Assignment 3

Topic: Class & Objects

Sl. No.	Question
1.	Define a class *Stack*, which perform the basic operation of stack. Define another driver class to demonstrate the basic operations.

2.	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 intilaize*empName*, *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 method *showEmpDetails()* to display the detail informationof the employees in a tabular manner. Note that *da* is 20% of *basicSal* and *hra* is 10% of *basicSal*. *grossSal* is the sum of *basicSal*, *da* and *hra.*
	`NAME EMPNO BASIC DA HRA GROSS`
	`Ram 1 50000.0 10000.0 5000.0 65000.0`
	`Shyam 2 40000.0 8000.0 4000.0 52000.0`

3.	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 public 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. *intgetQuantity( )* 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.
	`Name Price Quantity Value`
	`==========`
	`Stapler $2.25 15 $33.75`
	`Paper $32.99 255 $8412.45`
	`Binder $4.75 9 $42.75`
	`Total Inventory is $8488.95`

4.	Declare a variable *Student* which consists of a student's*name*, *markfor 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.
5.	Suppose we want to represent a planet in the solar system as an object of class *Planet*. In the object, it contains two fields: one called *name* is a String containing its name, and one called *satellites* is an array of String containing the names of all its satellites. Define the class, with a constructor taking a String and an array of String as argument for initializing the object. Write a method print() in the class to print out the name of the planet and all the satellites. For example, if we have String[] earth_sat = { "Moon" }; Planet earth = new Planet("Earth", earth_sat); Then we want earth.print(); to print out the following: Earth has 1 satellite(s): Moon.