

Day.4

Classes and Objects, Constructors, Abstraction and Encapsulation
Constructor Overloading

Q1) Create a class called Marks with the following details: regnum, MarksInEng, MarksInMaths and MarksInScience. Write getters and setters for the all variables. Use the class Student which is already created for getting the details of the student. Create a class called Standard with 5 students' details and write separate method for each of the following tasks and invoke the same.

- a) To display the entire reg no and the name of the students in the class in the ascending order of reg no.
- b) To display the reg no and the name of the student who has got the highest percentage.
- c) To display the reg no and the name of the student who scored highest mark in mathematics.
- d) To display the reg no and the name of the student in the ascending order of the total marks in mathematics and science alone.
- e) To display the reg no, name, total marks, percentage and rank of all the students in the descending order of rank.

Q2) Create a class called Calculator which has different add methods. Overload the methods such that the parameters can be of the following pattern.

- a) Both are of int data type.
- b) Both are of double data type.

c) First parameter is of int data type and second parameter is of double data type.

d) First parameter is of double data type and second parameter is of int data type

Q3) Create an object to access these methods and invoke these methods with different type of numbers and display the result in the corresponding methods.

a) Create an AddressBook class encapsulating name (String), tempAdd (Address), premAdd (Address) and phone number(long). Provide appropriate getter and setter methods.

b) Address class encapsulates house address– name, street address, city, state.

c) The Address class must be available only to AddressBook class.

d) Make sure that name assigned to AddressBook object is same as name assigned to Address object.

e) Test the application by creating AddressBook object and printing address and email id assigned to AddressBook object.