

## JAVA AND J2EE LABORATORY

1. Create a class called account with the data members(Accno – integer, name String, Phone\_No: integer, balance\_amt:float), and following methods :
  - a. Parameterized constructor to initialize the data members
  - b. Deposit() method which takes the amount to be deposited in to his/her account and do the calculation.
  - c. Withdraw() method which gets the amount to be withdrawn from his/her account.Print the appropriate results.  
Write a main method to read account details of „n“ employees from the user. If the amount in an employee account is less than 10000, display it.
2. Write a Java Program that does the following related to Inheritance where:  
Abstract class Shirt with members size, price and color, constructors and abstract methods getColor() and putColor().  
Inherit the Shirt class to obtain 2 classes : final class “PullOver” (with members has\_hood, has\_stripes) and class “FormalShirt”( with members has\_full\_sleeve, has\_stripes).  
Create class „PartyWear”(with member brand) which is a sub-class of “FormalShirt” and demonstrate the use of super keyword to initialize data members of “PartyWear”.  
Use packages and inheritance.
3. Write a Java Program that does the following related to Inheritance:
  - a. Create an abstract class called Vehicle which contains the „year\_of\_manufacture” data member and two abstract methods „getData()” and „putData()” with a constructor.
  - b. Create two derived classes “TwoWheeler” and “FourWheeler” and implement the abstract methods. Make “FourWheeler” as final class.
  - c. Create class „MyTwoWheeler” which is a sub-class of “TwoWheeler” and demonstrate the use of super keyword to initialize data members of “MyTwoWheeler”.
4. Write a Java Program that does the following related to Packages and Interfaces , Exception Handling: Create an interface Student which gets the name and branch of a student.  
Create a package called „StudentPackage” which has a user-defined class RegisterStudent.  
If a student registers above 30 credits for the semester, the method should throw a user-defined exception called „CreditLimit” and display an appropriate message.  
Create another package called „ResultPackage” which displays the grade for the subject registered for particular semester and the SGPA .If the SGPA is in invalid format throw NumberFormatException also if SGPA is above 10 then throws an InvalidSGPA user-defined exception.  
In the StudentPackage , collect the marks of all the subjects in 4 semesters and calculate SGPA and CGPA.
5. Write a Program that simulates a telephone that records missed incoming calls.
  - Maintain a callers list(HashMap) of 10 people . Choose or extend the most appropriate collection class and provide the following features.
  - o Maintain an arrayList of missed calls. Numbers are recalled in the order they arrive. Up to 10 numbers are recorded. When the eleventh call comes in, it is stored and the oldest call is deleted so that no more than 10 numbers are ever recorded.
  - o For each of the missed call, If the name exists in the callers list store the time of the call, telephone number and the name of the caller. For unlisted numbers, set the name to “private caller”.After each number display, the user can select
  - to delete the call
  - to go on to the next missed call, or
  - to display the call details (number, caller name and time).

Write a main program to create callers list, missed call list, display the missed call list.

6. Write a program that uses Java Swing and JDBC to create a stand-alone application:  
Create two tables namely, Representative (RepNo, RepName, State, Commission, Rate) and Customer (CustNo, CustName, State, Credit\_Limit, RepNo) in MySQL database.  
Use appropriate Swing components to insert values in a form.  
Use another form to display Representative's information whose Credit\_Limit is above 15,000.
7. Write a Java program to create a progress bar GUI which displays the copy status of writing contents of one file to another file. Terminate the progress bar on click of STOP button and display the contents of the file.
8. Create a Servlet to file IT returns that accepts personal information, salary information and Tax deduction details from the user and write the information into a file. Also accept the name of the person and display in on the page.
9. Write a JSP and Servlet Program to do the following to buy a T-Shirt online:  
A set of checkboxes to select your T-Shirt accessories such as „belt“, „cap“, „hair-band“ , text area / text field to enter your T-Shirt tag-line, Radio-button that allows the user to choose between T-Shirt with chest pocket and Combo Box to choose your T-Shirt color  
Create appropriate labels for these GUI Components and a button called “Click Me” which when pressed will Insert the details entered into a table called „TShirts“. An OrderNo is generated by adding „1“ to the existing „OrderNo“. If „TShirts“ table is empty the initial value of „OrderNo“ is 100. This „OrderNo“ is also inserted into the „TShirts“ table .  
**Display all the records of the ‘TShirts’ table in tabular form**  
PS: Frontend display should be in JSP and the business logic should be written in Servlet Class.
10. Create a Telephone Directory Application using Servlet that searches the database based on phone number or name. Also show database table creation with inserting 5 values to the table.  
Database Name:  
OnlineDirectory Table Design:  
Table Name: Telephone\_Directory  
Attributes: Phone\_Number, Name, Address, Company, Pin\_Code.
11. Write a Java Program that creates two threads object of Thread class. Where one thread asks the user to enter a number not less than four digits. Split the digits of the number and display in words the value of the number. Ex: 1 – One. Second thread finding the number of vowels in a word. Ex: JAVA – Vowel - A, Count – 2.
12. Write a program using JSP that helps a student to calculate the income tax on various annual incomes that he will be earning when he gets a job.  
Login.html will call dataCapture.jsp that should do the following:  
Use Java Collections to make a list of valid users and facilitate user login functionality.  
Give a personalized Welcome message and display today's date.  
Have a Text Entry with label „Name“ to enter the name of the user. Give a List of Organizations to choose „Place of Work“  
Provide a Male or Female option to choose the „Gender“  
Have a Text Entry with label „Annual Income“  
Give a Submit button reading „Calculate Tax“  
CalculateTax.jsp must calculate the interest based on the following business rules: Salary below 1,00,000 shall no have income-tax.  
Calculate 15% of tax on 1,00,001 – 5,00,000.  
Calculate 20% on 5,00,001 onwards.  
The final income tax along with the details of how it is calculated must be put in a session object and displayed to the user in dataCapture.jsp. All the income taxes calculated so far by the user, must be taken out of the session object and displayed, each time in dataCapture.jsp which has a link called „Logout“ that destroys the session.
13. a. Create two tables Flight(Flight\_Number, Airline\_Name, Weekdays) and SeatReservation(Flight\_Number, Date, Seat\_Number, Customer\_Name, Customer\_Phone) in MySQL database.

- b. Create JSP page ReserveOnline.jsp to reserve an airline seat and insert the values into the table SeatReservation. OnClick of Submit in ViewDetails.jsp display information about reservation. Validate the Flight\_Number from already existing Flight database and generate random number for Seat\_Number within the range 1-500.
- c. Also create a link to display information of all the flights running on a particular day.