INSTITUTE VISION AND MISSION

Vision

To emerge as a destination for higher education by transforming learners into achievers by creating, encouraging and thus building a supportive academic environment.

Mission

To impart Quality Technical Education and to undertake Research and Development with a focus on application and innovation which offers an appropriate solution to the emerging societal needs by making the students globally competitive, morally valuable and socially responsible citizens.

DEPARTMENT VISION AND MISSION

Vision

To emerge as a center of excellence with global reputation with adaption of rapid advancements in the field of computer specialization.

Mission

1. To provide a strong theoretical and practical background in area of computer science with an emphasize on software development.

2. To inculcate Professional behavior, strong ethical values, leadership qualities, research capabilities and lifelong learning.

3. To educate students to become effective problem solvers, apply knowledge with social sensitivity for the betterment of the society and humanity as a whole.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

Programme educational objectives are broad statements that describe the career and professional accomplishments that the programme is preparing graduates to achieve within 3 to 5 years after graduation.

The **Programme Educational Objectives** of the B. Tech CSE programme are:

- **PEO1:** To apply the knowledge of mathematics, basic science and engineering solving the real world computing problems to succeed higher education and professional careers.
- **PEO2:** To develop the skills required to comprehend, analyze, design and create innovative computing products and solutions for real life problems.
- **PEO3:** To inculcate professional and ethical attitude, communication and teamwork skills, multi-disciplinary approach and an ability to relate computer engineering issues with social awareness.

LABORATORY OUTCOMES:

CO[1] : To design the static and dynamic diagrams for ATM ,HMS using UML tool.
CO[2] : Student will be able to understand different testing tools.
CO[3] : To make Use of LAMP stack, to develop web applications.
CO[4] : To Write the Simple applications with technologies like HTML,JavaScript,AJAX,PHP,Servlets and JSPs.
CO[5] : To develop application to connect to the database for data manipulation.
CO[6] : To build SAX and DOM to parse XML files

Do's

1. Come with completed observation and record

2. Wear apron and ID card before entering into the lab.

3. Know the location of the fire extinguisher and the first aid box and how to use them in case of an emergency.

4. Read and understand how to carry out an activity thoroughly before coming to the laboratory.

5. Report any broken plugs or exposed electrical wires to your lecturer/laboratory technician immediately.

6. Write in time, out time and system details in the login register.

Don'ts

1. Do not eat or drink in the laboratory.

2. Do not operate mobile phones in the lab. Keep mobile phones either in silent or switched off mode.

3. Do not change system settings.

4. Do not disturb your neighbouring students. They may be busy in completing tasks.

5. Do not remove anything from the computer laboratory without permission.

6. Do not use pen drives.

7. Do not misbehave.

INDEX

UNIFIED MODELING LANGUAGE (UML)

INTRODUCTION:

The unified modeling language (UML) is a standard language for writing software blue prints.

The UML is a language for

- Visualizing
- Specifying
- Constructing
- Documenting

The artifacts of a software system:

UML is a language that provides vocabulary and the rules for combing words in that vocabulary for the purpose of communication

A modeling language is a language whose vocabulary and rules focus on the concept and physical representation of a system. Vocabulary and rules of a language tell us how to create and real well formed models, but they don't tell you what model you should create and when should create them.

Visualizing:

The UML is more than just a bunch of graphical symbols. In UML each symbol has well defined semantics. In this manner one developer can write a model in the UML and another developer or even another tool can interpret the model unambiguously.

Specifying:

UML is used from specifying means building models that are precise, unambiguous and complete. UML addresses the specification of all the important analysis, design and implementation decisions that must be made in developing and deploying a software intensive system.

Constructing:

UML is not a visual programming language but its models can be directly connected to a variety of programming languages. This means that it is possible to map from a model in the UML to a programming language such as java, C++ or Visual Basic or even to tables in a

relational database or the persistent store of an object-oriented database. The mapping permits forward engineering. The generation of code from a UML model into a programming language.

The reverse Engineering is also possible you can reconstruct a model from an implementation back into the UML.

Documenting:

UML is a language for Documenting. A software organization produces all sorts of artifacts in addition to raw executable code. These artifacts include Requirements, Architecture, Design, Source code, Project plans, Test, Prototype, and Release. Such artifacts are not only the deliverables of a project, they are also critical in controlling, measuring and communicating about a system during its development and after its deployment.

Conceptual model of the UML:

To understand the UML, we need to form a conceptual model of the language and this requires learning three major elements. The UML Basic Building Blocks. The Rules that direct how those building blocks may be put together. Some common mechanisms there apply throughout the UML. As UML describes the real time systems it is very important to make a conceptual model and then proceed gradually. Conceptual model of UML can be mastered by learning the following three major elements:

UML building blocks:

Rules to connect the building blocks

Common mechanisms of UML

UML build blocks. The building blocks of UML can be

Defined as:

- Things
- Relationships
- Diagrams

Things:

Things are the most important building blocks of UML. Things can be:

- Structural
- Behavioral
- Grouping
- An notational

Structural things:

The Structural things define the static part of the model. They represent physical a conceptual elements. Following are the brief descriptions of the structural things.

Class*:*

Class represents set of objects having similar responsibilities.

Interface:

Interface defines a set of operations which specify the responsibility of a class

Use case:

Use case represents a set of actions performed by a system for a specific goal.

Component:

Component describes physical part of a system.

*Node***:** A node can be defined as a physical element that exists at run time.

Behavioral things:

A behavioral thing consists of the dynamic parts of UML models. Following are the behavioral things:

Interaction:

Interaction is defined as a behavior that consists of a group of messages exchanged among elements to accomplish a specific task.

State machine:

State machine is useful when the state of an object in its life cycle is important. It defines the sequence of states an object goes through in response to events. Events are external factors responsible for state change.

Grouping things

Grouping things can be defined as a mechanism to group elements of a UML model together. There is only one grouping thing available.

Package*:* Package is the only one grouping thing available for gathering structural and behavioral things.

Annotational things:

Annotational things can be defined as a mechanism to capture remarks, descriptions, and comments of UML model elements. Note is the only one Annotational thing available.

Note: A note is used to render comments, constraints etc of an UML element.

Relationships in UML:

Relationship is another most important building block of UML. It shows how elements are associated with each other and this association describes the functionality of an application. There are four kinds of relationships available.

Dependency:

Dependency is a relationship between two things in which change in one element also affects the other one.

Association:

Association is basically a set of links that connects elements of an UML model. It also describes how many objects are taking part in that relationship.

Generalization:

Generalization can be defined as a relationship which connects a specialized element with a generalized element. It basically describes inheritance relationship in the world of objects.

Realization:

Realization can be defined as a relationship in which two elements are connected. One element describes some responsibility which is not implemented and the other one implements them. This relationship exists in case of interfaces.

UML Diagrams:

UML diagrams are the ultimate output of the entire discussion. All the elements, relationships are used to make a complete UML diagram and the diagram represents a system. The visual effect of the UML diagram is the most important part of the entire process. All the other elements are used to make it a complete one.

UML includes the following nine diagrams and the details are described in the following

- Class diagram
- Object diagram
- Use case diagram
- Sequence diagram
- Collaboration diagram
- Activity diagram
- State chart diagram
- Deployment diagram

- Component diagram

ARCHITECTURE OF UML:

Any real world system is used by different users. The users can be developers, testers, business people, analysts and many more. So before designing a system the architecture is made with different perspectives in mind. The most important part is to visualize the system from different viewer's perspective. The better we understand the better we make the system. UML plays an important role in defining different perspectives of a system.

These perspectives are:

- Design
- Implementation
- Process
- Deployment

And the centre is the **Use Case view** which connects all these four. A Use case represents the functionality of the system. So the other perspectives are connected with use case.

Design of a system consists of classes, interfaces and collaboration. UML provides class diagram, object diagram to support this. Implementation defines the components assembled together to make a complete physical system. UML component diagram is used to support implementation perspective.

Process defines the flow of the system. So the same elements as used in Design are also used to support this perspective.

Deployment represents the physical nodes of the system that forms the hardware. UML deployment diagram is used to support this perspective.

Automatic Teller Machine:

Description of ATM System:

The software to be designed will control a simulated automated teller machine (ATM) having a magnetic stripe reader for reading an ATM card, a customer console (keyboard and display) for interaction with the customer, a slot for depositing envelopes, a dispenser for cash, a printer for printing customer receipts, and a key-operated switch to allow an operator to start or stop the machine. The ATM will communicate with the bank's computer over an appropriate communication link. (The software on the latter is not part of the requirements for this

problem.)The ATM will service one customer at a time. A customer will be required to insert an ATM card and enter a personal identification number (PIN) – both of which will be sent to the bank for validation as part of each transaction. The customer will then be able to perform one or more transactions. The card will be retained in the machine until the customer indicates that he/she desires no further transactions, at which point it will be returned – except as noted below.

The ATM must be able to provide the following services to the customer:

1. A customer must be able to make a cash withdrawal from any suitable account linked to the card. Approval must be obtained from the bank before cash is dispensed.

2. A customer must be able to make a deposit to any account linked to the card, consisting of cash and/or checks in an envelope. The customer will enter the amount of the deposit into the ATM, subject to manual verification when the envelope is removed from the machine by an operator. Approval must be obtained from the bank before physically accepting the envelope.

3. A customer must be able to make a transfer of money between any two accounts linked to the card.

4. A customer must be able to make a balance inquiry of any account linked to the card.

5. A customer must be able to abort a transaction in progress by pressing the Cancel key instead of responding to a request from the machine.

The ATM will communicate each transaction to the bank and obtain verification that it was allowed by the bank. Ordinarily, a transaction will be considered complete by the bank once it has been approved. In the case of a deposit, a second message will be sent to the bank indicating that the customer has deposited the envelope. (If the customer fails to deposit the envelope within the timeout period, or presses cancel instead, no second message will be sent to the bank and the deposit will not be credited to the customer.)If the bank determines that the customer's PIN is invalid, the customer will be required to re-enter the PIN before a transaction can proceed. If the customer is unable to successfully enter the PIN after three tries, the card will be permanently retained by the machine, and the customer will have to contact the bank to get it back.

If a transaction fails for any reason other than an invalid PIN, the ATM will display an explanation of the problem, and will then ask the customer whether he/she wants to do another

transaction. The ATM will provide the customer with a printed receipt for each successful transaction, showing the date, time, machine location, type of transaction, account(s), amount, and ending and available balance(s) of the affected account ("to" account for transfers).The ATM will have a key-operated switch that will allow an operator to start and stop the servicing of customers. After turning the switch to the "on" position, the operator will be required to verify and enter the total cash on hand. The machine can only be turned off when it is not servicing a customer. When the switch is moved to the "off" position; the machine will shut down, so that the operator may remove deposit envelopes and reload the machine with cash, blank receipts, etc.

LAB EXCERCISE-1

USE CASE DIAGRAM

AIM:

To develop use case diagram for ATM

ABOUT USE CASE DIAGRAM:

To model a system the most important aspect is to capture the dynamic behaviour. To clarify a bit in details, dynamic behaviour means the behaviour of the system when it is running /operating. So only static behaviour is not sufficient to model a system rather dynamic behaviour is more important than static behaviour. In UML there are five diagrams available to model dynamic nature and use case diagram is one of them. Now as we have to discuss that the use case diagram is dynamic in nature there should be some internal or external factors for making the interaction.

Purpose:

The purpose of use case diagram is to capture the dynamic aspect of a system. But this definition is too generic to describe the purpose. Because other four diagrams (activity, sequence, collaboration and Statechart) are also having the same purpose. So we will look into some specific purpose which will distinguish it from other four diagrams. Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. So when a system is analyzed to gather its functionalities use cases are prepared and actors are identified.

So in brief, the purposes of use case diagrams can be as follows:

- Used to gather requirements of a system.
- Used to get an outside view of a system.
- Identify external and internal factors influencing the system.
- Show the interacting among the requirements are actors.

USE CASE DIAGRAM FOR ATM:

Withdrawal Use Case:

A withdrawal transaction asks the customer to choose a type of account to withdraw from (e.g. checking) from a menu of possible accounts, and to choose a dollar amount from a menu of possible amounts. The system verifies that it has sufficient money on hand to satisfy the request

before sending the transaction to the bank. (If not, the customer is informed and asked to enter a different amount.) If the transaction is approved by the bank, the appropriate amount of cash is dispensed by the machine before it issues a receipt. A withdrawal transaction can be cancelled by the customer pressing the Cancel key any time prior to choosing the dollar amount.

Deposit Use Case:

A deposit transaction asks the customer to choose a type of account to deposit to (e.g. checking) from a menu of possible accounts, and to type in a dollar amount on the keyboard. The transaction is initially sent to the bank to verify that the ATM can accept a deposit from this customer to this account. If the transaction is approved, the machine accepts an envelope from the customer containing cash and/or checks before it issues a receipt. Once the envelope has been received, a second message is sent to the bank, to confirm that the bank can credit the customer's account – contingent on manual verification of the deposit envelope contents by an operator later.

A deposit transaction can be cancelled by the customer pressing the Cancel key any time prior to inserting the envelope containing the deposit. The transaction is automatically cancelled if the customer fails to insert the envelope containing the deposit within a reasonable period of time after being asked to do so.

Transfer Use Case:

A transfer transaction asks the customer to choose a type of account to transfer from (e.g. checking) from a menu of possible accounts, to choose a different account to transfer to, and to type in a dollar amount on the keyboard. No further action is required once the transaction is approved by the bank before printing the receipt.

A transfer transaction can be cancelled by the customer pressing the Cancel key any time prior to entering a dollar amount.

Inquiry Use Case:

An inquiry transaction asks the customer to choose a type of account to inquire about from a menu of possible accounts. No further action is required once the transaction is approved by the bank before printing the receipt. An inquiry transaction can be cancelled by the customer pressing the Cancel key any time prior to choosing the account to inquire about.

Validate User use case:

This use case is for validate the user i.e check the pin number, when the bank reports that the customer's transaction is disapproved due to an invalid PIN. The customer is required to re-enter the PIN and the original request is sent to the bank again. If the bank now approves the transaction, or disapproves it for some other reason, the original use case is continued; otherwise the process of re-entering the PIN is repeated. Once the PIN is successfully re-entered.

If the customer fails three times to enter the correct PIN, the card is permanently retained, a screen is displayed informing the customer of this and suggesting he/she contact the bank, and the entire customer session is aborted.

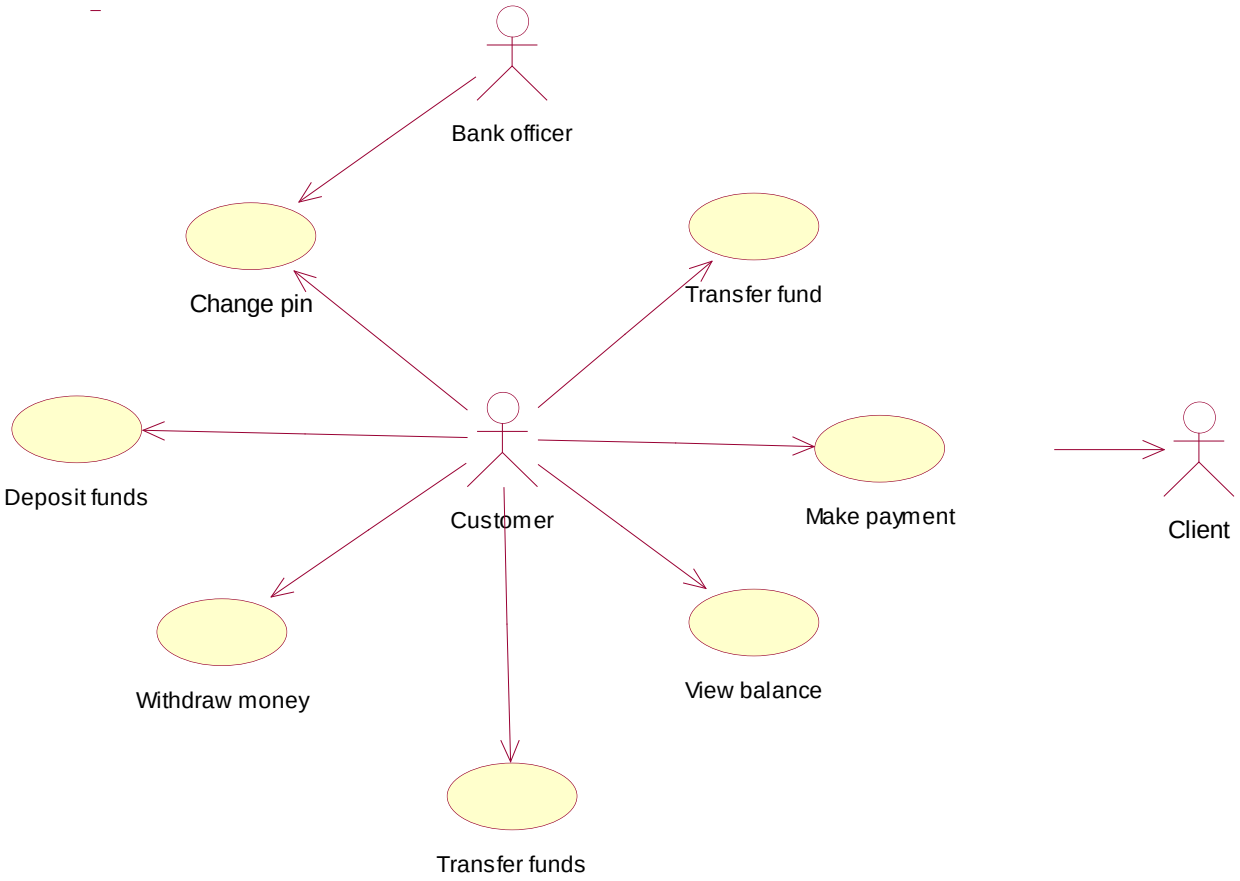
Print Bill use case:

This usecase is for printing corresponding bill after transactions(withdraw or deposit ,or balance enquiry, transfer) are completed.

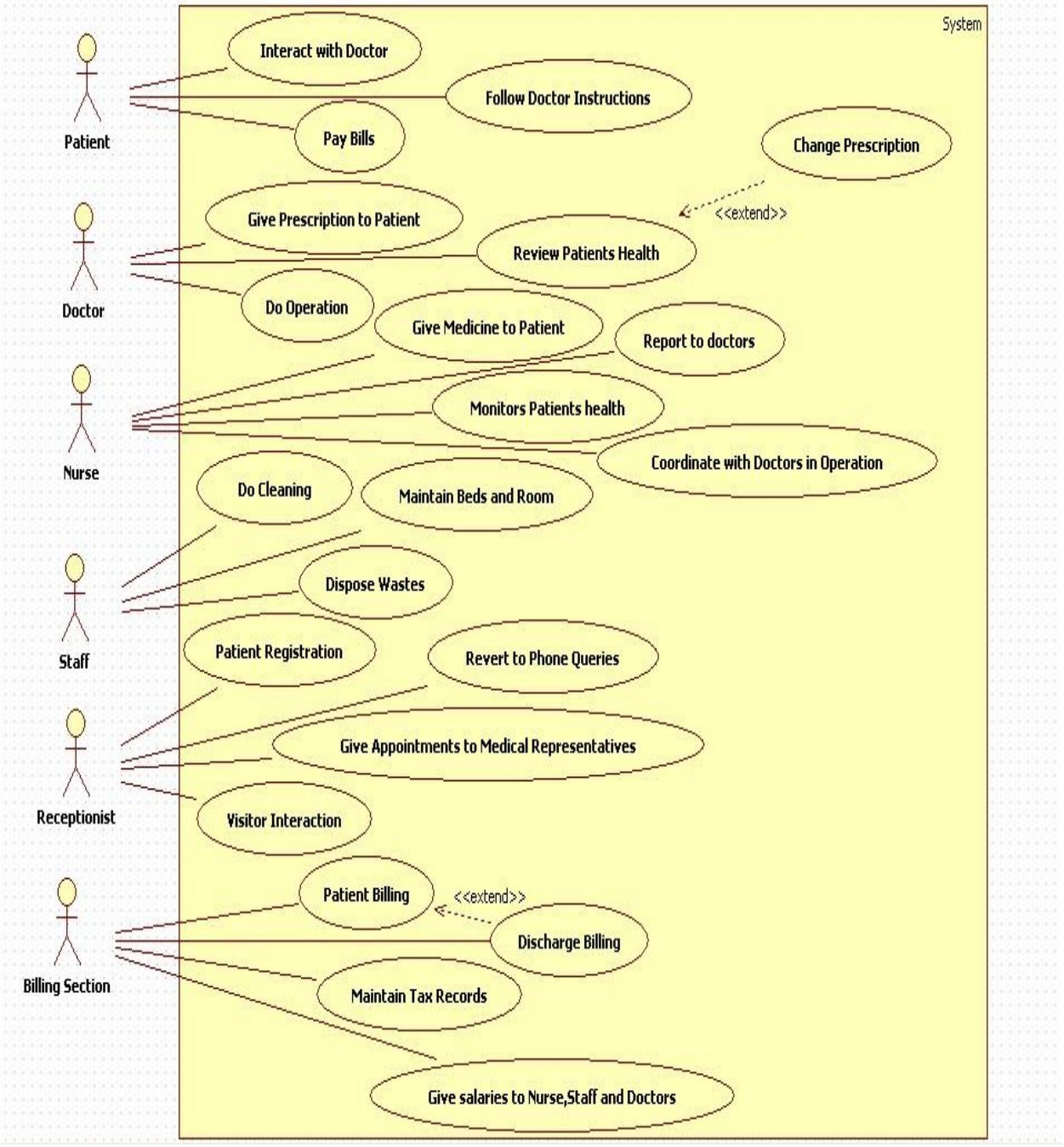
Update Account:

This use case is for updating corresponding user accounts after transactions (withdraw or deposit or transfer) are completed.

USECASE DIAGRAM OF ATM:



USECASE DIAGRAM OF HOSPITAL MANAGEMENT SYSTEM:


System
Patient
Interact with Doctor
Follow Doctor Instructions
Pay Bills
Change Prescription
<<extend>>
Doctor
Give Prescription to Patient
Review Patients Health
Do Operation
Give Medicine to Patient
Report to doctors
Nurse
Monitors Patients health
Coordinate with Doctors in Operation
Do Cleaning
Maintain Beds and Room
Staff
Dispose Wastes
Patient Registration
Revert to Phone Queries
Receptionist
Give Appointments to Medical Representatives
Visitor Interaction
Billing Section
Patient Billing
<<extend>>
Discharge Billing
Maintain Tax Records
Give salaries to Nurse,Staff and Doctors

VIVA VOICE QUESTIONS:

1. What is use case diagram?

Ans. Use case diagram is relationship among use cases and actors with in a system.

2. What is an actor?

Ans. An actor represents a coherent set of roles.

3. What is use case?

Ans. Use case describes a set of sequences

4. What are the contents of use case diagram?

Ans. Use cases, actors, dependency, generalization, and association relationships.

5. What is the use case name prefixed by the name of the package in which that usecase lives?

Ans. A path name is the use case name prefixed by the name of the package.

6. How can you model the content of a system?

Ans. In uml you can model the content of a system with a use case diagram.

7. Name the three types of relationships in a use case diagram.

Ans. Communication, Uses, extends

CLASS DIAGRAM

AIM:

To develop use class diagram for ATM

ABOUT CLASS DIAGRAM:

The class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing and documenting different aspects of a system but also for constructing executable code of the software application. The class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagram shows a collection of classes, interfaces, associations, collaborations and constraints. It is also known as a structural diagram.

Purpose:

The purpose of the class diagram is to model the static view of an application. The class diagrams are the only diagrams which can be directly mapped with object oriented languages and thus widely used at the time of construction. The UML diagrams like activity diagram, sequence diagram can only give the sequence flow of the application but class diagram is a bit different. So it is the most popular UML diagram in the coder community. So the purpose of the class diagram can be summarized as:

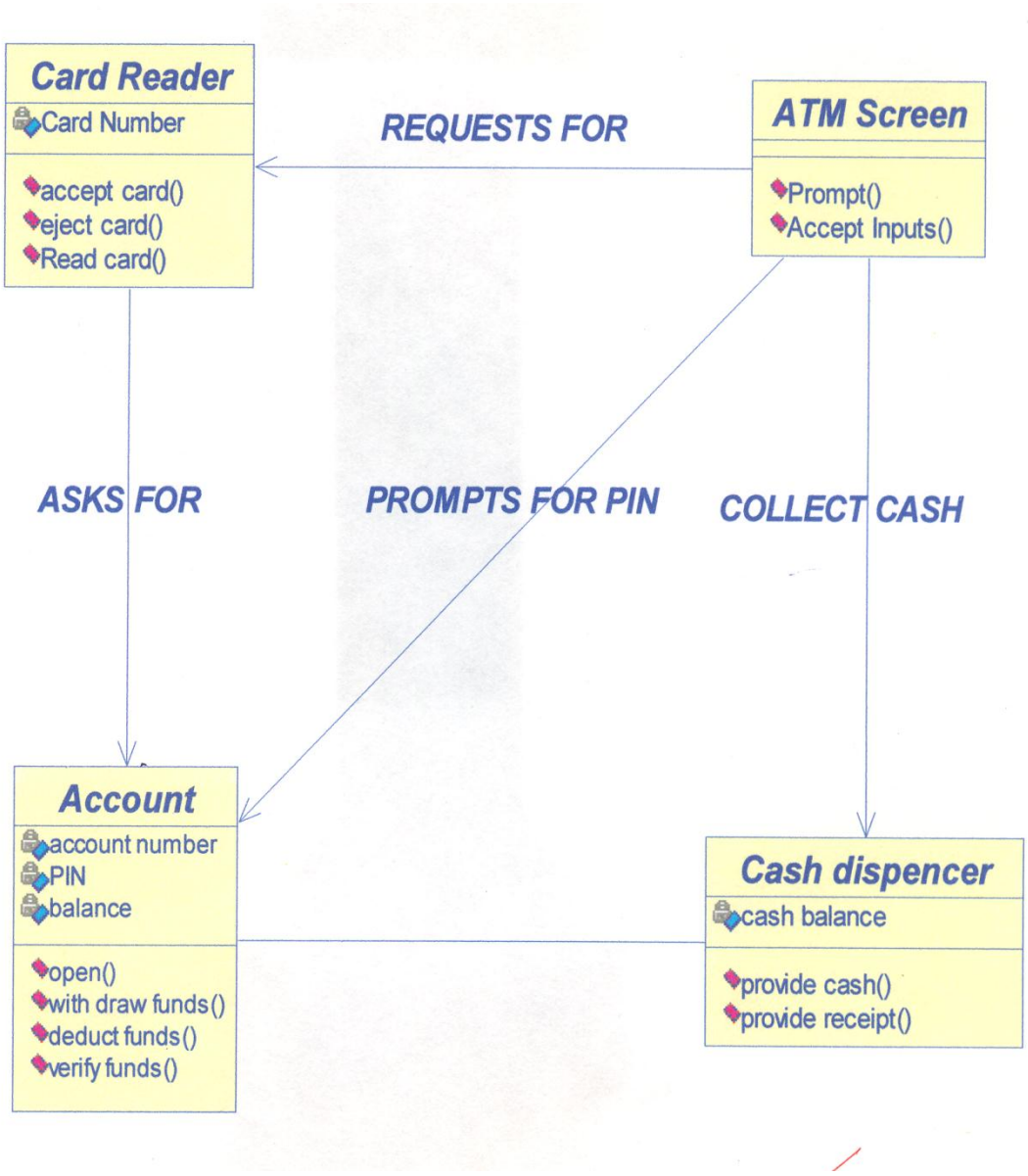
- Analysis and design of the static view of an application.
- Describe responsibilities of a system.
- Base for component and deployment diagrams.
- Forward and reverse engineering.

Contents:

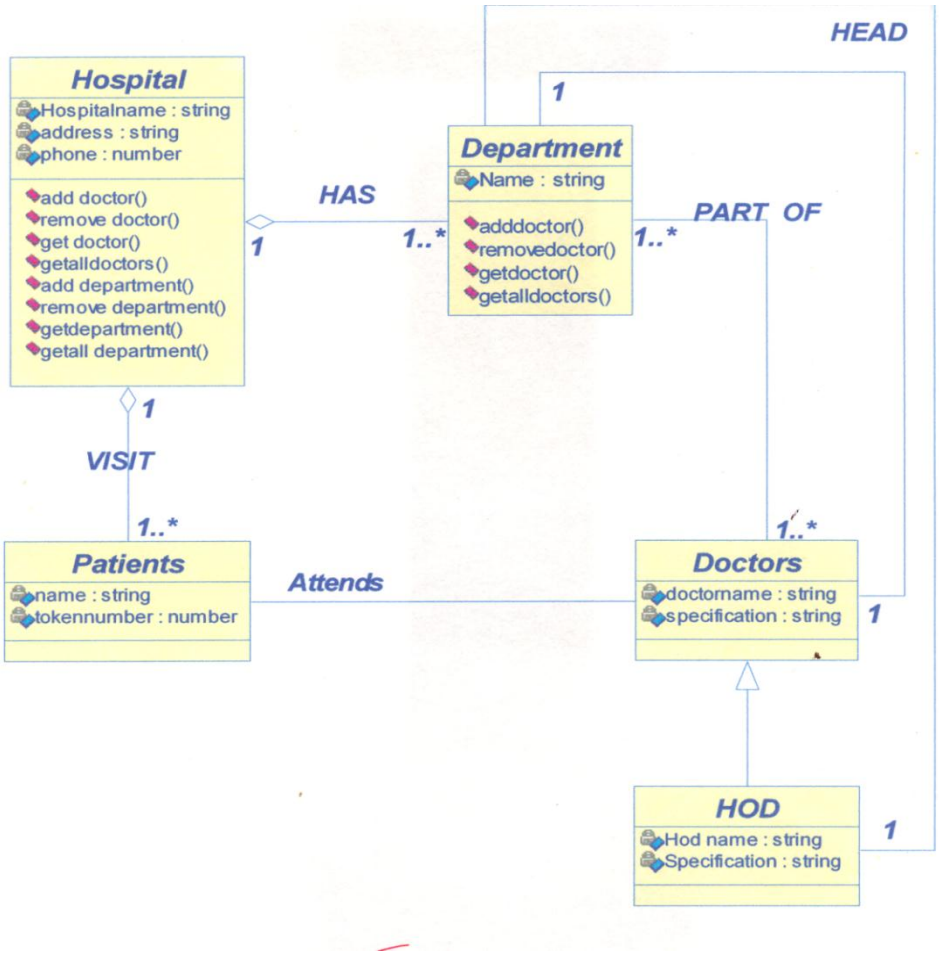
Class diagrams commonly contain the following things

- Classes.
- Interfaces.
- Collaborations.
- Dependency, generalization and association relationships.

CLASS DIAGRAM OF ATM:



Hospital Model with Attributes:



VIVA VOICE QUESTIONS:

1. What is a class?

Ans. A class is a description of a set of objects.

2. What are responsibilities?

Ans. A responsibilities is a contract or an obligation of a class

3. What is class diagram?

Ans.A class diagram is a diagram that shows a set of classes,interfaces and collaborations and their relationships.

4. What is a name?

Ans. A name is a textual string

5. How many relationships are there?

Ans. In object oriented modeling three kinds of relationships are included.

6. What is an interface?

Ans. Interface defines a set of actions.

7. What is responsibility?

Ans. A responsibility is a contract or an obligation of a class

8. What are the relationships usually visualized in class diagrams?

Ans. Dependencies, generalization, and association

LAB EXCERCISE-2

INTERACTION DIAGRAMS

AIM:

To develop interaction diagram for ATM

ABOUT INTERACTION DIAGRAMS:

We have two types of interaction diagrams in UML. One is sequence diagram and the other is a collaboration diagram. The sequence diagram captures the time sequence of message flow from one object to another and the collaboration diagram describes the organization of objects in a system taking part in the message flow.

So the following things are to identified clearly before drawing the interaction diagram:

1. Objects taking part in the interaction.
2. Message flows among the objects.
3. The sequence in which the messages are flowing.
4. Object organization.

Purpose:

1. To capture dynamic behaviour of a system.
2. To describe the message flow in the system.
3. To describe structural organization of the objects.
4. To describe interaction among objects.

Contents of a Sequence Diagram:

Objects

Focus of control

Messages

Life line

Contents

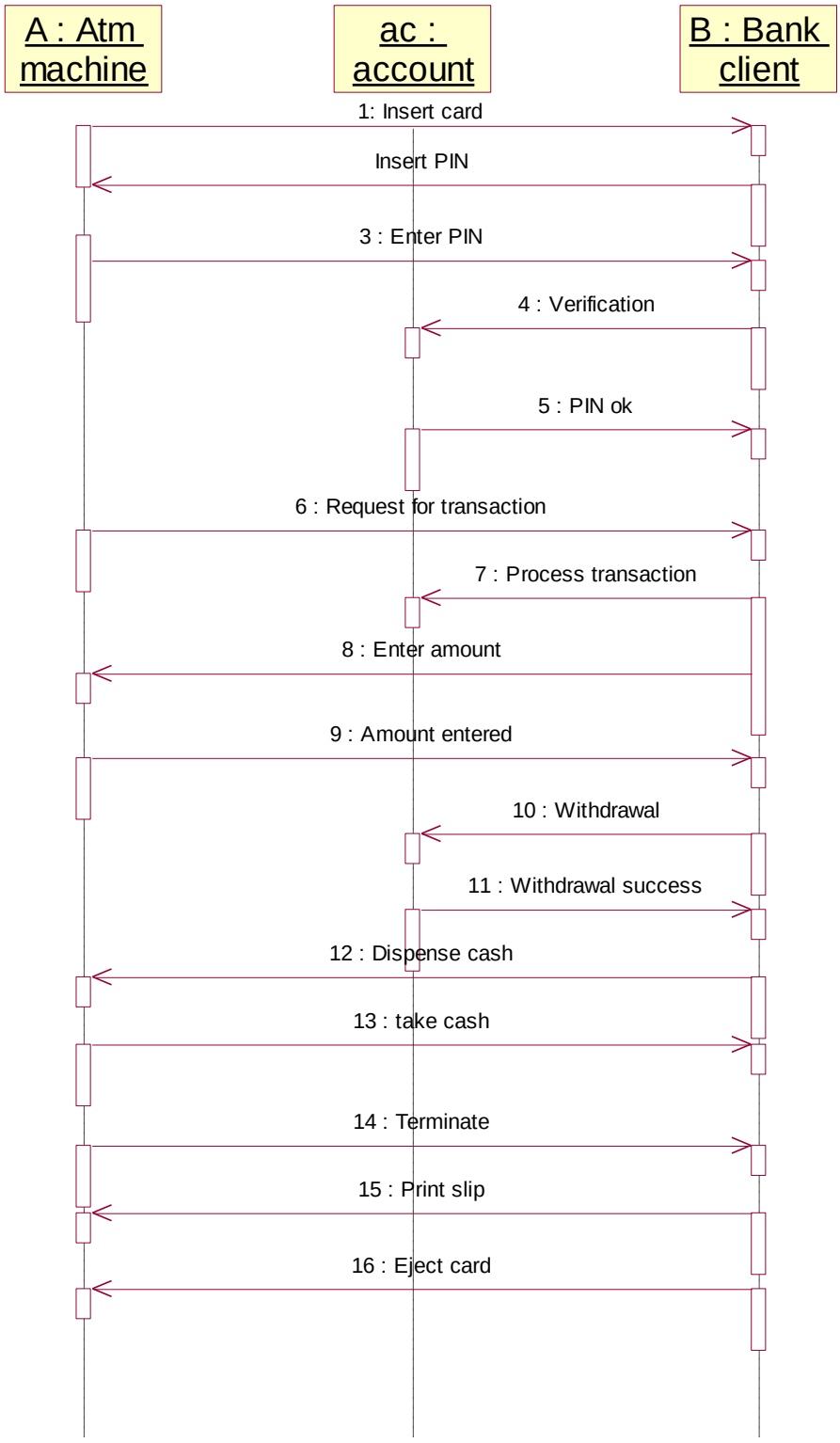
Contents of a Collaboration Diagram:

Objects

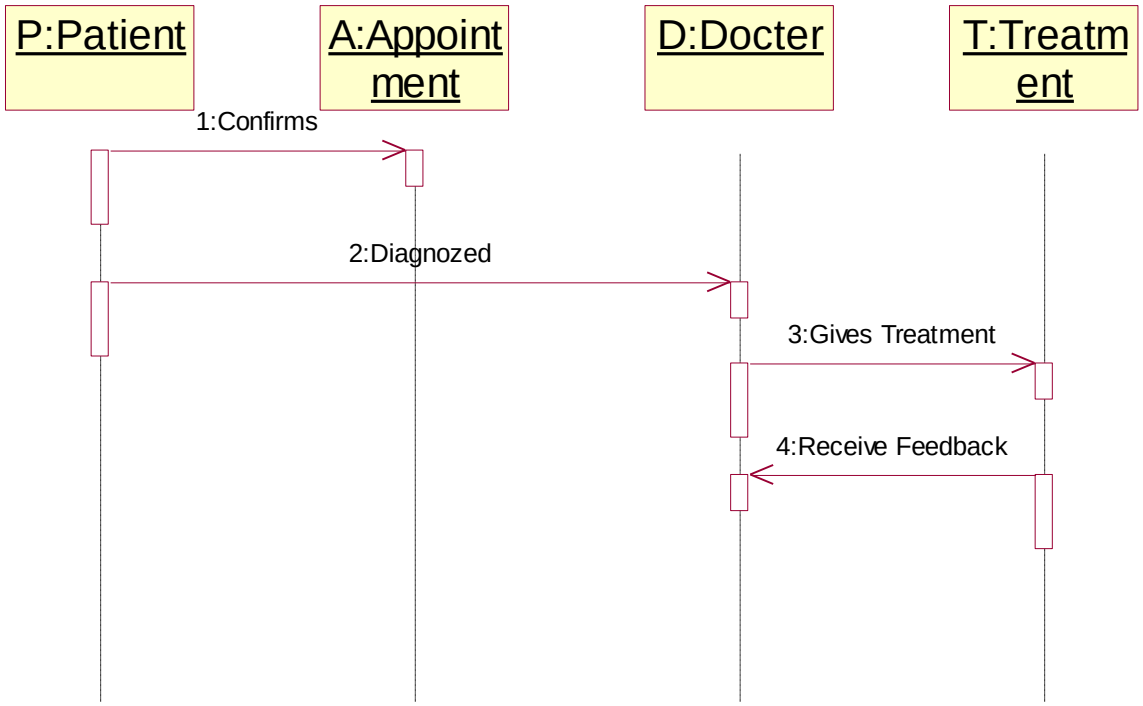
Links

Messages

SEQUENCE DIAGRAM FOR ATM:



SEQUENCE DIAGRAM FOR HOSPITAL:



VIVA VOICE QUECTIONS:

1. What is the need of an Object diagram?

Ans. An object diagram is used to show the existence of objects and their relationships in the logical design of a system.

