

## **DETAILED LAB DELIVERY PLAN**

### **EXPERIMENT – 1**

**TITLE:** Introduction to Java Environment

- 1) Installation of JDK
- 2) Setting of path and classpath
- 3) Introduction to Eclipse

### **EXPERIMENT – 2**

**TITLE:** Basic Java Programming

- 1) Write a program to find the largest of 3 numbers.
- 2) Write a program to add two number using command line arguments.
- 3) Write a program to print Fibonacci series using loop.
- 4) Write a program to implement a command line calculator.
- 5) Write a program using classes and object in java.

### **EXPERIMENT – 3**

**TITLE:** Basic Java Programming

- 1) Write a program to accept 10 student's marks in an array, arrange it into ascending order, convert into the following grades and print marks and grades in the tabular form.  
Between 40 and 50 : PASS  
  
Between 51 and 75 : MERIT  
  
and above : DISTINCTION
- 2) Write a program to accept three digits (i.e. 0 - 9) and print all its possible combinations. (For example if the three digits are 1, 2, 3 than all possible combinations are : 123, 132, 213, 231, 312, 321.)
- 3) Write a Java Program to accept 10 numbers in an array and compute the square of each number. Print the sum of these numbers.
- 4) Write a program to input a number of a month (1 - 12) and print its equivalent name of the month.( e.g 1 to Jan, 2 to Feb. 12 to Dec.)
- 5) Write a program to find the sum of all integers greater than 40 and less than 250 that are divisible by 5.

### **EXPERIMENT – 4**

**TITLE** Inheritance

- 1) Write a Java program to show that private member of a super class cannot be accessed from derived classes.
- 2) Write a program in Java to create a Player class. Inherit the classes Cricket \_Player, Football \_Player and Hockey\_ Player from Player class.
- 3) Write a class Worker and derive classes **DailyWorker** and **SalariedWorker** from it. Every worker has a name and a salary rate. Write method **ComPay** (int hours) to compute the week pay of every worker. A DailyWorker is paid on the basis of the number of days he/she works. The SalariedWorker gets paid the

wage for 40 hours a week, no matter what the actual hours are. Test this program to calculate the pay of workers.

- 4) Design a class employee of an organization. An employee has a name, empid, and salary. Write the default constructor, a constructor with parameters (name, empid, and salary) and methods to return name and salary. Also write a method *increaseSalary* that raises the employee's salary by a certain user specified percentage. Derive a subclass Manager from employee. Add an instance variable named department to the manager class. Supply a test program that uses these classes and methods.

## **EXPERIMENT – 5**

**TITLE:** Interface

- 1) Write a program to create an interface named test. In this interface, the member function is square. Implement this interface in arithmetic class. Create one new class called ToTestInt. In this class we use the object of arithmetic class.
- 2) Write a program to create interface A, In this interface we have two methods meth1 and meth2. Implement this interface in another class named MyClass.
- 3) Write a program in Java to show the usefulness of Interfaces as a place to keep the constant value of the program
- 4) Write a program to create an Interface having two methods division and modules. Create a class, which overrides these methods.

## **EXPERIMENT – 6**

**TITLE:** Package

- 1) Write a Java program to implement the concept of importing classes from user defined package and created packages.
- 2) Write a program to make a package Balance. This has an Account class with Display\_Balance method. Import Balance package in another program to access Display\_Balance method of Account class.

## **EXPERIMENT – 7**

**TITLE:** Exceptions

- 1) Write a program in Java to display students' names and roll numbers. Initialize respective array variables for 10 students. Handle ArrayIndexOutOfBoundsException, so that any such problem doesn't cause illegal termination of the program.
- 2) Write a Java program to enable the user to handle any chance of divide by zero exception.
- 3) Create an exception class, which throws an exception if the operand is non-numeric in calculating modules. (Use command line arguments).
- 4) Write a Java program to throw an exception for employee details.
  - If an employee's name is a number, a name exception must be thrown.
  - If an employee age is greater than 50, an age exception must be thrown.
  - Or else an object must be created for the entered employee details

## **EXPERIMENT – 8**

**TITLE:** Strings Handling and Wrapper Class

- 1) Write a program for searching strings for the first occurrence of a character or substring and for the last occurrence of a character or substring.
- 2) Write a program that converts all characters of a string in capital letters. (Use StringBuffer to store a string). Don't use inbuilt function.
- 3) Write a program in Java to read a statement from console, convert it into upper case and again print on console. (Don't use inbuilt function)
- 4) Write a Java code that converts int to Integer, converts Integer to String, converts String to int, converts int to String, converts String to Integer converts Integer to int.
- 5) Write a Java code that converts float to Float converts Float to String converts String to float converts float to String converts String to Float converts Float to float.

## **EXPERIMENT – 9**

**TITLE:** Threads and Collections

- 1) Write a program to implement the concept of threading by extending Thread Class and Runnable interface.
- 2) Write a program for generating 2 threads, one for printing even numbers and the other for printing odd numbers.
- 3) Write a program to launch 10 threads. Each thread increments a counter variable. Run the program with synchronization.
- 4) Write a Java program to create five threads with different priorities. Send two threads of the highest priority to sleep state.
- 5) Write a program for the following:
  - Read all elements from ArrayList by using Iterator.
  - Create duplicate object of an ArrayList instance.
  - Reverse ArrayList content.
- 6) Write a program for the following HashSet
  - copy another collection object to HashSet object.
  - delete all entries at one call from HashSet
  - search user defined objects from HashSet

## **EXPERIMENT – 10**

**TITLE:** JDBC

- 1) Create a database table to store the records of employee in a company. Use getConnection function to connect the database. The statement object uses executeUpdate function to create a table.
- 2) Create a database of employee of company in mysql and then use java program to access the database for inserting information of employees in database. The SQL statement can be used to view the details of the data of employees in the database.

## **EXPERIMENT – 11**

**TITLE:** Servlet

- 1) Servlet: a) ServletContext interface b)getParameterValues( ) of Servlet Request
- 2) Write a Servlet page to display current date of the server.

3) Write a Servlet page to which include the two other Servlet page through of include directives feature provided in Servlet.

4) Write a Servlet page to create a simple calculator.

## **EXPERIMENT – 12**

**Title: JSP**

**Project Specification:** (Write the following classes in same project named as Proj\_Lab9)

**Objective:** After these lab exercises students will be in position to clear the concept of JSP and how to write the server side scripting language.

- 1) Write a JSP page to access a student's data from the student table.
- 2) Write a JSP Login page to enter the username and password entered by user and display the welcome page on successful login otherwise display wrong authentication page.