Deadline: 10/03/2023

Mapped to CLO1

Methods and Constructors

Q1 Create a class *Account* class with *balance, yearofOpening and CNIC* as data member.
Create :
    a. Default constructor
    b. One-argument Constructor (balance)
    c. Three- argument constructor
    d. setValues()
    e. display()
    f. withDraw()
    g. deposit()
    h. calculateAgeOfAccount()

Q2 Create a *quadraticEquation* Class *with a, b and c* as data members.
Create:
    a. Default constructor
    b. Three- argument constructor
    c. Display()
    d. setValues ()
    e. getDiscriminant() //returns double
    f. checkIfDescriminantIsGretaerThan100() //Boolean return

Q3 Create a class *Rectangle* with *length and width* as data members.
Create:
    a. Default constructor
    b. two- argument constructor
    c. Display()
    d. setValues ()
    e. calculateArea ()
    f. checkSquare () //Boolean return

Q4 Create a class *Point* class with *x and y* as data members.

   Create:
   a. Default constructor
   b. two- argument constructor
   c. Display()
   d. setValues ()
   e. move ()
   f. checkOrigin () //Boolean return

Q5 Create a *Book* class with *author and chapterNames*[5] as data members.

   Create:
   a. Default constructor
   b. two- argument constructor
   c. Display()
   d. setValues ()
   e. checkIfAuthorNameStartsWithA ()
   f. searchChapter () //Boolean return

Q6 Create a *Student* Class with *name, GPA, subjects[5] and email* as data members.

   Create:
   a. Default constructor
   b. four- argument constructor
   c. Display()
   d. setValues ()
   e. searchSubject ()
   f. checkProbStatus () //Boolean return
   g. validateEmail() //Boolean return

Q7 Create a class "University" having following characteristics:

   Data Members:
   - String uniName;
   - String location;
   - String rectorName;
   - String departments[20]; // it's a string array

Constructors:

- No argument
- Two argument (UniName and RectorName)
- A Constructor setting values of all parameters.

Methods:

- display
  - This methods displays all the data members of the class
- addADepartment
  - This method should add a new department the Departments [] array.
- checkIfLocatedInCapital
  - This will return true if university is located in federal capital or provincial capital.
- searchDepartment
  - This method will return true if a certain department is found

Runner class:

Create a runner class such that all Constructors and methods are called at least once.