2. Write some applications of object model?

Ans. They include Air traffic control, Animation, Avionics, Database, Robotics etc.

3. Names the diagrams of Booch Methodology?

Ans. Class diagram, object diagram, state transition diagram, use case diagram, collaboration diagram, sequence diagram, interaction diagram, component diagram, deployment diagram

4. What is mean by object?

Ans. Instances of a class (it is a an real time entity)

5. Write the characteristics of an object.

Ans. Identity, classification, polymorphism, and inheritance.

6. What is unified modeling language?

Ans. Unified modeling language is a language for specifying, conducting, visualizing and documenting the software system and its components.

COLLABORATION DIAGRAMS

AIM:

To develop collaboration diagram for ATM

ABOUT COLLABORATION DIAGRAMS:

We have two types of interaction diagrams in UML. One is sequence diagram and the other is a collaboration diagram. The sequence diagram captures the time sequence of message flow from one object to another and the collaboration diagram describes the organization of objects in a system taking part in the message flow.

So the following things are to identified clearly before drawing the interaction diagram:

5. Objects taking part in the interaction.
6. Message flows among the objects.
7. The sequence in which the messages are flowing.
8. Object organization.

Purpose:

5. To capture dynamic behaviour of a system.
6. To describe the message flow in the system.
7. To describe structural organization of the objects.
8. To describe interaction among objects.

Contents of a Sequence Diagram:

Objects

Focus of control

Messages

Life line

Contents

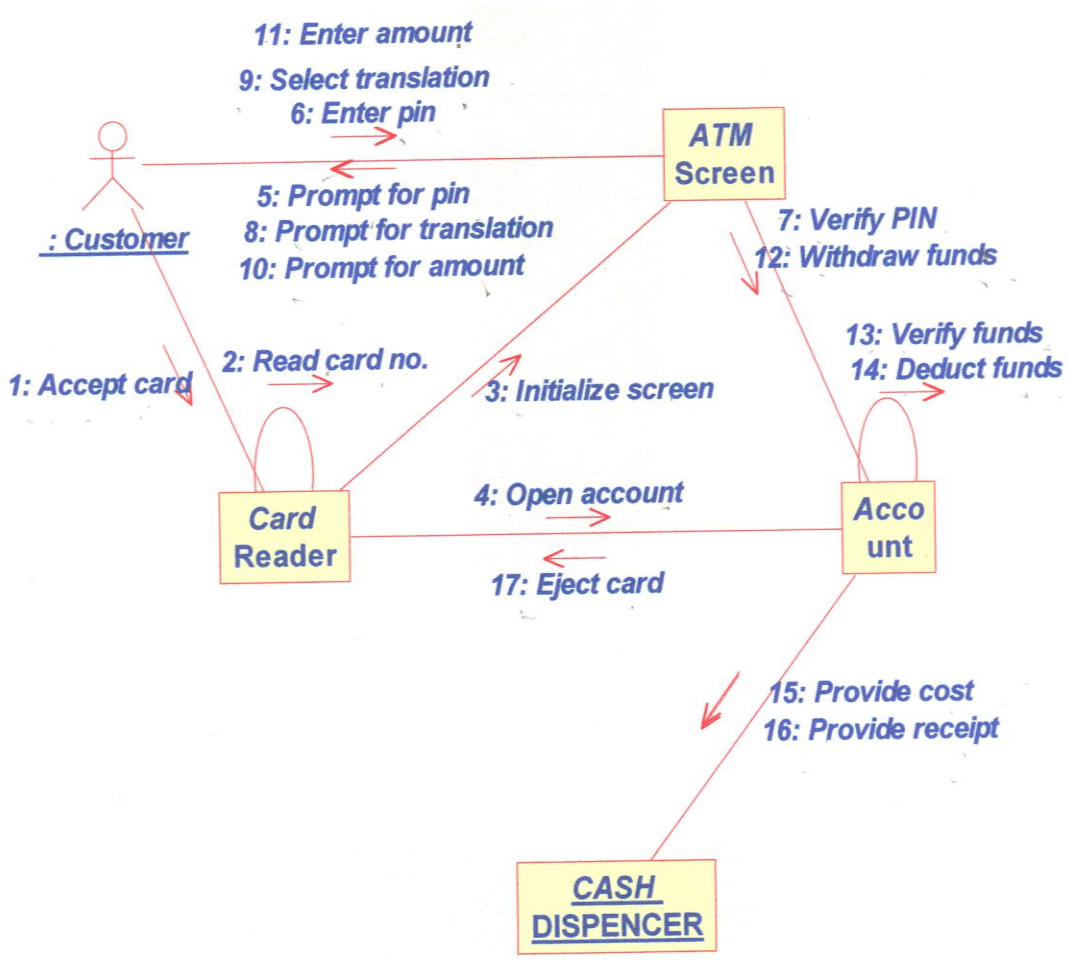
Contents of a Collaboration Diagram:

Objects

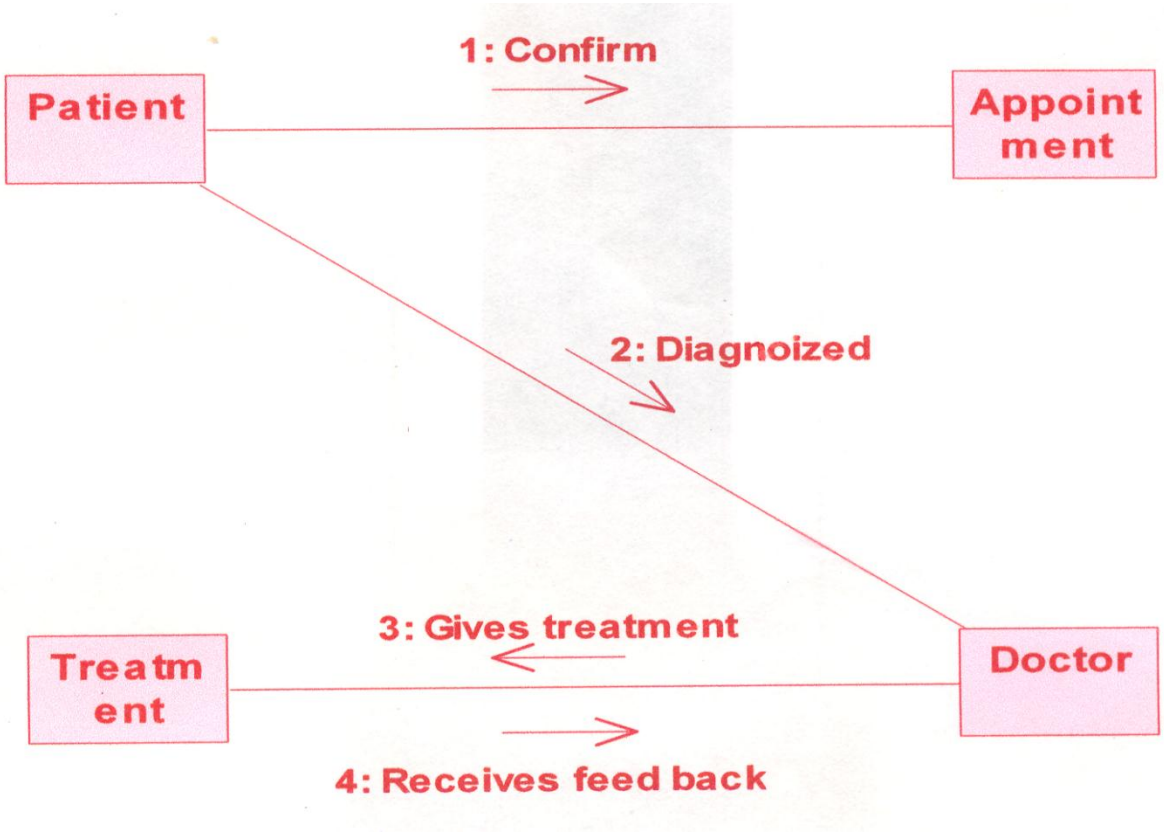
Links

Messages

COLLABORATION DIAGRAM FOR ATM:



Hospital Collaboration Diagram:



VIVA VOICE QUECTIONS:

1. What are the contents of collaboration diagram?

Ans. Objects, Links, Messages

2. What is the purpose of collaboration diagram?

Ans. To capture dynamic behavior of a system.

3. What is component?

Ans. Component describes physical part of a system

4. What is deployment?

Ans. Deployment represents the physical nodes of the system that forms the hardware

LAB EXCERCISE-3

STATE DIAGRAM

AIM:

To develop use state diagram for ATM

ABOUT STATE DIAGRAM:

State chart diagram is used to model dynamic nature of a system. They define different states of an object during its lifetime. And these states are changed by events. So State chart diagrams are useful to model reactive systems. Reactive systems can be defined as a system that responds to external or internal events.

State chart diagram describes the flow of control from one state to another state. States are defined as a condition in which an object exists and it changes when some event is triggered. So the most important purpose of State chart diagram is to model life time of an object from creation to termination.

State chart diagrams are also used for forward and reverse engineering of a system. But the main purpose is to model reactive system.

Following are the main purposes of using State chart diagrams:

1. To model dynamic aspect of a system.
2. To model life time of a reactive system.
3. To describe different states of an object during its life time.
4. Define a state machine to model states of an object.

Contents:

Simply state and composite states

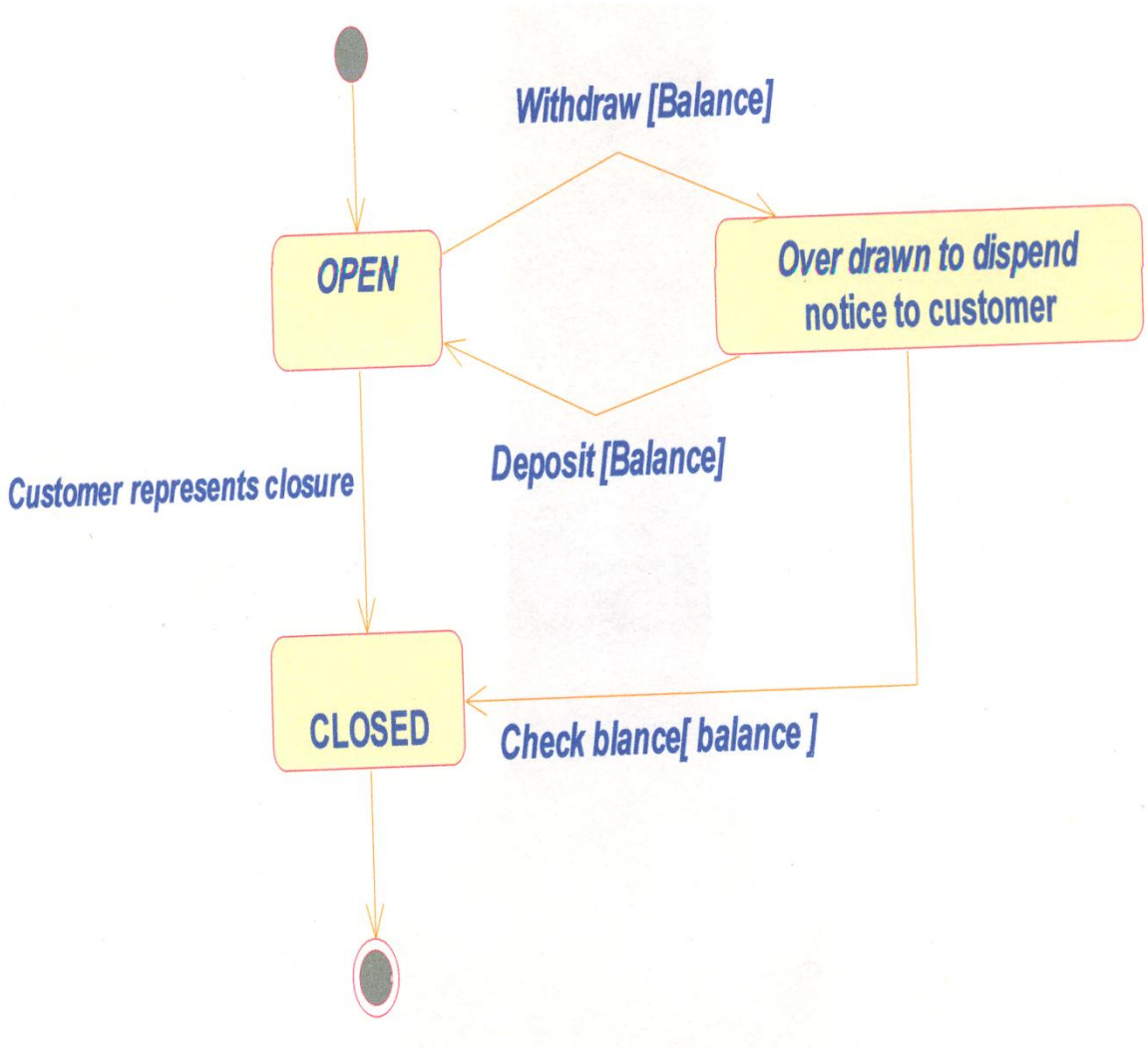
Transitions, including events and actions

Common use:

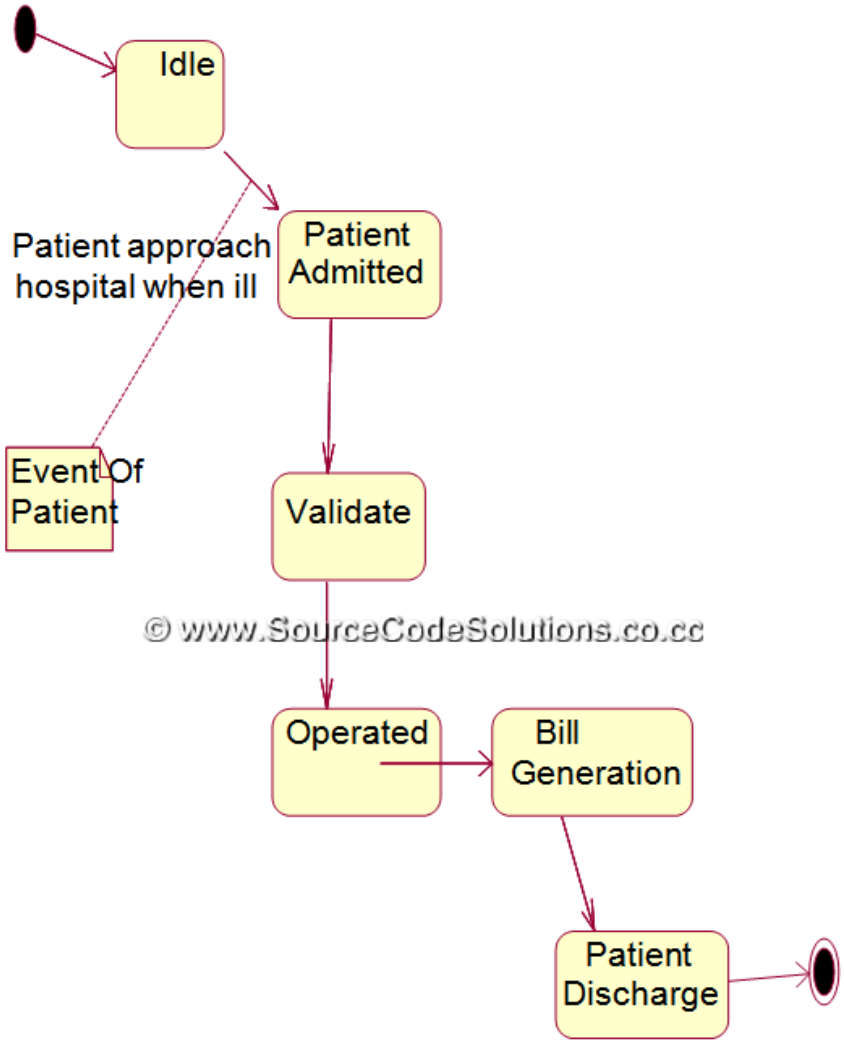
They are use to model the dynamic aspects of a system.

Event ordered behavior of any kind of objects, to model reactive objects.

STATE CHART DIAGRAM OF ATM:



STATE CHART DIAGRAM OF HOSPITAL:



VIVA VOICE QUESTIONS:

1. What is Association?

Ans. An Association is a structural relationship that specifies that objects of one thing are connected to objects of another

2. How Association is rendered?

Ans. An association is rendered as a solid line connecting the same or different classes

3. What is binary association?

Ans. An association that connects exactly two classes is called a binary association

4. What is n-ary association?

Ans. An association that connect more than two classes s

5. What are the four adornments that apply to association?

Ans. Name, Role, Multiplicity, Aggregation

ACTIVITY DIAGRAM

AIM:

To develop activity diagram for ATM

ABOUT ACTIVITY DIAGRAM:

Activity diagram is basically a flow chart to represent the flow form one activity to another . The activity can be described as an operation of the system. So the control flow is drawn from one operation to another. This flow can be sequential, branched or concurrent. Activity diagrams deals with all type of flow by using elements like fork, join etc.

Contents:

Initial/Final State, Activity, Fork & Join, Branch, Swimlanes

Fork:

A fork represents the splitting of a single flow of control into two or more concurrentFlow of control. A fork may have one incoming transition and two or more outgoing transitions, each of which represents an independent flow of control. Below fork the activities associated with each of these path continues in parallel.

Join:

A join represents the synchronization of two or more concurrent flows of control. A join may have two or more incoming transition and one outgoing transition. Above the join the activities associated with each of these paths continues in parallel.

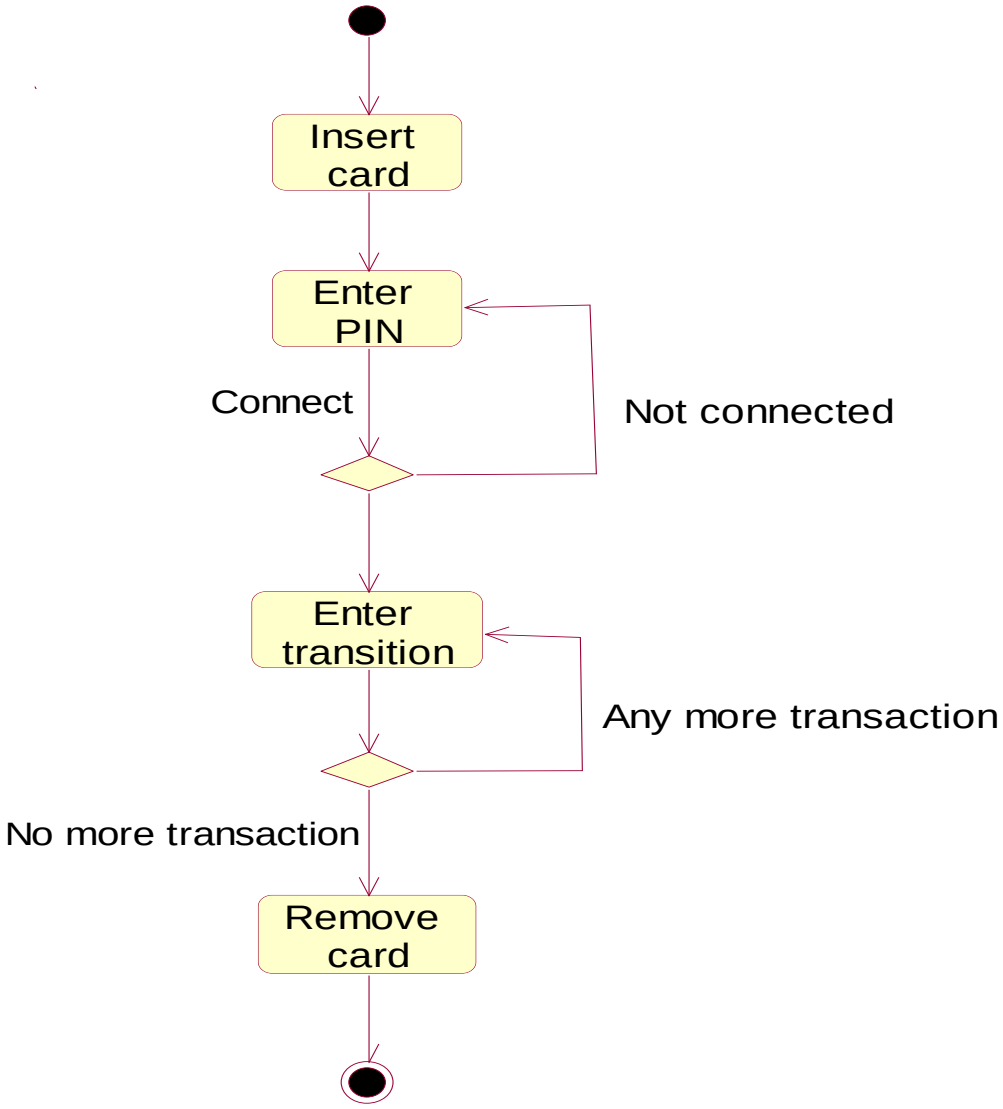
Branching:

A branch specifies alternate paths takes based on some Boolean expression Branch is represented by diamond Branch may have one incoming transition and two or more outgoing one on each outgoing transition, you place a Boolean expression shouldn't overlap but they should cover all possibilities.

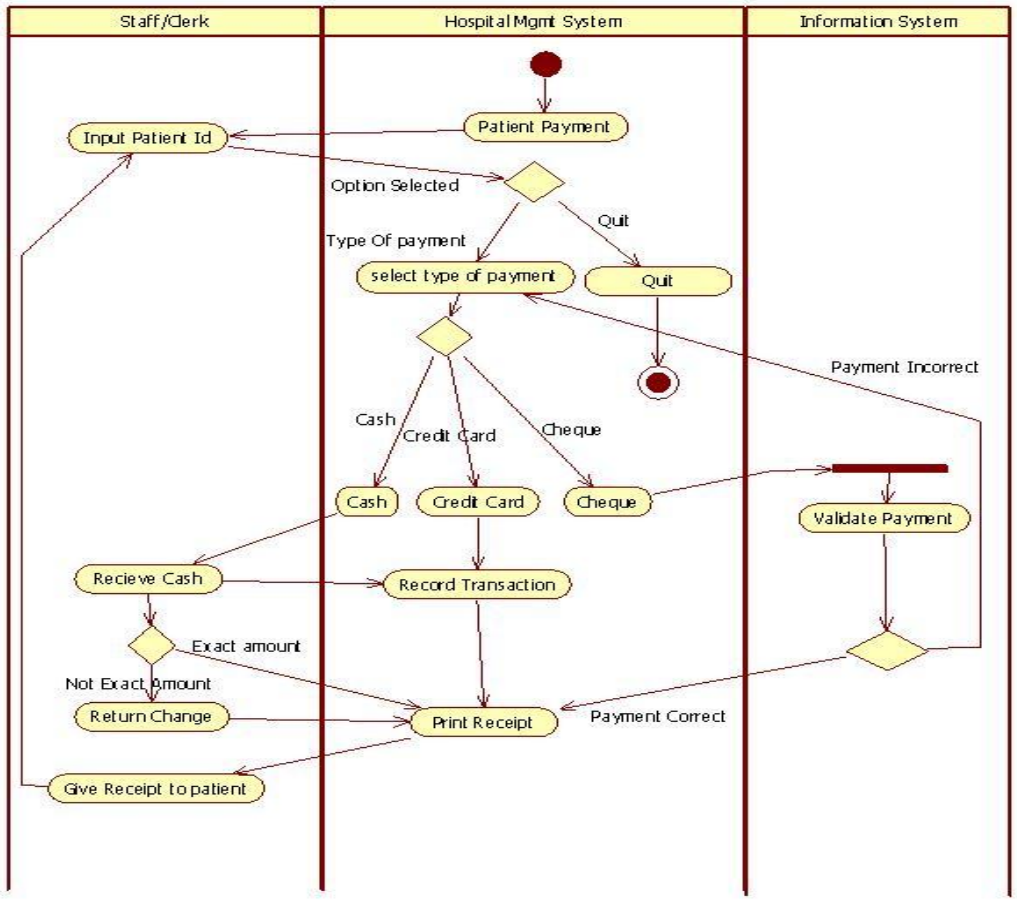
Swimlane:

Swimlanes are useful when we model workflows of business processes to partition the activity states on an activity diagram into groups. Each group representing the business organization responsible for those activities, these groups are called Swimlanes.

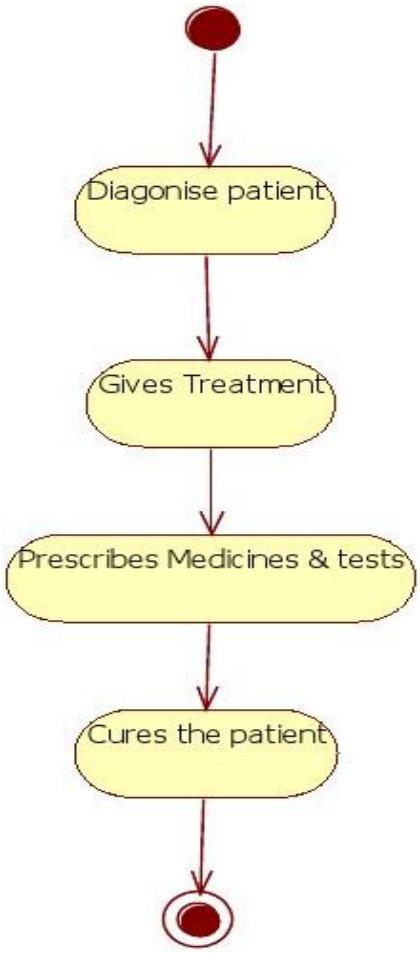
ACTIVITY DIAGRAM FOR ATM:



ACTIVITY DIAGRAM FOR HOSPITAL MANAGEMENT SYSTEM:



ACTIVITY DIAGRAM FOR HOSPITAL MANAGEMENT SYSTEM:



VIVA VOICE QUESTIONS:

1. What is an activity?

Ans. An activity is a set of operations that is executing during the entire period an object is in a state.

2. What is control flow, work flow patterns?

Ans.A control flow work flow patterns, i.e. abstracted forms of recurring situations related to the ordering of activities in a work flow, and the work flow of execution between them.

3. What is a sub activity state?

Ans.A sub activity state is recursively defined as a compound state whose decomposition contains exclusively action and sub activity state.

4. Name the two properties of a part of relationship.

Ans. Transitivity, Anti symmetry

COMPONENT DIAGRAM

AIM:

To develop component diagram for ATM

ABOUT COMPONENT DIAGRAM:

Component diagrams are used to model physical aspects of a system. Now the question is what are these physical aspects? Physical aspects are the elements like executables, libraries, files, documents etc which resides in a node. So component diagrams are used to visualize the organization and relationships among components in a system. These diagrams are also used to make executable systems.

Purpose:

Component diagrams can be described as a static implementation view of a system. Static implementation represents the organization of the components at a particular moment.

A single component diagram cannot represent the entire system but a collection of diagrams are used to represent the whole.

Before drawing a component diagram the following artifacts are to be identified clearly:

- Files used in the system.
- Libraries and other artifacts relevant to the application.
- Relationships among the artifacts.
- Now after identifying the artifacts the following points needs to be followed:
- Use a meaningful name to identify the component for which the diagram is to be drawn.
- Prepare a mental layout before producing using tools.
- Use notes for clarifying important points.

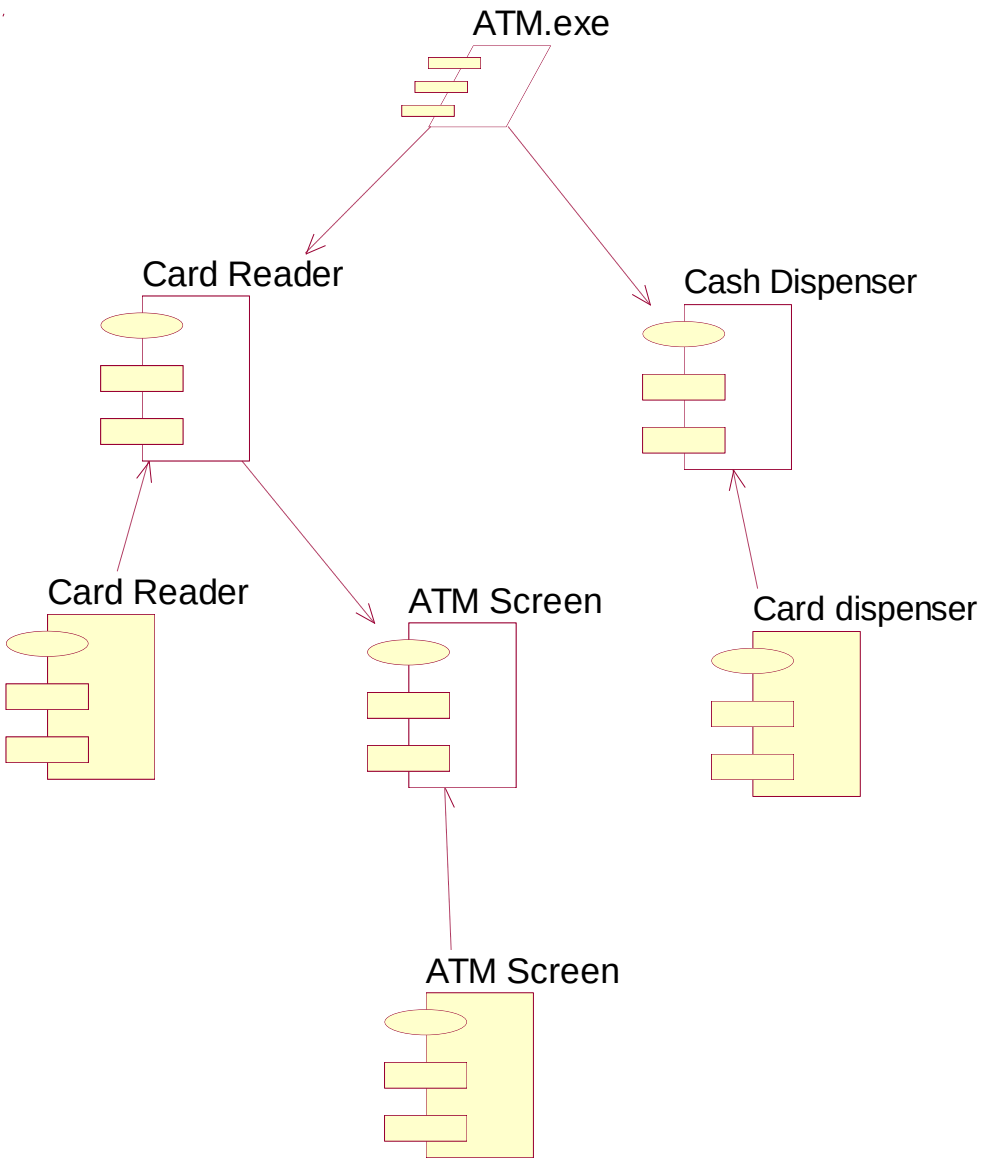
Now the usage of component diagrams can be described as:

1. Model the components of a system.
2. Model database schema.
3. Model executables of an application.
4. Model system's source code.

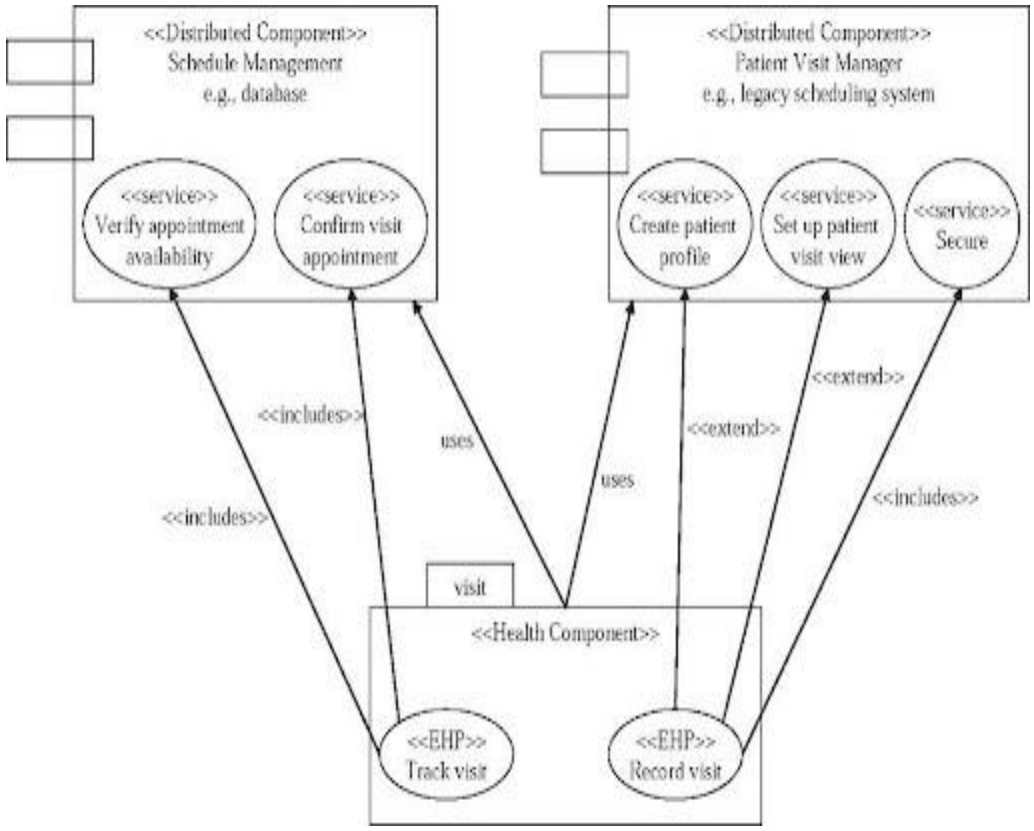
Contents:

Components , Interfaces , Relationships

COMPONENT DIAGRAM FOR ATM:



COMPONENT DIAGRAM FOR HOSPITAL MANAGEMENT SYSTEM:



VIVA VOICE QUESTIONS:

1. What is Dependency?

Ans. Change in one thing depends upon the another thing

2. How the dependency is rendered?

Ans. Dependency is rendered as a dashed directed line, directed to the thing being depended on

3. Define Object Oriented Analysis?

Ans. Object Oriented Analysis (OOA) is a method of analysis that examines requirements from the perspective of the classes and objects found in the vocabulary of the problem domain.

4. Write the two types of Implementation diagram?

Ans. Component diagram, deployment diagram

5.What is the Generalization?

Ans.It means that objects of the child may be used anywhere the parent may appear, but not the reverse

6.Write the guidelines for preparing the Documentation.

Ans. Common cover, 80-20 rule, Familiar vocabulary, makes the document as short as possible, organize the document. Bank Account Person and Company Person.

DEPLOYMENT DIAGRAM

AIM:

To develop deployment diagram for ATM

ABOUT DEPLOYMENT DIAGRAM:

Deployment diagrams are used to visualize the topology of the physical components of a system where the software components are deployed. So deployment diagrams are used to describe the static deployment view of a system. Deployment diagrams consist of nodes and their relationships.

Purpose:

The name Deployment itself describes the purpose of the diagram. Deployment diagrams are used for describing the hardware components where software components are deployed. Component diagrams and deployment diagrams are closely related. Component diagrams are used to describe the components and deployment diagrams shows how they are deployed in hardware.

