

FACULTY OF COMPUTER APPLICATIONS

- **Course** : BCA
- **Sem.** : 5
- **Subject Code** : 05BC0501
- **Subject** : **Advanced Java**
- **Objective** :
 1. To understand java and develop dynamic web pages using java server page (JSP).
 2. To develop proficiency in creating web based applications using the Servlets and JSP, following MVC architecture.
 3. To be able to understand to develop distributed application
- **Prerequisites** : Knowledge of Core Javas

Unit No.	Topics Covered	No. of lectures required
1	<p>Introduction to Servlets :</p> <ul style="list-style-type: none"> ○ Servlet Basics, Basic Servlet structure, Servlets Generating text/html content, Packaging Servlets, The servlet life-cycle. <p>Request :</p> <ul style="list-style-type: none"> ○ Handling Client Request Form Data, Reading Form Data from Servlets, Handling Client Request, Reading Request Headers, Understanding HTTP/1.1 Request Headers, Changing the page according to how the user got there, Accessing the Standard CGI Variables. <p>Response :</p> <ul style="list-style-type: none"> ○ Generating the Server Response, HTTP Status Codes, Specifying Status Codes, HTTP / 1.1 Status Codes, Using Redirections, HTTP Response Headers, Setting Response Headers from Servlets, Understanding HTTP / 1.1 Response Headers, Using Servlets to Generate JPEG Images <p>Cookies and Sessions :</p> <ul style="list-style-type: none"> ○ Handling Cookies, Remembering Usernames and Passwords, Deleting Cookies, Sending and Receiving Cookies, Using Cookie Attributes, Differentiating Session Cookies from Persistent Cookies, Using Cookies to Remember User Preferences, Session Tracking, Need for Session Tracking, Session Tracking API, Encoding URLs Sent to the Client, Accumulating a List of User Data 	12
2	Introduction to JSP :	10

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	<ul style="list-style-type: none"> ○ JSP Basic Syntax, HTML Text, HTML comments, Template Text, JSP Comment, JSPExpression, JSP Scriptlet, JSP Declaration, JSP Directives, JSP Action, JSP Expression Language Element, Custom Tag (Custom Action), Escaped Template Text, Using JSP Scripting Elements, Using Predefined Variables, XML syntax for Expressions, Scriptlets, Declarations and Directives, Using Scriptlets, Using Declarations, Using Page Directive, Using Standard Actions Tags - <jsp:plugin>, <jsp:forward>, <jsp:include>, Using JavaBeans in JSP pages - <jsp:useBean>, <jsp:getProperty>, <jsp:setProperty>, Sharing Beans, Use of Scopes and their Attributes 	
3	MVC Architecture : <ul style="list-style-type: none"> ○ Integrating Servlets and JSP in a Web Application (MVC Architecture for Web Applications), Implementing MVC with Request Dispatcher, Understanding Data Sharing Between Servlets and JSP, JSP Expression Language, Accessing Scoped Variables, Bean Properties, Collections and Implicit Objects Using EL, Using EL Operators 	10
4	Java Database Connectivity : <ul style="list-style-type: none"> ○ Accessing Databases with JDBC, Loading JDBC Driver, Establishing Connection, Creating Statements, Executing SQL and Processing Results of a Query, Using Prepared Statement, Using Callable Statement, Using Database Transactions 	8
5	Overview of Distributed Services: <ul style="list-style-type: none"> ○ SOA ○ RMI 	8

▪ **Course Outcomes**

1. Able to understand programming of web applications through servlets.
2. Able to handle request and response data.
3. Able to create pages through JSP.
4. Able to understand database connectivity in Java.
5. Able to generate applications through MVC architecture.

▪ **Main Reference:**

1. Marty Hall, Larry Brown, "Core Servlets and JavaServer Pages Volume - 1", Pearson Education, Latest Edition
2. Marty Hall, Larry Brown, Yaakov Chaikin, "Core Servlets and JavaServer Pages Volume - 2", Latest Edition

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3. Cay S Horstmann, Gary Cornell, Core Java® Volume II—Advanced Features, 9th Edition, Pearson

▪ **Other References:**

1. Y Deniel Liang, Introduction to Java Programming, Latest Edition, Pearson
 2. Herbert Schildt, The Complete Reference, McGraw Hill
 3. "Web Technologies Black Book", Dreamtech Press, Edition 2010
 4. Servlet Specifications - Documentation
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