Advance Java (JEE)

Servlet

JSP

**Web Application**

1. The applications which can be consume from the browser/client. And it is deployed at Server side.
2. These applications are also known as client-server application.
3. Web Applications are of 2 types
   1. Static Web Application
      1. The content of the page is same for every user.
      2. These applications can be build using HTML, CSS, JS, JQuery etc.
   2. **Dynamic web application**
      1. The content of the page is changes as per user.
      2. These application can be build using HTML, CSS, JS, Jquery, JSP, Servlet.

**Client-Server**

* + - 1. Client is a browser from there end user will access the web application via a network.
      2. Server is a hardware and software where applications/code will be deployed.
      3. Servers are of two types
         1. Web Server

It contains the EJB container and Servlet Container.

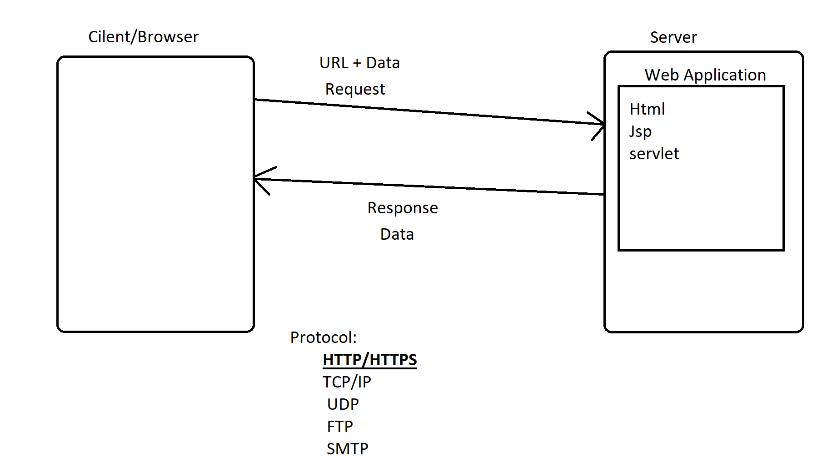
Examples, Web Spare server, JBoss server

* + - * 1. Web Application Server

It contains a servlet container.

Example, Apache Tomcat.

* + - 1. Client and server communicate with each other using Request and Response.



**Server Setup into Eclipse**

1. Download Tomcat Server ZIP file.

<https://tomcat.apache.org/download-90.cgi>

1. Extract a ZIP file into a specific location.
2. Steps to setup server into eclipse
   1. Open an eclipse workspace.
   2. Verify the perspective, it must be Java EE.
   3. Select a Servers tab at the bottom of the screen.
   4. Click On the link which is display under Server section to create new server.
   5. Expand Apache and select appropriate version of the tomcat.
   6. Click on “Next” -> Browse for the server location where you extractor the ZIP file.
   7. Server location must be a parent folder of bin, conf, log
   8. Click On “Finish”
3. To Start server, right click on the server and select “Start” option.
4. Check of “INFO: Server startup in [746] milliseconds” log to verify server started or not.

**Steps to Create Dynamic Web Project**

1. File -> New -> select **Dynamic Web Project**
2. Provide name of the Project
3. Make Sure that Target Runtime is selected to “Apache Tomcat”. It must not ne NONE
4. Click On **Next ->** Click **Next** -> **Checked the check box (Generating Deployment Descriptor web.xml)**
5. Click on **Finish**

**Project Structure**



HTML Reference Link : <https://www.w3schools.com/html/html_forms.asp>

**Servlet**

1. Servlet is a java class.
2. This class executes at server side.
3. Servlets are used to create dynamic web pages.
4. Inside servlet you can use HTML along with Java. Which is also known as HTML in Java.
5. Servlet file extension in .java.
6. Main method is not allowed in the servlet.
7. Servlet is mainly use to **get the request and Data, process a request and generate a response**.
8. In Web application every thing will be access using the URL.
9. Every Servlet has a URL. This URL must be unique so that servlets can access using this URL.
10. Servlet Object will be created and maintain by Servlet Container which is a part of tomcat server.

**Create and Use Servlet**

1. Servlets can be created by 2 ways
   1. Manual Approach
      1. Create a Java Class without Main method.
      2. The Convert Java Class into Servlet
         1. By implementing **Servlet Interface**
         2. By extending **GenericServlet abstract class**
         3. By extending **HttpServlet abstract class**
      3. Override a **service method** from the Parent Class.
      4. Write Your Business logic inside the service method.
   2. Eclipse Predefine Option.
2. Create URL for the servlet
   1. Every Servlet must have a URL.
   2. URL must be start with “/”
   3. There are 2 ways to provide URL for the servlet
      1. Using XML tags inside web.xml

<servlet>

<servlet-name>First</servlet-name>

<servlet-class>FirstServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>First</servlet-name>

<url-pattern>/my-first-servlet</url-pattern>

</servlet-mapping>

* + 1. Using Annotation on the servlet class.