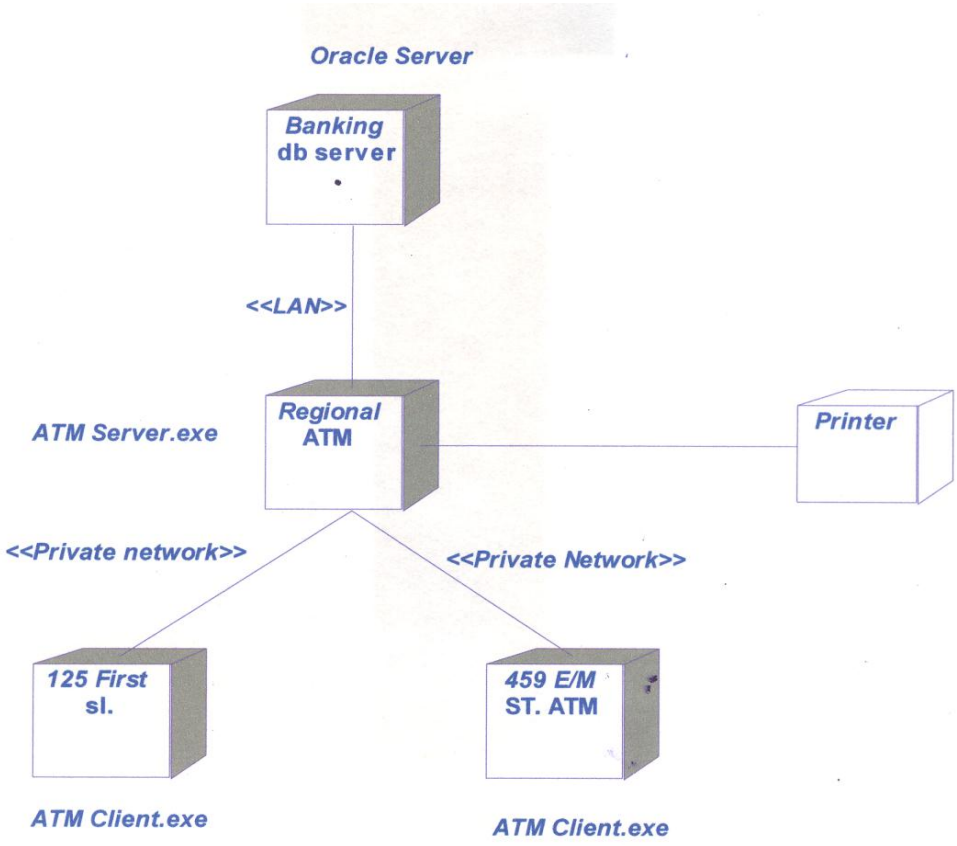
Contents:

Nodes

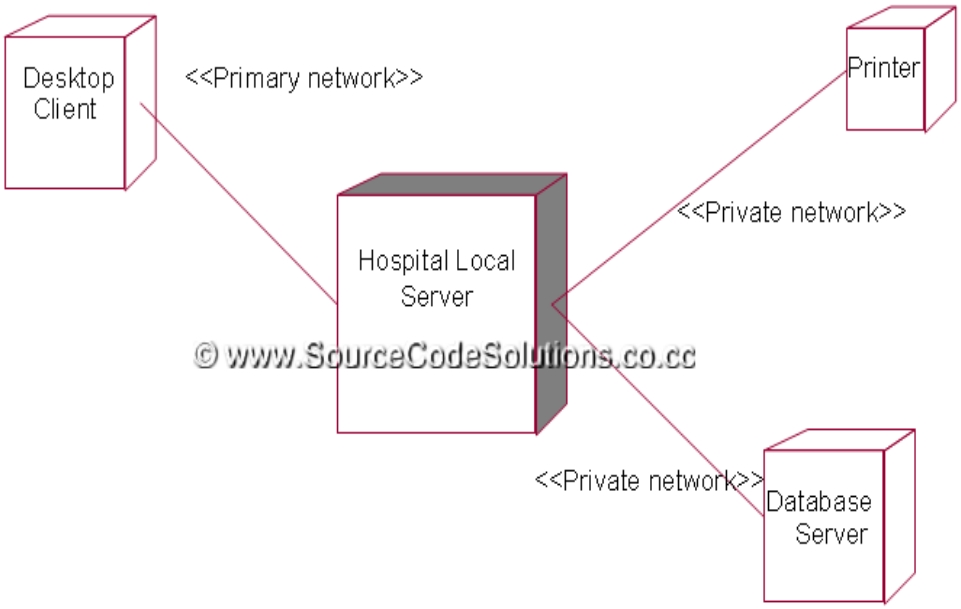
Dependency

Association relationships

DEPLOYMENT DIAGRAM of ATM:



DEPLOYMENT DIAGRAM OF HOSPITAL:



VIVA VOICE QUESTIONS:

1. What are the parts of a deployment diagram?

Ans. Nodes: A node represents any hardware component. The configuration of hardware is represented by attributes of node.

2. What is a note?

Ans. It is a graphical symbol for rendering constraints or comments attached to an element or a collection of elements.

3. What is Association?

Ans. An Association is a structural relationship that specifies that objects of one thing are connected to objects of another thing.

4. How the note is rendered?

Ans. It is rendered as a rectangle with dog-eared corner, together with textual or graphical comment.

5. What are the four adornments that apply to association?

Ans. Name, Role, Multiplicity, Aggregation

6. What is stereotype?

Ans. It is an extension of the vocabulary of the UML

7. What is a Role?

Ans. When a class participates in an association, it has a specific role that it plays in the relationship

8. How we can describe nature of relationship in association

Ans. By the name.

LAB EXCERCISE-4

INTRODUCTION ABOUT LAB:

Testing is a process used to help identify the correctness, completeness and quality of developed computer software. With that in mind, testing can never completely establish the correctness of computer software. There are many approaches to software testing, but effective testing of complex products is essentially a process of investigation, not merely a matter of creating and following rote procedure.

One definition of testing is "the process of questioning a product in order to evaluate it", where the "questions" are things the tester tries to do with the product, and the product answers with its behavior in reaction to the probing of the tester. Although most of the intellectual processes of testing are nearly identical to that of review or inspection, the word testing is connoted to mean the dynamic analysis of the product putting the product through its paces.

Testing helps is verifying and Validating if the Software is working as it is intended to be working. This involves using Static and Dynamic methodologies to Test the application.

Testing:

Testing is a process in which defects are identified, isolated, subjected for rectification & ensured that the product is defect free inorder to produce quality product in the end & hence customer satisfaction.

Testings are two types:

1. **Manual Testing.**
2. **Automation Testing.**

Quality:

Quality is defined not only justification of all the requirements of a customer in a product whether it is user friendly or not.

Note: Quality is not defined in the product; Quality is defined in the customer mind.

TESTING TOOL

AIM:

To study of Any Testing Tool (**Quick Test Professional**)

ABOUT TESTING TOOL:

Testing:

Testing is a process in which defects are identified, isolated, subjected for rectification & ensured that the product is defect free inorder to produce quality product in the end & hence customer satisfaction.

Testing are two types:

1. Manual Testing
2. Automation Testing

Manual Testing:

It is a process in which all the phases of s/w testing lifecycle like test planning development, execution, result, analysis and bug tracking & expoeting are accomplish successfully manually with human efforts.

Drawbacks:

1. More number of human resources working
2. Time consuming
3. Less accuracy
4. Tiredness
5. Simultaneous actions are not possible
6. Can't expect same task again & again with same interest.

Automation Testing:

It is a process in which all the drawbacks of manual testing are addressed properly & provided speed and accuracy to the existing testing process.

Drawbacks:

1. Automated tools are expensive.
2. Some of the applications can't be tested with automated tool.
3. Lack of the automation testing expects.

What is automated Tool?

It is an Assistant of Test Engineer & which works based on instructions & information given By the Test Engineer & Finally Shows the Result.

- Automated testing is not a replacement for manual testing, it is just continuation of manual testing.
- Generally every application will be initially tested manually. Once the application has come to stable static then only it is suggested to for automation testing.

General Framework for learning any Automated tool:

1. How to give instruction.
2. How to give information.
3. How to use it encoding facility.
4. How to analyze the result.

Types of Automated Tools:

Basically there are 2 Types of Black box testing Tools.

A. Functional Testing (QTP).

B. Performance Testing (load Runner).

QTP (QUICK Test Professional):

Introduction:

Type of the Tool: Functional Tool

Company: introduced by Mercury interactive In Corporation and taken by HP.

How to install QTP:

Step1:

→Windows 2000 with service pack 4

→Double click on setup file

→Next (up to getting new option)

→Select license type cast sheet.

→Select full version

→Next (up to getting finish option)

→Finish.

Step2:

→Open legend folder

→Double click on present in side

→Next

→Close every thing

***now ready to open **QTP Tool**…..

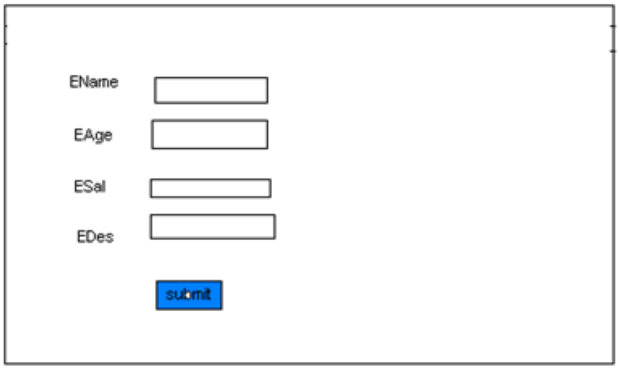
**It purely using scripting languages

Scripting Language: Default Scripting Language is VB Script.QTP can also understand all the other Scripts languages, by doing some internal configurations.

Versions of QTP: **Versions** 5.5,6.5,7.0,7.6,8.0,8.2,9.0,9.1,9.2,9.5,10.0,11.0(Recent version)

Anatomy of QTP:

****Example writes a each programming language for following window VB Script Applications**:



VB Script for Visual Basic Applications:

Vbwindow("emp").vbedit("ename").set"raju"

Vbwindow("emp").vbedit("eage").set"25"

Vbwindow("empl").vbedit("esal").set"22,000"

Vbwindow("emp").vbedit("edes").set"test eng"

Vbwindow("emp").vbbutton("submit").click

VB Script for Standard Window Applications:

window("emp"). winedit ("ename").set"raju"

window("emp").winedit("eage").set"25"

window("empl"). winedit ("esal").set"22,000"

window("emp"). winedit ("edes").set"test eng"

window("emp"). winbutton ("submit").click

VB Script for Java Applications:

javawindow(“emp”). javaedit(“ename”).set”raju”

javawindow(“emp”). javaedit (“eage”).set”25”

javawindow(“empl”). javaedit (“esal”).set”22,000”

javawindow(“emp”). javaedit (“edes”).set”test eng”

javawindow(“emp”). javabutton(“submit”).click

VB Script for .net Applications:

swfwindow(“emp”). swfedit (“ename”).set”raju”

swfwindow(“emp”). swfedit (“eage”).set”25”

swfwindow (“empl”). swfedit (“esal”).set”22,000”

swfwindow (“emp”). swfedit (“edes”).set”test eng”

swfwindow (“emp”). swfbutton (“submit”).click

VB Script for SAP Applications:

sapguiwindow(“emp”). sapguiedit (“ename”).set”raju”

sapguiwindow (“emp”). sapguiedit (“eage”).set”25”

sapguiwindow (“empl”). sapguiedit (“esal”).set”22,000”

sapguiwindow (“emp”). sapguiedit (“edes”).set”test eng”

sapguiwindow (“emp”). sapguibutton(“submit”).click

VB Script for web Applications:

Browser(“internet explorer”).page(“Emp”).webedit(“ename”).set”raju”

Browser(“internet explorer”).page(“Emp”).webedit(“eage”).set”25”

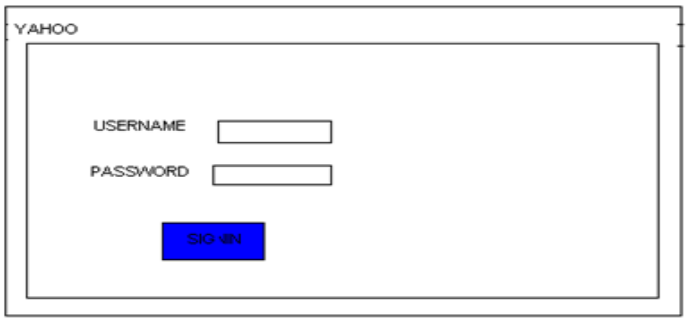
Browser(“internet explorer”)..page(“Emp”).webdit(“esal”).set”25,000”

Browser((“internet explorer”).page(“Emp”).webedit(“edes”).set”test eng”

Browser(“internet explorer”).page(“Emp”).webbutton(“ename”).set”raju”

VB Script for web Applications:

****Example write a programme for following window VB Script web Applications**



VB Script for web Applications:

Browser(“internet explorer”).page(“yahoo”).webedit(“username”).set”raju”

Browser(“internet explorer”).page(“yahoo”).webedit(“password”).set”1234”

Browser(“internet explorer”).page(“yahoo”).webbutton(“signin”).click

PARTS OF QTP:

1. Test Pane.
2. Active Screen.
3. Data table.
4. Debug viewer pane.
5. Information pane.
6. Missing resources pane.
7. Test options.

1. Test Pane:

It is an area provided by the qtp which is used for developing, viewing&modifying.

It shows script in two views:

a.expert view

b.keyword view

a.expert view:it shows the script in vbscript format

b.keyword view: it shows the script in graphical user interface.is further divided into 4 parts:

*item

*operation

*value

*documentation

2. Active Screen:

It is an area provided by the qtp which holds the snapshots related to each & every recorded statements & used for the following.

1. Easy understanding of script.
2. Easy enhancing of script.

****Recording:**

During the recording QTP will do following:

- It will generate a script stmt for every user action on the appln in the test pane.
- It will store the related and required objects information in the object repository.
- It will store the corresponding snapshots in the active screen.(in view option → F3)

Operations→to identification of the object

Instruction→to perform action on that object

****Running:**

Reading instruction→understand instruction→what action should be perform on which object→realise that on which obj is doin perform→Need information→taken obj repository.

During the running QTP will do following:

- It will read the instructions (i.e.,script statements) & will understand what action should be performed on which object.
- It will realize that to perform that action it need to identify the required objects for that it need some information.
- It will go to the object repository & search for the information.
- If at all the information is found using that information.
- If at all the information is found using that information it will try to identify the object.
- If all the obj is identify then it will perform the required action.

****Recording & Running settings:**

Record & running settings is a feature provided by the QTP.Which is used for making the QTP understand What exactly it need to do, has exactly it should behave during recording & running.

Navigation:

→Activate the menu item automation

→Select the option record & running settings

→Select required options click on apply & ok.

Recording Modes:

There 3 recording modes in QTP

1. Normal or context sensitive recording mode

2. Analog recording mode

3. Low level recording mode

1. Normal or context sensitive recording mode:

This recording mode is used for recording the standard operations performed in different situations.

2. Analog recording mode:

It is a special recording mode provided by QTP which is used for recording the continues operations performed on appln.

****Navigation:**

→ Activate the menu item automation

→Select the option analog recording

→Select the one of the following options

- Record relative to the screen
- Record relative to the window

3. Low level recording mode:

It is a special rec mode provided by the QTP. Which is used for recording atleast some operations on the non supported environments also.

Generally this rec mode encountered in real time. because….

a. All the operations can't be recorded. only few operations can be recorded

b. Script is not easily understandable & enhance able.

OBJECT REPOSITORY:

This is a storage place where one can store the object's information & it also acts as an interface between the test scripts & auto applications (applications under test) inorder to identify the objects during the execution.

TYPES OF OBJECT REPOSITORIES:

1. LOCAL REPOSITORY

2. SHARED REPOSITORY

LOCAL REPOSITORY:

- For every action in a script file an individual local repository.
- It will created and managed by QTP itself

SHARED REPOSITORY:

Whenever we feel some common information required by so,many actions.

Navigation for Shared Repository:

→ Activate the menu item “resources”.

→ Select the option analog “object repository manager”

→ Select the new repository file button

→Add the required object’s information for into that file.

→Save with “.tsr” extension. (Test Shared Repository)

****Navigation for creating shared repository:**

Whenever some information is already present in the local repository.

→open obj file

→ Activate the menu item file

→ Select the option export local object’s.

→Then save file with .tsr extension.

Navigation for creating associate shared repository to a desired action:

→ Activate the menu item “resources”.

→ Select the option “associate repository”

→Add required repository from the list

→Select rep, select option

→Click on associate button

Navigation for creating update shared repository to a desired action:

→ Activate the menu item “resources”.

→ Select the option obj rep manager

→ Select the option enable editing (4^{th} option)

→Do require modification & save the file.

Operations on object repository:

Navigation for adding the objects information to object repository:

→ Activate the menu item “resources”.

→ Select the option “object repository”

→Click on add object’s to local

→Click on title bar of window or page.

→Click on ok.

→Select one of the following options

A. selected obj only

B. defalut obj types

C. all obj type

D. select obj type

→option 4th selected

→click on ok.

Navigation for deleting the objects information to object repository:

→Right click on desired obj on obj rep

→ Select the option "delete"

→Confirm deletion by click on "yes"

Navigation for running the object:

→Right click on desired obj on obj rep

→ Select the option "add"

→Selected desired properties to objs.

→Click on ok.

Object identification:

Object identification is based on ordinal identification.

Object Spy:

Object Spy is very usefull feature provided by QTP. Which shows complete object information like properties values, list of methods, syntax of methods, description of methods.

Navigation:

→ Activate the menu item "tools"

→ Select the option "object spy"

→Specify desired object in application with help of hand icon

Types of objects:

Runtime objects: all the objects are present in the application.

Test objects: the reference object's for the original objects. That are stored in object rep.

QTP Lifecycle:

It contains six phases:

1. Test planning
2. Generating the basic test
3. Enhancing the test
4. Debugging the test
5. Executing the test
6. Analyzing the test.

Checkpoints:

Checkpoint is a feature provided by the QTP. It is used for checking something during the execution at any point of time.

It works in 2 ways:

1. **Presentation phase:** Capture expected value & generate corresponding script stmt.
2. **While execution phase:** Capture actual value & compare actual value with expected value & show the result pass or fail.

Types of Checkpoints:

1. Standard checkpoints: used for checking standard gui obj properties values)
2. Bitmap checkpoints: checking expected pixels are available in seleted area or not
3. Text checkpoints: checking expected texted available in the desired obj or not
4. Text area checkpoints: checking expected texted available in selected area of apply
5. Database checkpoints: checking contents of database
6. Xml checkpoints: checking contents of xml
7. Page checkpoints: checking properties of pages
8. Table checkpoints: checking contents of web table
9. Image checkpoints: used for checking properties of an image
10. Accessibility checkpoints: checking whether the page is developed according to w3c standards or not. based one can come to conclusion, whether the page is accessed all over the world or not.

Synchronization:

Synchronization is a process of matching the speeds of both tool & application.

Parameterization:

It is a process of replacing the constant vale with parameters or values inorder to increase scope of test case.

Debugging the test:

It is a process of executing the script in a user designed fashion with some temporary breaks, inorder to identify breaks, inorder to identify errors.

Breaking point: Temporarily breaking execution

Step commands:

Step into: used for single step. if that step is function call step

Step out: executing all remaining status inside function from position to pointer

Step over: used any step till it is over breaks execution at the next step

Run to step: executing all stmts from position of pointers

VIVA VOICE QUESTIONS:

1. What is automated Tool?

Ans. It is an Assistant of Test Engineer & which works based on instructions & information Given By The Test Engineer & Finally Shows The Result.

2. How many Types of Automated Tools?

Ans. Basically there are 2 Types of Black box testing Tools

A. Functional Testing (QTP)

B. Performance Testing (load Runner)

3. What is Automation Testing?

Ans. It is a process in which all the drawbacks of manual testing are addressed properly & provided speed and accuracy to the existing testing process

4. Draw Backs of Automation Tools?

Ans. 1.automated tools are expensive.

2. Some of the applications can't be tested with automated tool.

3. Lack of the automation testing expects

5. What is the purpose of object spy?

Ans. Object Spy is very usefull feature provided by QTP. Which shows complete object information like properties, vales, list of methods, syntax of methods, description of methods

WEB TESTING TOOL

AIM:

Study of any web testing tool (e.g. Selenium**)**

ABOUT WEB TESTING TOOL:

Study of any web testing tool:

Selenium is a robust set of tools that supports rapid development of test automation for web-based applications. Selenium provides a rich set of testing functions specifically geared to the needs of testing of a web application. These operations are highly flexible, allowing many options for locating UI elements and comparing expected test results against actual application behavior.

One of Selenium's key features is the support for executing one's tests on multiple browser platforms.

Selenium Components:

Selenium is composed of three major tools. Each one has a specific role in aiding the development of web application test automation.

Selenium-IDE:

Selenium-IDE is the Integrated Development Environment for building Selenium test cases. It operates as a Firefox add-on and provides an easy-to-use interface for developing and running individual test cases or entire test suites. Selenium-IDE has a recording feature, which will keep account of user actions as they are performed and store them as a reusable script to play back. It also has a context menu (right-click) integrated with the Firefox browser, which allows the user to pick from a list of assertions and verifications for the selected location. Selenium-IDE also offers full editing of test cases for more precision and control.

Although Selenium-IDE is a Firefox only add-on, tests created in it can also be run against other browsers by using Selenium-RC and specifying the name of the test suite on the command line.

Selenium-RC (Remote Control):

Selenium-RC allows the test automation developer to use a programming language for maximum flexibility and extensibility in developing test logic. For instance, if the application under test returns a result set, and if the automated test program needs to run tests on each element in the result set, the programming language's iteration support can be used to iterate through the result set, calling Selenium commands to run tests on each item.

Selenium-RC provides an API (Application Programming Interface) and library for each of its supported languages: HTML, Java, C#, Perl, PHP, Python, and Ruby. This ability to use Selenium-RC with a high-level programming language to develop test cases also allows the automated testing to be integrated with a project's automated build environment.

Selenium-Grid:

Selenium-Grid allows the Selenium-RC solution to scale for large test suites or test suites that must be run in multiple environments. With Selenium-Grid, multiple instances of Selenium-RC are running on various operating system and browser configurations; Each of these when launching register with a hub. When tests are sent to the hub they are then redirected to an available Selenium-RC, which will launch the browser and run the test. This allows for running tests in parallel, with the entire test suite theoretically taking only as long to run as the longest individual test.

* Tests developed on Firefox via Selenium-IDE can be executed on any other supported browser via a simple Selenium-RC command line.

** Selenium-RC server can start any executable, but depending on browser security settings there may be technical limitations that would limit certain features.

Flexibility and Extensibility:

Selenium is highly flexible. There are multiple ways in which one can add functionality to Selenium's framework to customize test automation for one's specific testing needs. This is, perhaps, Selenium's strongest characteristic when compared with proprietary test automation tools and other open source solutions. Selenium-RC support for multiple programming and scripting languages allows the test writer to build any logic they need into their automated testing and to use a preferred programming or scripting language of one's choice.

Selenium-IDE allows for the addition of user-defined "user-extensions" for creating additional commands customized to the user's needs. Also, it is possible to re-configure how the Selenium-IDE generates its Selenium-RC code. This allows users to customize the generated code to fit in with their own test frameworks. Finally, Selenium is an Open Source project where code can be modified and enhancements can be submitted for contribution.

Test Suites:

A test suite is a collection of tests. Often one will run all the tests in a test suite as one continuous batch-job.

When using Selenium-IDE, test suites also can be defined using a simple HTML file. The syntax again is simple. An HTML table defines a list of tests where each row defines the filesystem path to each test. An example tells it all.

```
<html>
<head>
<title>Test Suite Function Tests – Priority 1</title> </head>
<body>
<table>
<tr><td><b>Suite Of Tests</b></td></tr>
<tr><td><a href=”./Login.html”>Login</a></td></tr>
<tr><td><a href=”./SearchValues.html”>Test Searching for Values</a></td></tr>
<tr><td><a href=”./SaveValues.html”>Test Save</a></td></tr>
</table> </body>
</html>
```

A file similar to this would allow running the tests all at once, one after another, from the Selenium-IDE.

Test suites can also be maintained when using Selenium-RC. This is done via programming and can be done a number of ways. Commonly Junit is used to maintain a test suite if one is using Selenium-RC with Java. Additionally, if C# is the chosen language, Nunit could be employed. If using an interpreted language like Python with Selenium-RC than some simple programming would be involved in setting up a test suite. Since the whole reason for using Sel-RC is to make use of programming logic for your testing this usually isn’t a problem.

Few typical Selenium command:

Open – opens a page using a URL.

Click/clickAndWait – performs a click operation, and optionally waits for a new page to load.

Verify Title/assert Title – verifies an expected page title.

VerifyTextPresent – verifies expected text is somewhere on the page.

VerifyElementPresent – verifies an expected UI element, as defined by its HTML tag, is present on the page.

Verify Text – verifies expected text and it's corresponding HTML tag are present on the page.

Verify Table – verifies a table's expected contents.

WaitForPageToLoad – pauses execution until an expected new page loads. Called automatically when click And Wait is used.

VIVA VOICE QUESTIONS:

1. What is the purpose of selenium Tool?

Ans. Selenium is a robust set of tools that supports rapid development of test automation for web-based applications. Selenium provides a rich set of testing functions specifically geared to the needs of testing of a web application

2. Selenium Tool Tests Developed on which Browser?

Ans. Tests developed on Firefox via Selenium-IDE can be executed on any other supported browser via a simple Selenium-RC command line.

3. What is the use of context menu in Selenium IDE?

Ans. It allows the user to pick from a list of assertions and verifications for the selected location.

4. What are the advantage and features of Selenium IDE?

Ans. 1. Intelligent field selection will use IDs, names, or XPath as needed.

2. It is a record & playback tool and the script format can be written in various languages including C#, Java, PERL, Python, PHP, HTML.

3. Auto complete for all common Selenium commands.

4. Debug and set breakpoints.

5. Option to automatically assert the title of every page.

6. Support for Selenium user-extensions.js file.

5. What are the disadvantage of Selenium IDE tool?

Ans. 1. Selenium IDE tool can only be used in Mozilla Firefox browser.

2. It is not playing multiple windows when we record it.

BUG TESTING TOOL

AIM:

Study of Any Bug Tracking Tool (Bugzilla)

ABOUT BUG TESTING TOOL:

Study of Any Bug Tracking Tool:

Bugzilla is a "Bug Tracking System" that can efficiently keep track of outstanding bugs in a product. Multiple users can access this database and query, add and manage these bugs. Bugzilla essentially comes to the rescue of a group of people working together on a product as it enables them to view current bugs and make contributions to resolve issues. Its basic repository nature works out better than the mailing list concept and an organized database is always easier to work with.

Advantage of Using Bugzilla:

1. Bugzilla is very adaptable to various situations. Known uses currently include IT support queues, Systems Administration deployment management, chip design and development problem tracking (both pre-and-post fabrication), and software and hardware bug tracking for luminaries such as Redhat, NASA, Linux-Mandrake, and VA Systems. Combined with systems such as CVS, Bugzilla provides a powerful, easy-to-use solution to configuration management and replication problems.

2. Bugzilla can dramatically increase the productivity and accountability of individual employees by providing a documented workflow and positive feedback for good performance. Ultimately, Bugzilla puts the power in user's hands to improve value to business while providing a usable framework for natural attention to detail and knowledge store to flourish.

The bugzilla utility basically allows doing the following:

- Add a bug into the database
- Review existing bug reports
- Manage the content

Bugzilla is organised in the form of bug reports that give all the information needed about a particular bug. A bug report would consist of the following fields.

- Product–>Component
- Assigned to
- Status (New, Assigned, Fixed etc)

- Summary
- Bug priority
- Bug severity (blocker, trivial etc)
- Bug reporter

Using Bugzilla:

Bugzilla usage involves the following activities

- Setting Parameters and Default Preferences
- Creating a New User
- Impersonating a User
- Adding Products
- Adding Product Components
- Modifying Default Field Values
- Creating a New Bug
- Viewing Bug Reports

Setting Parameters and Default Preferences:

When we start using Bugzilla, we'll need to set a small number of parameters and preferences. At a minimum, we should change the following items, to suit our particular need:

- set the maintainer
- set the mail_delivery_method
- Set bug change policies
- set the display order of bug reports

To set parameters and default preferences:

1. Click Parameters at the bottom of the page.
2. Under Required Settings, add an email address in the maintainer field.
3. Click *Save* Changes.
4. In the left side Index list, click Email.
5. Select from the list of mail transports to match the transport we're using. If evaluating a click to try application, select *test*. If using SMTP, set any of the other SMTP options for your environment. Click Save Changes.
6. In the left side *Index* list, click *Bug Change Policies*.

7. Select on for comment on create, which will force anyone who enters a new bug to enter a comment, to describe the bug. Click *Save Changes*.

8. Click *Default Preferences* at the bottom of the page.

9. Select the display order from the drop-down list next to the When viewing a bug, show *comments in this order* field. Click Submit Changes.

Creating a New User:

Before entering bugs, make sure we add some new users. We can enter users very easily, with a minimum of information. Bugzilla uses the email address as the user ID, because users are frequently notified when a bug is entered, either because they entered the bug, because the bug is assigned to them, or because they've chosen to track bugs in a certain project.

To create a new user:

1. Click **Users**.
2. Click **add** a new user.
3. Enter the **Login name**, in the form of an email address.
4. Enter the **Real name**, a password, and then click **Add**.
5. Select the **Group access options**. we'll probably want to enable the following options in the row titled User is a member of these groups:

- can confirm
- edit bugs
- edit components

6. Click **Update** when done with setting options.

Impersonating a User

Impersonating a user is possible, though rare, that we may need to file or manage a bug in an area that is the responsibility of another user when that user is not available. Perhaps the user is on vacation, or is temporarily assigned to another project. We can impersonate the user to create or manage bugs that belong to that user.

Adding Products

We'll add a product in Bugzilla for every product we are developing. To start with, when we first login to Bugzilla, we'll find a test product called **TestProduct**. We should delete this and create a new product.

To add a product:

1. At the bottom of the page, click **Products**.
2. In the **TestProduct** listing, click **Delete**.
3. Click **Yes, Delete**.
4. Now click **Add a product**.
5. Enter a product name, such as "Widget Design Kit."
6. Enter a description.
7. Click **Add**. A message appears that you'll need to add at least one component.

Adding Product Components

Products are comprised of components. Software products, in particular, are typically made up of many functional components, which in turn are made up of program elements, like classes and functions. It's not unusual in a software development team environment for different individuals to be responsible for the bugs that are reported against a given component. Even if there are other programmers working on that component, it's not uncommon for one person, either a project lead or manager, to be the gatekeeper for bugs. Often, they will review the bugs as they are reported, in order to redirect them to the appropriate developer or even another team, to review the priority and severity supplied by the reporter, and sometimes to reject bugs as duplicates or enhancement requests, for example.

To add a component:

1. Click the link **add at least one component** in the message that appears after creating a new product.
2. Enter the **Component** name.
3. Enter a **Description**.
4. Enter a **default assignee**. Use one of the users we've created. Remember to enter the assignee in the form of an email address.
5. Click **Add**.
6. To add more components, click the name of product in the message that reads edit other components of product <**product name**>.

Modifying Default Field Values

Once we begin to enter new bugs, we'll see a number of drop-down lists containing default values. Some of these may work just fine for our product. Others may not. We can

modify the values of these fields, adding new values and deleting old ones. Let's take a look at the OS category.

To modify

To modify default field values:

1. At the bottom of the page, in the **Edit** section, click **Field Values**.
2. Click the link, in this case **OS**, for the field we want to edit. The OS field contains a list of operating system names. We are going to add browsers to this list. In reality, we might create a custom field instead, but for the sake of this example, just add them to the OS list.
3. Click **Add a value**. In the **Value** field, enter "IE7." Click **Add**.
4. Click **Add a value** again.
5. In the **Value** field, enter "Firefox 3."
6. Click **Add**.
7. Where it reads **add other values for the op_sys field**, click **op_sys**.
8. This redisplays the table. We should now see the two new entries at the top of the table. These values will also appear in the OS drop-down list when we create a new bug.

Creating a New Bug

Creating bugs is a big part of what Bugzilla does best.

To create a new bug:

1. In the top menu, click **New**.
2. If we've defined more than one component, choose the component from the component list.
3. Select a **Severity** and a **Priority**. **Severity** is self-explanatory, but **Priority** is generally assumed to be the lower the number, the higher the priority. So, a **P1** is the highest priority bug, a *showstopper*.
4. Click the **OS** drop-down list to see the options, including the new browser names we entered.
5. Select one of the options.
6. Enter a summary and a description. We can add any other information of choice, but it is not required by the system, although we may determine that our bug reporting policy requires certain information.

7. Click **Commit**. Bugzilla adds our bug report to the database and displays the detail page for that bug.

Viewing Bug Reports

Eventually, we'll end up with thousands of bugs listed in the system. There are several ways to view the bugs. The easiest is to click the My Bugs link at the bottom of the page. Because we've only got one bug reported, we'll use the standard Search function.

To find a bug:

1. Click **Reports**.
2. Click the **Search** link on the page, not the one in the top menu. This opens a page titled "Find a Specific Bug." Select the **Status**.
3. Select the **Product**.
4. Enter a word that might be in the title of the bug.
5. Click **Search**. If any bugs meet the criteria that we have entered, Bugzilla displays them in a list summary.
1. Click the **ID** number link to view the full bug report.

Modifying Bug Reports

Suppose we want to change the status of the bug. We've reviewed it and have determined that it belongs to one of the users we have created earlier

To modify a bug report:

1. Scroll down the full bug description and enter a comment in the **Additional Comments** field.
2. Select "Reassign bug to" and replace the default user ID with one of the other user IDs you created. It must be in the format of an email address.

VIVA VOICE QUESTIONS:

1. Difference between bug, error, defects and fault, failure?

Ans. Bug: deviation from the expected result.

Error: programmatically mistake leads to error.

Defect: Problem in algorithm leads to failure.

Fault: When everything is correct but we are not able to get a result

Failure: We are not able to insert any input

2. What is the purpose of buzilla(bug tracking tool)?

Ans. Bugzilla is a "Bug Tracking System" that can efficiently keep track of outstanding bugs in a product.

3. Uses of bug tracking Tools?

Ans. software and hardware bug tracking for luminaries such as Redhat, NASA, Linux-Mandrake, and VA Systems.

4. How to Modify Bug Reports?

Ans.To modifies a bug report:

1. Scroll down the full bug description and enter a comment in the Additional Comments field.
2. Select "Reassign bug to" and replace the default user ID with one of the other user IDs you created. It must be in the format of an email address.

5. Explain the different types of Bugs?

Ans. The different bugs are:

1. Show-stopper / critical bugs: The core dumps, products abnormally shuts down and no work around will be found out, like OS automatic freezing.
2. Major Bugs: The work around is found, but the implementation can be done, like performance degradency.
3. Medium Bugs: These bugs include database errors, link errors, low response time
4. Low/minor Bugs: These bugs are typos, simple GUI error

TEST MANAGEMENT TOOL

AIM:

Study of Any Test Management Tool (Test Director)

ABOUT TEST MANAGEMENT TOOL:

Study of Any Test Management Tool

Test Director is a global test management solution which provides communication, organization, documentation and structure to the testing project.

Test Director is used for

- Mapping Requirements to User acceptance test cases
- Test Planning by placing all the test cases and scripts in it.
- Manual testing by defining test steps and procedures
- Test Execution status
- Defect Management

The Test Director Testing Process:

Test Director offers an organized framework for testing applications before they are deployed. Since test plans evolve with new or modified application requirements, you need a central data repository for organizing and managing the testing process. Test Director guides through the requirements specification, test planning, test execution, and defect tracking phases of the testing process.

The Test Director testing process includes four phases:

Specifying Requirements

- Requirements are linked to tests and defects to provide complete traceability and aid the decision-making process
- See what percent of requirements are covered by tests
- Each requirement in the tree is described in detail, and can include any relevant attachments. The QA tester assigns the requirement a priority level which is taken into consideration when the test team creates the test plan
- Import from Microsoft Word or third party RM tool

Planning Tests

- The Test Plan Manager enables to divide application according to functionality. Application can be divided into units, or subjects, by creating a test plan tree.

- Define subjects according to:
- Application functionality-such as editing, file operations, and reporting.
- Type of testing-such as functional, user interface, performance, and load
- As the tests are also linked to defects, this helps ensure compliance with testing requirements throughout the testing process

Running Tests

- As the application constantly changes, using test lab, run manual and automated tests in the project in order to locate defects and assess quality.
- By creating test sets and choosing which tests to include in each set, test suite can be created? A test set is a group of tests in a Test Director project database designed to achieve specific testing goals.
- Tests can be run manually or scheduled to run automatically based on application dependencies.

