

UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA



SOFTWARE ENGINEERING

LAB-13(14 as 13) SOLUTION

SUBMITTED TO : Engr.SABA AWAN

SUBMITTED BY : MUHAMMAD ARSALAN

REG NO : 20-SE-56

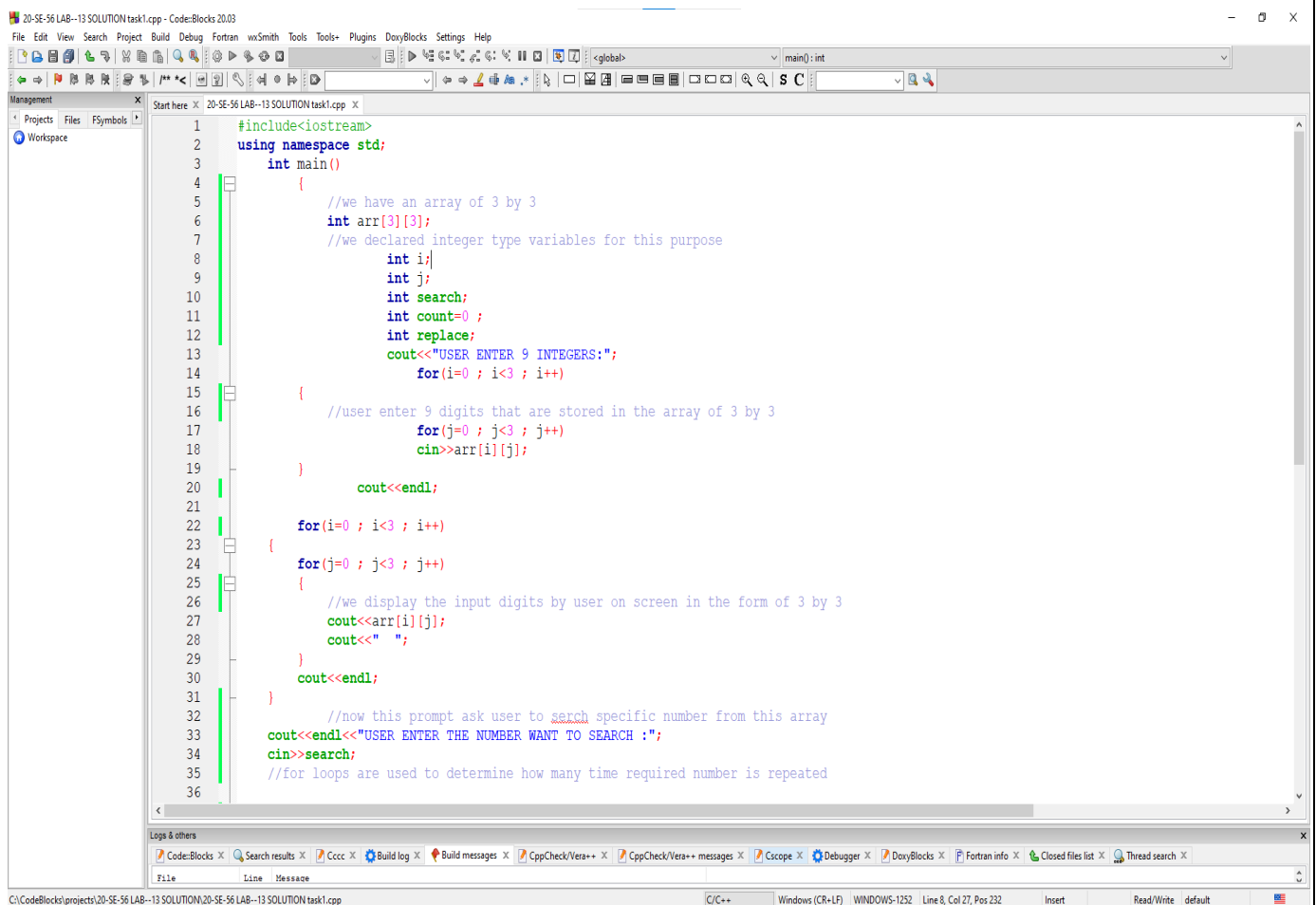
+++++

TASK-1

Write a program that takes 2-dimensional array of 9 integers from user and display it on the screen. Now the program prompts the user to enter number to be searched and the number with which actual number will be replaced. e.g. user entered 3 times value of 5 and wants to replace 5 with 0. In the final array where every 5 appears program should replace it with 0.

