

Web Development with Jakarta Server Pages and Servlets

Session: 2

Developing and Deploying a Web Application



Objectives

- ❖ Describe the process of installing Apache Tomcat server
- ❖ List the steps in the lifecycle of a Web application
- ❖ Explain the directory structure of a Web application
- ❖ Describe Web application development with Eclipse IDE
- ❖ Explain how to package a Web application
- ❖ Describe the process to build and deploy a Web application using Eclipse and Apache Tomcat server
- ❖ Explain deployment descriptor elements

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Overview of Apache Tomcat Server

Responsibilities
of Apache
Tomcat Server

- Process Servlets and JSPs
- Transform JSPs into Servlets
- Monitor incoming client requests
- Execute and unload servlet class

Benefits of Tomcat Server

Platform Independent

Open-source Environment

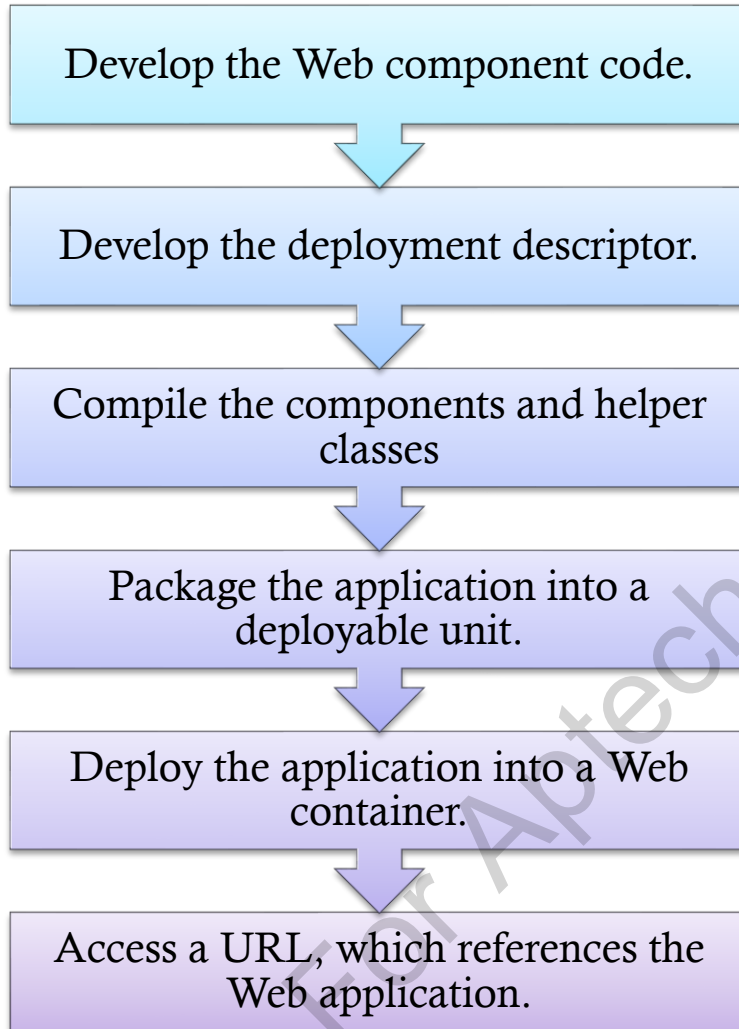
Lightweight

Well-Documented

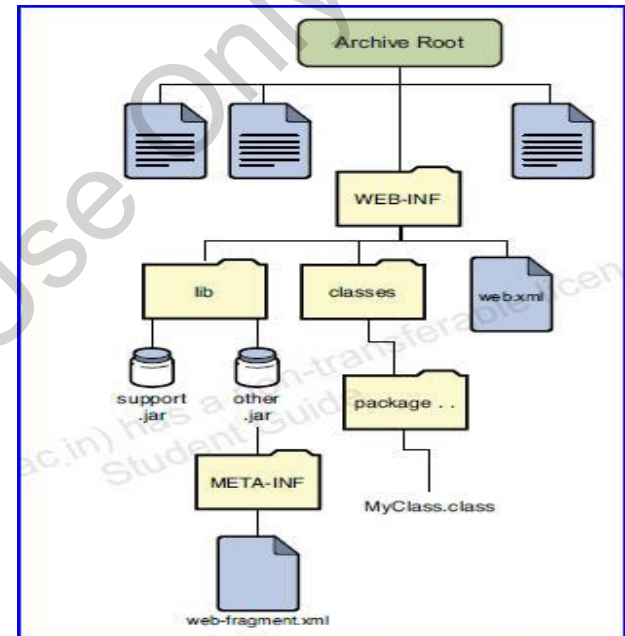
Highly Secure

Lifecycle and Directory Structure of Web Applications

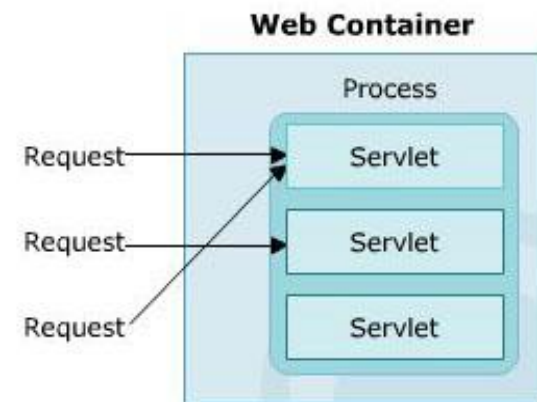
Web Application Lifecycle



Directory Structure

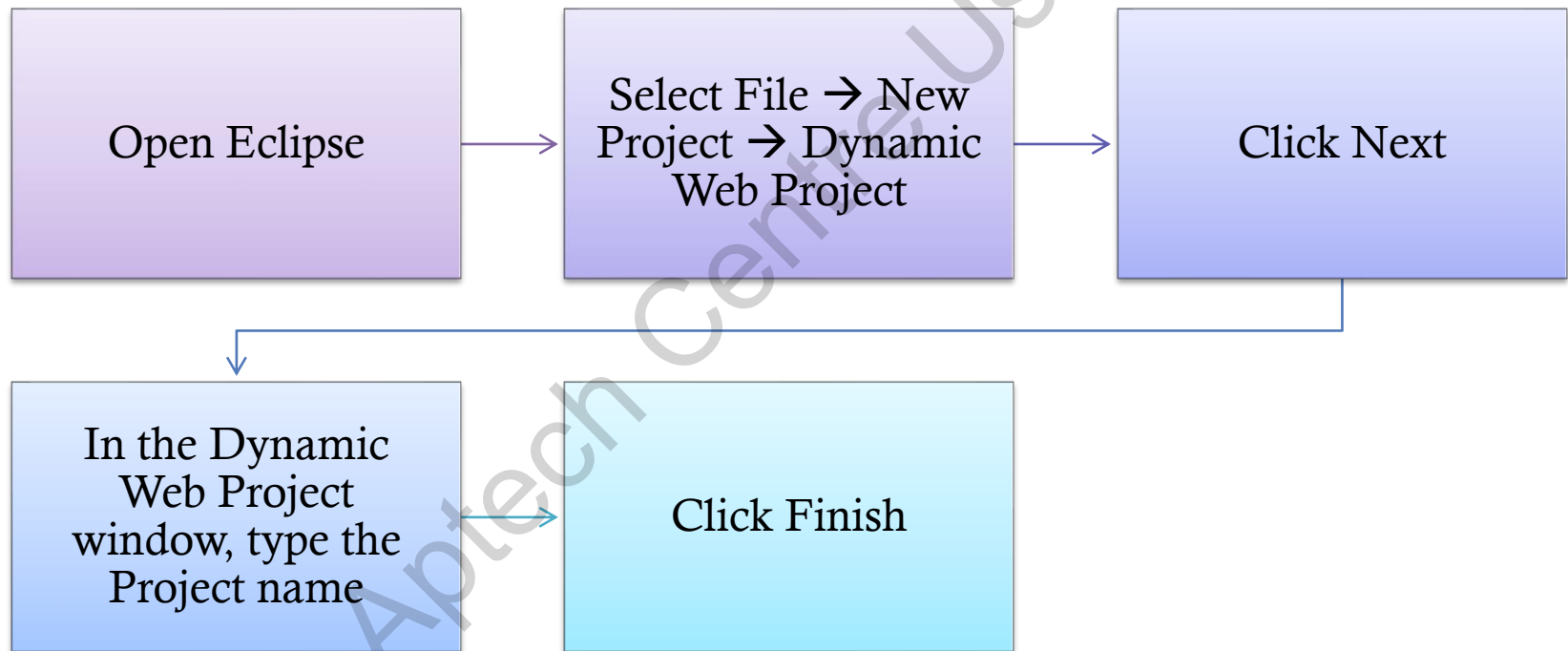


Web Container



Web Application Development in Eclipse

Process of creating a new Dynamic Web Project in Eclipse:



Packaging a Web Application

Deployment methods for the WAR file:

Using the console panel
on the Server.

By placing the WAR file
manually in a specified
Server folder.

Elements of
<web-app>

context-
param

session-
config

Servlet
element

welcome-
file-list

taglib

error-page

Summary

- ❖ Apache Tomcat is a free and open-source Web server and servlet container for Java-based programming applications such as Java servlets, Java Server Pages, Java Expression Language, Java WebSocket, and others.
- ❖ Apache Tomcat is responsible for monitoring all incoming requests made by clients and loading the appropriate servlet classes in order to fulfill those requests.
- ❖ The lifecycle of a Web application is the process of building, deploying, and running it.
- ❖ All resources such as, classes, servlets, static files and so on are stored as a directory structure for better organization.
- ❖ In the directory structure, the WEB-INF contains Web.xml and Weblogic.xml. These are deployment descriptors.
- ❖ Web apps are stored in a Web Archive (WAR) distinguishing them from other types of Java programs.
- ❖ A WAR file contains all the contents of a Web application, it speeds up the process of delivering huge files across the network