Tracking Defects

Locating and repairing application defects efficiently is essential to the testing process. Defects can be detected and added during all stages of the testing process. In this phase you perform the following tasks:

- This tool features a sophisticated mechanism for tracking software defects, enabling Testing Team and the project Team to monitor defects closely from initial detection until resolution
- By linking Test Director to e-mail system, defect tracking information can be shared by all Development and Management Teams, Testing and Wipro Software Quality Assurance personnel

System Requirements for Test Director

Server System configuration : 128 MB of RAM , 500 MB of free disk space, Win NT server, Win 2K server, IIS 5.0, M S Access/Oracle 7.x,8.x,9/MS SQL Server

Client System configuration : 64 MB of RAM , 10 MB of free disk space, Win 95/98/NT/2K/XP, IE 5 , Netscape 4.7

VIVA VOICE QUESTIONS:

1. Define Test Management Tool?

Ans. Test Director is a global test management solution which provides communication, organization, documentation and structure to the testing project.

2. What are the uses of Test Management Tool?

Ans. Test Director is used for

- Mapping Requirements to User acceptance test cases
- Test Planning by placing all the test cases and scripts in it.
- Manual testing by defining test steps and procedures
- Test Execution status
- Defect Management

3.which type of testings are used for Test Management Tool?

Ans. a.Manual Testing

b.Automation Testing

4.what is the mean by manual Testing?

Ans.Manual Testing:It is a process in which all the phases of s/w testing lifecycle like test planning development,execution,result,analysis and bug tracking & expoeting are accomplish successfully manually with human efforts.

5.What are the Drawbacks of manual Testing?

Ans.1.more number of human resources working

2.time consuming

3.less accuracy

4.tiredness

5.simeltenious actions are not possible

6.can't expect same task again & again with same interest.

6.What is builder ?

Ans. who designs for and is accountable to buyer

OPEN SOURCE TESTING TOOL

AIM:

Study of any open source testing tool (Test Link)

ABOUT OPEN SOURCE TESTING TOOL:

Study of any open source testing tool

Testlink is an open source test management tool. It enables creation and organization of test cases and helps manage into test plan. Allows execution of test cases from test link itself. One can easily track test results dynamically, generate reports, generate test metrics,prioritize test cases and assign unfinished tasks.

Its a web based tool with GUI, which provides an ease to develop test cases, organize test cases into test plans, execute these test cases and generate reports.

Test link exposes API, written in PHP, can help generate quality assurance dashboards. The functions like AddTestCase ToTestPlan, Assign Requirements,Create TestCase etc. helps create and organize test cases per test plan. Functions like GetTestCasesForTestPlan, GetLastExecutionResult allows one to create quality assurance dashboard.

TestLink enables easily to create and manage Test cases as well as organize them into Test plans. These Test plans allow team members to execute Test cases and track test results dynamically, generate reports, trace software requirements, prioritize and assign tasks. Read more about implemented features and try demo pages.

Overall structure

There are three corner stones: **Product**, **Test Plan** and **User**. All other data are relations or attributes for this base. First, definition of a couple of terms that are used throughout the documentation.

Products and Test Plans

Product: A Product is something that will exist forever in TestLink. Products will undergo many different versions throughout their life times. Product includes Test Specification with Test Cases and should be sorted via Keywords.

Test Plan: Test Plans are created when you'd like to execute test cases. Test plans can be made up of the test cases of one or many Products. Test Plan includes Builds, Test Case Suite and Test Results.

User: An User has a Role, that defines available TestLink features.

Test Case Categorization

TestLink breaks down the test case structure into three levels Components, Categories, and test cases. These levels are persisted throughout the application.

Component: Components are the parents of Categories. Each Component can have many Categories.

Category: Categories are the parents of test cases. Each Category can have many test cases.

Test Case: Test cases are the fundamental piece of TestLink.

Test Specification: All Components, Categories and test cases within Product.

Test Case Suite: All Components, Categories and test cases within Test Plan.

Test Specification

Creating Test Cases

Tester must follow this structure: Component, Category and test case. At first you create Component(s) for your Product. Component includes Categories. Category has the similar meaning but is second level of Test Specification and includes just Test Cases.

User can also copy or move Test Cases.

Test Cases has following parts:

- Title: could include either short description or abbreviation (e.g. TL-USER-LOGIN)
- Summary: should be really short; just for overview.
- Steps: describe test scenario (input actions); can also include precondition and cleanup information here.
- Expected results: describe checkpoints and expected behaviour a tested Product or system.

Deleting Test Cases

Test cases, Categories, and Components may be deleted from a test plan by users with lead permissions from the “delete test cases” screen. Deleting data may be useful when first creating a test plan since there are no results. However, Deleting test cases will cause the loss of all results associated with them. Therefore, extreme caution is recommended when using this functionality.

Requirements relation

Test cases could be related with software/system requirements as n to n. The functionality must be enabled for a Product. User can assign Test Cases and Requirements via link Assign Requirements in the main screen.

Test Plans

Test plan contains name, description, collection a chosen test cases, builds, test results, milestones, tester assignment and priority definition.

Creating a new Test Plan

Test Plans may be deleted from the "Create test plan" page (link "Create Test Plan") by users with lead privileges. Test plans are the basis for test case execution. Test plans are made up of test cases imported from Products at a specific point of time. Test plans can only be created by users with lead privileges. Test plans may be created from other test plans. This allows users to create test plans from test cases that at a desired point in time. This may be necessary when creating a test plan for a patch. In order for a user to see a test plan they must have the propper rights. Rights may be assigned (by leads) in the define User/Project Rights section. This is an important thing to remember when users tell you they can't see the project they are working on.

Test Execution

Test execution is available when:

1. A Test Specification is written.
2. A Test Plan is created.
3. Test Case Suite (for the Test Plan) is defined.
4. A Build is created.
5. The Test plan is assigned to testers (otherwise they cannot navigate to this Test Plan).

Select a required Test Plan in main page and navigate to the 'Execute tests' link. Left pane serves for navigation in Test Case Suite via tree menu, filtering and define a tested build.

Test Status

Execution is the process of assigning a result (pass, fail, blocked) to a test case for a specific build. 'Blocked' test case is not possible to test for some reason (e.g. a problem in configuration disallows to run a tested functionality).

Insert Test results

Test Results screen is shown via click on an appropriate Component, Category or test case in navigation pane. The title shows the current build and owner. The colored bar indicate status of the test case. Yellow box includes test scenario of the test case.

Updated Test Cases: If users have the proper rights they can go to the "Update modified test case" page through the link on main page. It is not necessary for users to update test cases if there has been a change (newer version or deleted).

Example of TestLink workflow:

1. Administrator create a Product "Fast Food" and a user Adam with rights "leader" and Bela with rights "Senior tester".

2. Adam imports Software Requirements and for part of these requirements generates empty Test cases.

3. Bela describe test sneario of these Test cases that are organized according to Components and Categories.

4. Adam creates Keyword: "Regression" and assignes this keyword to ten of these test cases.

5. Adam creates a Test Plan "Fish & Chips", Build "Fish 0.1" and add Test Cases with keywords "Regression".

6. Adam and Bela execute and record the testing with result: 5 passed, 1 failed and 4 are blocked.

7. Developers make a new build "Fish 0.2" and Bela tests the failed and blocked test cases only. Exceptionaly all these five Test cases passed.

8. Manager would like to see results. Administrator explain him that he can create account himself on the login page. Manager do it. He has "Guest" rights and could see results and Test cases. He can see that everything passed in overal report and problems in build "Fish 0.1" in a report for particular Build. But he can change nothing.

VIVA VOICE QUESTIONS:

1. Purpose of test link tool?

Ans. Testlink is an open source test management tool. It enables creation and organization of test cases and helps manage into test plan. Allows execution of test cases from test link itself.

2. How many corner stone's in Test Link?

Ans. There are three corner stone's: Product, Test Plan and User

3. Which properties contain test link tool?

Ans. Test plan contains name, description, collection a chosen test cases, builds, test results, milestones, tester assignment and priority definition

4. What is alpha testing?

Ans. In software development, your alpha test, will be a test among yourselves (the teams) to confirm that your product works. Originally, the term alpha test meant the first phase of testing in a software development process.

5. What is mean by Checkpoints?

Ans. Checkpoint is a feature provided by the qtp.it is used for checking something during the execution at any point of time

6. Write at least 4 checkpoints?

Ans. 1.standard checkpoints:

2. Bitmap checkpoints

3. Text checkpoints

4. Text area checkpoints:

5. Database checkpoints:

6. Xml checkpoints

7. Page checkpoints:

8. Table checkpoints:

9. Image checkpoints:

10. Accessability checkpoints:

WEB TECHNOLOGIES LAB

PROGRAM -1

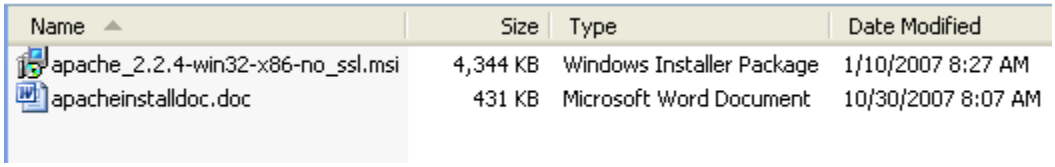
1. **Install the following on the Local machine**
   a) **Apache web server** c) **Install MYSQL**
   b) **Tomcat Application Server** d) **Install PHP**

Steps to Install Apache web server

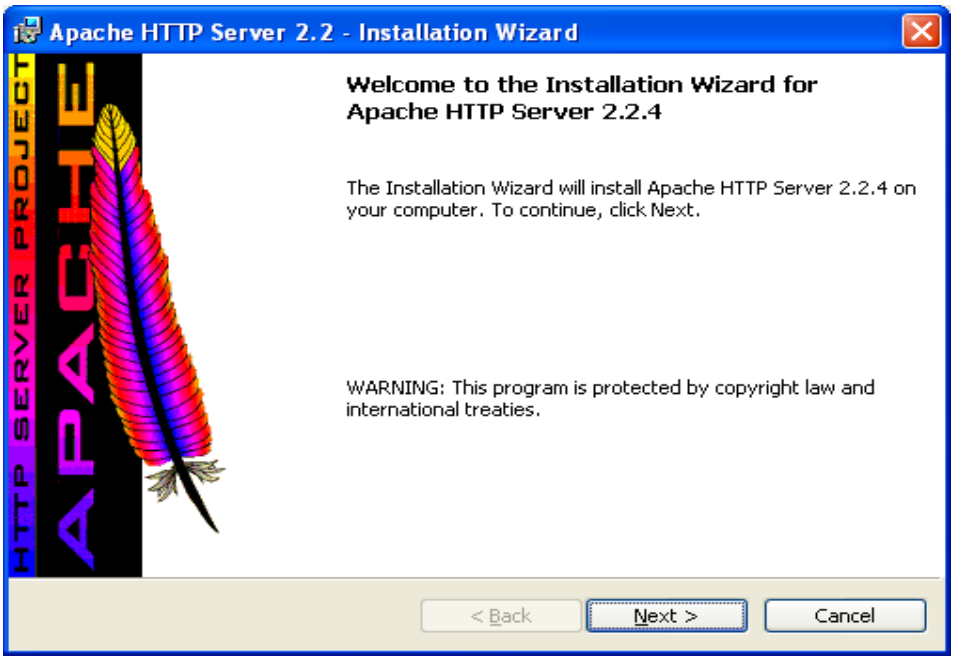
The machine specifications used to complete this task:

1. Intel Pentium Core 2 Duo, 2.2 GHz,
2. Windows XP Pro SP2 + periodical patches + periodical updates…
3. 2 GB DDR2 RAM.
4. 160 GB SATA HDD.
5. 17" SyncMaster 713N monitor.
6. Apache 2.2.4 web server for Windows.

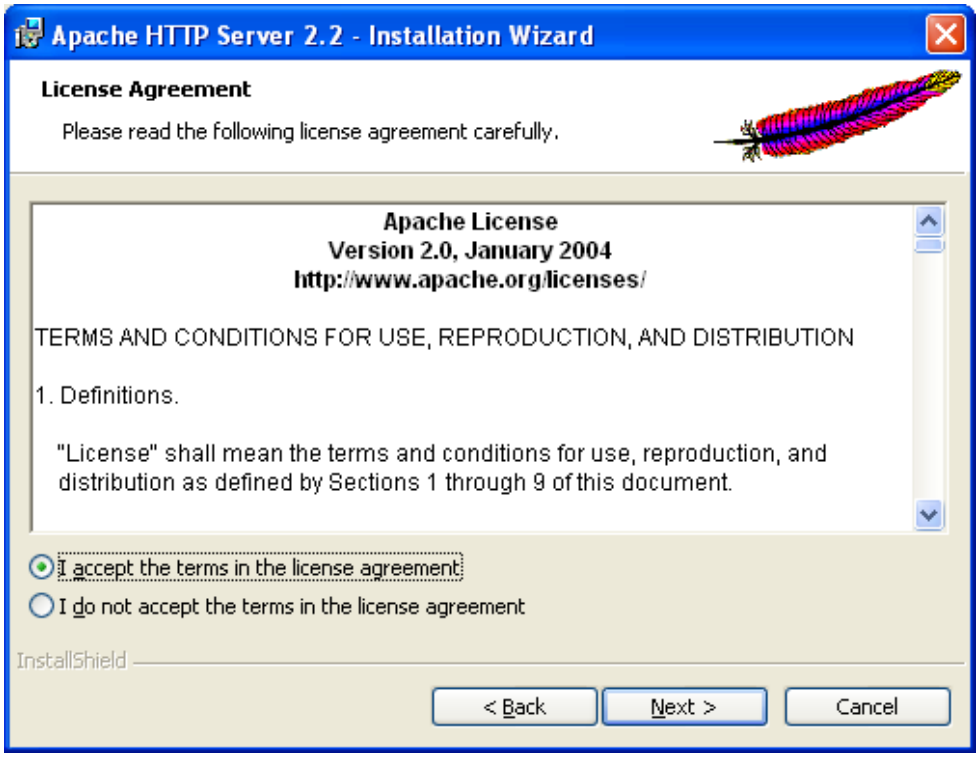
1. Go to Apache.org site to download the latest Apache for Windows. In this case we downloaded the Windows msi installer version.



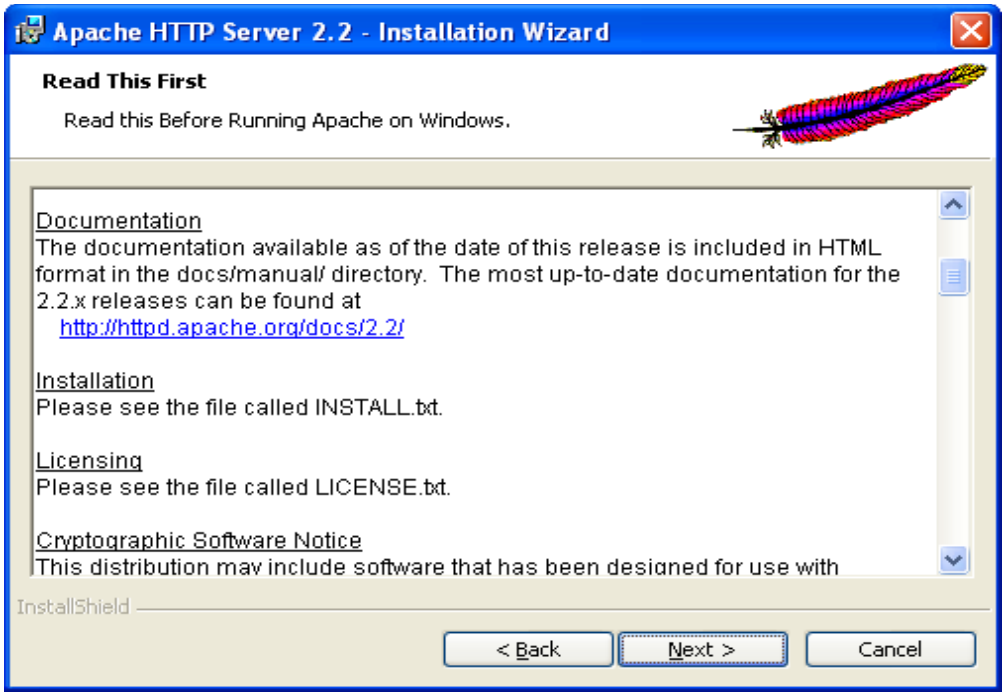
2. Double click the msi file. Click the Next of the welcome wizard page.



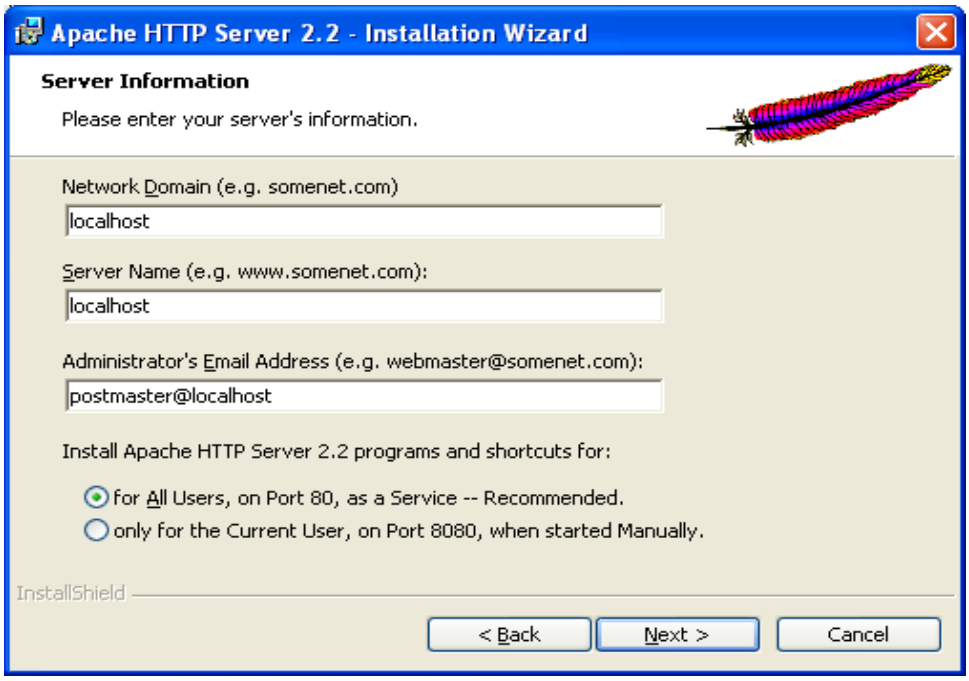
3. Accept the License Agreement and click Next.



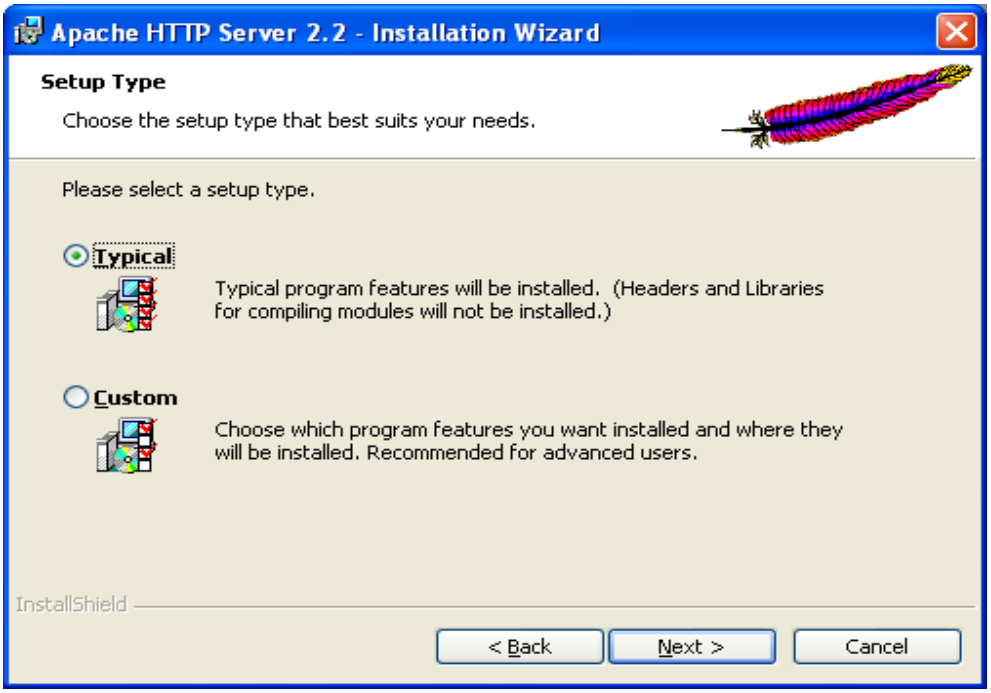
4. Read the information on running Apache on Windows. Read it and then click Next after finished.



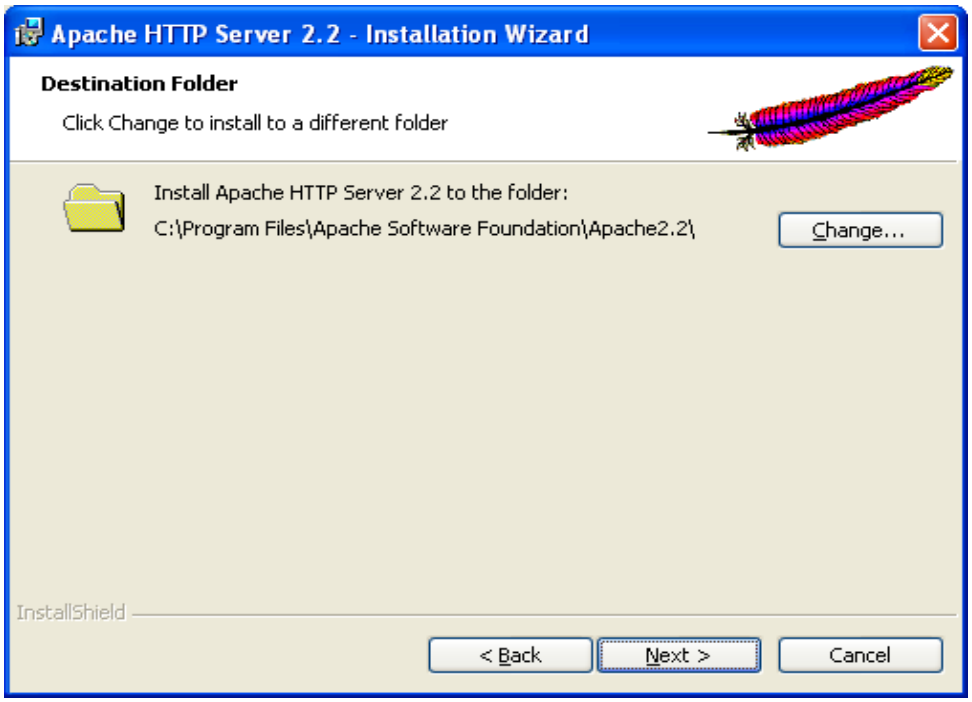
5. Fill in the server information. We will use **localhost**, without any domain. You should change those accordingly if you setup Apache on the production server. Select first radio button, for all user, on port 80, as a service. We can set install Apache for specific user that login to the server. We can change these settings later by editing the Apache configuration file,**httpd.conf** if needed. Click the **Next** button.



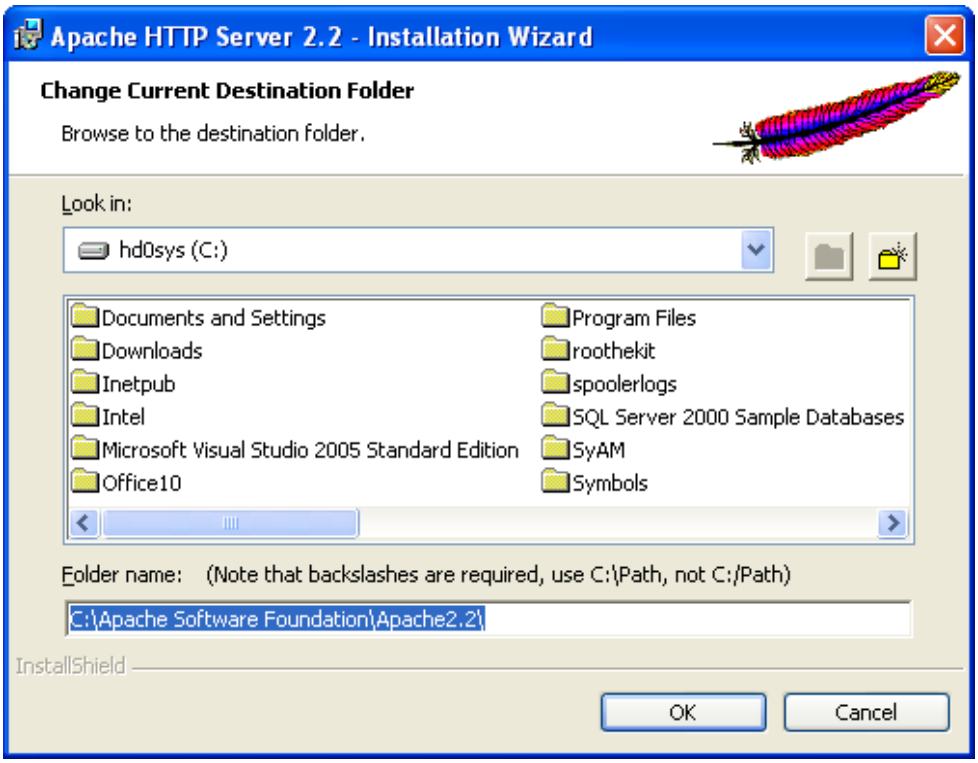
6. We will use typical setup type, so select the **Typical** radio button and click **Next**.



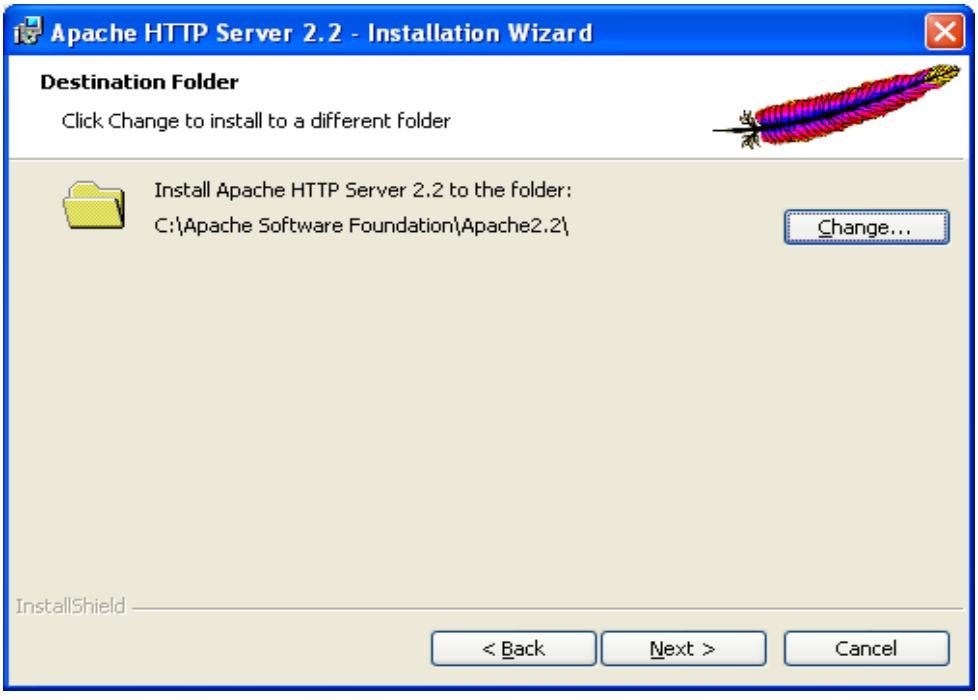
7. Set the Apache installation destination folder. In this case we will change the destination folder outside the **C:\Program Files** folder. The issue of Apache installation folder mostly related to the security of the web server itself. Click the **Change** button.



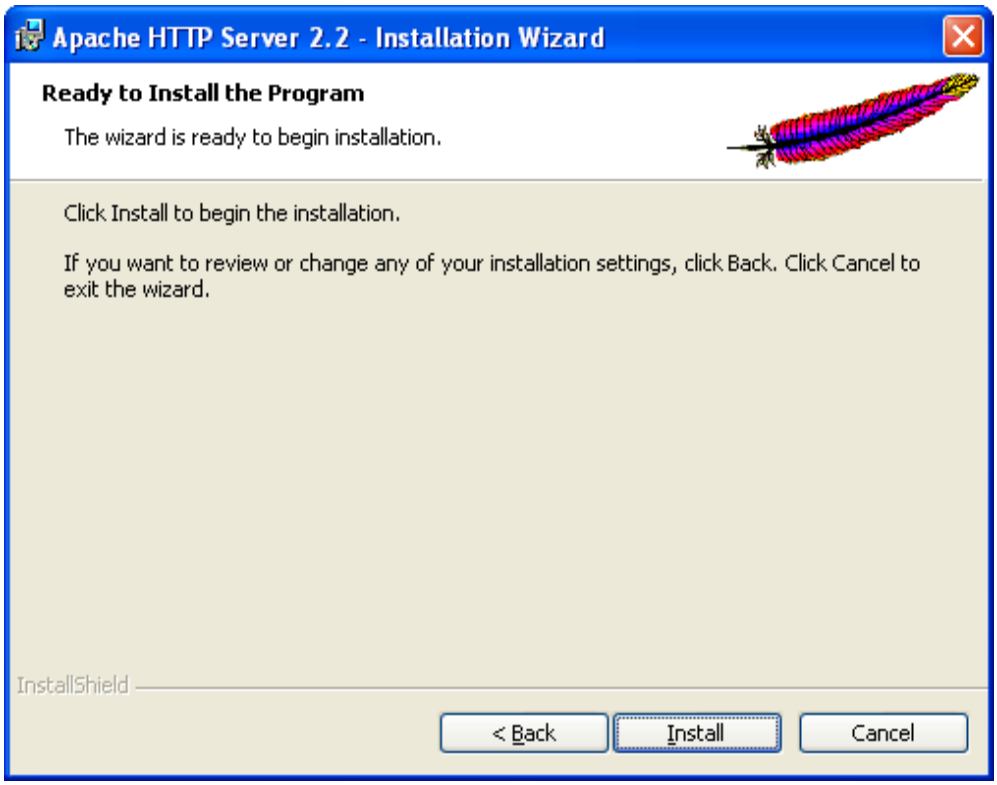
8. Change the folder to **C:\Apache Software Foundation\Apache2.2** and click **OK**.



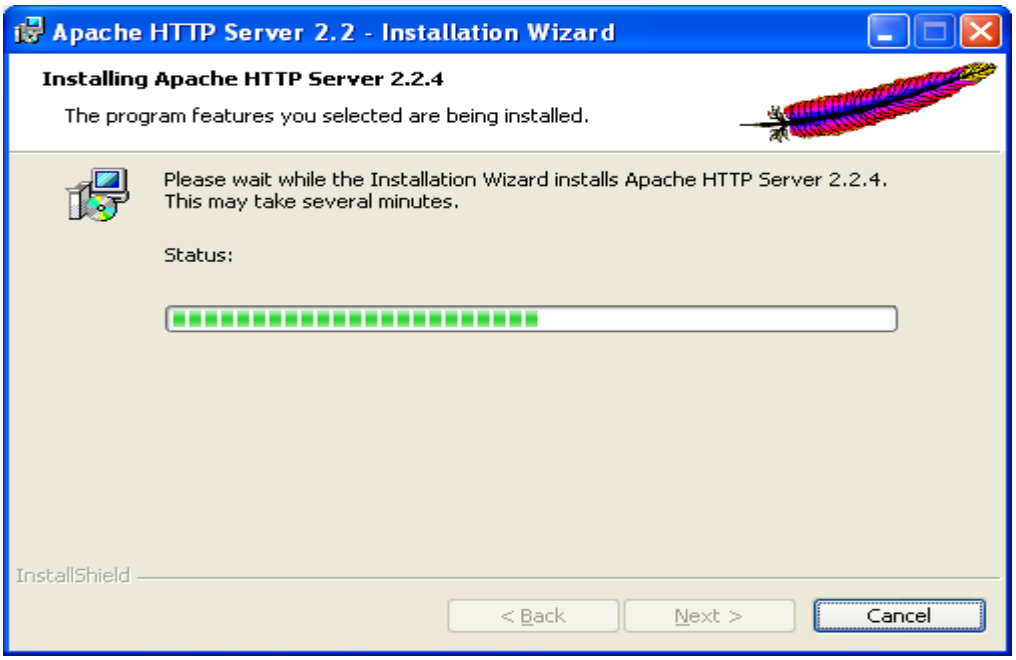
9. Confirm our destination folder and click **Next**.



10. The wizard is ready to install, click **Install**.



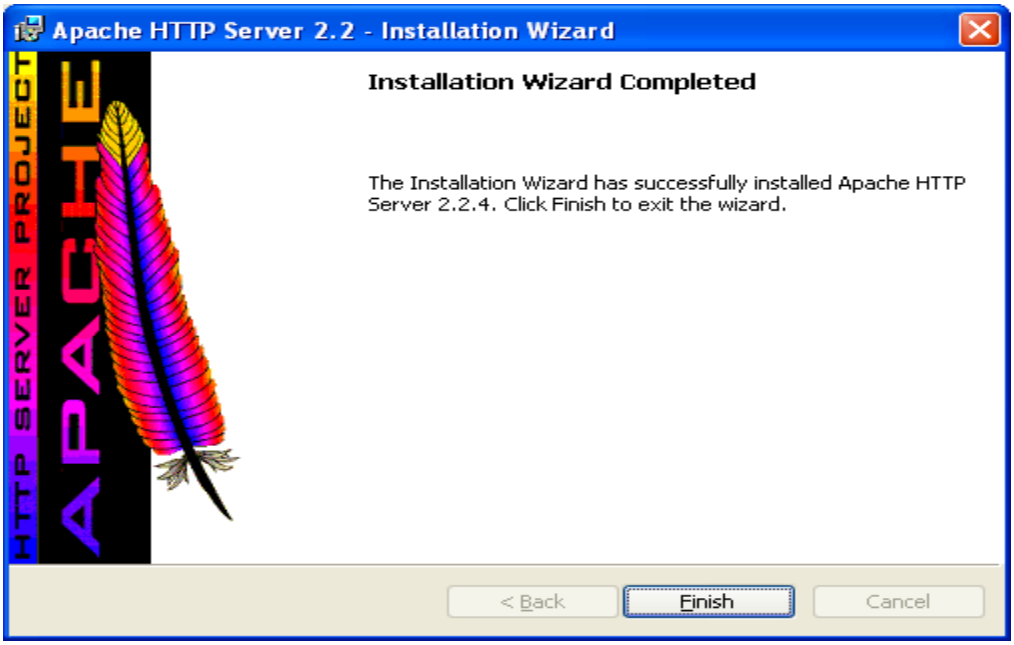
11. The installation is starts. Any error will be prompted, so don't worry.



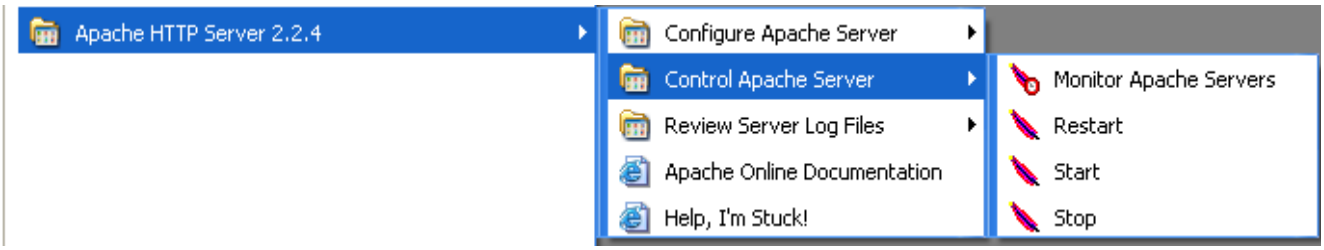
12. You will see the following windows console during the installation.

13. If your system displays **Windows Security Alert** shown below, please unblock it.

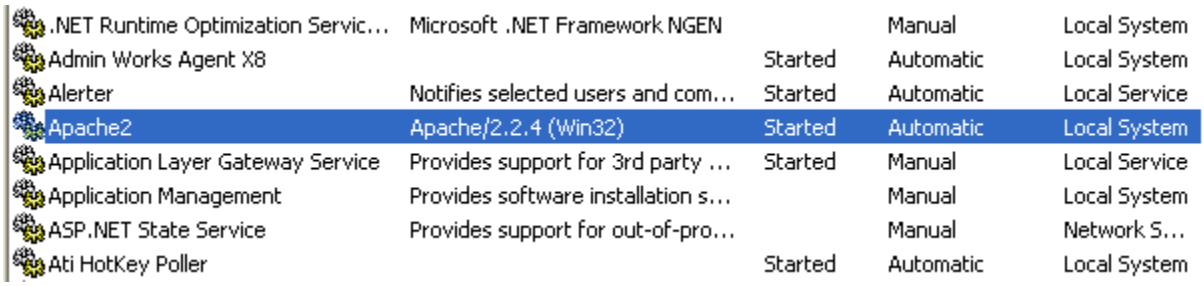
14. The following wizard page means the installation was completed. Click the **Finish** button.



