1. **Write a program contains a class EQ that has data members: a, b, c as float. It contains a constructor with parameters (use initialization list form), copy constructor, a function to solve the quadratic equation with parameters a, b, c and display its roots by using the quadratic formula b^2 – 4ac. In main function define three objects of this class, and call the function on them.**

2. **Write a program contains a class Student that has data members: name (string), ID(int), age(float), G[3](float), GPA(float). It contains a constructor with default parameters and a function to display data members. In main function define three objects and compare between them according to their GPA and display the max object.**

3. **Write a program contains a struct Data that has data members: R(float), I(float). The program contains a class Complex that has data members: C[20](Data), D[20], n (number of elements for C, D). It contains a function to read data members n, C and set the elements of D such that each element D_i is equal to $\sqrt{(C_i.R)^2 + (C_i.I)^2}$ for i=,..,n-1, a function to display the elements of C (complex number format), and the elements of D in tabular format, a function to sort**

the elements of C according to their corresponding elements of D, a function to return the average for the all the elements of D, a function to compare between the average of D for two objects and display the object with minimum value. In main function, define two objects of Complex, and call the functions on them.

Home Work

Write a program contains a class GCD that has data members: X[20][(float), Y[20] (float) n (number of elements), G[20] (int). This class contains a function to return the greatest common divisor for two given positive numbers, a function to read data members X, Y, n, and set the elements of G such that each G_i is greatest common divisor for two corresponding numbers X_i , Y_i $\forall$ i=0,.., n-1 (the elements of X, Y must be positive integer elements). It contains a function to display data members X, Y, G in tabular form, a function to return min number in G for one object, and a function to compare between min numbers in G for two objects and display min object. In main function, define two objects of GCD, and call the functions on them.