**Lab 21 (partially filled 2D arrays)**

**Lab Task 1:**

Write down the definitions of the following functions.

void Copy( const int X[][MAX\_COL], int Y[][MAX\_COL], int count\_rows, int count\_cols);

This function receives an input array X of size MAX\_ROW x MAX\_COL, and copies this array into array Y having the same size.

Note that the function will be called as given below:

Copy(X1, Y1, MAX\_ROW, MAX\_COL); // where X1 and Y1 are array actual arguments

E.g. if X is as give below (i.e. MAX\_ROW=3, MAX\_COL=5):

Calendar

Description automatically generated

Then, after calling this function, Y should also be as given below:

Calendar

Description automatically generated

2. void Subarray2(const int X[][MAX\_COL],

int Y[][MAX\_COL], int count\_rows1, int count\_cols1, int count\_rows2, int count\_cols2);

This function receives an input array X of size MAX\_ROW1 x MAX\_COL1, and copies an initial subarray of size count\_rows2 x count\_cols2 from X into array Y (see example below). Thus, array Y has an actual size of count\_rows2 x count\_cols2.

E.g. Assume MAX\_ROW=3, MAX\_COL=3, and X is as give below:

Calendar

Description automatically generated

And count\_rows2=2, count\_cols2=2, then after completing the function, Y should be:

Calendar

Description automatically generated

Note that in the above case, the function will be called as given below:

Subarray2(X1, Y1, MAX\_ROW, MAX\_COL, 2, 2); // where X1 and Y1 are array actual arguments

**Call the above functions in main to test on different arrays and verify that these functions are correct.**

**HOME TASK (List of Strings):**

Walkthrough the programming Example “Text Processing” at the end of Chapter 9 and understand the code completely. After you understand the code well, convert the program code so that the program first reads a list of strings from the input file (rather than character by character reading from the input file). Then, the program processes this list of strings to produce the same output as that of the original example.