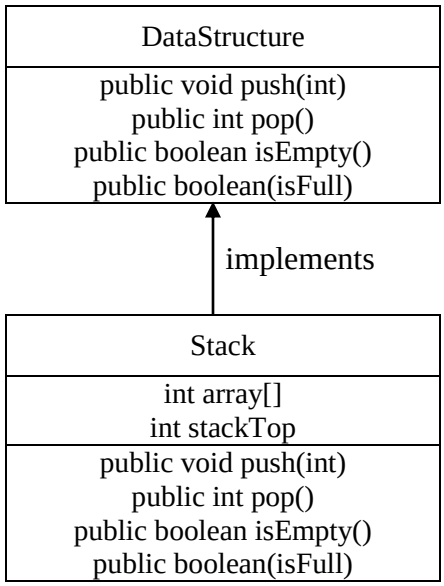
RAMAIAH Institute of Technology

Department of Computer Science & Engineering

QUESTION BANK FOR V SEM (CSE) (Autonomous Syllabus)

Subject Code: CSL57 **TERM: AUG-DEC 2019** **I.A.Marks : 50**
Subject Name: JavaLaboratory **Exam Hours: 03**
Credits: 0:0:1 **Exam Marks: 50**

Design, develop, and implement the following programs in Java

1.	a. Write a Java program to implement the Stack operations. Create an interface called as DataStructure. Write a Stack class which will implement the DataStructure interface.  b. Write a JAVA-JDBC program to create the table named **Department** with the attributes Dept_ID, Name, Year_Established, Head_Name, No_of_Employees. (i) Find the number employees in a CSE department. (ii) List Name, Dept_ID of all the departments which are established in the year 2010.
2.	a. Write a Java program to maintain the student details like USN, Dept_Names, 3 Subject grades and SGPAin student package and keep the staff details such as Staff_ID, Staff_Name, Designation and subjectshandled in a staff package. In main class use these two packages details for Staff and Student classes to display the student and staff information as requested by the user. b. Write a Java Servlet program that loads area and phone no. of police station of that area from a database. It takes area orphone number as input and prints the corresponding fields. (Note: Create police_station table with appropriate fields)

3.	a. Write a Java program to read details of anEmployee. If the employee name is entered as a number, a **NameNotCorrect** user defined exception must be thrown. If the employee age is greater than 50, an **AgeLimitException** must be thrown. If the details are entered correctly, then create the object and print the details. b. Write a Java Servlet program with a function called **initials()** that takes input representing a full name and returns the initials of the name in all capital letters. **Example:** If Input is Robert B. Qwerty then Output should be RBQ.
4.	a. Write Java program to create an applet with text box. User must type a string in text box first. If "P" key is pressed, check whether the given string is **palindrome** or not and the result must be displayed on the status bar. b. Develop a JSP application that has the following pages. The index page **register.html** contains 2 text boxes for entering username and password. Provide a button "Register". Once the Register button is clicked the page should be redirected to welcome.jsp. In welcome.jsp validate username and password and display welcome message for a valid user.**(Use Sessions)**
5.	a. Write a Java multithreaded program to display prime numbers between 1-100 using thread1 and 101-200 using thread2 using a synchronized displayPrime(int n) function. Demonstrate the usage of synchronized function and synchronized blocks.. b. Write a JSP that takes the user's name and age from a form. Echo back the name and age along with a message stating the price of movie tickets. • The price is determined by the age passed to the JSP. • If the age is greater than 62, the movie ticket price is Rs. 50. • If the user is less than 10 years old, the price is Rs. 30. • For everyone else, the price is Rs. 80.
6.	a. Write a Java program to prompt the user to enter his/her age and theCGPA. The user application for a job will be rejected either if his age is greater than 25 years or his CGPA is less than 8. Declare two nested try-throw-catch blocks; one to handle the **AgeOutOfRangeException** and the other to handle the **LowCGpaException**. If the user enters acceptable age andCGPA, display the message "Your application is accepted and is under study". b. Write a Java Servlet program to insert Employee details like Emp_ID, Employee_Name, Address, Date_of_Birth in Employee table using JDBC and display the details in table format.
7.	a. Write a Java program to create a super class "**Record**" to store the names and ranks of 10 students. Define a sub class **Rank** to find the highest rank along with the name. The details of both classes are given below **Class Name :Record** Data Members: name[ ], rank[ ] (store names and respective ranks in an array) Member functions: Record(): Constructor to initialize data members void readValues(): To store names and ranks

