LAB QUIZ 02 (SECTION SE A)

CS211 – Data Structures & Algorithms  
Usman Institute of Technology  
Fall 2020

1. Create a class **Matrix** and write functions in python whose return values are given below. You can use the following script and add the functions in the script given below:
2. Add a function **MaxValue**, that returns the maximum value of ***left diagonal*** of matrix (You are not allowed to use any built-in function of max)
3. Add a function **SearchDiagonalValue**, that takes an argument *value*  and returns True if the value is in ***Right* *diagonal*** of the matrix. Otherwise, the function should return false.

**class Matrix:**

**def \_\_init\_\_(self,row,col):**

**self.row = row**

**self.col = col**

**self.data = [0 for i in range(row\*col)]**

**def Location(self,i,j):**

**l = i \* self.col + j**

**return l**

**def SetValue(self,i,j,v):**

**l = self.Location(i,j)**

**self.data[l] = v**

**def GetValue(self,i,j):**

**l = self.Location(i,j)**

**return self.data[l]**

**def Print(self):**

**for i in range(self.row):**

**for j in range(self.col):**

**print(self.GetValue(i,j), end = " ")**

**print('\n')**

**def** **MaxValue**(self):

// your code goes here

**def** **SearchDiagonalValue**(self,value):

// your code goes here

**Example:**

row = 3

col = 3

obj = Matrix(row,col)

for i in range(row):

for j in range(col):

obj.SetValue(i,j,i+j)

obj.Print()

print(obj.MaxValue())

print(obj.SearchDiagonalValue(4))

print(obj.SearchDiagonalValue(2))

**Output:**

0 1 2  
1 2 3

2 3 4

#Max Value in left diagonal of matrix

4

#Search value 4 in matrix

False (since 4 is not present in right diagonal of matrix)

#Search value 2 in matrix

True (since 2 is present in right diagonal)