B.Tech. CE.Sem.IV
Java Technology
Practical List
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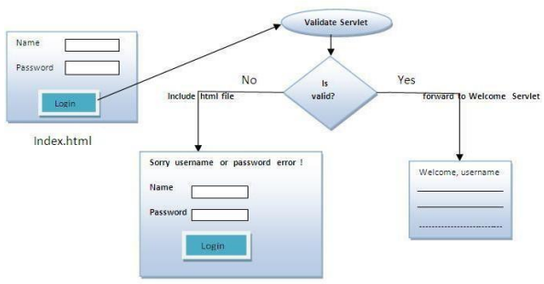
Lab	Aim	Hours
1	**Introduction to IDE and JDBC** 1. Create a Java application consisting of the following components: a. Student class with private data members: int id, String name, double cpi. Default constructor, parameterized constructor, getter-setter methods and toString method. b. DemoStudent class has main method to create various Student objects • Using command-line-argument • Taking input from user at runtime 2. Write a Java application to create table, to store and fetch student registration information (like firstName, lastName, branch, username and password) from database using JDBC. (Using Statement object)	**2**
2	**Working with JDBC and Servlets** 1. Write a Java application to fetch records of student registration and practice the use of the following methods of ResultSet interface: absolute(), afterLast(), beforeFirst(), first(), isFirst(), isLast(), last(), previous(), next(),relative() 2. Write a servlet that displays a hello message on thebrowser. Understanding java Servlet life cycle. Use deployment descriptor file.	2
3	**Working with Servlets** 1. Write a servlet to display the initialization (servlet and context) parameters. 2. Write a servlet to display the requestheaders. 3. Write a servlet which registers and displays the number of hits made by clients since that servlet has beendeployed.	2
4	**Working with Servlets (delegating the request) and JSP** 1. Write a Java web application for a login module which contains the following components: • **index.html :** for getting input from theuser. • **ValidateServlet.java :** a servlet class for validating the user. If it is a valid user (validate from database using PreparedStatement), it will forward the request to the welcome servlet. If user is not validated then it displays Error message along with the response fromindex.html. • **WelcomeServlet.java :** a servlet class for displaying the welcomemessage.  1. 2. Write a Java web application to search a word or phrase on Google search engine. The application should have followingcomponents: • **Search.html**: It contains a textbox to accept search word or phrase fromuser. • **SearchOnGoogleServlet.java**: It should redirect the search query to Google search engine. 3. Write a Java web application to demonstrate usage of JSP Scripting Elements (Scriptlet, Expression, Declaration) and JSP implicit objects (out, request, response.) • Use method post to submit a feedback form (html) (Full Name, Email, Subject, Message)to a jsp page and let jsp page preview the same as confirmation page with additional text “Feedback received. Thank you.”.	2

5	**Working with Servlets and JSP** 1. Write a web based Java application which allows the user to download a file from the list of available files. The application has two components as follow: • **FileList.html:** It displays a list of files to the user to choose a file to download. • **FileDownloadServlet:** It takes the user's choice for a file to be downloaded and sends that file in response to the user. 2. Given a design goal below, write a web based application using the following standard actions: jsp:useBean (with attributes:'id', 'scope', 'type', and 'class'), jsp:getProperty to display final results. 3. Components identified as follow.: Movie.java, **Genre.html**, **ControllerServlet** and **DisplayMovieList.jsp** • **Movie.java** provides a bean/class data members, accessors, mutators, toString, default and parameterized constructor as required. • **Genre.html** provides a list of movie genres to the user to choose from. Send the chosen genre as request parameter to ControllerServlet. • **ControllerServlet** contains a list of movies according to genre. Set a request scope attribute "mymovies" with the array of movies of the chosen genre. Forward the request to DisplayMovieList.jsp • **DisplayMovieList.jsp** displays the names of movies by getting them from the attribute "mymovies".	2
6	**Working with JSP and Listeners** **1.** Write a web based java application containing a JSP which performs the simple arithmetic calculation for given arguments and operator. Write your JSP code using **jsp:useBean** action tag. **2.** Write a web based Java application which registers and displays the number of hits made by clients since that application has been started by container. [Use ServletContextListener]. **3.** Write a web based Java application which logs the request creation and its destruction.	2
