ព្រះរាជាណាចក្រកម្ពុជា

ជាតិ សាសនា ព្រះមហាក្សត្រ

Institute of technology of Cambodia

Department of Information and communication Engineering

The lesson taking about basic of array.

TP8-Use array

TP: Algorithm and Programming

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Contents

Problem1:

Write a program which displays the letters in a string (sequence of character / array of character / char array) in reverse order. The program ask a user for a string.

E.g: Input: covid19 vaccine

=> Output: eniccav 91divoc

art here X TP8Array ex1 venthon,e20191250.c X

```c
#include<stdio.h>
main()
{
    char text[20];
    printf("Enter the text: ");
    scanf("%s",&text);
    int n;
    n=strlen(text);
    for(int k=n-1; k>=0; k--)
    {
        printf("%c",k[text]);
    }
}
```

```
"C:\Code C program\TP8Array ex1 venthon,e20191250.exe"
Enter the text: covid19vaccine
eniccav91divoc
Process returned 0 (0x0)   execution time : 61.839 s
Press any key to continue.
```

Problem2:

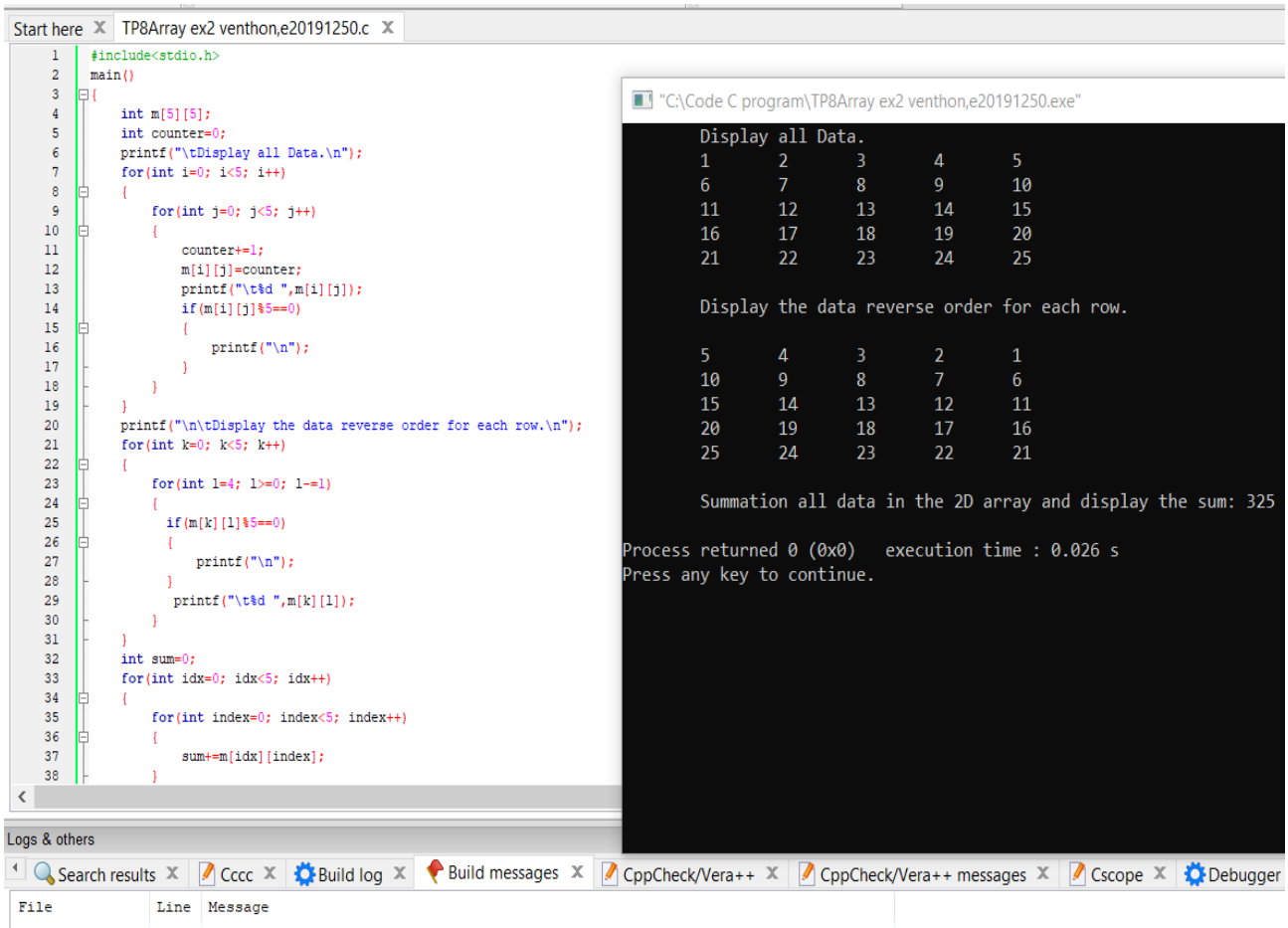
Write a program to fill data in the 2D (two-dimentional) array as the following.

1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25

int m[5][5];

Then make your program to be able to:
a) Display all data above.
b) Display the data in reverse order for each row.
c) Sum all data in the 2D array and display the sum.

E.g output of b)
5 4 3 2 1
10 9 8 7 6
15 14 13 12 11
20 19 18 17 16
25 24 23 22 21



Problem3:

Write a C program to ask a user to input 7 numbers and store in an array. Find largest and second largest element in an array.

