UNIVERSITY OF ENGINEERING AND TECHNOLOGY,TAXILA

SOFTWARE ENGINEERING

LAB-13(14 as 13) SOLUTION

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REG NO   : 20-SE-56

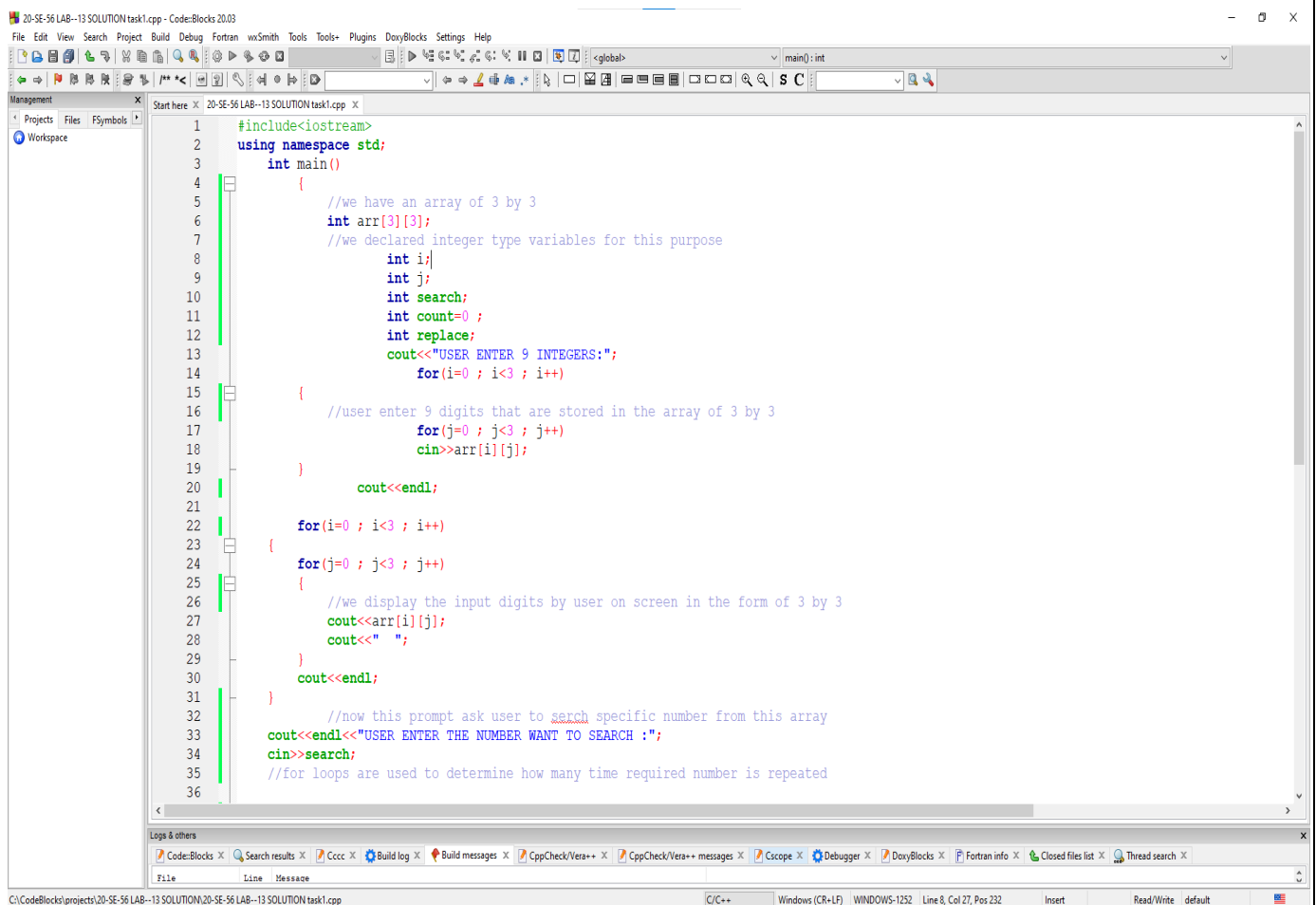++

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 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

```cpp
#include<iostream>
using namespace std;
    int main()
        {
            //we have an array of 3 by 3
            int arr[3][3];
            //we declared integer type variables for this purpose
                int i;
                int j;
                int search;
                int count=0 ;
                int replace;
                cout<<"USER ENTER 9 INTEGERS:";
                    for(i=0 ; i<3 ; i++)
        {
            //user enter 9 digits that are stored in the array of 3 by 3
                    for(j=0 ; j<3 ; j++)
                    cin>>arr[i][j];
        }
                cout<<endl;

        for(i=0 ; i<3 ; i++)
        {
        for(j=0 ; j<3 ; j++)
            {
            //we display the input digits by user on screen in the form of 3 by 3
            cout<<arr[i][j];
            cout<<"  ";
            }
        cout<<endl;
        }
            //now this prompt ask user to serch specific number from this array
        cout<<endl<<"USER ENTER THE NUMBER WANT TO SEARCH :";
        cin>>search;
        //for loops are used to determine how many time required number is repeated
