Using Java we can build 2 types of application
a. Standalone applications(Using JSE)
b. WebApplication(using JEE)

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Webapplication
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The application which is developed using web related technologies like html,css,javascript,angular,react,servlet,jsp) is called webapplication.
eg:gmail.com,facebook.com

Note: webapplication provides services to the end user.

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Request --- Response work flow
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Server end
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1. Start the server and deploy the application inside the server.
2. Once the application is deployed, client can send the request.

Client end
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1. Browser sends the request to the deployed application using protocol called "http".

Steps followed by the client to handle the request
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a. browser sends the request(either for static or for dynamic)
b. server traps the request and identifiers whether the request is for
a. static resource
b. dynamic resoure
c. If the request is for static resource,then server only will take the copy of that resource and sends the copy of the resource as the response to the browser.
d. If the request is for static resource and if the resource is not available then server will generate the response as "404-page not found".
e. If the request is for dynamic resource, then server will identify for that request which .java code should be executed.
f. To identify for a particular resource, which java file server will use "web.xml/annotation".
g. Once the required java code is available then server will handover the control to "container".
i. Container will execute the java code based on its "LifeCycle-Actions".

How to install tomcat server?
a. Go to the following link
https://tomcat.apache.org/download-90.cgi
b. click on 32-bit/64-bit Windows Service Installer (pgp, sha512)
c. Once the download starts, double click and install the set up file
d. During the installation it will ask for password supply the password as "root123" and change the http-port-no :: 9999.
e. Once the installation is ready, just go to C:\tomcat9.0\bin\tomcat9.exe
f. Double click on that file and check the status of te server(

```
   (11-Aug-2023 19:52:37.897 INFO [main] org.apache.catalina.startup.Catalina.start
Server startup in [10543] milliseconds)
```

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Configuring eclipse with tomcat9.0

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1. Click on Server tab
2. Select Apache folder(tomcat9.0)
3. Click on next
4. Click on finsih(make sure the server tab is filled with tomcat file)
5. Select tomcat9.0 file and start the server(check in conosle for the information like server startup)

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Configuring eclipse to create WebApplications

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1. Create dynamic webproject and choose runtime environment as tomcat9.0
2. choose servlet version 3.1
3. Click on next
4. Type the userdefined servlet name as per your choice[Our class will be made as a parent for HttpServlet].
5. Click on finsh

Note::

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 home(request:: dynamic request)
  |
MyServlet.java(dynamic response)
```

Request type :: http://localhost:9999/FirstServletApp/home
Response form container(executes based on life cycle actions)

a. Servlet Loading
b. Servlet Instantiation
c. Servlet Initialization(init())
d. Request Processing(doXXXX(request,response)
e. Servlet De-Instantiation(destroy())

MyServlet.java
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```
package in.pwskills.controller;

import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/home")
public class MyServlet extends HttpServlet {
      private static final long serialVersionUID = 1L;
      static {
            System.out.println("Servlet Loading...");
      }

      public MyServlet() {
            System.out.println("Servlet Instantiation...");
      }

      public void init(ServletConfig config) throws ServletException {
            System.out.println("Servlet Initialization...");
      }

      public void destroy() {
            System.out.println("Servlet DeInstantiation...");
      }

      public void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
            System.out.println("Request Processing phase....");
            PrintWriter out = response.getWriter();
            out.println("<html><head><title>Response</title></head>");
            out.println("<body bgcolor='red'><marquee><h1>Welcome to Servlet
coding....</h1></marquee></body>");
            out.println("</html>");
            out.close();
      }
}
```

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Creating a Webapplication for static resource
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 SecondServletApp
      |=> webapp(public area)
            |=> index.html(default landing page)
```

```
index.html
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<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Landing Page</title>
</head>
<body>
      <h1 style="color: red;">
            <marquee>Welcome to ServletAPI coding...</marquee>
      </h1>
</body>
</html>

request(static request)    :: http://localhost:9999/SecondServletApp/
response(static response)  :: copy of index.html will be sent
```