**Lab Assignment 1**

**UCS 406 Data Structures and Algorithms**

Note: Use C/C++ or JAVA programming language.

Q1. Write a program that

1. computes and returns the sum of all the integers between "first" and "last" inclusive.
2. computes and returns the smallest positive integer n for which 1+2+3+...+n equals or exceeds the value of "goal".
3. computes and returns the greatest common divisor (g.c.d.) of the arguments passed to it.
4. Determines whether an integer is prime.
5. Prints the English name of an integer from 1 to 9.
6. Reverses the order of the objects in an array.
7. Finds the index of the largest number in an array.
8. Shifts the contents of array cells one cell to the right, with the last cell's contents moved to the left end.
9. Examines an array of integers and eliminates all duplication of values. The distinct integers are all moved to the left part of the array.
10. Copies numbers from two arrays into a third array. The numbers from the second array are placed to the right of the numbers copied from the first array.

Q2. Write a program to find sum of all elements of an array; write a program to find maximum of elements of an array; write a program for linear search of an array.

Q3. Write a program for adding and subtracting Matrices using 2D Arrays.

Q4. Write a program to Multiply Matrices of 10X10.

Q5. Write a program for Linear Search using Functions.

Q6. Write a class for a rectangle. Create objects for this class and call the member functions to find the area and perimeter of the rectangle.