SOLUTION

CODE



```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      //we have an array of 3 by 3
6      int arr[3][3];
7      //we declared integer type variables for this purpose
8      int i;
9      int j;
10     int search;
11     int count=0 ;
12     int replace;
13     cout<<"USER ENTER 9 INTEGERS:";
14     for(i=0 ; i<3 ; i++)
15     {
16         //user enter 9 digits that are stored in the array of 3 by 3
17         for(j=0 ; j<3 ; j++)
18             cin>>arr[i][j];
19     }
20     cout<<endl;
21
22     for(i=0 ; i<3 ; i++)
23     {
24         for(j=0 ; j<3 ; j++)
25         {
26             //we display the input digits by user on screen in the form of 3 by 3
27             cout<<arr[i][j];
28             cout<<" ";
29         }
30         cout<<endl;
31     }
32     //now this prompt ask user to search specific number from this array
33     cout<<endl<<"USER ENTER THE NUMBER WANT TO SEARCH :";
34     cin>>search;
35     //for loops are used to determine how many time required number is repeated
36 }
```

```
20-SE-56 LAB--13 SOLUTION task1.cpp - CodeBlocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here: 20-SE-56 LAB--13 SOLUTION task1.cpp
35 //for loops are used to determine how many time required number is repeated
36
37 for(i=0 ; i<3 ; i++)
38 {
39     for(j=0 ; j<3 ; j++)
40     {
41         if(search==arr[i][j])
42             count++;
43     }
44 }
45 cout<<endl;
46 cout<<"THE NUMBER REPEATED "<<count<<" TIMES "<<endl<<endl;
47 //user will input the number he want to add in place of searched digit
48 cout<<"USER ENTER NUMBER TO REPLACE ACTUAL NUMBER :";
49 cin>>replace;
50 cout<<endl;
51 for(i=0 ; i<3 ; i++)
52 {
53     for(j=0 ; j<3 ; j++)
54     {
55         if(search==arr[i][j])
56             arr[i][j]=replace;
57     }
58 }
59 for(i=0 ; i<3 ; i++)
60 {
61     for(j=0 ; j<3 ; j++)
62     {
63         cout<<arr[i][j];
64         cout<<" ";
65     }
66     cout<<endl;
67 }
68 return 0;
69
70
```

OUTPUT

```
"C:\CodeBlocks\projects\20-SE-56 LAB--13 SOLUTION\20-SE-56 LAB--13 SOLUTION task1.exe"
USER ENTER 9 INTEGERS:1 2 3 2 5 2 7 9 2
1 2 3
2 5 2
7 9 2

USER ENTER THE NUMBER WANT TO SEARCH :2

THE NUMBER REPEATED 4 TIMES

USER ENTER NUMBER TO REPLACE ACTUAL NUMBER :0

1 0 3
0 5 0
7 9 0

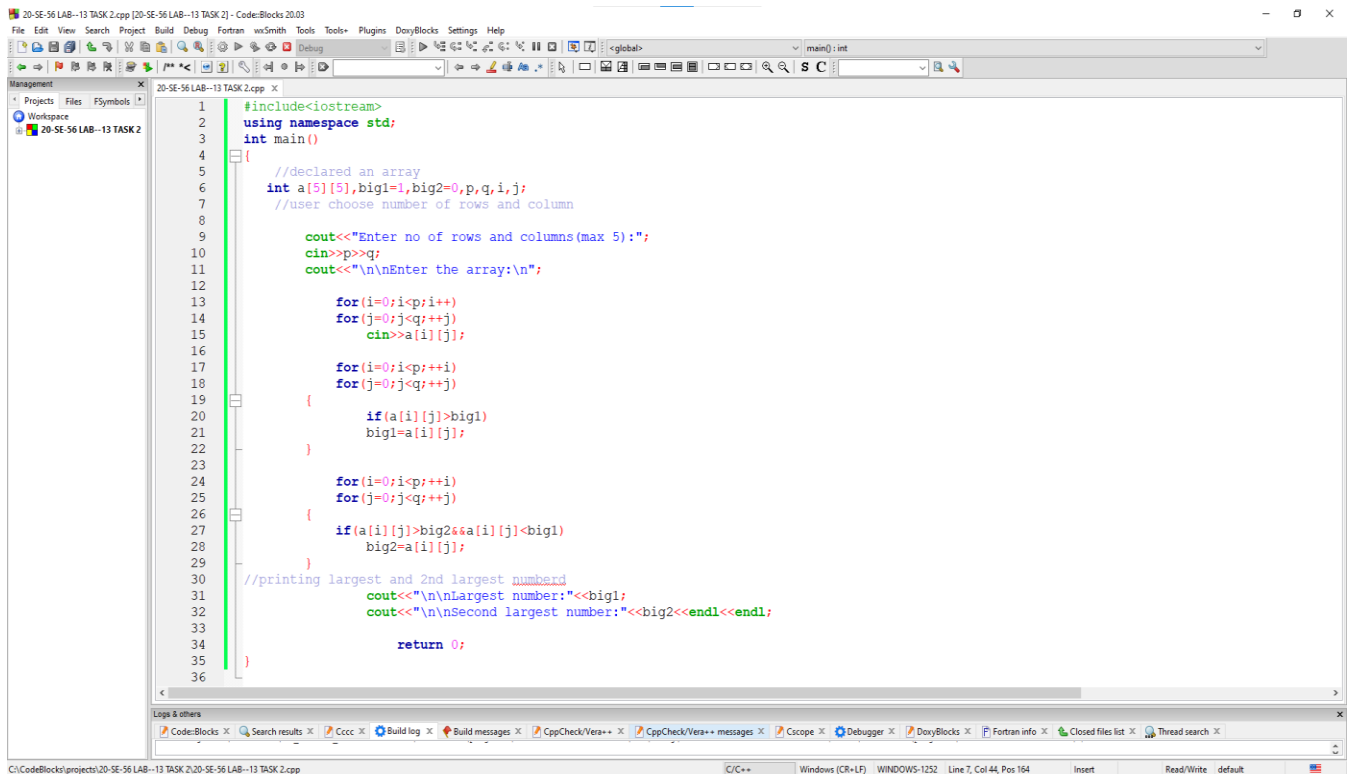
Process returned 0 (0x0) execution time : 31.978 s
Press any key to continue.
```

TASK-2

Write a program that takes 2-dimensional array of 16 integers from user . Program should Find Largest and Second Largest Number in 2D Array.