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void display(): Displays the names and the corresponding ranks
Class name : Rank
Data Members: index(integer to store the index of the topmost rank)
Member functions: Rank() : constructor to invoke the base class constructor and to initialize index to 0.
void highest() : finds the index location of the topmost rank and stores it in index without sorting the array
void display() : displays the name and ranks along with the name having the topmost rank.

b. Write a JSP program to create a form with Book_No, Title, Author, Publication, Price and a Submit button. Using JSP-Database connectivity, get the data from the form and insert the records into the database. Retrieve the book details for the particular title and display the details.
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<tr><td>8.</td><td>
a. Write a Java program to implement the following :
Consider a restaurant that has one chef and one waitperson. The waitperson must wait for the chef to prepare a meal. When the chef has a meal ready, the chef notifies the waitperson, who then gets the meal and goes back to waiting. The chef represents the producer, and the waitperson represents the consumer.

b. Write a JSP program to accept the marks entered and display his/her grade to the browser. Department has set the grade for the subject Java as follows: Above 90=A, 80-89=B, 70-79=C, Below 70=FAIL.
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<tr><td>9.</td><td>
a. Write a Java program to create a class called Library with the following description:
Instance variables/data members:
int Acc_Num: To store the accession number of the book
String Title: To store the title of the book and the name of the author
Member Methods:
void input(): To input and store the accession number, title and author.
void compute(): To accept the number of days late, calculate and display and fine charged at the rate of Rs.2 per day.
void display(): To display the details in the following format:
<table>
<tr><td>Accession</td><td>Number</td><td>Title</td><td>Author</td></tr>
</table>
Write a main method to create an object of the class and call the above member methods.

b. Write a JAVA-JDBC program to implement Banking Application using transaction management. Demonstrate Rollback and Savepoint concept.
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<tr><td>10.</td><td>
a. Write java program to create a package called AdvMath, which has two classes. In main class use this packageto display the result as requested by the user.
i. To calculate y = sin(x)+cos(x)+tan(x)
ii. To print Pythagorean triplets

b. Write a Java Servlet program to accept the details of client as client Name, Password and Pan_ID. Write a cookie which stores Pan_ID. If the cookie is present print "Welcome Back" with client name. Otherwise print "Welcome".
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11.	a. Write a java program to accept a string. Convert the string to uppercase. Count and output the number of double letter sequences that exist in the string. Sample Input: "SHE WAS FEEDING THE LITTLE RABBIT WITH AN APPLE Sample Output: 4 b. Write a servlet program that uses JDBC to display the subjects allotted for the faculty.Subjects Table should have Sub_ID, Sub_Name, Faculty_ID as the fields. Update subject details for a faculty and display how many rows are updated.
12.	a. Write a java program to create five threads with different priorities. Send two threads of highest priority to sleep state. Change the name of the main thread and it should be the last thread to exit. Check the aliveness of the threads. b. Write a JSP program to create a HTML form with Username, Age, Marks and Submit button. The program should get values from HTML form and display message like "Eligible for SEE" along with the message the page includes counter.jsp, which counts the number of visitor visited the page.
13.	a. Write a java program to implement an abstract class **Reservation** and two classes **ReserveTrain** and **ReserveBus**. Define the Reservation abstract class with following characteristics. Method **reserve()** which takes integer value seats and typeOfSeat as parameters and returns boolean type. Method **getAvailableSeats()** which return a number of seat remaining. b. Write a "**SetCookies**" Servlet class to create six cookies. Three cookies to have the default expiration date, meaning that they should exist only until the user next restarts the browser. The other three cookies to use setMaxAge() to stipulate that they should exist for the next hour, regardless of whether the user restarts the browser or reboots the computer to initiate a new browsing session.
14.	a. Write a java program to create an applet. When we drag the mouse, the path of the mouse pointer must be drawn as a rectangle. b. Write a JAVA-JDBC program that connects to the database **College** with **Student**table. Assume appropriate attributes for the Student table. Write a program to display the details of those Students who haveCGPAless than 9. Also update the Student table to change the CGPA of student named "John" from 8.50 to 9.4 using ***updatable result set***. Finally display the results and disconnect from the database.

Marks Distribution:

Conduction and Result	Write-Up (8)	Execution (35)	Viva	Change of Program	Total
Part – a	**4**	**15**	**7 Marks**	**-10 marks**	**50 Marks**
Part – b	**4**	**20**			

HOD, Dept. of CSE