

Kadi Sarva Vishwavidyalaya

Master of Computer Application (MCA)

Year – II (Semester – IV) (W.E.F. January 2015)

Subject Name: Object Oriented Technology – II (OOT-II) – MCA401

Sub Total Credit	Teaching scheme		Examination scheme				
	(per week)		MID	CEC	External		Total Marks
	Th	Pr	Th	Th	Th.	Pr.	
4	3	2	25	25	50	50	150

Rationale (Course Objective) :

The objective of this course to teach the concept of J2EE so they can easily development the application using Servlet, JSP , JDBC and other concept. Instruction shall be in a laboratory setting with continuous hands-on implementation of concepts and emphasis on developing application in AJP.

Learning Outcome:

Students will be able to develop the database driven enterprise application using the concept of AJP.

Instructional Strategies:

- Generally lecture method will be adapted.
- Teaching aids such as OHP and LCD projectors will be used.
- Project based teaching methodology
- Emphasis on self study will be handled through seminars.

Unit 1 SWING COMPONENTS

(20%)

Overview of Swing Components, Text and Images in window, Text Fields and Event Handling, Event Types and Listeners, JButton, JCheckBox, JRadioButton, JComboBox, JList, Multiple Selection Lists, Mouse Event Handling, Layout Managers, Key Event Handling, JTextArea, JPopMenus, Menus with Frames

Unit 2 SERVLETS

(20%)

Building basic servlets, Understanding the Servlet life cycle, Reading form parameters, Using HTTP request headers, Manipulating HTTP status codes and response headers, Redirecting requests, Generating custom JPEG images from servlets, Handling Cookies, Tracking sessions, Difference between browser and server sessions

Unit 3 JSP Fundamentals

(20%)

Overview of JSP, Invoking Java code from JSP pages, Classic JSP scripting elements, Predefined JSP variables, Code structure with the page directive, Controlling multithreading behavior , Pages at request time and compile time , Including Files and Applets in JSP pages

Unit 4 JAVA BEANS and MVC Architecture

(20%)

Understanding the benefits of beans, Creating beans, Installing bean classes on server, Accessing bean properties, Setting implicit and explicit bean properties, Sharing beans among multiple servlets and JSP

pages, Understanding the benefits of MVC, Request Dispatcher to implement MVC, Handling relative URLs, Different display options, Comparing Data Sharing strategies, Collections and Implicit Objects Using EL, Using EL Operators

Unit 5 JSTL and JDBC

(20%)

The Application Events Framework, Tag Library – Basics; Using JSTL – c:out, c:forEach, c:forTokens, c:if, c:choose, c:set, c:remove, c:import, c:url, c:param, c:redirect and c:catch Tags Overview of JDBC , Understanding of ODBC , JDBC driver types, JDBC-ODBC bridge , Driver Manager , Driver , Connection , Statement , ResultSet, Accessing databases with JDBC, Configuring MS Access, MYSQL and Oracle9i , Creating and Processing HTML Forms

Text Books:

1. Marty Hall, Larry Brown, "Core Servlets and JavaServer Pages Volume – 1", Pearson
2. Java How To Program- Eighth Edition ,Paul Deitel & Harvey Deitel, PHI Publication

Chapter & Topics –

Book 2:-

Unit 1: Chapter 14, 15, 25

Book 1:-

Unit 2: 2, 3,4,5,6,7,8,9

Unit 3: 10,11,12,13

Unit 4: 14, 15

Unit 5: 17, 18, 19

Reference Book:

1. Java Servlet & JSP CookBook , Bruce W. Perry , O'Reilly.
2. J2EE: the complete reference , James Edward Keogh , McGraw-Hill
3. Java database programming bible, John O'Donahue, Wiley

Practical: JDK and Netbeans with oracle 10g will be used for practical programs

Practical List:

1. Design a text editor similar to notepad using swing
2. Write java applcaiton using slider control to change the current Fahrenheit to centigrade and display the result in JLabel
3. Write a simple JSP page to display a simple message (It may be a simple html page).
4. Write a JSP page, which uses the include directive to show its header and footer.
5. Create a Java class called Product with the following properties: name, description, price. Create a listener that notifies (through System.out) whenever a user adds a product to a shopping cart (i.e. adds an object to the session object) or removes it again. Hint: check out the class

HttpSessionAttributeListener. Make it print the name and price of the object (hint: access the session through the HttpSessionEvent object). Also, let the listener print the total price of all objects saved in the session so far (one way to accomplish this could be to keep a collection of all objects saved to the session – or just their keys – in the listener or an associated class).

6. Create a servlet filter that logs all access to and from servlets in an application and prints the following to System.out:
 - a. the time the request was received
 - b. the time the response was sent
 - c. how much time it took to process the request
 - d. the URL of the resource requested
 - e. the IP address of the visitor
7. Develop an interest calculation application in which user will provide all information in HTML form and that will be processed by servlet and response will be generated back to the user.
8. Develop an application to demonstrate how the client (browser) can remember the last time it visited a page and displays the duration of time since its last visit. (Hint: use Cookie).
9. Develop an application to keep track of one user across several servlet invocations within the same browser session.
10. Develop an application to write a "page-composite" JSP that includes other pages or passes control to another page. (Hint: Use <jsp:include> or <jsp:forward>).
11. You want to reduce the amount of Java coding in your JSP using a JavaBean component. (Hint: Use <jsp:useBean> with the name of your bean).
12. Develop a program to perform the database driven operation like insert, Delete, Update and select. To perform the above operations create one table named
Employee.
Field Name Field Type
EmpId Integer
Empname Varchar
Emp_desig Varchar
Emp_J_Date Varchar
Emp_Salary Numeric
13. Develop a Java application to perform the database driven operation like insert, Delete, Update and selection using PreparedStatement. To perform the above operations use the table from above exercise.
14. Write a Java application to invoke a stored procedure using a CallableStatement. For this a stored procedure called incrementSalary may be developed to increase all the employees salary by a percentage specified in the parameter.
15. Write a JSP page which uses tags available from the standard tag library JSTL. Write a Servlet which uses the concept of Request forwarding & including external source in the current servlet context.
16. Develop a JSP Page to display the personal information and result information of the student in two different tabular formats.
17. Develop a JSP Page to perform database driven operations like insert, Delete, Update and selection with table named Student having fields like StudId, Name, Address, result.
18. Write a JSP Page to use JSP's Page directives.
19. Write a JSP Page to use JSP scripting.
20. Write a JSP Page to which uses Session Tracking for online shopping.