1. **Write a program contains a class Student that has data members: name (string), age(float), id (int), and ten marks (double), avg (the average for ten marks). This class contains two constructors one with default parameters, and the other copy constructor. It contains a function to display data members. In main function, test this class for two objects.**

2. **Write a program contains a class Complex that has data members: R(int), and I(int). It contains a constructor with initialization list, and a copy constructor. It contains a function to display data members in complex format, a function to convert a complex number into real number which is equal $\sqrt{R^2 + I^2}$. It contains a function to return the multiplication of two complex numbers, a function to return the division of two complex numbers, a function to compare between two complex numbers and return the max object, a function to return the average for two real values (converted values for two given complex numbers). In main function, define four objects of Complex, and apply all functions on them.**

3. **Write a program contains a class Num that has data members: N[10] (float) , m (int — number of elements), and T[10](string) This class includes a function to return the factorial of a given number, a function to test if a given number prime or not, a function to read data members N and m, and set the elements of T**

such that each T_i takes "prime" if N_i is prime number, and "not prime" otherwise (the elements of N must be positive integer). This class contains a function to display the data members in tabular form, a function to return the sum of the factorials of prime numbers in N, a function to return the average of not prime numbers in N (hint: use T array). In main function, define an object of class Num and apply all functions on it.

4. **Write a program contains a class GCD that has data members: X[20][(float), Y[20] (float) n (int — 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 apply all functions on them.**