1. PRACTICAL LIST for JAVA

Class: MCA-I Assignment: -1 Division – A,B,C & D

1. Implement a program to find a number is Prime number or not.
2. Implement a Java program to find factorial of a number.
3. Implement a Java program to print multiplication table
4. Implemet a Java Program to print Fibonacci Series
5. Given the following class, called NumberHolder, write some code that creates an instance of the class, initializes its two member variables, and then displays the value of each member variable.

```
public class NumberHolder {
  public int anInt;
  public float aFloat;
}
```

6. The following code creates one array and one string object. How many references to those objects exist after the code executes? Is either object eligible for garbage collection?

```
...
String[] students = new String[10];
String studentName = "Peter Parker";
students[0] = studentName;
studentName = null;
...
```

7. Create a class shape which has data member and area () method. Calculate area of square, rectangle, and circle by overloading of method.

8. Define a class to represent a bank account. Include the following members:

Data Members

1. Name of Depositors
2. Account Number
3. Type of Account
4. Balance amount in the Account

Methods

1. To assign initial values
2. To deposit an amount
3. To withdraw an amount after checking the balance
4. To display name and balance.

9. Write a java program to calculate gross salary & net salary taking the following data.

Input:empno,empname,basic

Process:

DA=50%of basic

HRA=25%of basic

CCA=Rs240/-

PF=10%of basic

PT=Rs100/-

10. Write a Java program that calculate mathematical constant ‘e’ using the formula e=1+1/2!+1/3!+..... up to 5 .

11. Write a method named minGap that accepts an integer array as a parameter and returns the minimum 'gap' between adjacent values in the array. The gap between two adjacent values in a array is defined as the second value minus the first value. For example, suppose a variable called array is an array of integers that stores the following sequence of values:

```
int[] array = {1, 3, 6, 7, 12};
```

The first gap is 2 (3 - 1), the second gap is 3 (6 - 3), the third gap is 1 (7 - 6) and the fourth gap is 5 (12 - 7). Thus, the call of minGap(array) should return 1 because that is the smallest gap in the array. If you are passed an array with fewer than 2 elements, you should return 0.

12. Java can deal with single inheritance (one superclass with multiple subclasses). How can a class inherit from more than one superclass (multiple inheritances)?

13. Use the Box class as a base class of manual 3 and override the area() method in derived class.

14. WAP to design a String class that perform String Method (Equal,Reverse the string,change case).

15. WAP to Check if Two Arrays Are Equal or Not

16. WAP to Remove All Occurrences of an Element in an Array

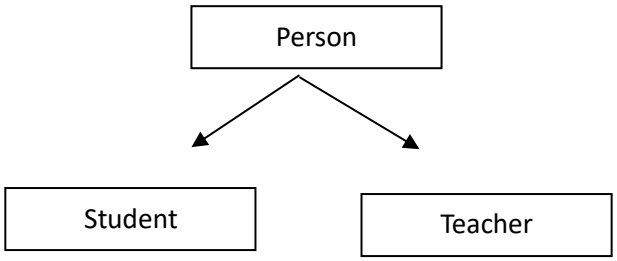
17. WAP to Find Common Array Elements

18. WAP to Copy All the Elements of One Array to Another Array

19. WAP to Create a package that access the member of external class as well as same package.

20. Create a Base Class Person and two derived class as student and teacher with their constructor and method.

The inheritance hierarchy would appear as follows:



21. Add methods to "set" and "get" the instance variables in the Person class. These would consist of: getName, getAge, getGender, setName, setAge, and setGender.

22. Write a Teacher class that extends the parent class Person.

23. Write a constructor for the Teacher class. The constructor will use five parameters to initialize myName, myAge, myGender, *subject*, and *salary*