15. Verify the Apache HTTP Server 2.2.x in the **Start > All Programs > Apache HTTP Server 2.x.x**. You can configure the **httpd.conf** file, stop, start and restart the Apache service, monitor the Apache server and review the server log files.



16. Check the **Apache2** service in **Windows Services** snap in.

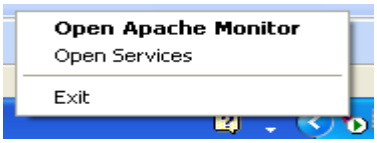


17. If the Apache service is running, you can see the eagle fur with green arrow as shown below in the icon tray, bottom-left.

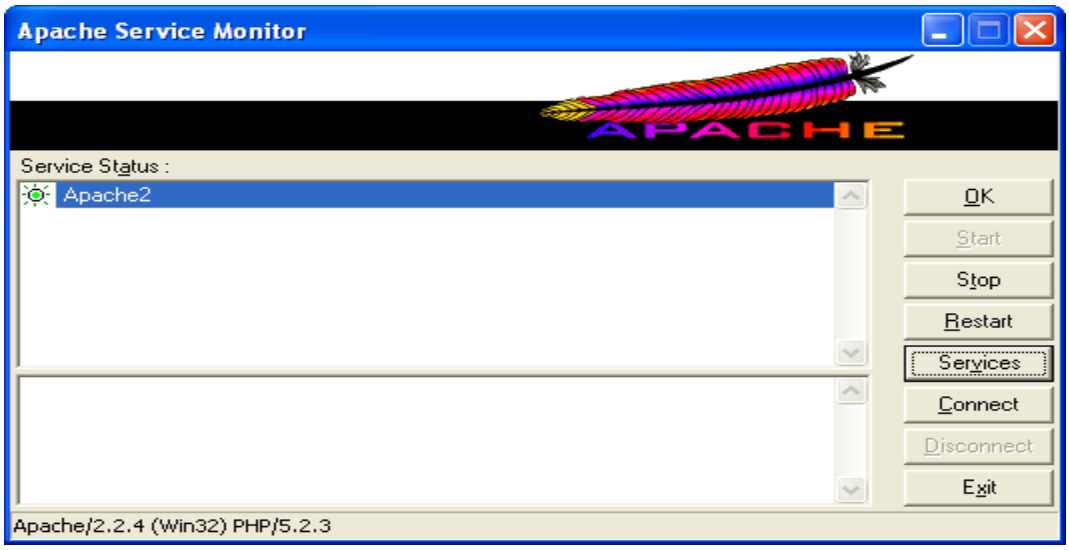
 - Apache is running.

18. If Apache is not running, the icon is red square as shown below. You can right click mouse on the icon and open the Apache Monitor or the Windows Services snap in.

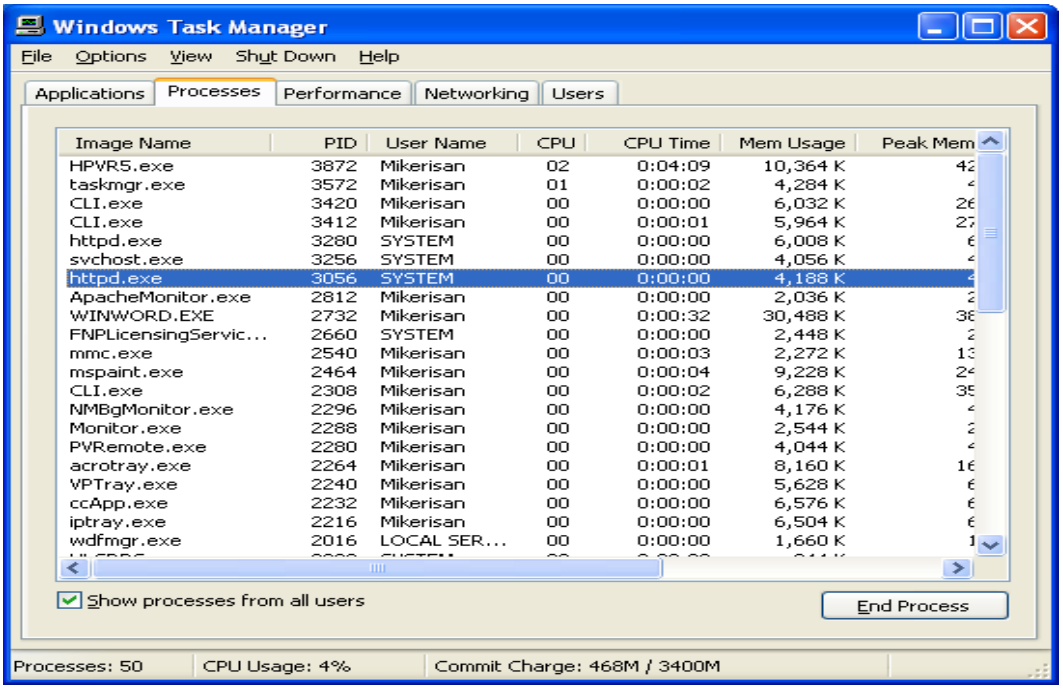
- Apache is dead



19. The following is the Apache monitor.

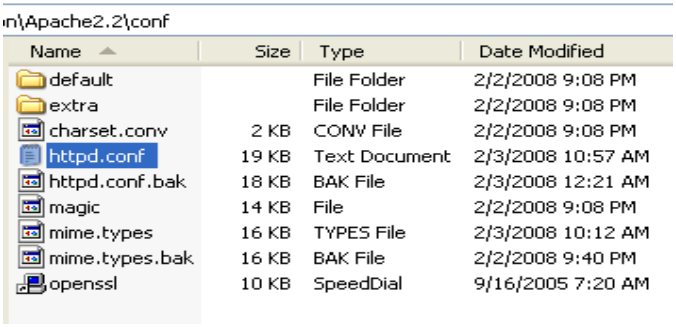


20. When seen through Windows Task Manager, the process name is httpd.

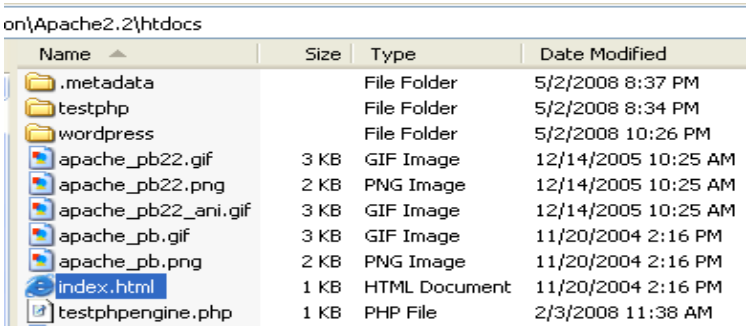


21. The following Figure shows the files and folders under the Apache installation folder, **C:\Apache Software Foundation\Apache2.2**.

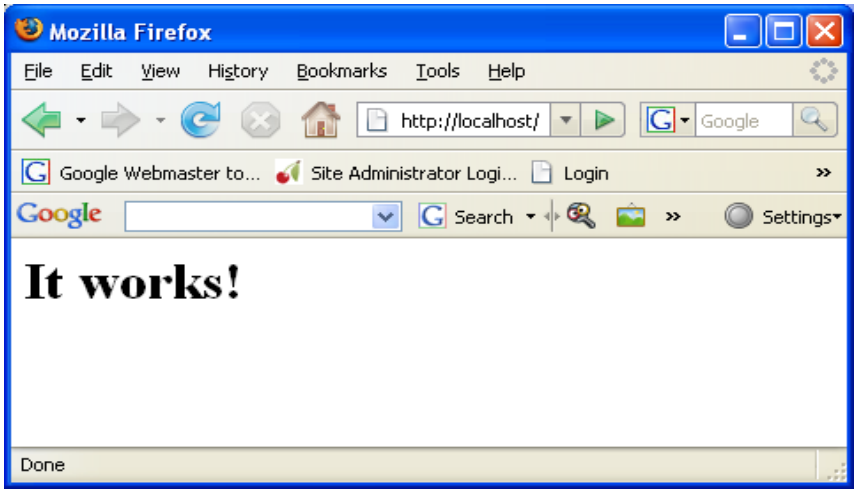
22. The configuration file is **httpd.conf** under the **conf** folder and this file can be opened in any text editor.



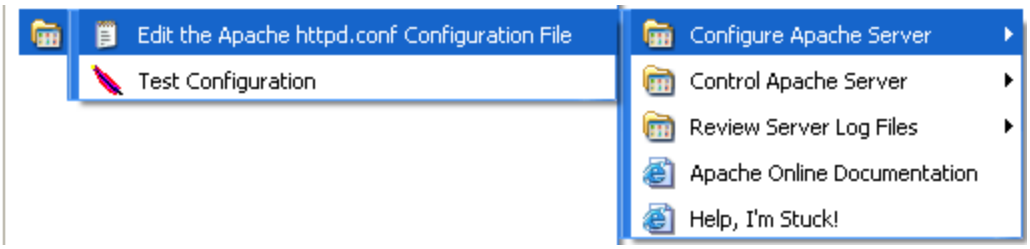
23. The default web root folder is **htdocs**. All your web files and folders will be put in this folder if you are using the default web root folder.



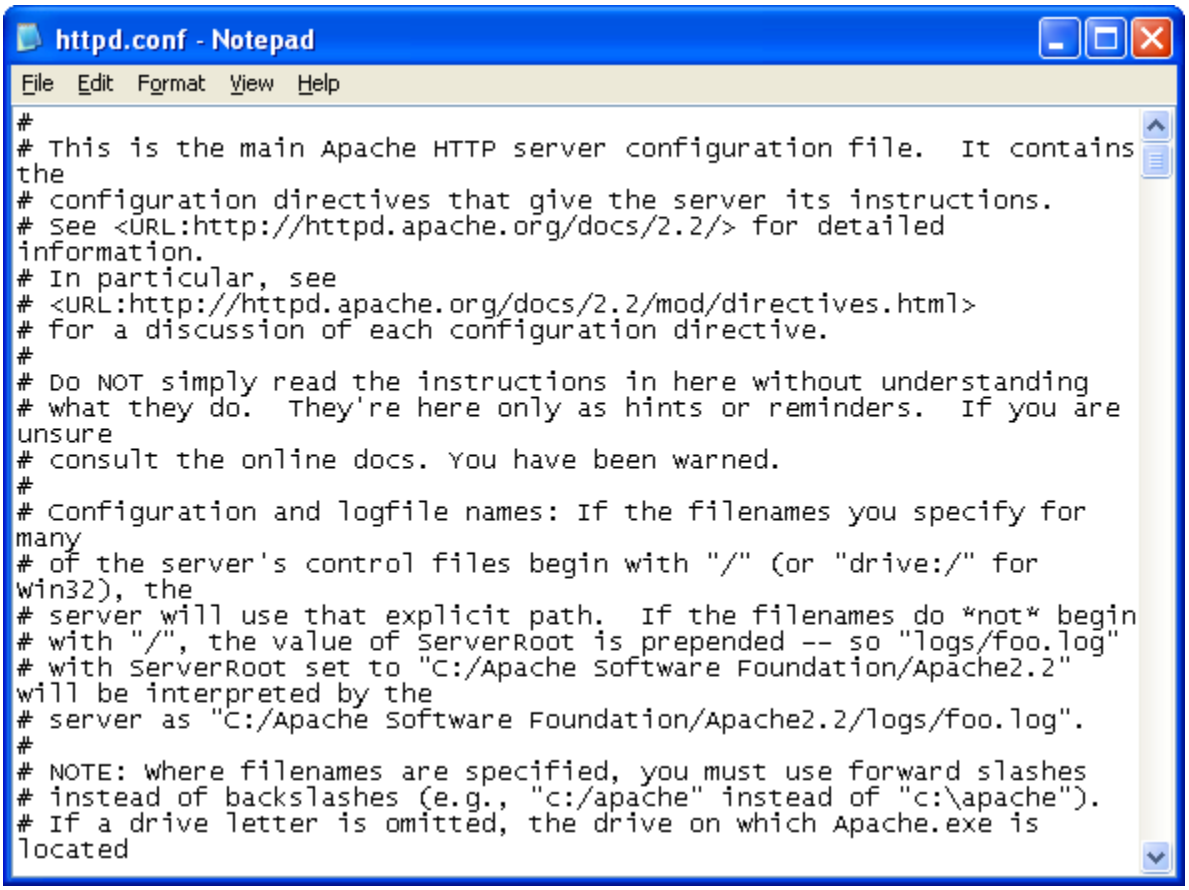
24. The default root directory for web files is **htdocs**. Let test our Apache web server through browser by using **http://localhost** or **http://127.0.0.1**. There is already an **index.html** file provided by default. Open your browser, type http://localhost or http://127.0.0.1 and hit the Enter key. You will be greeted by the following page.



25. We can open the **httpd.conf** file through the Start menu as shown below.



26. The following is the content of the Apache configuration file. We need to edit this file to suit our specific needs of the web server.



Installing Apache Tomcat

Environment Used

- JDK 6 (Java SE 6)
- Apache Tomcat 6.x
- Windows OS

Tomcat 6 requires any installed Java 5 or later JRE (32-bit or 64-bit). We have used JRE 6.

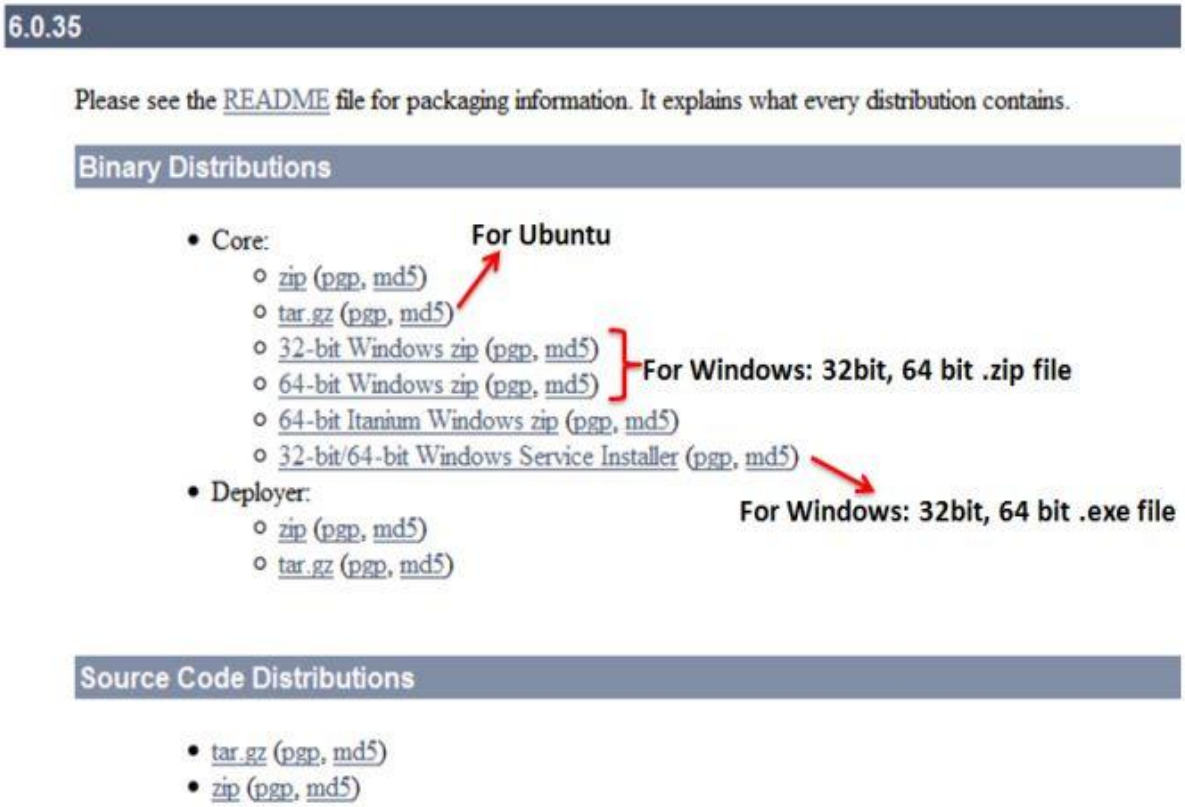
Installing JDK

JDK should be installed with proper environment set up. Read this page for installing the JDK and setting up the environment. Installing JDK automatically installs JRE.

Downloading Apache Tomcat

If you need to install Tomcat, you can download it from this location: http://tomcat.apache.org/download-60.cgi

NOTE: This tutorial uses "Apache Tomcat 6.0.35″ version.



Installing Apache Tomcat

You can install Tomcat on any operating system that supports the zip or tar formats.

In Windows using zip file

To install Apache Tomcat, all you have to do is simply unzip the downloaded (.zip) file to a safe location on your machine. For simplicity and easy access, we recommend you to unzip Tomcat in "C:\Tomcat6\" directory.

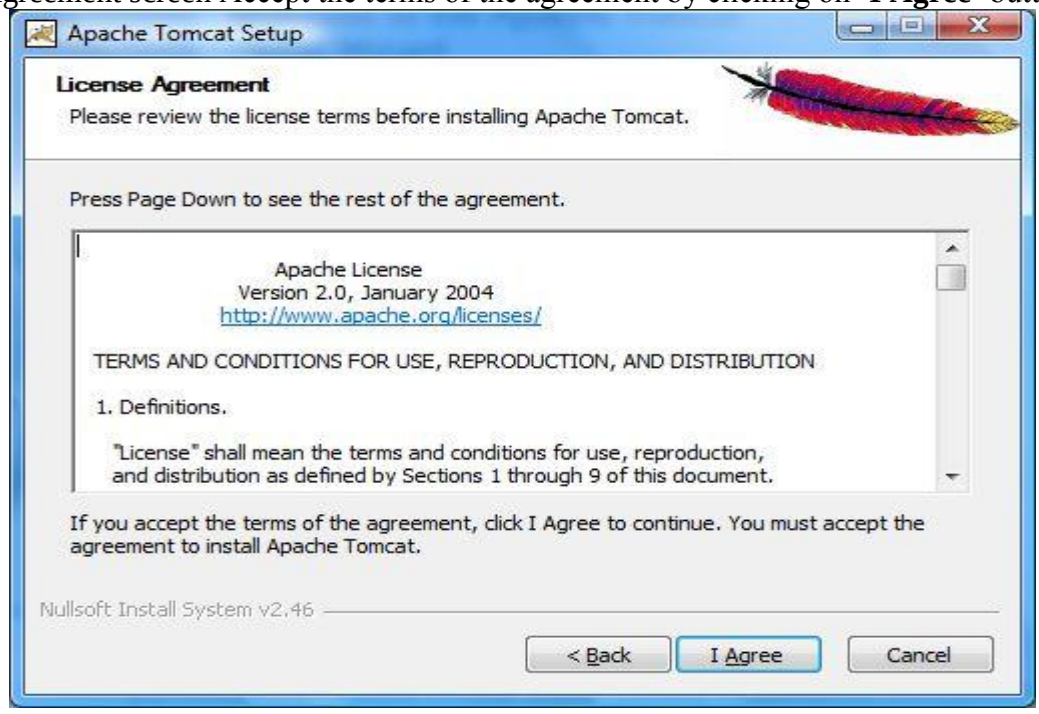
In Windows using .exe (Windows Service Installer) file

After downloading the Windows installer file (.exe) file, simply double-click on the .exe file and follow the steps below to install Apache Tomcat.

Welcome screen

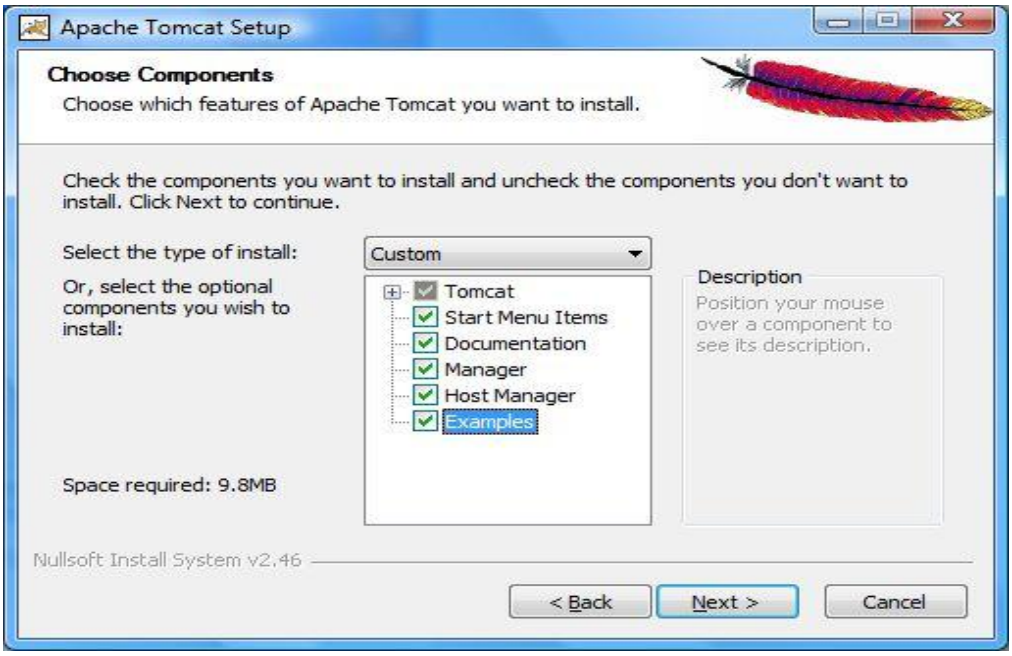
Simply click on the '**Next**'button to continue installation process.

License Agreement screen Accept the terms of the agreement by clicking on '**I Agree**' button.



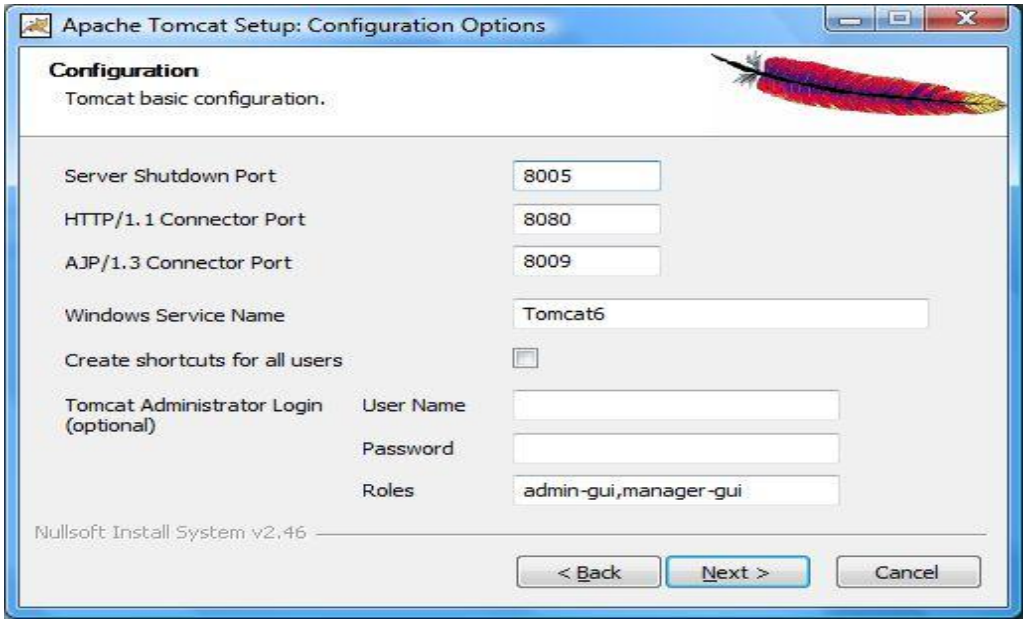
Choose the components

Choose the features of Apache Tomcat you want to install by checking the components and click '**Next**'.



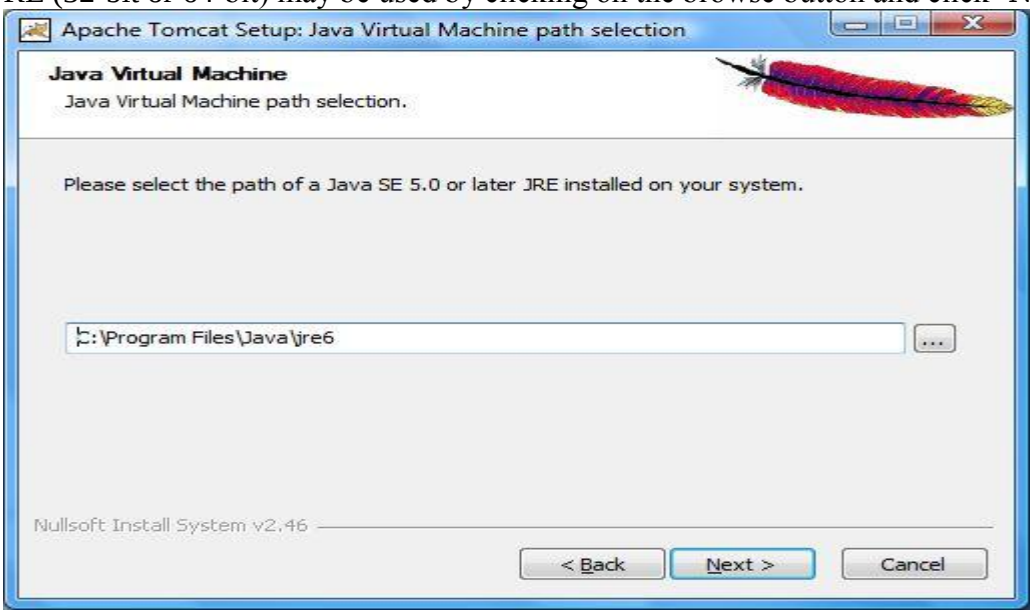
Tomcat Configuration options

- The default port number for Tomcat to process HTTP requests is 8080. You can either change the port number here or change it later after the installation in server.xml which is located in /conf/server.xml. We recommend to have the default value.
- You can provide the username and password for Administrator login but here, we leave it as blank.
- Now, click on the '**Next**' button.



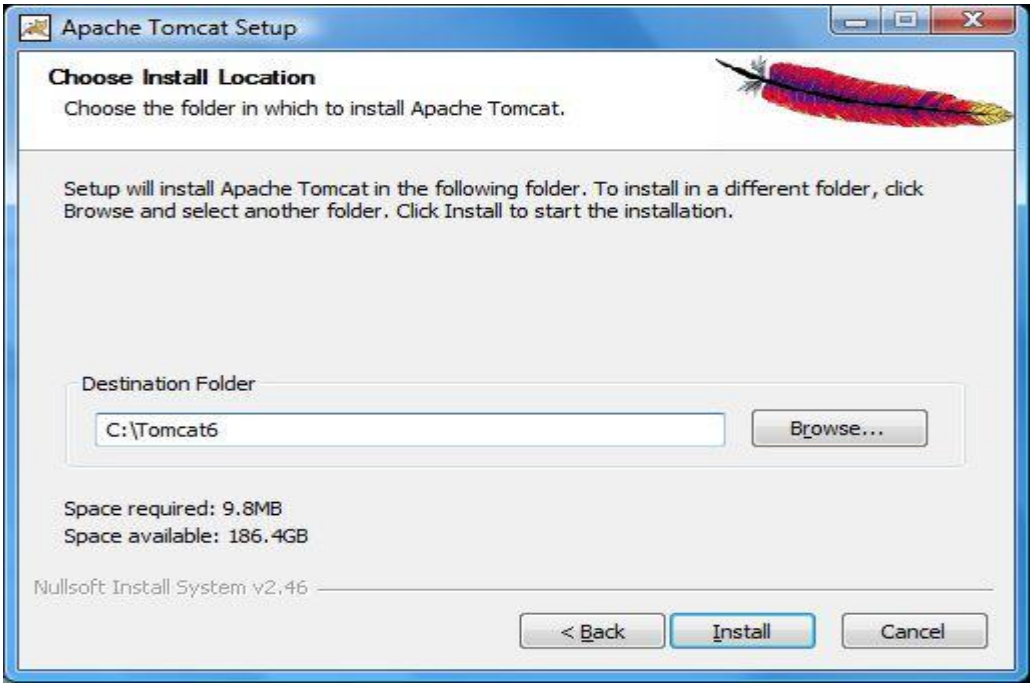
Installed JRE path

- The installer uses the registry to determine the base path of a Java 5 or later JRE, including the JRE installed as part of the full JDK.
- When running on a 64-bit operating system, the installer will first look for a 64-bit JRE and only look for a 32-bit JRE if a 64-bit JRE is not found.
- It is not mandatory to use the default JRE detected by the installer. Any installed Java 5 or later JRE (32-bit or 64-bit) may be used by clicking on the browse button and click '**Next**'.

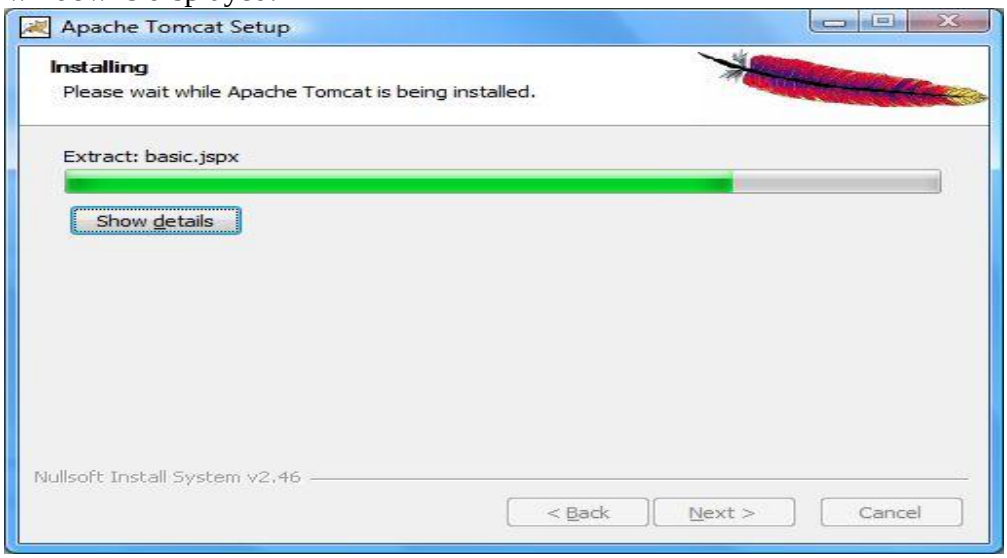


Choose Installation Location

In Windows, by default the location will be provided as 'C:\Program Files\Apache Software Foundation\Tomcat 6.0′. But for simplicity, we recommend you to use '**C:\Tomcat6**' as shown below and click '**Install**'.

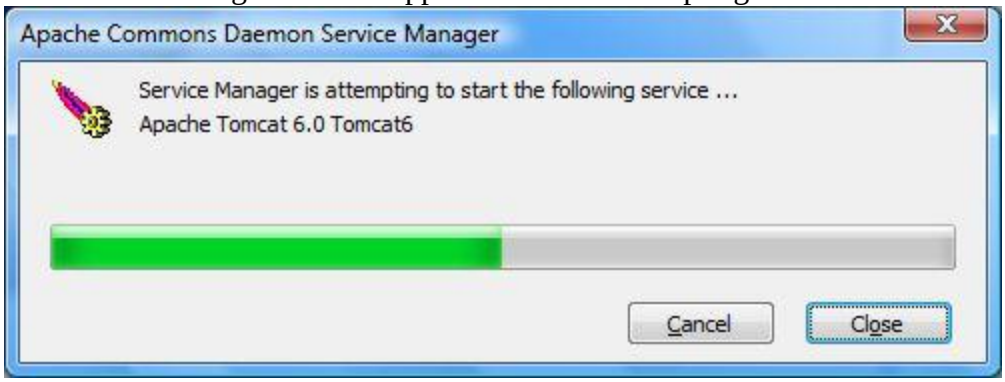


Installing window is displayed.



Tomcat setup completion window is displayed as shown below and click on '**Finish**' button.

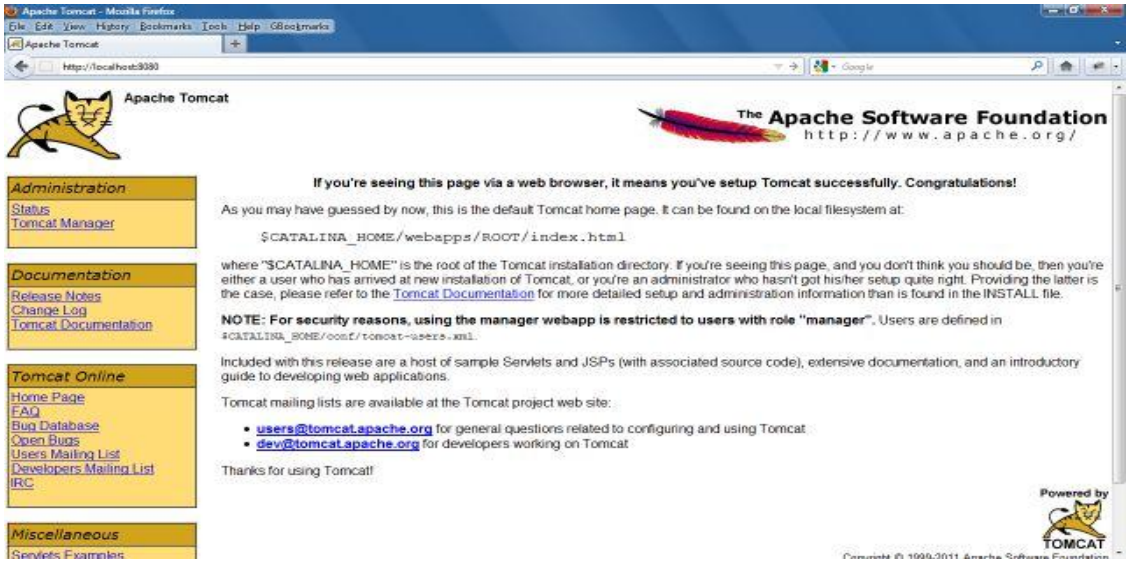
Apache Service Manager window appears which is attempting to start the Tomcat service.



Once the service has been started, an **Apache Tomcat icon appears on Windows Taskbar** (bottom right).

Test your installation

Open browser and type http://localhost:8080. You should see the Apache Tomcat home page as shown below.

