Assignment No: 3

Topic: Class and Object

Q1. Write a program to Print the average of three numbers entered by user by creating a class named 'Average' having a method to calculate and print the average. Define another driver class to demonstrate the basic operation.

Q2. Write a program to Create a class named 'Student' with String variable 'name' and integer variable 'roll\_no'. Assign the value of roll\_no as '20' and that of name as "John" by creating an object of the class Student.

Q3. Write a program to print the area of two rectangles having sides (4,5) and (5,8) respectively by creating a class named 'Rectangle' with a method named 'Area ()' which returns the area.

Q4. Print the sum of two complex numbers by creating a class named 'Complex’ whose real and imaginary parts are entered by user.

Q5. Write a program that would print the information (name, year of joining, salary, address) of three employees by creating a class named 'Employee'.

Q6. Write a program to print the area of a rectangle by creating a class named 'Area' having two methods. First method named as 'setDim ()' takes length and breadth of rectangle as parameters and the second method named as 'getArea ()' returns the area of the rectangle. Length and breadth of rectangle are entered through keyboard.

Q7. Write a program by creating an 'Employee' class having the following methods and print the final salary.  
1 - 'getInfo()' which takes the salary, number of hours of work per day of employee as parameter  
2 - 'addSal()' which adds $10 to salary of the employee if it is less than $500.  
3 - 'addWork()' which adds $5 to salary of employee if the number of hours of work per day is more than 6 hours.

Q8. Define a class Stack, which perform the basic operation of stack. Define another driver class to demonstrate the basic operations.

Q9. Develop a java program that will deal with employee information of an organization. Define a class Employee. Minimum number of data member and member function are as follows:

Data members : empName, empNo, basicSal, da, hra, grossSal

Methods: calGrossSal(), showEmpDetails()

You are free to add more number of relevant data member and member function. Define parameterized constructor to intilaizeempName, empNo and basicSal. Create anytwo objects of Employee class and initialize their data members while object creation. Use the method calGrossSal()to calculate the gross salary and



Q10. Create a class named Item that holds data about an item in a retail store.The class should have the following three fields:

1. name: the name field is a String object that holds the name of the item.

2. price: the price field is a double variable that holds the item's retail price

3. quantity: the quantity field is an int variable that holds the number of units currently in inventory

Write a constructor method that accepts three arguments, name, price, & quantity and stores the values of the arguments passed into it in the object's instance fields.

Write four public methods to retrieve the values from the three fields and their current inventory value

1. String getName( ) returns the item name

2. double getPrice( ) returns the price of the item

3. int getQuantity( ) returns the number of quantities

4. double getValue( ) that returns the current inventory value (quantity \* price)

Write a separate class called Inventory with a main method that creates three Item objects and then produces a neatly formatted table of the store's inventory displaying the three items, their current inventory value, and the total inventory value for the store. Duplicate the format of the output exactly shown below. Test your output with different items in inventory.



Q11. Declare a variable Student which consists of a student’s name, mark for Programming, mark for Logic and a grade for Lab. A mark is a number (between 0 and100) and a grade is a letter (between A and F). Write a predicate (a boolean method) isStronger, which takes two students and returns true if and only if the first student has done better than the second in the ordering below.

a. the Programming mark is most important,

b. numerical order of Logic marks is the determining factor when two students have the same Programming mark,

c. alphabetical order of Lab grades is the determining factor when two students have the same Programming and Maths marks.