7	**Working with HttpSession** Write a Java web application using **HttpSession** which allows only logged in user to access the other JSPs/Servlets of the application. Write the following components: • **Login.html** allows user to provide username and password and send them as request parameters toLoginVerifierServlet. • **LoginVerifierServlet** takes username and password from login.html and verifies it. If credentials are correct then it creates a session. It displays welcome message along with username and links to first.jsp and second.jsp. • **first.jsp** and **second.jsp** display some random messages and can be accessed if user is logged in. (you should delegate to Login.html if the user is not loggedin)	2
8	**Working with Scriptless jsp** 1. Write a scriptless jsp to display the words in uppercase and the word-count (no. of words) of the text written in atextbox. e.g. in textbox "This is Scriptless JSP" is entered by the user. **Words:** THIS IS SCRIPTLES S JSP **Count:**4 2. Write a web application that takes the user's name and age from a form. It echoes back the name and age along with a message stating the price of amusement park tickets. The price is determined by the age passed by the user. Application should not contain any javacode. • If the age is greater than 62, the ticket price is INR100.00 • If the user is less than 10 years old, the price is INR50.00 • For everyone else, the price is INR300.00 3. Write a tag based solution to display wordOfTheDay. Have dummy word list attached per week days.	2

9	**Working with Tag file and SimpleTagSupport** 1. Write a web based java application for demonstrating use of tag file. This application must contain the following components: • **Color.java:** It represents a color bean with properties name and rgb. • **setColors.java:** It is a servlet which creates an ArrayList of color bean objects and set it as a request scoped attribute. It forwards the request to the ShowColorTagDemo.jsp. • **ShowColorTagDemo.jsp:** It invokes the showColor.tag by passing request scoped attribute as an attribute to tag file. • **showColor.tag:** It is a tag file which takes an arraylist of color bean objects as an attribute and prints the name and rgb properties of each color object. 2. Write a java web application for simple calculator (i.e. +, -, *, /) using S. Your application must have following components. • **Input.jsp:** which takes arguments and operator as input and submit it to calculate.jsp • **Calculate.jsp:** it calls the custom tag calculate with arguments and operator as attributes. • **MyCalculator.java:** it handles the simple custom tag calculate and prints the result. • **Mytags.tld:** it describe the simple custom tag calculate	2
10	**Working with Filters & Introduction to Spring Framework** **1.** Write a filter to check whether user has logged in. Whenever user makes a request for any web resource, the filter is activated. However, filter must not be activated when login.html or LoginServlet is called as it is used to process the login. Filter checks whether the requested URL is login.html or LoginSerevlet, if so it does nothing otherwise it checks whether user has logged in. Session attribute logged indicated whether user has logged or not. Assume that attribute logged is set in session in LoginSerevlet during the login process. **2.** Write a filter to display the total request processing time for any web resource. **3.** Develop a “HelloWorld” application using Spring Framework.	2
11	**Working with Hibernate** Create a Hibernate Application to demonstrate CRUD operations on table Employee having fields id, firstname, lastname and salary. Id field is a primary key and set as auto_increment.	2
12	**Working with Spring** 1. Develop Spring framework based Java application. Utilize Dependency Injections; Also Aspect Oriented Programming in your design for cross-cutting concerns. Class with properties: triangle (type – Equilateral, Bilateral, etc.) and circle (center (x,y) and radius) Class to provide collective service ShapeService having dependencies triangle and circle. Assuming all properties being priority information, which need to be audited, generate artifacts (Console Output using syso) of usage for the same. (Hint. Use AOP. Practice various types of advice. i.e. After, Before. Etc.) Write a DemoSpring class having main method. Create spring application context and retrieve object (spring bean) ShapeService. Invoke getter methods to verify artifact generation. 2. Study and exercising Spring Web MVC based Java web application from the demo shared.	