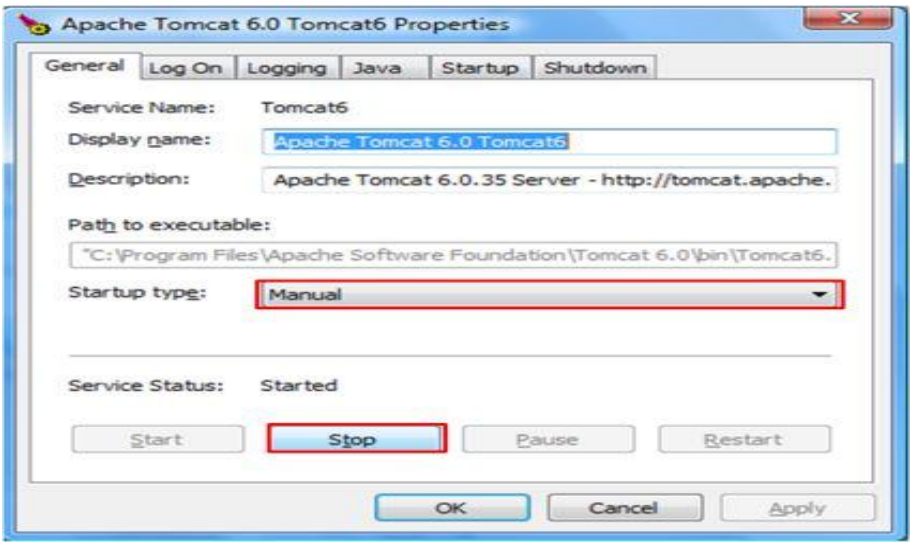


Configuring Apache Tomcat

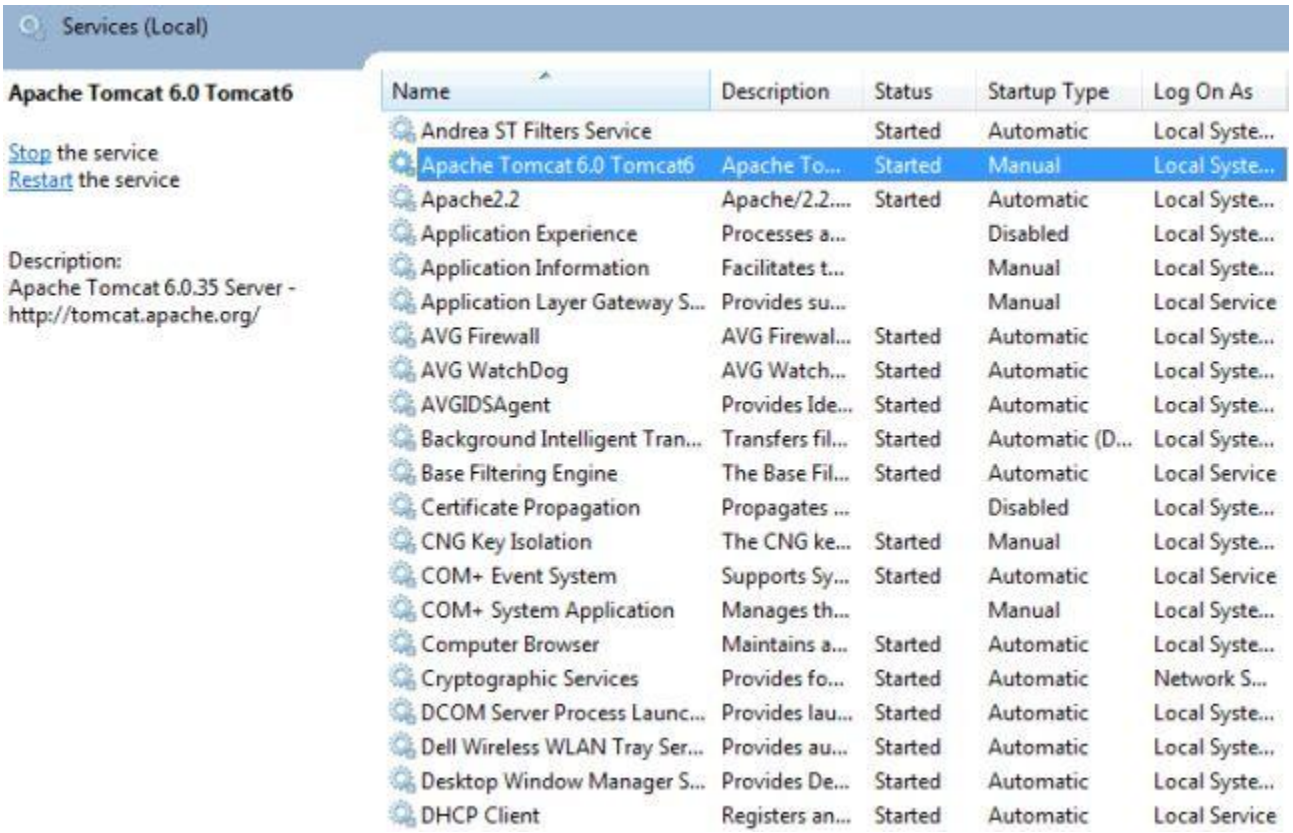
You can configure the Tomcat in many ways,

- Double-click on the Tomcat icon in Taskbar to open the Apache Tomcat properties dialog box as shown below.

Select Manual as startup type and start the server (if you are managing the tomcat manually) or stop the server (We can start the Tomcat server inside any IDE such as, Eclipse, NetBeans, etc) and click OK.



- Double-click on /bin/Tomcat6w.exe (in our case, it is C:\Tomcat6\bin) and follow the step as above. If it did not open the Apache Tomcat properties window then try to run it as administrator (Right click on exe file->Run as administrator).
- Using Windows Services
  - Open Control Panel\Administrative Tools and double-click on Services.
  - Double-click on Apache Tomcat service and do as above.



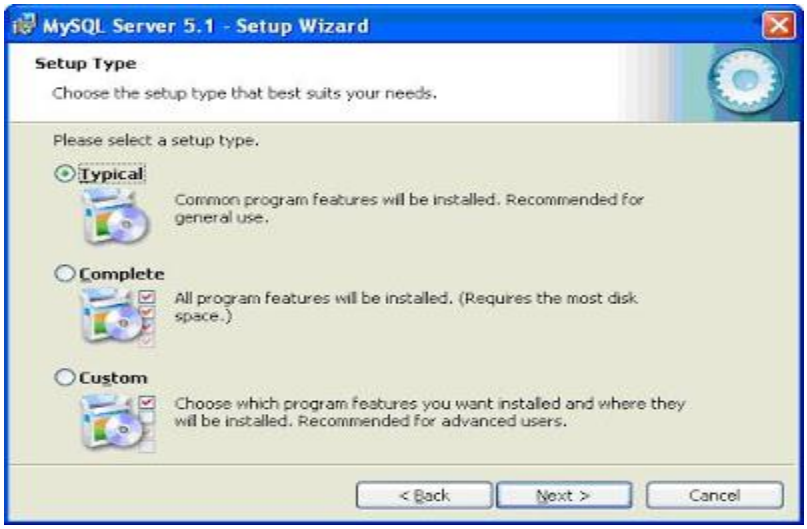
Installing MySQL

Step-by-Step guide for Installing MySQL on Windows
You can download the MySQL database from the MySQL website http://www.mysql.com by clicking on the downloads tab. Scroll down to the MySQL database server & standard clients section and select the latest production release of MySQL, 5.1.35 at the time of writing.

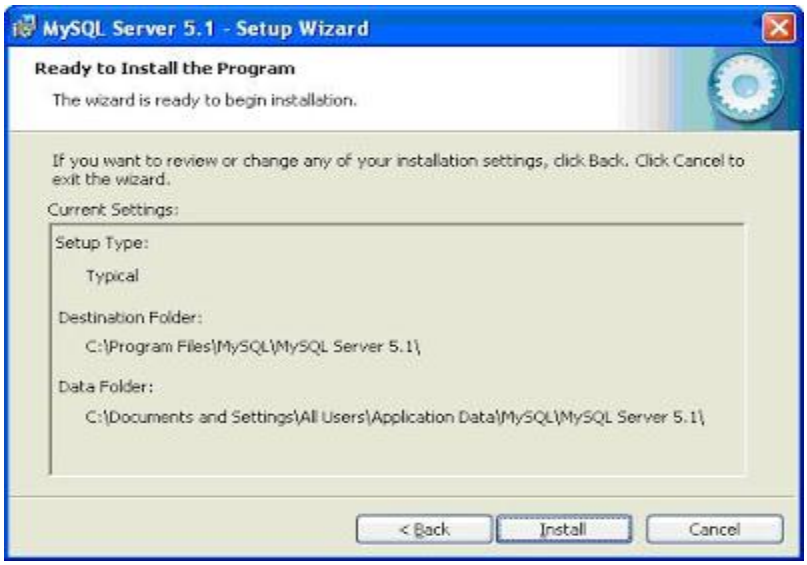
Installation of MySQL Server

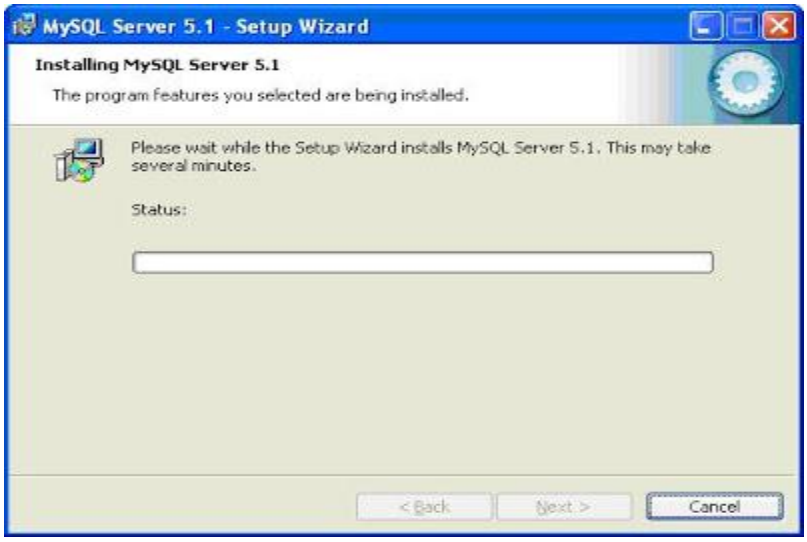
Unzip the setup file and execute the downloaded MSI file. Follow the instructions below exactly when installing MySQL Server:

Click on the "setup"

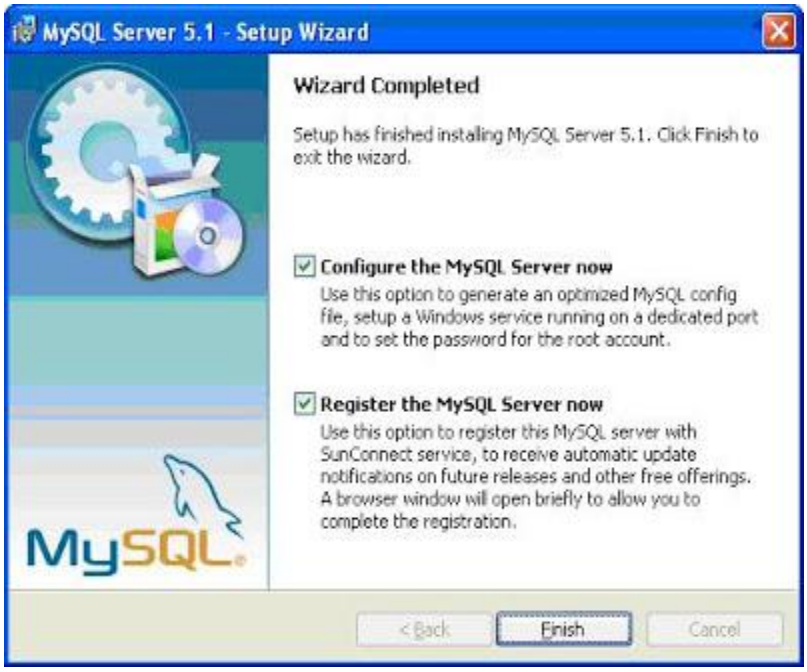


Perform a typical installation


MySQL Server 5.1 - Setup Wizard
Ready to Install the Program
The wizard is ready to begin installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
Current Settings:
Setup Type:
Typical
Destination Folder:
C:\Program Files\MySQL\MySQL Server 5.1\
Data Folder:
C:\Documents and Settings\All Users\Application Data\MySQL\MySQL Server 5.1\
< Back
Install
Cancel


MySQL Server 5.1 - Setup Wizard
Installing MySQL Server 5.1
The program features you selected are being installed.
Please wait while the Setup Wizard installs MySQL Server 5.1. This may take several minutes.
Status:
< Back
Next >
Cancel

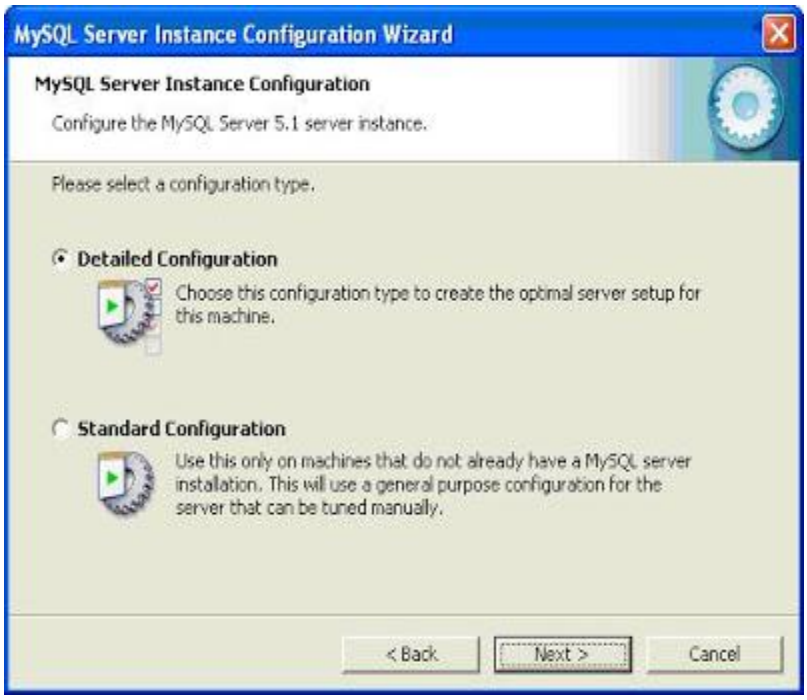

MySQL Enterprise
MySQL
Enterprise
A MySQL Enterprise subscription is the most comprehensive offering of MySQL database software, services, and support to ensure your business achieves the highest levels of reliability, security, and uptime.
An Enterprise Subscription includes:
1. The MySQL Enterprise Server - The most reliable, secure, and up-to-date version of the worlds most popular open source database.
2. MySQL Enterprise Monitor Service - An automated virtual database assistant.
3. MySQL Production Support - Technical and consultative support when you need it, along with service packs, hot-fixes, and more.
For more information click [More...] or visit www.mysql.com/enterprise
More ...
< Back
Next >
Cancel



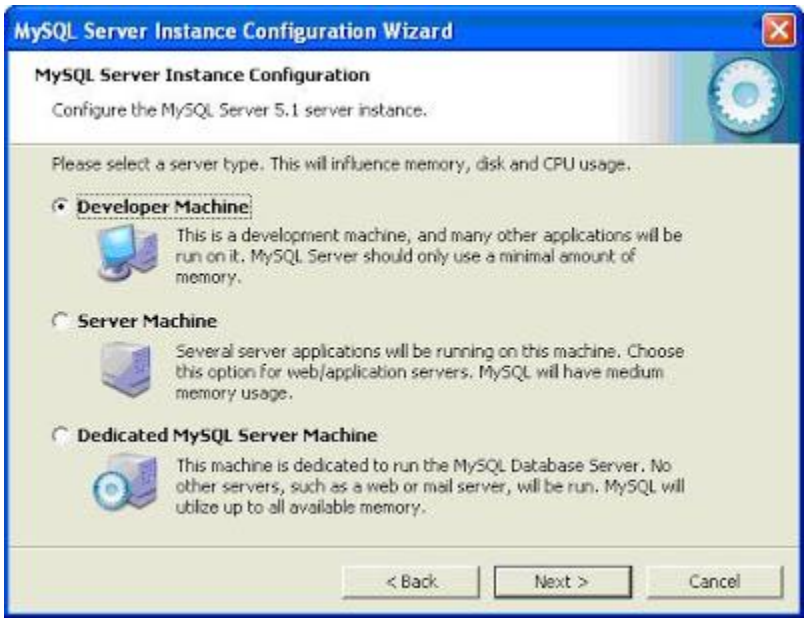
Check box to configure MySQL Server

If you checked the Configure the MySQL Server now check box on the final dialog of the MySQL Server installation, then the MySQL Server Instance Configuration Wizard will automatically start.

Follow the instructions below carefully to configure your MySQL Server to run correctly with EventSentry.

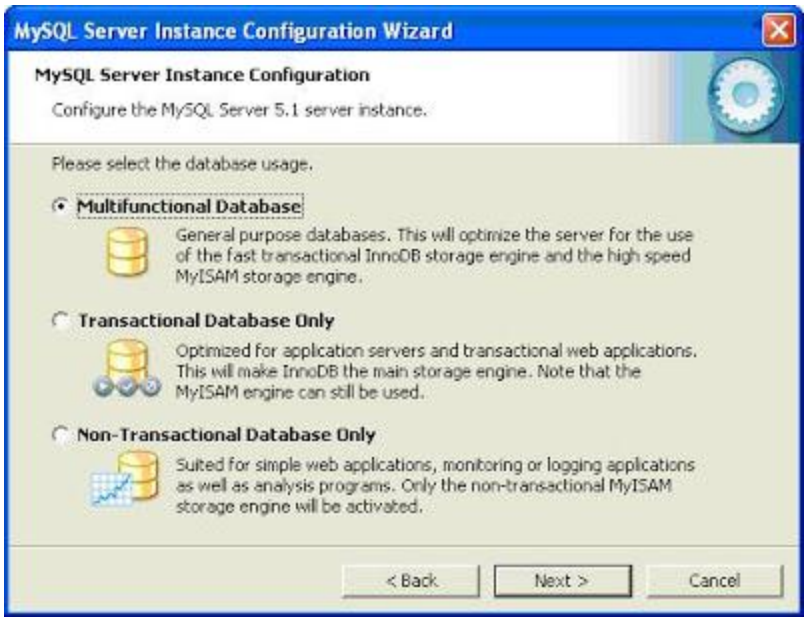


Select Detailed Configuration

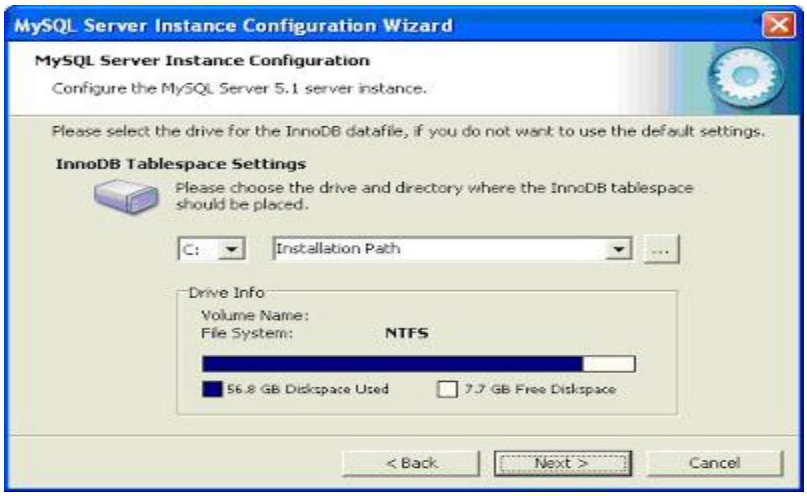


I was installing it on my local machine where other applications & tools are running I decided to opt "developer machine" but it is recommended that you use a Dedicated MySQL Server Machine for your MySQL database, if this is not an option then select "Server Machine".

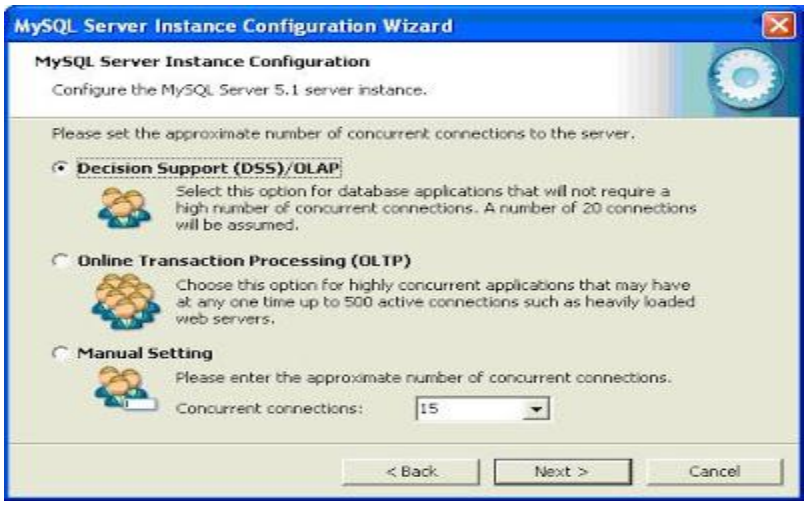
If you selected Dedicated MySQL Server Machine and your MySQL service does not start after the wizard completes, then try to re-run the wizard (or re-install) MySQL, but this time select the Server Machine option



I have checked "Multifunctional databases" as I wanted MyISAM as default storage engine but if you want you can select "Transactional Database Only", this will make sure that InnoDB is the main storage engine. If you have checked 3rd option then only myISAM engine would be available



Select the drive where the database files will be stored.
Select the drive on the fastest drive(s) on your server

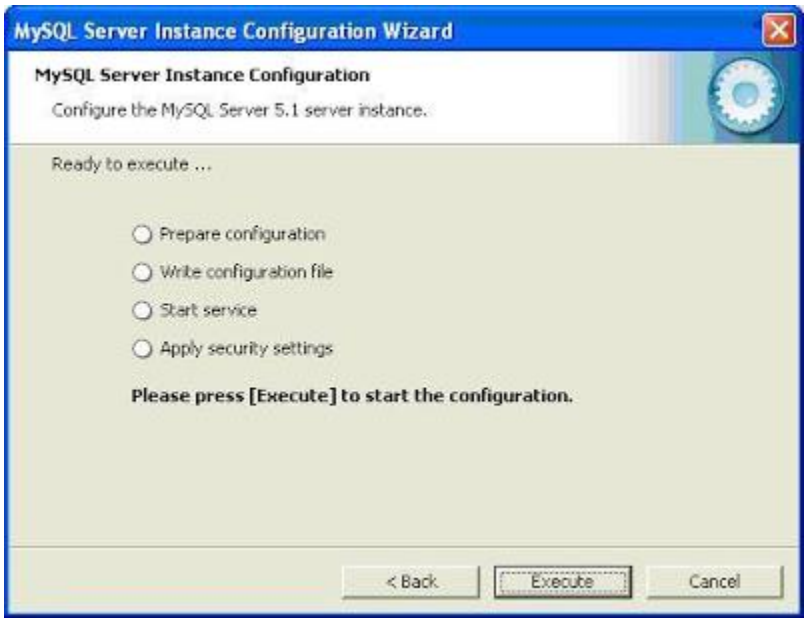


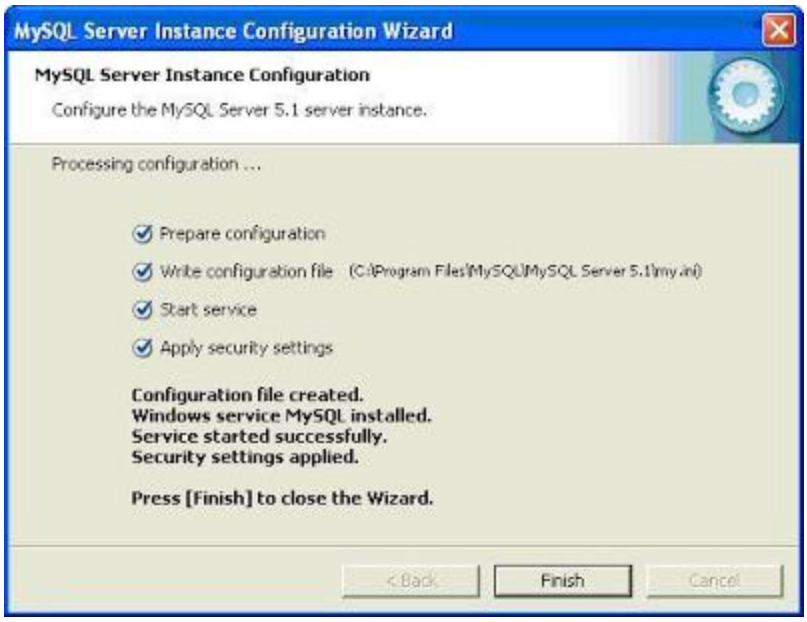
It is recommended that you leave the default port 3306 in place, however EventSentry will also work with non-standard ports if necessary.

It is highly recommended that you run the MySQL Server as a Windows service(you can disable this if you want to start it manually whenever required) and include the binary directory in the search path.

Specify a secure root password, you may want to check the box Enable root access from remote machines if you plan on administering your MySQL server from your workstation or other servers.

If you are getting an error message after clicking the Next button, then please enable port 3306 in the Windows XP Firewall Settings



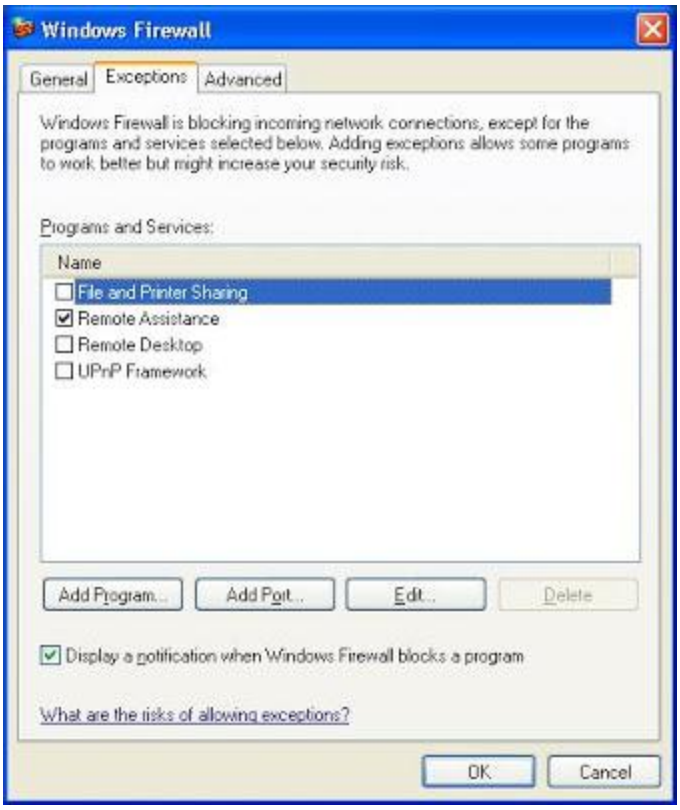


Done!!!

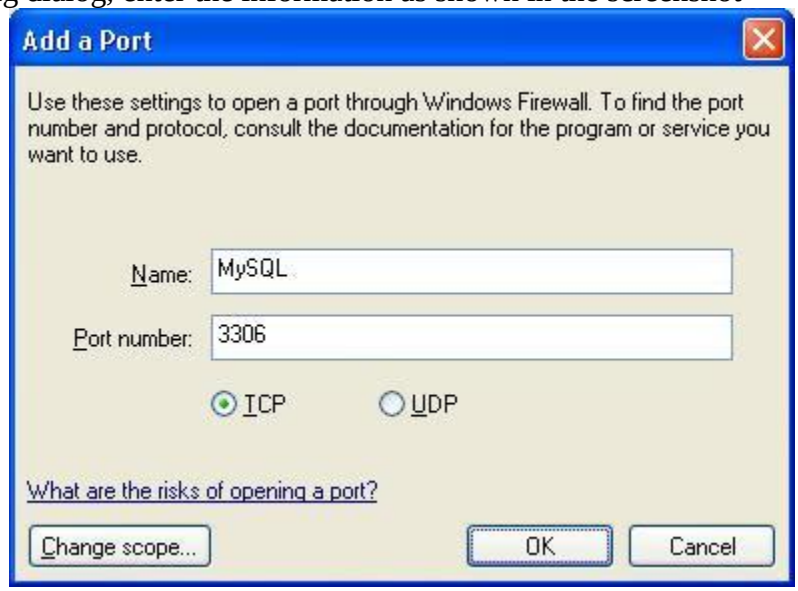
But if you are installing MySQL on a Windows XP workstation, or any other computer that has a firewall enabled, and the wizard fails with an error message similar to the one shown below (Can't connect to MySQL server on 'localhost'), then you will have to exclude the MySQL daemon from your firewall configuration

On Windows XP, you can exclude MySQL from the firewall by following the steps below:

1. Navigate to Start -> Settings -> Control Panel -> Windows Firewall



1. In the resulting dialog, enter the information as shown in the screenshot



Click on ok it finish

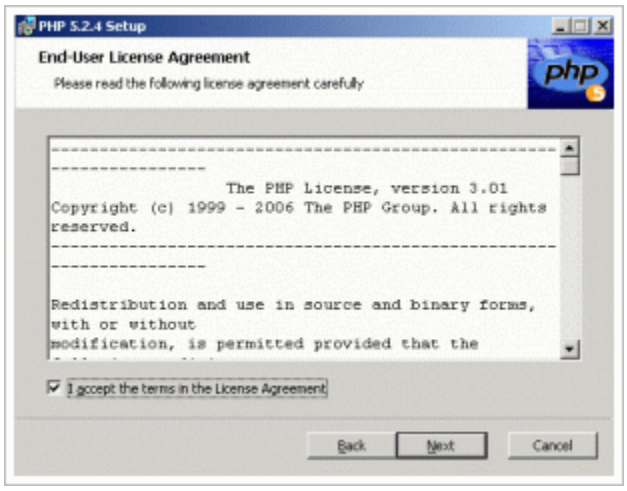
Install PHP 5 on Windows

1- Download the latest Windows PHP Binaries (MSI file) from this page. I choose theeZNetworking mirror because it is the closest one to Malaysia. Choose a mirror that is nearer to your country for a faster file download. The latest PHP version that I downloaded is 5.2.4. Save the file to your Desktop.

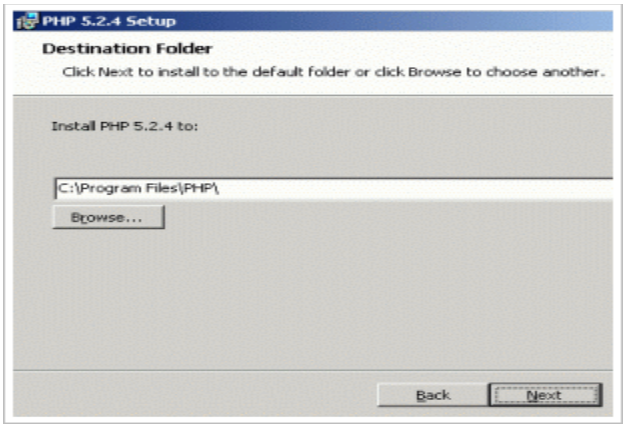
2- Right click on the file and click "*Install*".

3- Click "*Next* " once the Welcome page is displayed.

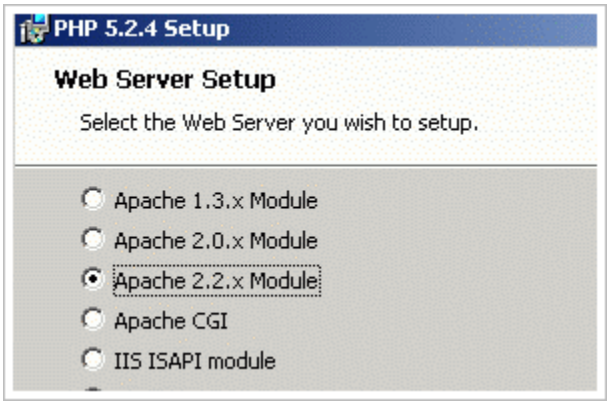
4- Select "*I accept the license agreement*" and click "*Next* ".



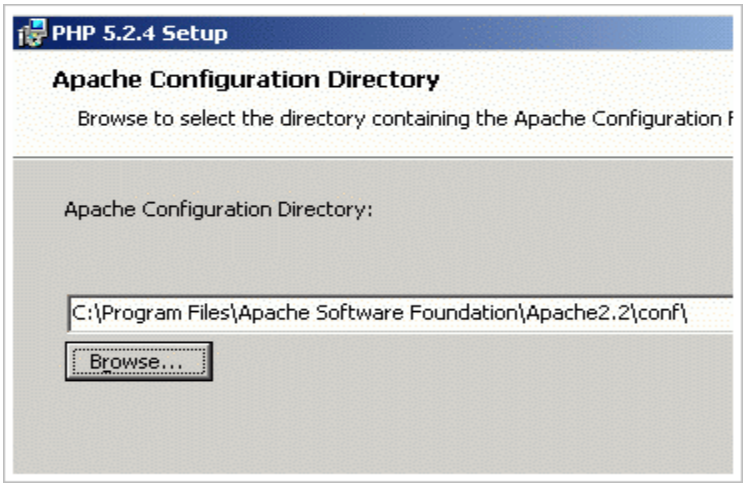
5- Change your PHP installation path OR just accept the default path – ***C:\Program Files\PHP*** and click "*Next* ".



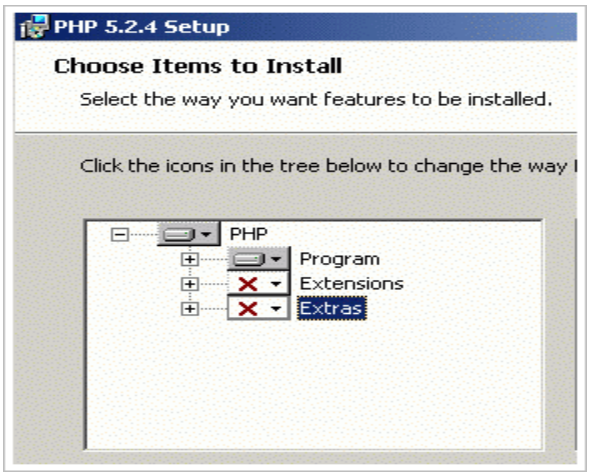
6- On the Web Server Setup screen, select the **Apache 2.2.x Module** and click "*Next*".



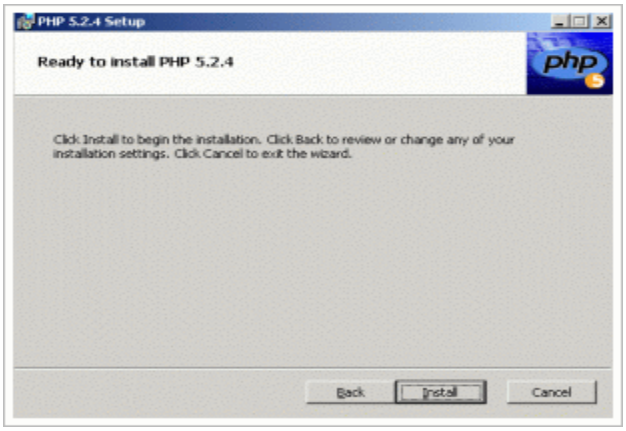
7-On the **Apache Configuration Directory** screen, browse for the Apache configuration directory (conf) OR just enter **C:\Program Files\Apache Software Foundation\Apache2.2\conf** and click "*Next* " to proceed with the installation.



8- For now, accept the default selection and click "*Next*".

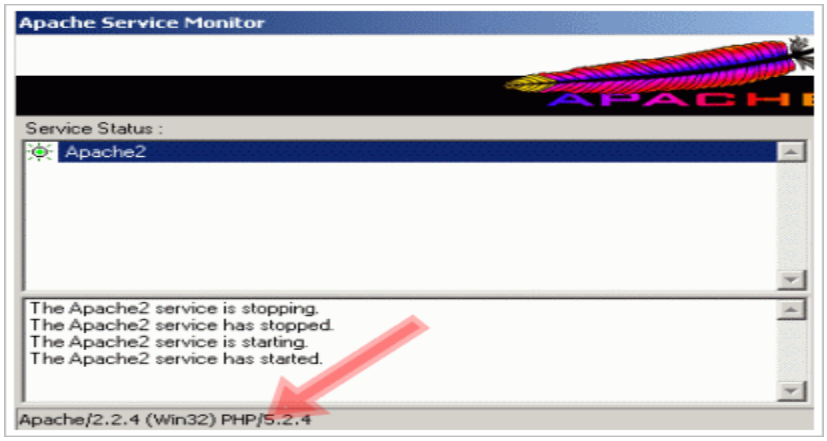


9-Click "*Install* " to install PHP 5 on Windows.



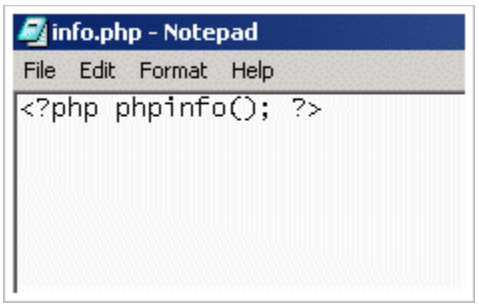
10- Click "*Finish* " once completed. PHP 5 is successfully installed.

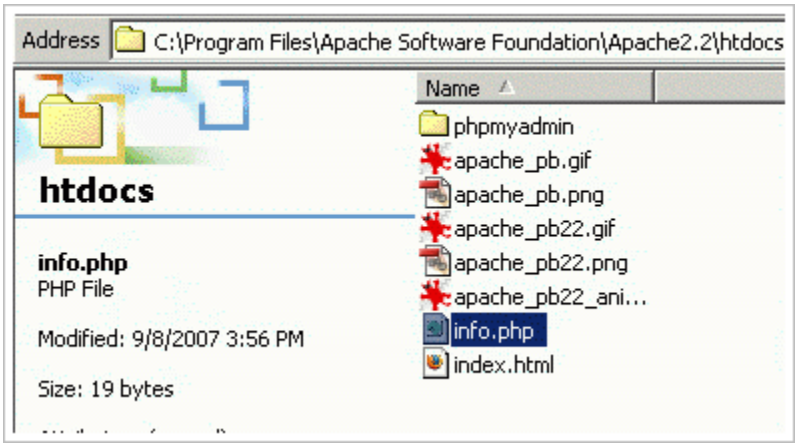
11- Start your Apache 2.2 server using the "**Monitor Apache Servers**" console (*Start -> Apache HTTP Servers 2.2.4 -> Monitor Apache Servers*). You can see that PHP was successfully installed by checking the Apache status at the bottom of the console.



