**Course 2 - Backend and Database Development**

**Day 15: 16 Jan 2025**

**Java**

**JavaSE** JavaEE JavaME

Java Standard Edition Java Enterprise Edition Java Micro Edition

Core Java

Basic Java

OOPs concept

Exception handling

Multithreading

Collection framework

JDBC

Standalone or desktop application

AWT (Abstract Window toolkit)

Swing or JavaFX

GUI (Graphical User interface)

JDBC

MySQL

If we created any standalone or desktop application using any technology like java or .net. To run that application in that machine we need all required software. For standalone application only one user can access that application at the same time. if we want to do any changes in that application in every machine we need to update.

JavaEE : This module help us to develop the web application.

http/https(req)----------------🡪

Client Server

🡨-----http/https(res)------------------ html 🡪 web page

Css 🡪 apply styling

JS

TypeScript

Angular framework

Server-Side technologies

JavaEE 🡪 Servet, JSP(Java Server Pages) and EJB (Enterprise Java Bean)

Asp.net

Php

Python with Django

Node Js (Server Side JavaScript)

Spring framework and Spring boot

To run Servlet, JSP and EJB program we need server. Because Servlet, JSP and EJB doesn’t contains main method. we need to compile program and deploy(run on server) the application on server.

Application point of view.

Server are mainly divided into two types.

1. Web Server : tomcat
2. Application Server : Web Logic, Jboss, WebSphere etc.

Server contains container. Container is a part of server which also known as engine which is responsible to take care the execution of servlet, jsp and ejb in both the type of server. If server is a type of web server which contains only one type of container ie web container. Web container is responsible to execute servlet and jsp application. If server is a type of server which contains many container ie web container, ejb container, jms container etc. web container is responsible to execute servlet and jsp, ejb container responsible to execute ejb. Generally in development mode we use web server, and production environment we uses application server. Application server provide many other features like resource management, thread management, connection pooling, security etc.

By default tomcat default port number is 8080

Servlet : Servlet is normal java program which help to create dynamic web page on server side.

To create servlet program java people provided sevlet package. This package contains set of classes and interface which help to create the servlet program.

import javax.servlet.\*;

Servlet interface: This interface contains 5 methods.

init initialization.it call only once

service this method contains two parameter request and response. Request is use to receive the request from a client and response is use to give response back to client base upon client request. This method call again and again whenever client send new request to server.

destroy it call at last to destroy the client thread destroy or servlet program. It call only once.

life cycle methods.

getServleInfo

getServletConfig

1st approach

public class Demo implements Servlet {

we need to override all 5 methods.

}

GenericServlet : It is a type of abstract class which internally implements Servlet interface and provided body for 4 method except service method.

2nd approach

public class Demo extends GenericServlet {

we need to override only service method mandatory

}

HttpServlet : it is a type of abstract class which internally extends GenericServlet and provided logic for service method. It also provide few extra method in the form of doXXX like doGet, doPost, doPut, doDelete etc.

3rd approach

public class Demo extends HttpServlet {

doGet or doPost which internally call service method.

}

http://localhost:9090/SimpleServletApp/Hello