**Lab Methods and Constructors**

1. Create a class Account class with balance, yearofOpening and CNIC as data member. Create :
   1. Default constructor
   2. One-argument Constructor (balance)
   3. Three- argument constructor
   4. setValues()
   5. display()
   6. withDraw()
   7. deposit()
   8. calculateAgeOfAccount()
2. Create a quadratic Equation Class with **a, b and c** as data members. Create
3. Default constructor
4. Three- argument constructor
5. Display()
6. setValues ()
7. getDiscriminant() //returns double
8. checkIfDescriminantIsGretaerThan100() //Boolean return
9. Create a class Rectangle with length and width as data members. Create
   1. Default constructor
   2. two- argument constructor
   3. Display()
   4. setValues ()
   5. calculateArea ()
   6. checkSquare () //Boolean return
10. Create a class Point class with x and y as data members. Create
    1. Default constructor
    2. two- argument constructor
    3. Display()
    4. setValues ()
    5. move ()
    6. checkOrigin () //Boolean return
11. Create a Book class with author and chapterNames[5] as data members. Create
    1. Default constructor
    2. two- argument constructor
    3. Display()
    4. setValues ()
    5. checkIfAuthorNameStartsWithA ()
    6. searchChapter () //Boolean return
12. Create a Student Class with name, Gpa, subjects[5] and email as data members. Create
    1. Default constructor
    2. four- argument constructor
    3. Display()
    4. setValues ()
    5. searchSubject ()
    6. checkProbStatus () //Boolean return
    7. validateEmail() //Boolean return
13. 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
* addADepartments
  + This method should add a new department the Departments [] array.
* checkIfLocatedInCapital
  + This method 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.