

CS6L2

**3/4 B.Tech. SECOND SEMESTER
WEB TECHNOLOGIES LAB
(Common to CSE & IT)
Required**

Credits: 4

**Lecture: --
Lab: 6 periods/week**

**Internal assessment: 25 marks
Semester end examination: 50 marks**

Course context and Overview: On completion of this course, a student will be familiar with client server architecture and able to develop or implement a web application using java technologies To create fully functional website/web application with MVC architecture.

Prerequisite: NIL

Objectives:

Create a fully functional website to develop an online book store

1. HyperText Markup Language (HTML) and Cascading Style Sheets (CSS) for laying out (formatting) pages that contain text, images and graphics.
2. Extensible Markup Languages (XML is used to store and transport data among webpages), a mechanism for defining new tag sets and interchanging data among web applications.
3. Client-side Programming using JavaScript for validating the data.
4. Creation of software components (objects used for client and server communication) using Beans.
5. Server-Side Programming using servlets are to generate static content and Java Server Pages are used to generate dynamic content.
6. Creating a pure Dynamic Web Application which retrieves the data from Database according to the client request using JDBC.

Learning Outcomes:

Ability to:

1. Create and Mange static web pages for given scenario.
2. Apply server side technologies to establish dynamic applications.
3. Implement web applications with effective data management.
4. Develop secure web applications with session management API's.

Hardware and Software required

- A working computer system with Windows.
- A web browser either IE or Firefox.
- Tomcat web server and Apache web server.
- A database either Mysql or Oracle.
- JVM (Java virtual machine) must be installed on your system.
- BDK (Bean development kit) must be also be installed.

Exercise 1: To practice HTML fundamental constructs.

1. Headings
2. Links
3. Paragraph
4. Images
5. Tables

Exercise 2: To practice HTML fundamental constructs.

1. Frames
2. Forms and HTML controls

1. **Exercise 3:** Project on HTML fundamentals

Exercise 4: To practice Cascading style sheets

- a. Internal
- b. External
- c. Inline

Exercise 5: To practice JavaScript and DHTML

- a. Simple Programs
- b. Handling Events
- c. Objects in JavaScript

Exercise 6: Project on DHTML

Exercise 7: To practice XML on XML spy/ Any validation tool

- a. Creating DTD document & validating
- b. Practice DOM & SAX
- c. Presenting XML using XSLT

Exercise 8:

To practice Java Beans

Exercise 9: To practice JDBC connectivity

- a. Statement
- b. PreparedStatement
- c. CallableStatement

Exercise 10: To practice Servlet programming

1. Simple servlet Programming
2. Understanding Life cycle Methods

Exercise 11: To practice Servlet programming

1. Working with initialization parameters
2. RequestDispatcher interface

Exercise 12: To practice JSP

1. JSP basic tags
2. Implicit objects

Exercise 13: To practice JSP

1. Working with Action tags
2. JSTL

Exercise 14: Exploring Authentication mechanisms

1. JAAS

Exercise 15: Practice Ajax

Simple Application on Ajax with JSP

Learning Resources

Text Books

Web Technologies, Black Book, Kogent Learning Solutions Inc, Dreamtech Press.

JDBC, Servlets, and JSP, New Edition, Santhosh Kumar K, Kogent Learning Solutions Inc, Dreamtech Press.