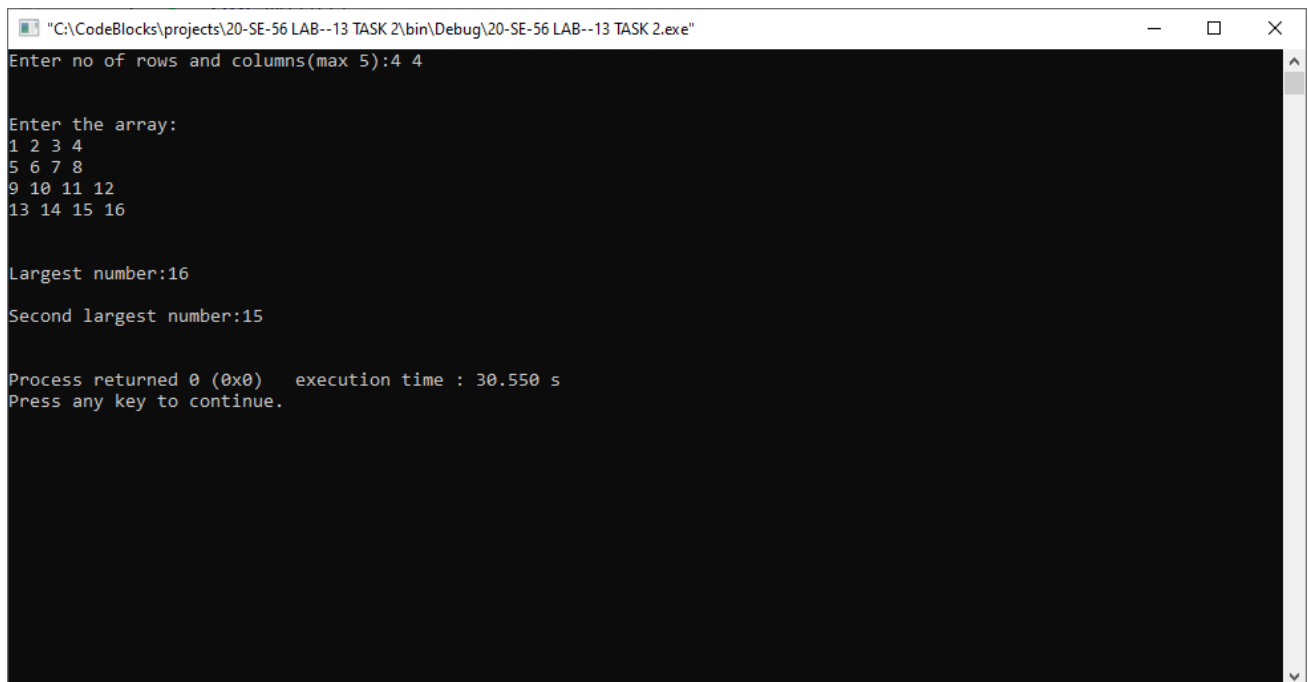
SOLUTION

CODE



```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      //declared an array
6      int a[5][5],big1=1,big2=0,p,q,i,j;
7      //user choose number of rows and column
8
9      cout<<"Enter no of rows and columns(max 5):";
10     cin>>p>>q;
11     cout<<"\n\nEnter the array:\n";
12
13     for(i=0;i<p;i++)
14     for(j=0;j<q;j++)
15         cin>>a[i][j];
16
17     for(i=0;i<p;i++)
18     for(j=0;j<q;j++)
19     {
20         if(a[i][j]>big1)
21             big1=a[i][j];
22     }
23
24     for(i=0;i<p;i++)
25     for(j=0;j<q;j++)
26     {
27         if(a[i][j]>big2&&a[i][j]<big1)
28             big2=a[i][j];
29     }
30     //printing largest and 2nd largest number
31     cout<<"\n\nLargest number:"<<big1;
32     cout<<"\n\nSecond largest number:"<<big2<<endl<<endl;
33
34     return 0;
35 }
36
```

OUTPUT



```
"C:\CodeBlocks\projects\20-SE-56 LAB--13 TASK 2\bin\Debug\20-SE-56 LAB--13 TASK 2.exe"
Enter no of rows and columns(max 5):4 4

Enter the array:
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16

Largest number:16

Second largest number:15

Process returned 0 (0x0)   execution time : 30.550 s
Press any key to continue.
```