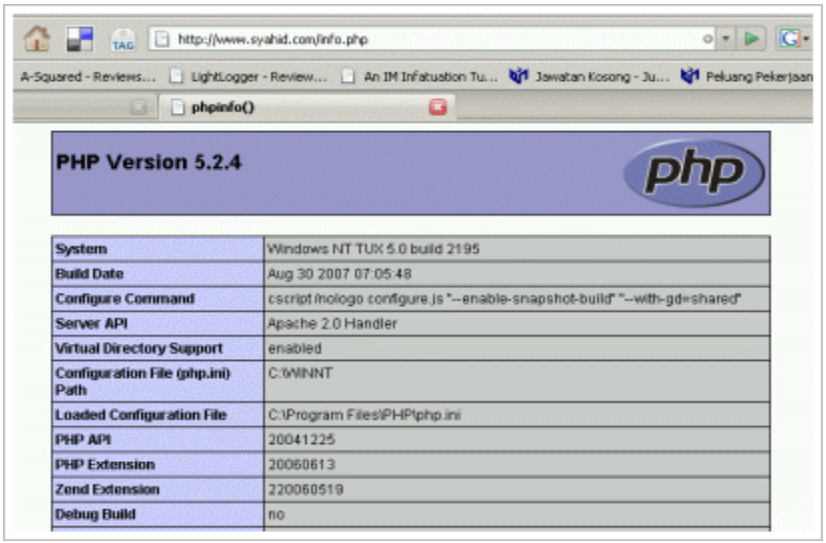
Test your PHP 5 Installation

1- Open up your Windows Notepad. Type in ***"<?php phpinfo(); ?>***" inside the file. Save this file as "**info.php**" inside your Apache root directory, *C:\Program Files\Apache Software Foundation\Apache2.2\htdocs* .





2- Open up your web browser. In the address bar, **type in your web server domain name plus info.php** as the file name. Example: ***http://www.syahid.com/info.php*** . You should get a PHP configuration page just like the one below.

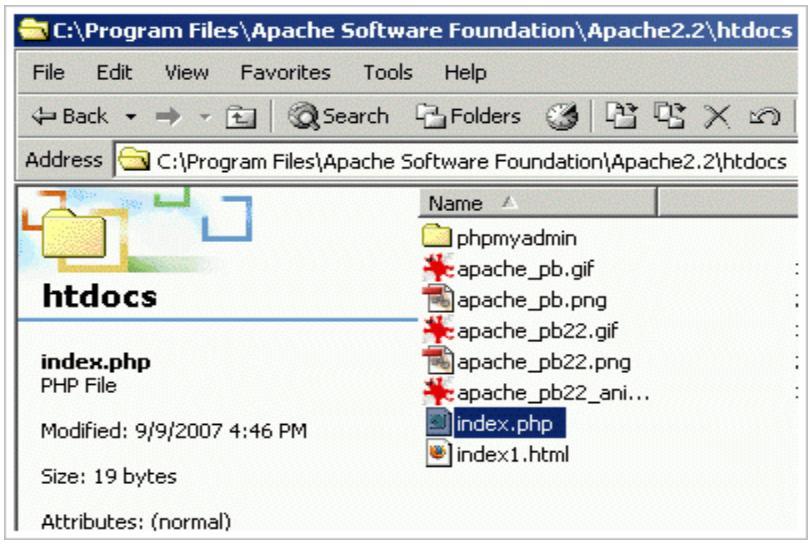


Congratulations! You have successfully installed and test PHP 5 on Windows!

Tell Apache 2.2.x to Support PHP Index File

What happens if you change your index.html (default web server homepage) to index.php and try to access your homepage? Apache will not recognize it and you won't see anything displayed on the page. To **make sure Apache recognizes index.php as a default homepage** too, follow the instructions below.

1- Rename your **index.html to index1.html** and **info.php to index.php** (for testing purposes only!).



2- Edit your Apache configuration file, *C:\Program Files\Apache Software Foundation\Apache2.2\conf\httpd.conf* by opening it with Windows Notepad.

3- Find a line that starts with "***DirectoryIndex index.html…***". Add index.php at the end of the line . Save the file and restart your Apache Server from the "Monitor Apache Servers" console.

```
#
# DirectoryIndex: sets the file that Apache w
# is requested.
#
<IfModule dir_module>
    DirectoryIndex index.html index.php
</IfModule>
```

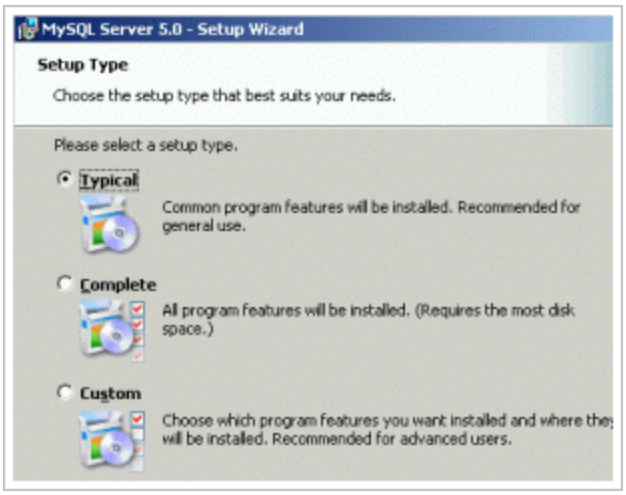
4- Load your Internet browser again. Type in your web server address e.g http://www.syahid.com. You should get a page similar to the info.php page above. Index.php now is recognized as a default Apache homepage, just like your normal index.html page.

Install MySQL 5.0 Community Edition on Windows

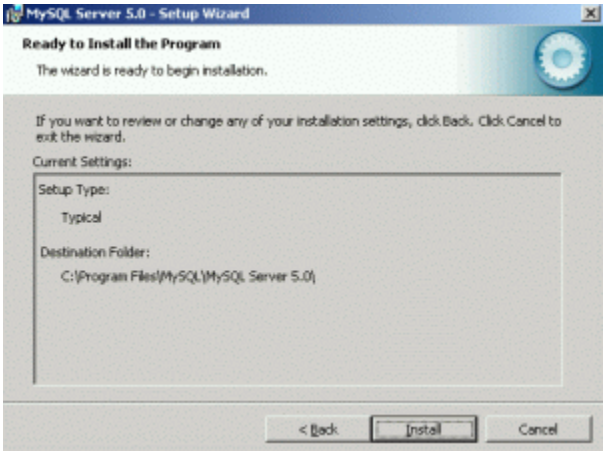
1- Download MySQL 5.0 Community Edition to your Desktop from here. If you want to download from a different mirror, click here. Make sure you always download the "**Complete package** ". Current version during this post was written is 5.0.45.

2- Unzip ***mysql-5.0.45-win32.zip*** (the downloaded mysql file) to get ***Setup.exe***. Double click *Setup.exe* to start installing MySQL. Click "*Next* " when you are prompted as below.

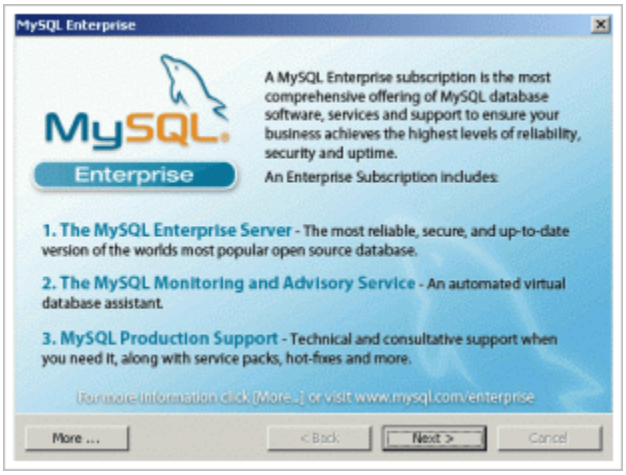
3- Select "***Typical***" for Setup Type and click "*Next* " again.



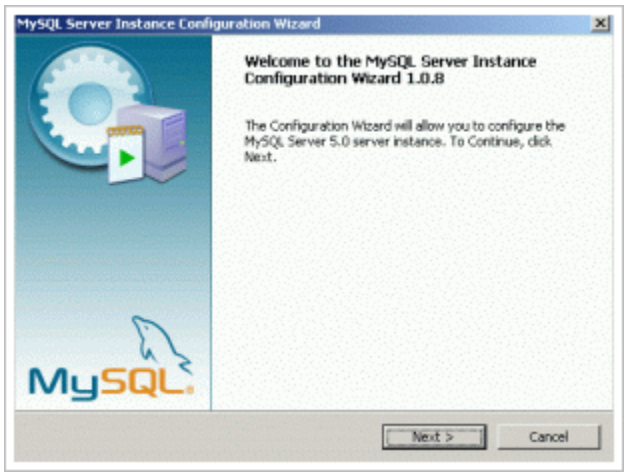
4- Click "*Install* " to proceed with the installation process.



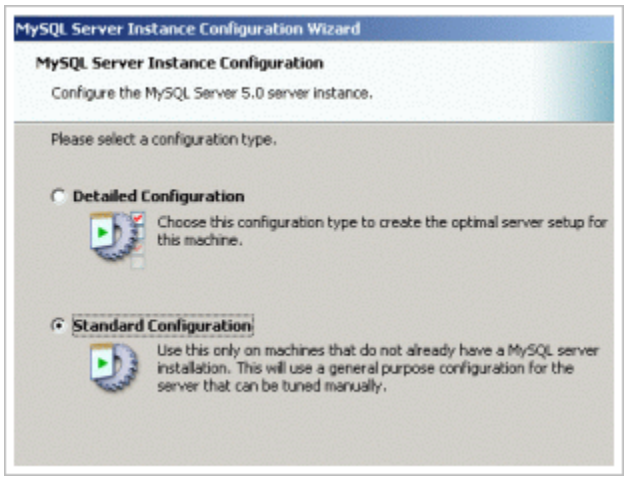
5- The setup activity will show you some advertisement. Read it if you wish and click "*Next* ".



6- Tick "***Configure the MySQL Server now***" and click "*Next* " two times.



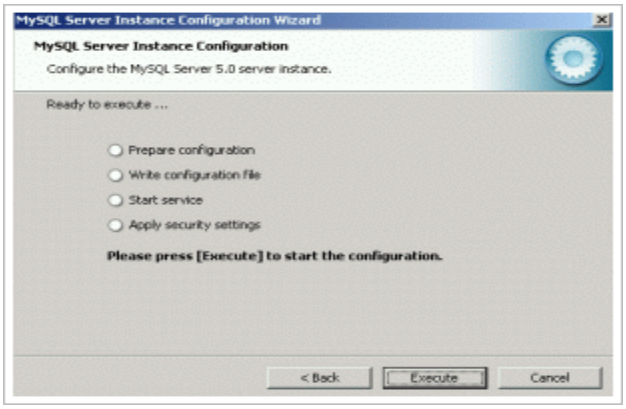
7- Click "***Standard Configuration***" to ease installation process and click "*Next* " again.

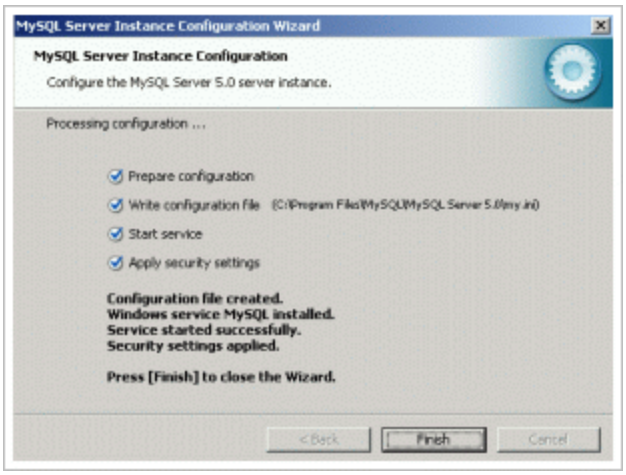


8- Tick "***Install As Windows Service***" to make MySQL auto-startup with Windows and "***Include Bin Directory in Windows PATH*** " to make MySQL system files automatically available for other application.

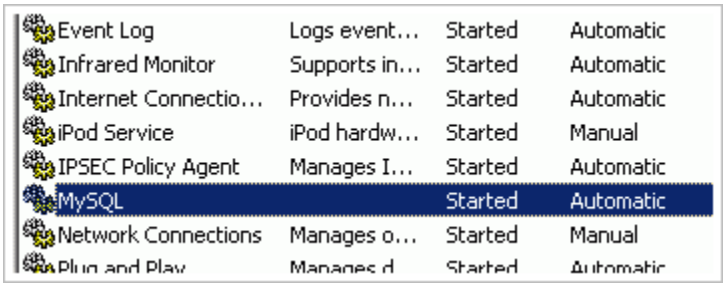
9- Tick "***Modify Security Settings***" and enter a root (Administrator) password to secure your MySQL installation. Don't skip this step! Click "*Next* " again.

10- Click "*Execute*" to start the MySQL Configuration process. Once finished, click "*Finish* " to end configuration.

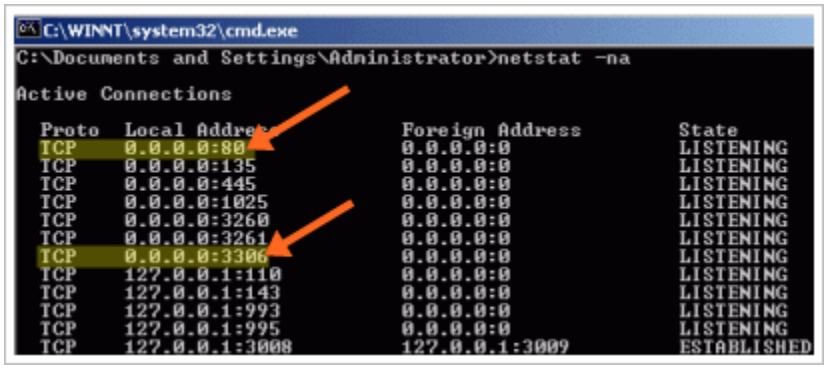




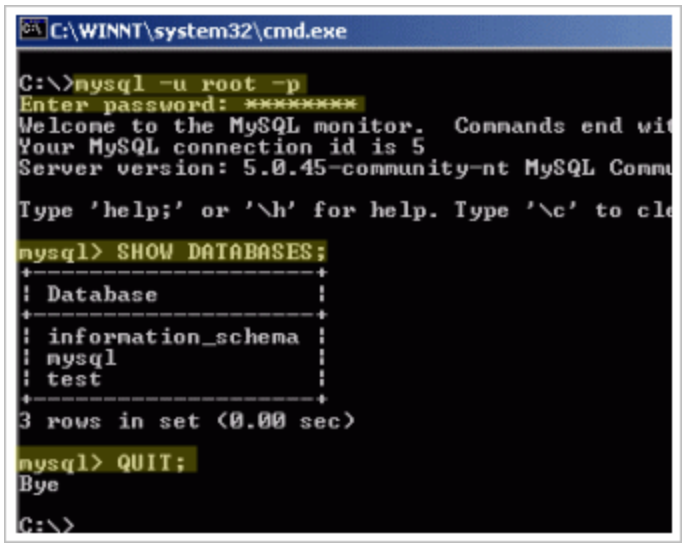
11- Make sure MySQL runs automatically after installation. You can check the status from Administrative Tools Services snap in (*Start -> Programs -> Administrative Tools -> Services*), also available via Control Panel.



12- (OPTIONAL) Open your DOS command prompt (***Run -> cud***). Type in "***net stat -na***". Check out ports opened by MySQL (3306) and Apache (80) . That means the services are up and running.



13- (OPTIONAL) Run some of MySQL commands to further ensure that the installation is a success. Check out and follow the commands as pictured below. User account is root and password depends on what you have entered previously during your MySQL configuration.

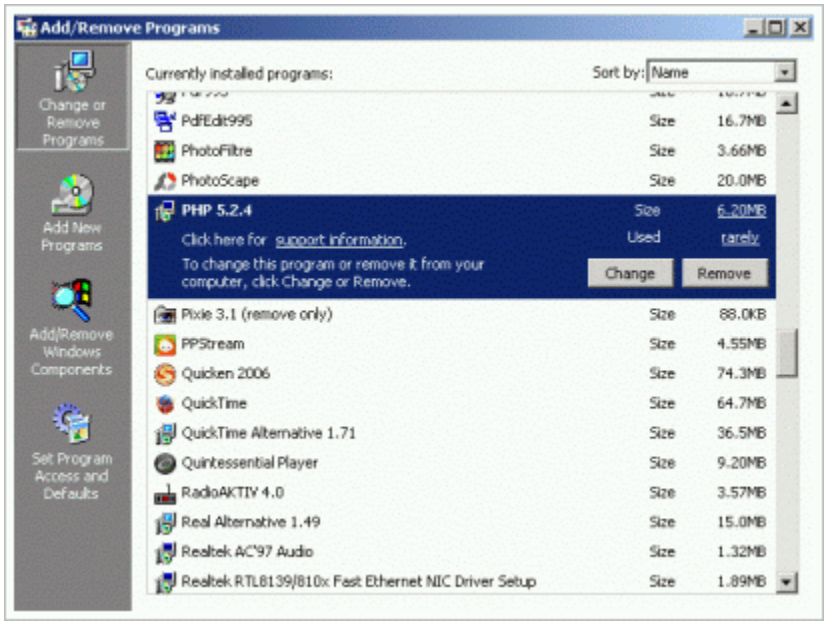


14- **IMPORTANT**: Reboot your machine! This is to ensure all MySQL system files are rss-read by Windows as environment variables.

Configure PHP 5 to Work with MySQL with MySQL PHP Extension

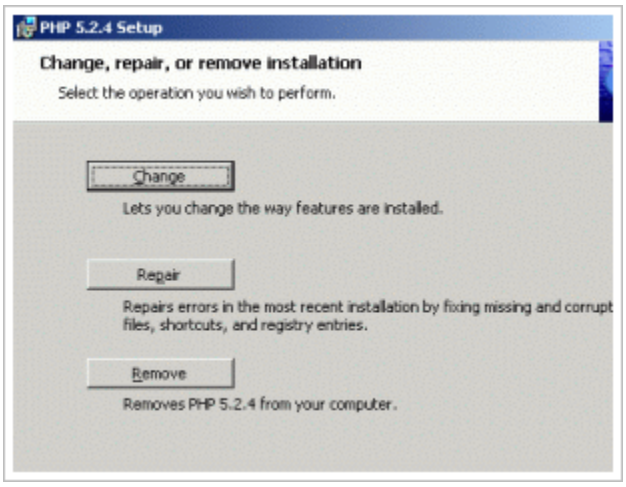
Previously, we have installed PHP with minimal modules / extension. To add MySQL support to PHP, you need to change your PHP installation – by adding the MySQL extension on top of your PHP installation. Please make sure that your original PHP 5 MSI installer still remains at its original place .

1- Open the ***Add / Remove Programs*** console via Windows Control Panel. Find the**PHP 5.x.x entry** and click "*Change* ".

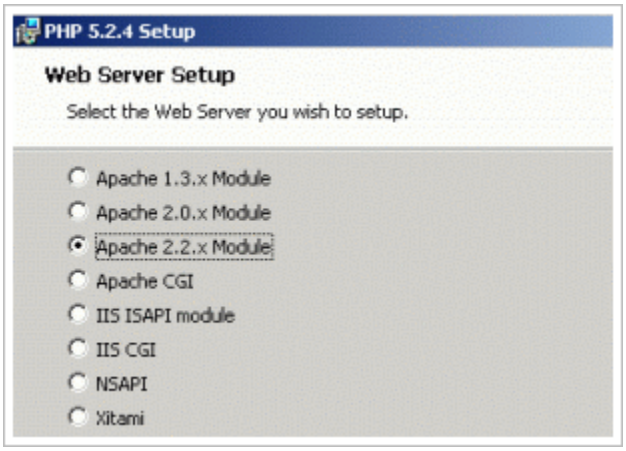


2- Click "*Next* " once you are prompted the Welcome page.

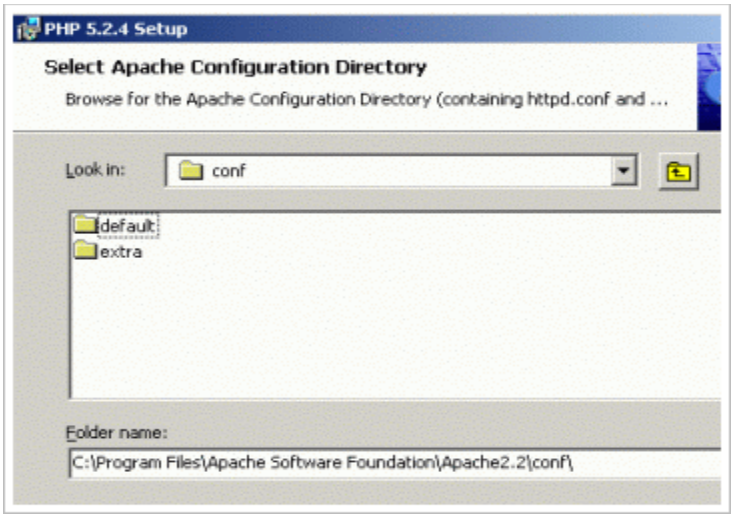
3- Click the "*Change* " button to proceed.

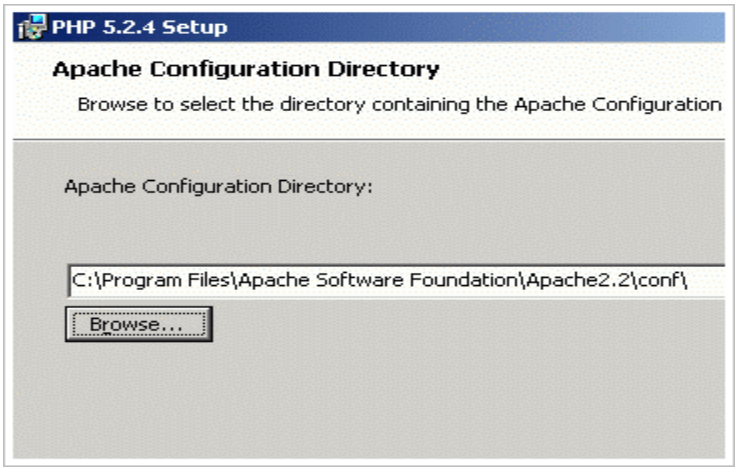


4- Select **Apache 2.2.x** as shown in the picture below. Click "*Next* " once again.

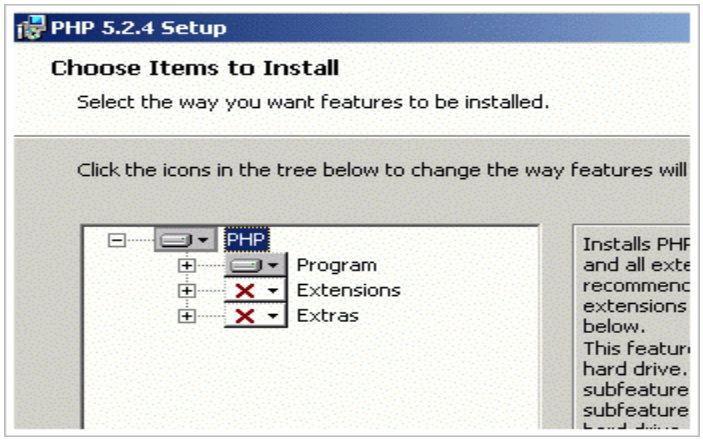


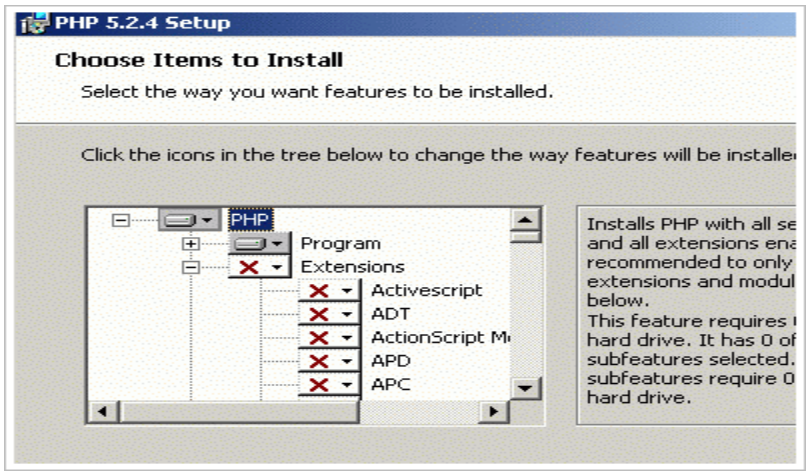
5- Select your Apache configuration directory (conf) – the directory where your httpd.conf resides. Click "*Next* " once done.



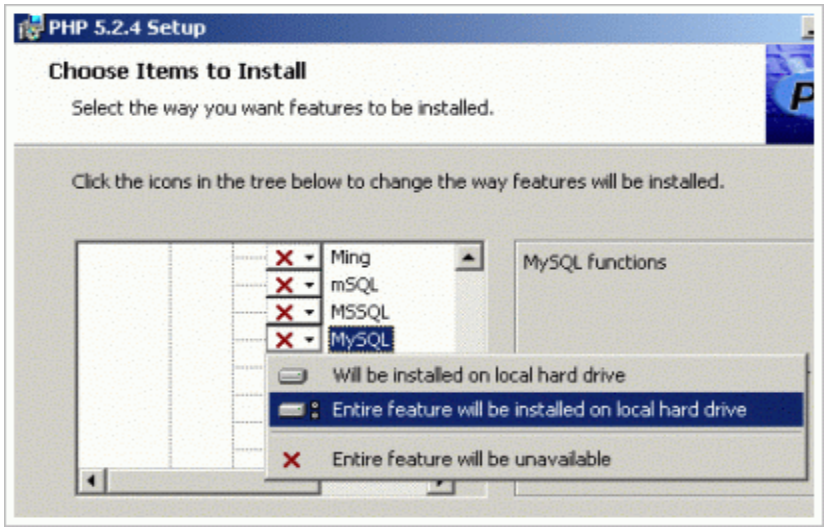


6- On the "**Choose items to install**" screen, click on the plus (+) icon next to Extensions to expand the list.

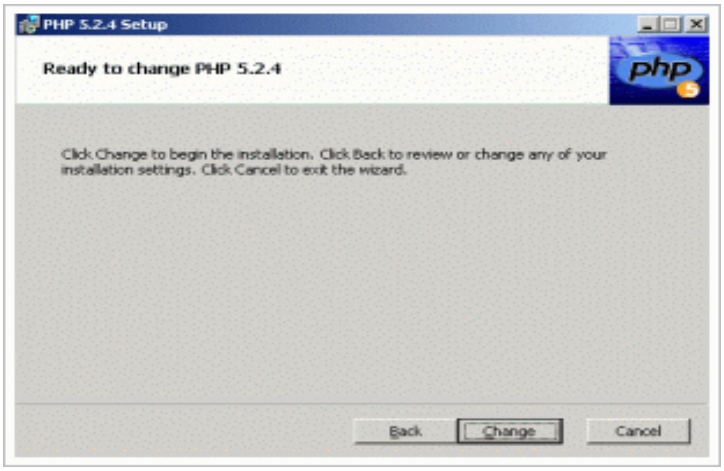




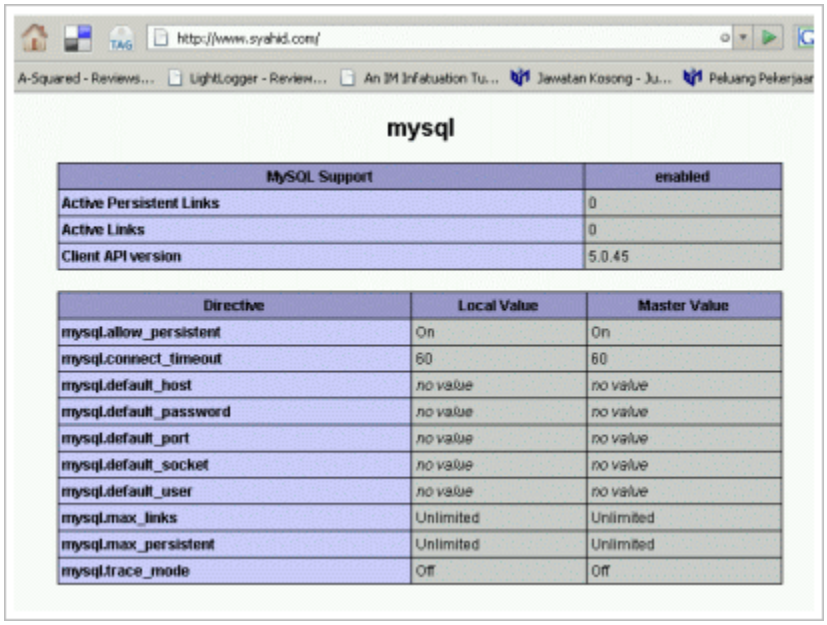
7- Select on the "*X*" next to "**MySQL**" and **select "Entire feature will be installed on local hard drive"**. Click "*Next*" again.



8- Click the "*Change*" button to save all the PHP configuration changes.



9- Finally, **restart your Apache 2.2 web server!** You can check out that the MySQL extension support for PHP was successfully installed by checking out the info.php / index.php page that was created before.



Congratulations! Give yourself a pat on the back to finally manage it here. Now you can run almost many web applications that depend on Apache 2.2, PHP 5 with MySQL 5 database support. If any of those apps complain about any missing extensions, remember that you can always **reconfigure PHP by following the steps above**.

PROGRAM -2

Aim: Write an HTML page including any required Javascript that takes a number from one text field in the range of 0 to 999 and shows it in another text field in words. If the number is out of range , it should be show " out of range" and if it is not a number it should show "not a number " message in th result box**.**

Program:

```
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
<title>convert Number to word</title>
<script>
function Convert() {

        var rVal=document.getElementById('rupees').value;
        rVal=Math.floor(rVal);


        if(Number(rVal) >=0){

        }
        else{
                alert('not a number');
                return false;
        }
        if(Number(rVal)==0){
                document.getElementById('wordValue').innerHTML=rup+"+' Zero Only';
                return false;
        }
        if(actualNumber.length>3){
                alert('Number out of Range');
                return false;
        }

var numWords=["Zero", " One", " Two", " Three", " Four", " Five", " Six", " Seven", " Eight", "
Nine"];
var numPlace=['Ten', ' Eleven', ' Twelve', ' Thirteen', ' Fourteen', ' Fifteen', ' Sixteen', ' Seventeen',
' Eighteen', ' Nineteen'];
var tPlace=['dummy', ' Ten', ' Twenty', ' Thirty', ' Forty', ' Fifty', ' Sixty', ' Seventy', ' Eighty', '
Ninety' ];

        var numWordsLength=rupRev.length;
        var totalWords="";
        var numtoWords=new Array();
        var finalWord="";
```

```
j=0;
for(i=0; i<numWordsLength; i++){
        switch(i)
        {
                case 1:
            CTen();
            break;
        case 2:
            if(actualNumber[i]==0) {
                numtoWords[j]='';
            }
            else if(actualNumber[i-1]!=0 && actualNumber[i-2]!=0) {
                numtoWords[j]=numWords[actualNumber[i]]+' Hundred and';
            }
            else {
                numtoWords[j]=numWords[actualNumber[i]]+' Hundred';
            }
            break;
        case 3:
            if(actualNumber[i]==0 || actualNumber[i+1]==1) {
                numtoWords[j]='';
            }
            else {
                numtoWords[j]=numWords[actualNumber[i]];
            }
            if(actualNumber[i+1] != 0 || actualNumber[i] > 0){
                numtoWords[j]=numtoWords[j]+" Thousand";
            }
            break;
        case 4:
            CTen();
            break;

        default:
            break;
        }
        j++;
}

function CTen() {
        if(actualNumber[i]==0) {
            numtoWords[j]='';
        }
        else if(actualNumber[i]==1) {
            numtoWords[j]=numPlace[actualNumber[i-1]];
        }
```

```
                else {
                        numtoWords[j]=tPlace[actualNumber[i]];
                }
        }
        numtoWords.reverse();
        for(i=0; i<numtoWords.length; i++) {
                finalWord+=numtoWords[i];
        }
        document.getElementById('wordValue').innerHTML=rup+'  '+finalWord;
}

</script>
</head>

<body>
Enter number:<input type="text" name="rupees" id="rupees" />

<input type="button" name="sr1" value="Click Here" onClick="Convert()"/>

<div id="wordValue"></div>
</body>
</html>
```

VIVA VOICE QUESTIONS:

1. What is JavaScript?
   Ans: JavaScript is a scripting language most often used for client-side web development.

2. What is the difference between JavaScript and Jscript?
   Ans: Both JavaScript and Jscript are almost similar. JavaScript was developed by Netscape. Microsoft reverse engineered JavaScript and called it JScript.

3. What is a prompt box?
   Ans: A prompt box is a box which allows the user to enter input by providing a text box. Label and box will be provided to enter the text or number.

4. What is 'this' keyword in JavaScript?
   Ans: 'This' keyword is used to point at the current object in the code. For instance: If the code is presently at an object created by the help of the 'new' keyword, then 'this' keyword will point to the object being created.

5. Explain how can you submit a form using JavaScript?
   Ans: To submit a form using JavaScript use document.form[0].submit();
   document.form[0].submit();

PROGRAM -3

Aim: Write an HTML page that has one input which can take multi-line text and a submit button. Once the user clicks the submit button, it should show the number of characters, words in the text entered using an alert message.

Program:

```
<!doctype html>
<html>
<head>
<meta charset="utf-8">
<title>count character</title>
<script type="text/javascript">
        function TextCount()
        {
         var t=document.forms["frm"]["txt"].value;
          t=t.split(" ").join("");
                alert(t.length);
        }
</script>
</head>
<body>
<form action="" method="post" name="frm" onSubmit="TextCount();">
<textarea cols="100" rows="5" name="txt"></textarea></br>
<input type="submit" value="Count"/>
</form>
</body>
</html>
```

VIVA VOICE QUESTIONS:

1. What do mean by NULL in Javascript?
   Ans: The NULL value is used to represent no value or no object. It implies no object or null string, no valid boolean value, no number and no array object.

2. What are all the types of Pop up boxes available in JavaScript?
   Ans: Alert
   Confirm and
   Prompt

3. What are JavaScript Cookies?
   Ans: Cookies are the small test files stored in a computer and it gets created when the user visits the websites to store information that they need. Example could be User Name details and shopping cart information from the previous visits.

4. What are the different types of errors in JavaScript?
   Ans: There are three types of errors:
   Load time errors: Errors which come up when loading a web page like improper syntax errors are known as Load time errors and it generates the errors dynamically.
   Run time errors: Errors that come due to misuse of the command inside the HTML language.
   Logical Errors: These are the errors that occur due to the bad logic performed on a function which is having different operation.

5. What is the use of Push method in JavaScript?
   Ans: The push method is used to add or append one or more elements to the end of an Array. Using this method, we can append multiple elements by passing multiple arguments

PROGRAM -4

Aim: Write an Html page that contains a selection box with a list of 5 countries. When the user selects a country, its capital should be printed next to the list. Add CSS to customize the Properties of the font of the capital (Color, bold and font size).

Program:

```
<html>
<title>navigation</title>
<body>
<FORM NAME="nav"><DIV>
<SELECT NAME="SelectURL"
onChange="document.location.href=document.nav.SelectURL.options[document.nav.Sel
ectURL.selectedIndex].value">
<OPTION VALUE="" SELECTED>Please select an item:
<OPTION VALUE="one.html">
India
<OPTION VALUE="two.html">
United Kingdom
<OPTION VALUE="three.html">
Malaysia
<OPTION VALUE="four.html">
Japan
<OPTION VALUE="five.html">
China
</SELECT><DIV>
</FORM>
</body>
</html>
```

One.html:

```
<html>
<style>
p {
    color: green;
 font-size:250%;
 font-weight: bold;
}
</style>
<body>
<p>NEW DELHI</p>
</body>
</html>
```

Two.html:

```
<html>
<style>
p {
color: red;
font-size:250%;
font-weight: bold;
}
</style>
<body>
<p> LONDON</p>
</body>
</html>
```

Three.html:

```
<html>
<style>
p {
   color: pink;
 font-size:250%;
 font-weight: bold;
}
</style>
<body>
<p>KUALA LUMPER</p>
</body>
</html>
```

Four.html:

```
<html>
<style>
p {
   color: blue;
 font-size:250%;
 font-weight: bold;
}
</style>
<body>
<p>TOKYO</p>
</body>
</html>
```

Five.html:

```
<html>
<style>
```

```
p {
    color: blue;
 font-size:250%;
 font-weight: bold;
}
</style>
<body>
<p>BEIJING</p>
</body>
</html>
```

VIVA VOICE QUESTIONS:

1. **What is image map?**

   Ans: Image map lets you link to many different web pages using a single image. You can define shapes in images that you want to make part of an image mapping.

2. **How do you create links to sections within the same page?**

   Ans: Links can be created using the <a> tag, with referencing through the use of the number (#) symbol. For example, you can have one line as BACK TO TOP, which would result in the words “BACK TO TOP” appearing on the webpage and links to a bookmark named topmost. You then create a separate tag command like <a name=”topmost”> somewhere on the top of the same webpage so that the user will be linked to that spot when he clicked on “BACK TO TOP”.

