

## **Data Structures and Algorithms**

**MC 124**

**Lab 1**

**30.03.2022**

### **Exercise 1**

Accept the value of N from user. Write a program to print the following pattern where N is the number of rows to be printed. The following result will be output when N=6.

ABCDEF

BCDEF

CDEF

DEF

EF

F

### **Exercise 2**

Accept values in an NxM array, and find out row total and column total.

### **Exercise 3**

- (a) Write a program that calculates the sum of diagonal elements of an NxN matrix.
- (b) Write a program that calculates the sum of off-diagonal elements of an NxN matrix.

### **Exercise 4**

- (a) Ask user to enter 2 numbers. Define a function that adds them and print the output.
- (b) Ask user to enter 2 numbers and the operation Id (1, 2, 3, or 4 which represent addition, subtraction, multiplication and division, respectively). Define a function that performs that operation and print the output.

### **Exercise 5**

Ask user to enter a sentence and define a function that reverses the sentence.