E.g 20 10 9 80 -9 3 80
largest: 80
second largest: 20

here | TP8Array ex1 venthon,e20191250.c | TP8Array ex3 venthon,e20191250.c

```c
#include<stdio.h>
main()
{
    int number[7];
    printf("Enter of 7 number:\n");
    for(int k=0; k<7; k++)
    {
        scanf("%d",&number[k]);
    }
    int max=number[0];
    for(int k=1; k<7; k++)
    {
        if(max<number[k])
        {
            max=number[k];
        }
    }
    printf("Largest number is: %d \n",max);
    int secmax=number[0];
    for(int k=0; k<7; k++)
    {
        if(number[k]>secmax && number[k]<max)
        {
            secmax=number[k];
        }
    }
    printf("Second largest number is: %d ",secmax);
}
```

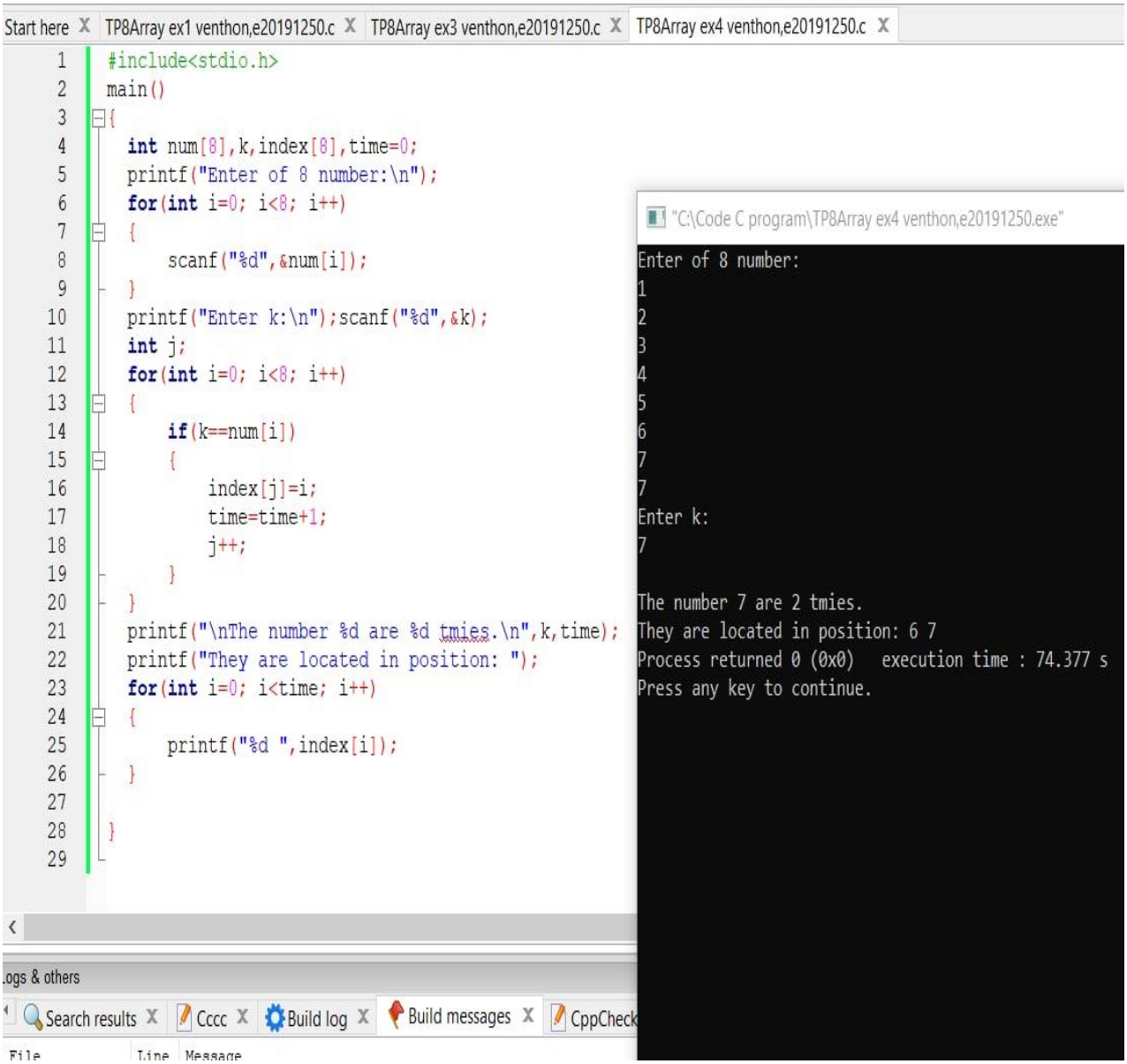
```
"C:\Code C program\TP8Array ex3 venthon,e20191250.exe"
Enter of 7 number:
10
20
30
40
70
90
110
Largest number is: 110
Second largest number is: 90
Process returned 0 (0x0)   execution time : 27.146 s
Press any key to continue.
```

Problem4:

Write a C program to search an element in an array, say myArray. The program ask the user to input 8 numbers (each number is in between 1 to 9) and store in an array.

Then ask the user to input another number, say n. The program searches for the position of n in myArray and display how many n are appearing in myArray and its positions.

E.g 7 8 9 4 7 6 1 1
n: 1
=> There are 2 times in array.
They are located in positions 6 and 7.



Problem5:

Randomize 9 numbers and store in the two 3x3 matrices, say m1 and m2. Each matrix is a 2D array of 3 rows and 3 columns.

int m1[3][3], m2[3][3];

a) Find the matrix m3 which is the summation of these two matrices. (m3 = m1+m2)

b) Find and display the max and min numbers in m3.

c) Find and display the average in m3 (find sum of all numbers, then divide by 9)