3. **What are style sheets?**

   Ans: Style sheets enable you to build consistent, transportable, and well-defined style templates. These templates can be linked to several different web page s, making it easy to maintain and change the look and feel of all the web pages within a site.

4. **How do you create a link that will connect to another web page when clicked?**

   Ans: To create hyperlinks, or links that connect to another web page, use the href tag. The general format for this is: text
   Replace “site” with the actual page url that is supposed to be linked to when the text is clicked.

5. **What is the relationship between the border and rule attributes?**

   Ans: Default cell borders, with a thickness of 1 pixel, are automatically added between cells if the border attribute is set to a nonzero value. Likewise, If the border attribute is not included, a default 1-pixel border appears if the rules attribute is added to the <table> tag.

PROGRAM -5

Aim: Create an XML document that contains 10 users information. Write a java program which takes user id as input and returns the user details by taking the user information from the XML document using

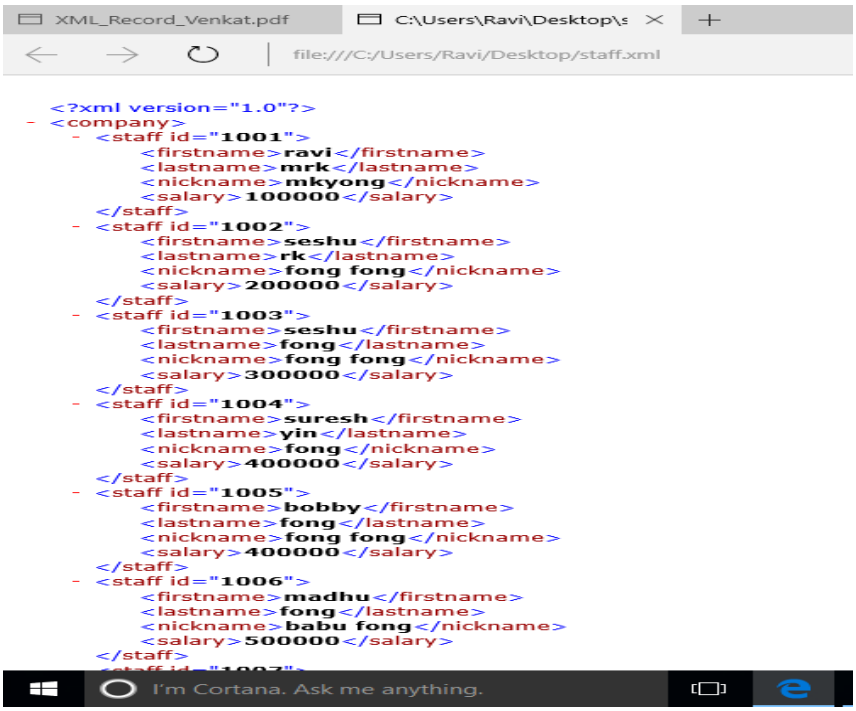
a) DOM parser b) SAX parser

Program:

```
<?xml version="1.0"?>
<company>
	<staff id="1001">
		<firstname>ravi</firstname>
		<lastname>mrk</lastname>
		<nickname>mkyong</nickname>
		<salary>100000</salary>
	</staff>
	<staff id="1002">
		<firstname>seshu</firstname>
		<lastname>rk</lastname>
		<nickname>fong fong</nickname>
		<salary>200000</salary>
	</staff>
	<staff id="1003">
		<firstname>seshu</firstname>
		<lastname>fong</lastname>
		<nickname>fong fong</nickname>
		<salary>300000</salary>
	</staff>
	<staff id="1004">
		<firstname>suresh</firstname>
		<lastname>yin</lastname>
		<nickname>fong</nickname>
		<salary>400000</salary>
	</staff>
	<staff id="1005">
		<firstname>bobby</firstname>
		<lastname>fong</lastname>
		<nickname>fong fong</nickname>
		<salary>400000</salary>
	</staff>
	<staff id="1006">
		<firstname>madhu</firstname>
		<lastname>fong</lastname>
		<nickname>babu fong</nickname>
		<salary>500000</salary>
```

```
        </staff>
        <staff id="1007">
                <firstname>babu</firstname>
                <lastname>yinong</lastname>
                <nickname>fon</nickname>
                <salary>600000</salary>
        </staff>
        <staff id="1008">
                <firstname>krish</firstname>
                <lastname>yin fong</lastname>
                <nickname>fong fong</nickname>
                <salary>700000</salary>
        </staff>
        <staff id="1009">
                <firstname>brammi</firstname>
                <lastname>yin fong</lastname>
                <nickname>fong fong</nickname>
                <salary>800000</salary>
        </staff>
        <staff id="1010">
                <firstname>praveen</firstname>
                <lastname>yin fong</lastname>
                <nickname>fong fong</nickname>
                <salary>900000</salary>
        </staff>
</company>
```

Output:



DOM Parser:

```
<html>
<body bgcolor="black">
<script type="text/javascript">
function loadXMLDoc(docname)
{
if(window.XMLHttpRequest)
{
xhttp = new XMLHttpRequest();
}
else
{
xhttp = new ActiveXObject("Microsoft.XMLHTTP");
}
xhttp.open("GET", docname, false);
xhttp.send();
return xhttp.responseXML;
}
function dot()
{
var val = document.sort.search_text.value;
try
{
o = loadXMLDoc("staff.xml");
y = o.getElementsByTagName("staff");
document.write("<table border = 1 align = center bgcolor = lightblue cellpadding
```

```
= 15%><tr>");

document.write("<th>firstname</th><th>lastname</th><th>nickname</th><th>salary
</th></tr>");
firstname = new Array(20);
var xy = 0;
lastname = new Array(20);
nickname = new Array(20);
salary = new Array(20);
for(i = 0; i < y.length; i++)
{
firstname[i] = o.getElementsByTagName("firstname")[i].childNodes[0].nodeValue;
 lastname[i]=o.getElementsByTagName("lastname")[i].childNodes[0].nodeValue;
 nickname[i] = o.getElementsByTagName("nickname")[i].childNodes[0].nodeValue;
salary[i] = o.getElementsByTagName("salary")[i].childNodes[0].nodeValue;
if(firstname[i] == val || lastname[i] == val || nickname[i] == val || salary[i] == val)
{
xy++;
document.write("<tr>");
document.write("<td>"+firstname[i]+"</td><td>");
document.write(lastname[i]+"</td><td>");
document.write(nickname[i]+"</td><td>");
document.write(salary[i]+"</td>");
document.write("</tr>");
}
}
if(xy == 0)
{
document.write("<h1>search not found</h1>");
}
document.write("</table>");
}
catch(e)
{
alert(e.message);
}
}
</script>
<form name="sort" action="" method="post" onsubmit="return dot()">
<input type="textbox" name="search_text" value="Enter the text" ><br />
<input type="submit" name="submit" value="search" >
</form>
</body>
</html>
```

Sax parser:

```
import java.io.*;
import javax.xml.parsers.*;
import org.w3c.dom.*;
public class SAXParser
{
public static void main(String args[])throws IOException
{
try
{
String file = args[0];
DocumentBuilderFactory fact = DocumentBuilderFactory.newInstance();
DocumentBuilder build = fact.newDocumentBuilder();
Document doc = build.parse(new File(file));
Element root = doc.getDocumentElement();
NodeList sroot = root.getElementsByTagName("staff");
System.out.println(root.getTagName());
Element r = (Element) sroot.item(0);
System.out.println(r.getNodeName());
NodeList book_tags = r.getElementsByTagName("username");
Element s = (Element) book_tags.item(0);
System.out.println(s.getFirstChild().getNodeValue());
}
catch(Exception e)
{
e.printStackTrace();
```

```
}
}
}
```

VIVA VOICE QUESTIONS:

1. What is XML?
   Ans: XML stands for *eXtensible Markup Language*. It is a simple and flexible markup language. It is known as universal language for data on the web because XML documents can be created and used in any language. It is universal standard for information interchange.XML technology facilitates you to create your own markup language.

2. What are the benefits of XML?
   Ans: These are the main benefits of using XML.
   Simplicity: Very easy to read and understand the information coded in XML.
   Openness: It is a W3C standard, endorsed by software industry market leaders.
   Extensibility: It is extensible because it has no fixed set of tags. You can define them as you need.
   Self-descriptive: XML documents do not need special schema set-up like traditional databases to store data. XML documents can be stored without such definitions, because they contain metadata in the form of tags and attributes.
   Scalable: XML is not in binary format so you can create and edit files with anything and it is also easy to debug.
   Fast access: XML documents are arranged in hierarchical form so it is comparatively faster.

3. What is XSNL?

Ans: XSNL is an *XML search neutral language*. This language acts between the meta search interface and targeted system.

4. What is DTD?
   Ans: DTD stands for *Document Type Definition*. It defines a leading building block of an XML document.
   It defines:
   Names of elements
   How and where they can be used
   Element attributes
   Proper nesting

VIVA VOICE QUESTIONS:

1. What is PHP?
   Ans: PHP is a server side scripting language commonly used for web applications. PHP has many frameworks and cms for creating websites. Even a non technical person can create sites using its CMS.WordPress, osCommerce are the famus CMS of php.It is also an object oriented programming language like java, C-sharp etc. It is very easy for learning

2. What's the difference between include and require?
   Ans: If the file is not found by require(), it will cause a fatal error and halt the execution of the script. If the file is not found by include(), a warning will be issued, but execution will continue.

3. What is the use of "echo" in php?
   Ans: It is used to print a data in the webpage, Example: <?php echo 'Car insurance'; ?> , The following code print the text in the webpage

4. What is Ajax?
   Ans: Ajax is abbreviated as Asynchronous Javascript and XML. It is new technique used to create better, faster and more interactive web systems or applications. Ajax uses asynchronous data transfer between the Browser and the web server. This technique is used to make internet faster and user friendly. It is not a programming language.

5. What are the advantages of Ajax?
   Ans: Following are the advantages of Ajax:

   Bandwidth utilization – It saves memory when the data is fetched from the same page.
   More interactive
   Speeder retrieval of data

6. Which are the two methods used for cross domain Ajax calls?
   Ans: There are two methods used to transfer data between the two more security domains:
   CROS – Cross Origin Resource Sharing and it works with the HTTP web browsers
   JSONP – JSON with padding which works with the HTTP GET and on legacy browsers

iv) aim: A simple calculator web application that takes two arguments and an operator from an html page and returns the result page with the operation performed on the operands.

Program:

```
<html>

<head></head>

<body>

<h3>Simple Calculator</h3>

<br/>

<form Name="calc">

<table border=2>

<tr>

<td colspan=4><input type=text Name="display"></td>

</tr>
```

```
<tr>
<td><input type=button value="0" OnClick="calc.display.value+='0'"></td>
<td><input type=button value="1" OnClick="calc.display.value+='1'"></td>
<td><input type=button value="2" OnClick="calc.display.value+='2'"></td>
<td><input type=button value="+" OnClick="calc.display.value+='+'"></td>
</tr>
<tr>
<td><input type=button value="3" OnClick="calc.display.value+='3'"></td>
<td><input type=button value="4" OnClick="calc.display.value+='4'"></td>
<td><input type=button value="5" OnClick="calc.display.value+='5'"></td>
<td><input type=button value="-" OnClick="calc.display.value+='-'"></td>
</tr>
<tr>
<td><input type=button value="6" OnClick="calc.display.value+='6'"></td>
<td><input type=button value="7" OnClick="calc.display.value+='7'"></td>
<td><input type=button value="8" OnClick="calc.display.value+='8'"></td>
<td><input type=button value="x" OnClick="calc.display.value+='*'"></td>
</tr>
<tr>
<td><input type=button value="9" OnClick="calc.display.value+='9'"></td>
<td><input type=button value="C" OnClick="calc.display.value=''"></td>
<td><input type=button value="=" OnClick="calc.display.value=eval(calc.display.value)"></td>
<td><input type=button value="/" OnClick="calc.display.value+='/'"></td>
</tr>
</table>
```

```
</form>

</body>

</html>
```

VIVA VOICE QUESTIONS:

1. **What hierarchy is being followed when in style sheets?**

   Ans: Inline style takes priority over embedded style sheets.
   Embedded style take priority over external style sheets.
   If a single selector includes three different style definitions, the definition that is closest to the actual tag gets the priority.

2. **What are new Media Elements in HTML5?**

   Ans: Following are the New Media Elements are present in HTML5:

   1. <audio> tag : For playing audio.
   2. <video> tag : For playing video.
   3. <source> tag : For media resources for media elements.
   4. <embed> tag : For embedded content.
   5. <track> tag : For text tracks used in media players.

3. **How to insert Javascript in HTML?**

   Ans: We can insert JavaScript in HTML using <Script tag>. JavaScript can be enclosed in <script type = text/javascript> and ending with </script>.

4. **The differences between HTML and XHTML are:**
   1. HTML is application of Standard Generalized Markup Language(SGML) whereas XML is application of Extensible Markup Language(XML).

2. HTML is a static Web Page whereas XHTML is dynamic Web Page.
3. HTML allows programmer to perform changes in the tags and use attribute minimization whereas XHTML when user need a new markup tag then user can define it in this.
4. HTML is about displaying information whereas XHTML is about describing the information.

5. What are life cycle methods of a servlet?

Ans: Servlet Life Cycle consists of three methods:
public void init(ServletConfig config) – This method is used by container to initialize the servlet, this method is invoked only once in the lifecycle of servlet.
public void service(ServletRequest request, ServletResponse response) – This method is called once for every request, container can't invoke service() method until unless init() method is executed.
public void destroy() – This method is invoked once when servlet is unloaded from memory.

vii) Aim: A web application that takes name and age from an html page . if the age is less than 18 it should send a page with hello <name> you are not authorized to visit the site " message where <name> should be replaced with the entered name .otherwise it should send welcome <name> to this message.

Program:

Login.html:

```
<html>
<head>
<title>Registration page</title>
</head>
<body bgcolor=pink>

<form METHOD="POST" ACTION="LoginSrv">
Username<input type="text" name="userName"><br>

age:<input type="text" name="age"> <br>
<input type="submit" value="submit">

</form>
</body>
</html>
```

LoginSrv.java:

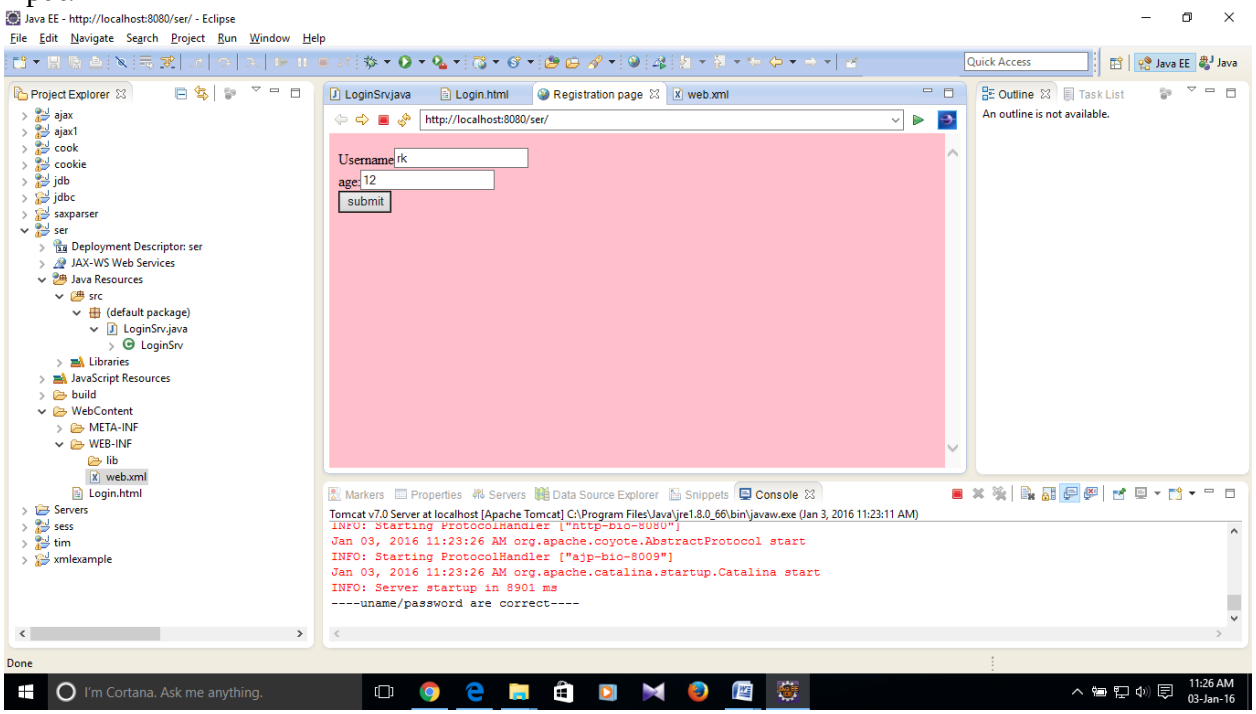
```
import java.io.*;
import javax.servlet.*;
```

```
import javax.servlet.http.*;
public class LoginSrv extends HttpServlet
{
	/**
	 *
	 */
	private static final long serialVersionUID = 1L;

	public void service(HttpServletRequest request,HttpServletResponse response) throws
ServletException,IOException
	{
		PrintWriter out=response.getWriter();
		String vuserName;
		int vage=0;
		vuserName=request.getParameter("userName");


		try
		{
			String ageStr=request.getParameter("age");
			vage=Integer.parseInt(ageStr);
		}
		catch(NumberFormatException nfe) { }
		//code to check uname/password ,depends on the application
		if(vage>=18)
		{

			System.out.println("----uname/password are correct----");

			out.println("<html>");
			out.println("<head><title>LOGIN FORM</title></head>");
			out.println("<body>");
			out.println("Welcome  Mr." + "  " +  vuserName + "  " );

			out.println("</body>");
			out.println("</html>");

		}
		else
		{
			out.println("hello" +" " + vuserName+  "you are not authorized to visit the
site ");
		}
	}
}
```

Web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://java.sun.com/xml/ns/javaee"
xmlns:web="http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"
id="WebApp_ID" version="3.0">
  <display-name>sess</display-name>
  <welcome-file-list>
    <welcome-file>Login.html</welcome-file>

  </welcome-file-list>

      <description>
            THIS IS MY Hidden1 SERVLET
    </description>
    <servlet>
          <servlet-name>sLoginSrv</servlet-name>
          <servlet-class>LoginSrv</servlet-class>
    </servlet>

    <servlet-mapping>
          <servlet-name>sLoginSrv</servlet-name>
          <url-pattern>/LoginSrv</url-pattern>
    </servlet-mapping>

</web-app>
```

Input:



VIVA VOICE QUESTIONS:

1. What is the difference between GET and POST method?

   Ans: GET is a safe method (idempotent) where POST is non-idempotent method.
   We can send limited data with GET method and it's sent in the header request URL whereas we can send large amount of data with POST because it's part of the body.
   GET method is not secure because data is exposed in the URL and we can easily bookmark it and send similar request again, POST is secure because data is sent in request body and we can't bookmark it.
   GET is the default HTTP method whereas we need to specify method as POST to send request with POST method. Hyperlinks in a page use GET method.

2. What is a servlet?
   Ans: Java Servlet is server side technologies to extend the capability of web servers by providing support for dynamic response and data persistence.

3. What is difference between ServletConfig and ServletContext?
   Ans:Some of the differences between ServletConfig and ServletContext are:
   ServletConfig is a unique object per servlet whereas ServletContext is a unique object for complete application.
   ServletConfig is used to provide init parameters to the servlet whereas ServletContext is used to provide application level init parameters that all other servlets can use.

We can't set attributes in ServletConfig object whereas we can set attributes in ServletContext that other servlets can use in their implementation.

4. What is difference between PrintWriter and ServletOutputStream?
   Ans: PrintWriter is a character-stream class whereas ServletOutputStream is a byte-stream class. We can use PrintWriter to write character based information such as character array and String to the response whereas we can use ServletOutputStream to write byte array data to the response.
   We can use ServletResponse getWriter() to get the PrintWriter instance whereas we can use ServletResponse getOutputStream() method to get the ServletOutputStream object reference.

ADDITIONAL PROGRAMS

LAB EXCERCISE-1

USE CASE DIAGRAM

AIM:

To develop use case diagram Passport Automation System

ABOUT USE CASE DIAGRAM:

To model a system the most important aspect is to capture the dynamic behaviour. To clarify a bit in details, dynamic behaviour means the behaviour of the system when it is running /operating. So only static behaviour is not sufficient to model a system rather dynamic behaviour is more important than static behaviour. In UML there are five diagrams available to model dynamic nature and use case diagram is one of them. Now as we have to discuss that the use case diagram is dynamic in nature there should be some internal or external factors for making the interaction.

Purpose:

The purpose of use case diagram is to capture the dynamic aspect of a system. But this definition is too generic to describe the purpose. Because other four diagrams (activity, sequence, collaboration and Statechart) are also having the same purpose. So we will look into some

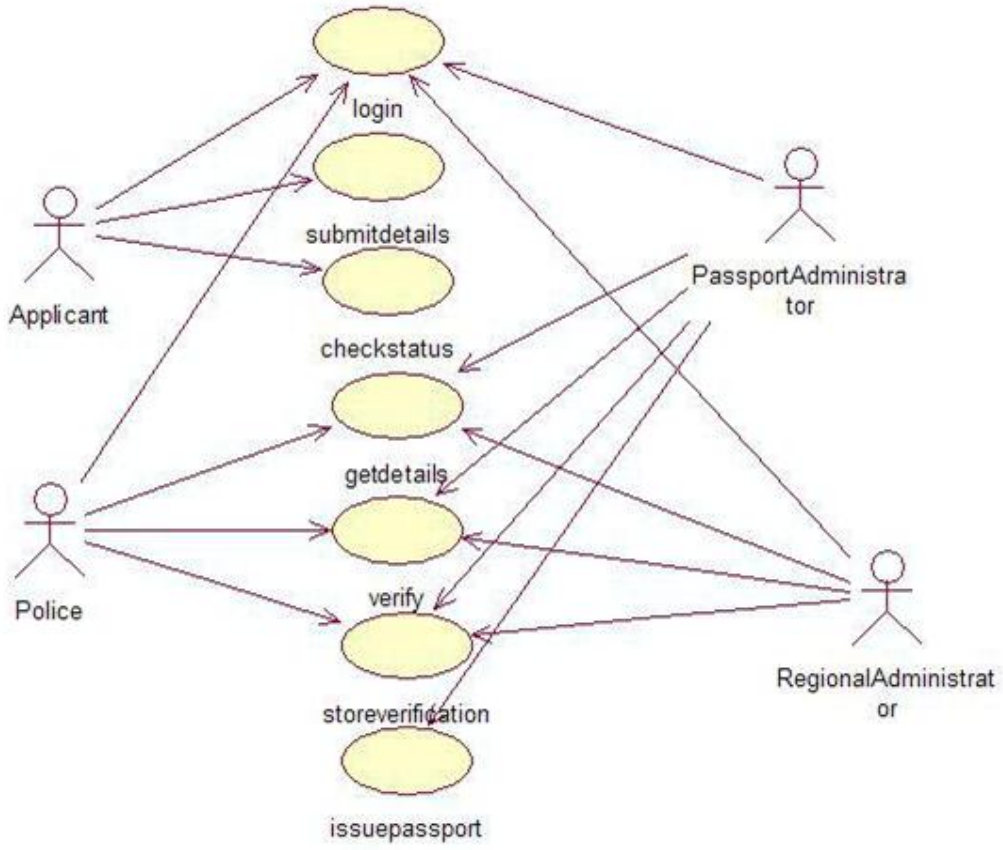
specific purpose which will distinguish it from other four diagrams. Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. So when a system is analyzed to gather its functionalities use cases are prepared and actors are identified.

So in brief, the purposes of use case diagrams can be as follows:

- Used to gather requirements of a system.
- Used to get an outside view of a system.
- Identify external and internal factors influencing the system.
- Show the interacting among the requirements are actors.

USECASE DIAGRAM PASSPORT AUTOMATION SYSTEM

a. The actors in use case diagram are Applicant, regional administrator, database, passport Administrator, Police.
b. The use cases are Login, givedetails, logout, collectdetails, verification, issue.
c. The actors use the use case are denoted by the arrow
d. The login use case checks the username and password for applicant, regional administrator, passport administrator and police.
e. The submit details use case is used by the applicant for submitting his details
    f. The check status use case is used by the applicant for checking the status of the application process.
    g. The get details, verify and store verification use case is used by passport administrator, regional administrator, and police.
    h. The details use case is used for getting the details form the database for verification
2. The verify use case is used for verifying the details by comparing the data in the database.
    a. The store verification use case is to update the data in the database
    b. And finally the issue passport use case is used by the passport administrator for issuing passport who's application verified successfully by all the actor .



VIVA VOICE QUESTIONS:

1. What is use case diagram?

Ans. Use case diagram is relationship among use cases and actors with in a system.

2. What is an actor?

Ans. An actor represents a coherent set of roles.

3. What is use case?

Ans. Use case describes a set of sequences

4. What are the contents of use case diagram?

Ans. Use cases, actors, dependency, generalization, and association relationships.

5. What is the use case name prefixed by the name of the package in which that usecase lives?

Ans. A path name is the use case name prefixed by the name of the package.

6. How can you model the content of a system?

Ans. In uml you can model the content of a system with a use case diagram.

7. Name the three types of relationships in a use case diagram.

Ans. Communication, Uses, extends

LAB EXCERCISE-2

CLASS DIAGRAM

AIM:

To develop class diagram Passport Automation System

ABOUT CLASS DIAGRAM:

The class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing and documenting different aspects of a system but also for constructing executable code of the software application. The class diagram

describes the attributes and operations of a class and also the constraints imposed on the system. The class diagram shows a collection of classes, interfaces, associations, collaborations and constraints. It is also known as a structural diagram.

Purpose:

The purpose of the class diagram is to model the static view of an application. The class diagrams are the only diagrams which can be directly mapped with object oriented languages and thus widely used at the time of construction. The UML diagrams like activity diagram, sequence diagram can only give the sequence flow of the application but class diagram is a bit different. So it is the most popular UML diagram in the coder community. So the purpose of the class diagram can be summarized as:

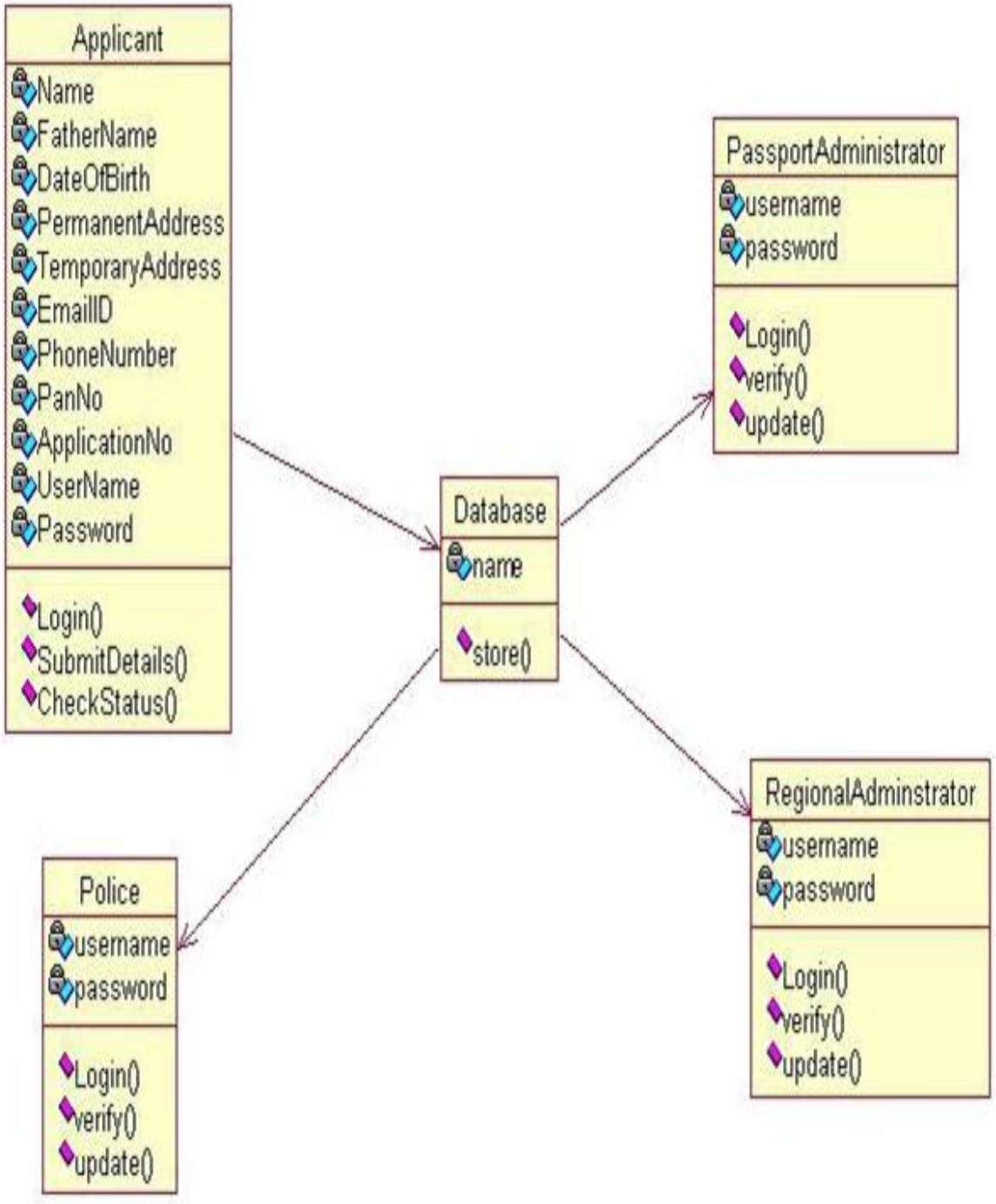
- Analysis and design of the static view of an application.
- Describe responsibilities of a system.
- Base for component and deployment diagrams.
- Forward and reverse engineering.

Contents:

Class diagrams commonly contain the following things

- Classes.
- Interfaces.
- Collaborations.
- Dependency, generalization and association relationships.

CLASS DIAGRAM FOR PASSPORT AUTOMATIONSYSTEM



DOCUMENTATION OF CLASS DIAGRAM

a. **APPLICANT**-The applicant has attribute such as name and password and operations are login, givedetails and logout. The applicant login and fill the details that are required for applying the passport .After applying the person can view the status of the passport verification process
b. **THE DATABASE**-The database has attributed such as name and operation is store. The purpose is to store the data.
c. **REGIONAL ADMINISTRATOR**- The regional administrator has attribute such as name and operation are get details, verify details and send. The regional administrator get the details form database and verify with their database
d. **PASSPORT ADMINISTRATOR**-The passport administrator has attributed such as name and operation are get details, verify details and issue. The passport administrator get the details form database and verify with their database , update the verification and issue the passport
e. **THE POLICE**-The police has attribute such as name and operation are get details, verify details and send. The police get the details form database and verify with their database , update the verification in the database

VIVA VOICE QUESTIONS:

1. What is a class?

Ans. A class is a description of a set of objects.

2. What are responsibilities?

Ans. A responsibilities is a contract or an obligation of a class

3. What is class diagram?

Ans.A class diagram is a diagram that shows a set of classes,interfaces and collaborations and their relationships.

4. What is a name?

Ans. A name is a textual string

5. How many relationships are there?

Ans. In object oriented modeling three kinds of relationships are included.

6. What is an interface?

Ans. Interface defines a set of actions.

7. What is responsibility?

Ans. A responsibility is a contract or an obligation of a class

8. What are the relationships usually visualized in class diagrams?

Ans. Dependencies, generalization, and association

3.What is PHP?

- PHP is an acronym for "PHP: Hypertext Preprocessor"
- PHP is a widely-used, open source scripting language
- PHP scripts are executed on the server

- PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages.
- PHP is a widely-used, free, and efficient alternative to competitors such as Microsoft's ASP.

What Can PHP Do?

- PHP can generate dynamic page content
- PHP can create, open, read, write, delete, and close files on the server
- PHP can collect form data
- PHP can send and receive cookies
- PHP can add, delete, modify data in your database
- PHP can be used to control user-access
- PHP can encrypt data

With PHP you are not limited to output HTML. You can output images, PDF files, and even Flash movies. You can also output any text, such as XHTML and XML.

Why PHP?

- PHP runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
- PHP is compatible with almost all servers used today (Apache, IIS, etc.)
- PHP supports a wide range of databases
- PHP is free. Download it from the official PHP resource: www.php.net
- PHP is easy to learn and runs efficiently on the server side

Basic PHP Syntax

A PHP script can be placed anywhere in the document.

A PHP script starts with **<?php** and ends with **?>**:

```
<?php
// PHP code goes here
?>
```

The default file extension for PHP files is ".php".

PHP statements end with a semicolon (;).

A PHP file normally contains HTML tags, and some PHP scripting code.

PROGRAM

```
<!DOCTYPE html>
<html>
<body>

<h1>My first PHP page</h1>

<?php
echo "Hello World!";
?>

</body>
</html>
```

OUTPUT

My first PHP page

Hello World!

COMMENTS IN PHP

```
<!DOCTYPE html>
<html>
<body>

<?php
// This is a single-line comment

# This is also a single-line comment

/*
This is a multiple-lines comment block
that spans over multiple
lines
*/

// You can also use comments to leave out parts of a code line
$x = 5 /* + 15 */ + 5;
echo $x;
?>

</body>
</html>
```

10

Creating (Declaring) PHP Variables

In PHP, a variable starts with the $ sign, followed by the name of the variable:

PHP Variables

A variable can have a short name (like x and y) or a more descriptive name (age, carname, total_volume).

Rules for PHP variables:

- A variable starts with the $ sign, followed by the name of the variable
- A variable name must start with a letter or the underscore character
- A variable name cannot start with a number
- A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)
- Variable names are case-sensitive ($age and $AGE are two different variables)

Program to Display Variables

```
<!DOCTYPE html>
<html>
<body>
<?php
$txt = "Hello world!";
$x = 5;
$y = 10.5;
echo $txt;
echo "<br>";
echo $x;
echo "<br>";
echo $y;
?>
</body>
</html>
```

PROGRAM

```
<!DOCTYPE html>
<html>
<body>
<?php
$txt1 = "Learn PHP";
$txt2 = "W3Schools.com";
$x = 5;
$y = 4;
echo "<h2>" . $txt1 . "</h2>";
echo "Study PHP at " . $txt2 . "<br>";
echo $x + $y;
?>
</body>
</html>
```

OUTPUT

Learn PHP

Study PHP at W3Schools.com
9

PHP Variables Scope

In PHP, variables can be declared anywhere in the script.

The scope of a variable is the part of the script where the variable can be referenced/used.

PHP has three different variable scopes:

- local
- global
- static

Global and Local Scope

A variable declared **outside** a function has a GLOBAL SCOPE and can only be accessed outside a function:

PROGRAM

```
<?php
    $x = 5; // global scope
```

```
function myTest() {
   // using x inside this function will generate an error
   echo "<p>Variable x inside function is: $x</p>";
}
myTest();

echo "<p>Variable x outside function is: $x</p>";
?>
```

PROGRAM

```
<?php
$x = 5;
$y = 10;

function myTest() {
   global $x, $y;
   $y = $x + $y;
}

myTest();
echo $y; // outputs 15
?>
```

PROGRAM

```
<?php
$x = 5;
$y = 10;

function myTest() {
   $GLOBALS['y'] = $GLOBALS['x'] + $GLOBALS['y'];
}

myTest();
echo $y; // outputs 15
?>
```

PROGRAM

```
<?php
function myTest() {
   static $x= 0;
   echo $x;
```

```
  $x++;
}

myTest();
myTest();
myTest();
?>
```

The PHP echo Statement

The echo statement can be used with or without parentheses: echo or echo().

Display Text

The following example shows how to output text with the echo command (notice that the text can contain HTML markup):

PROGRAM

```
<?php
echo "<h2>PHP is Fun!</h2>";
echo "Hello world!<br>";
echo "I'm about to learn PHP!<br>";
echo "This ", "string ", "was ", "made ", "with multiple parameters.";
?>
```

.

PHP CASE SENSITIVITY

In PHP, all keywords (e.g. if, else, while, echo, etc.), classes, functions, and user-defined functions are NOT case-sensitive.

PROGRAM

```
<!DOCTYPE html>
<html>
<body>

<?php
ECHO "Hello World!<br>";
echo "Hello World!<br>";
EcHo "Hello World!<br>";
?>

</body>
</html>
```

PROGRAM

```
<!DOCTYPE html>
<html>
<body>

<?php
$color = "red";
echo "My car is " . $color . "<br>";
echo "My house is " . $COLOR . "<br>";
echo "My boat is " . $coLOR . "<br>";
?>

</body>
</html>
```