```

```cpp
            //for loops are used to determine how many time required number is repeated

            for(i=0 ; i<3 ; i++)
            {
            for(j=0 ; j<3 ; j++)
            {
            if(search==arr[i][j])
                    count++;
            }
            }
            cout<<endl;
            cout<<"THE NUMBER REPEATED  "<<count<<" TIMES "<< endl<<endl;
            //user will input the number he want to add in place of searched digit
            cout<<"USER ENTER NUMBER TO REPLACE ACTUAL NUMBER :";
            cin>>replace;
            cout<<endl;
                    for(i=0 ; i<3 ; i++)
                    {
                        for(j=0 ; j<3 ; j++)
                        {
                        if(search==arr[i][j])
                            arr[i][j]=replace;

                        }
                        }
                        for(i=0 ; i<3 ; i++)
                        {
                        for(j=0 ; j<3 ; j++)
                        {
                        cout<<arr[i][j];
                        cout<<"  ";
                        }
                        cout<<endl;
                        }
                        return 0;
                    }
```

OUTPUT

```
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.
```
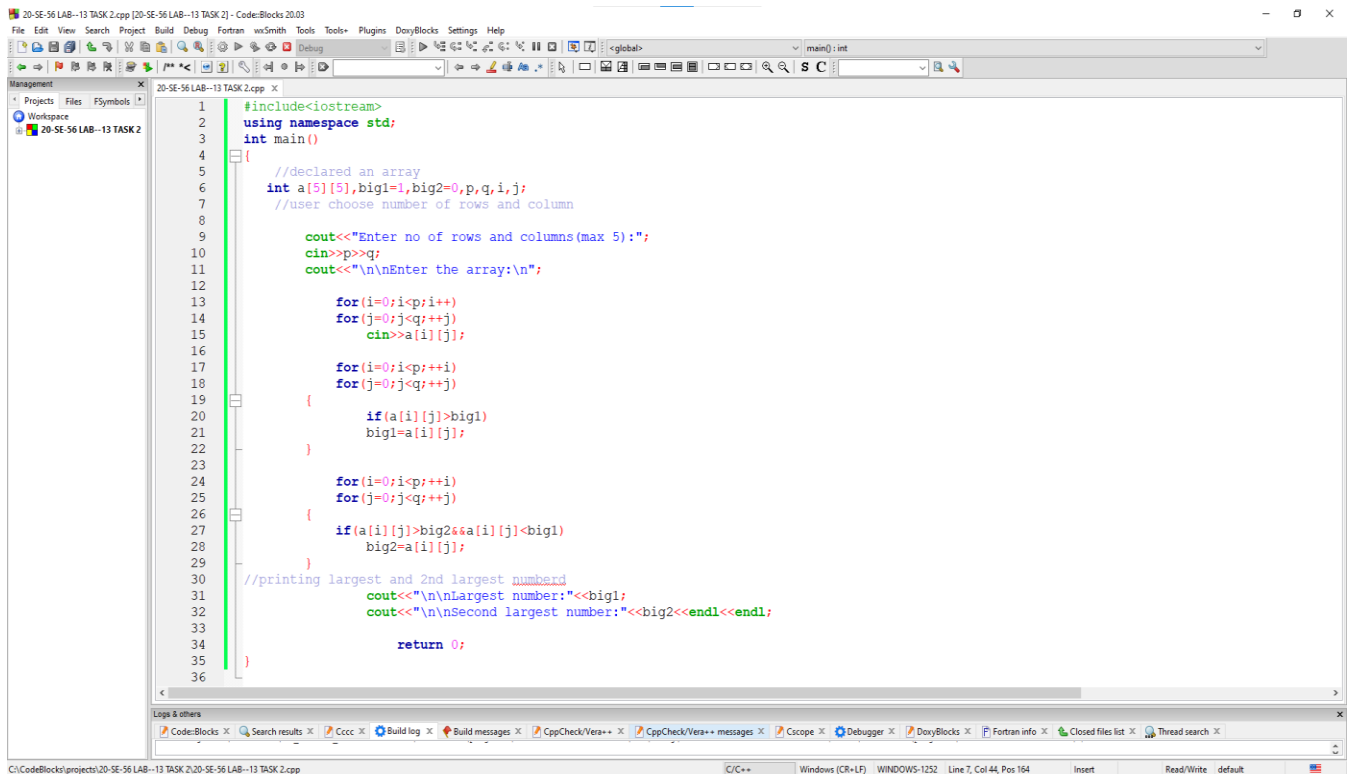
TASK-2

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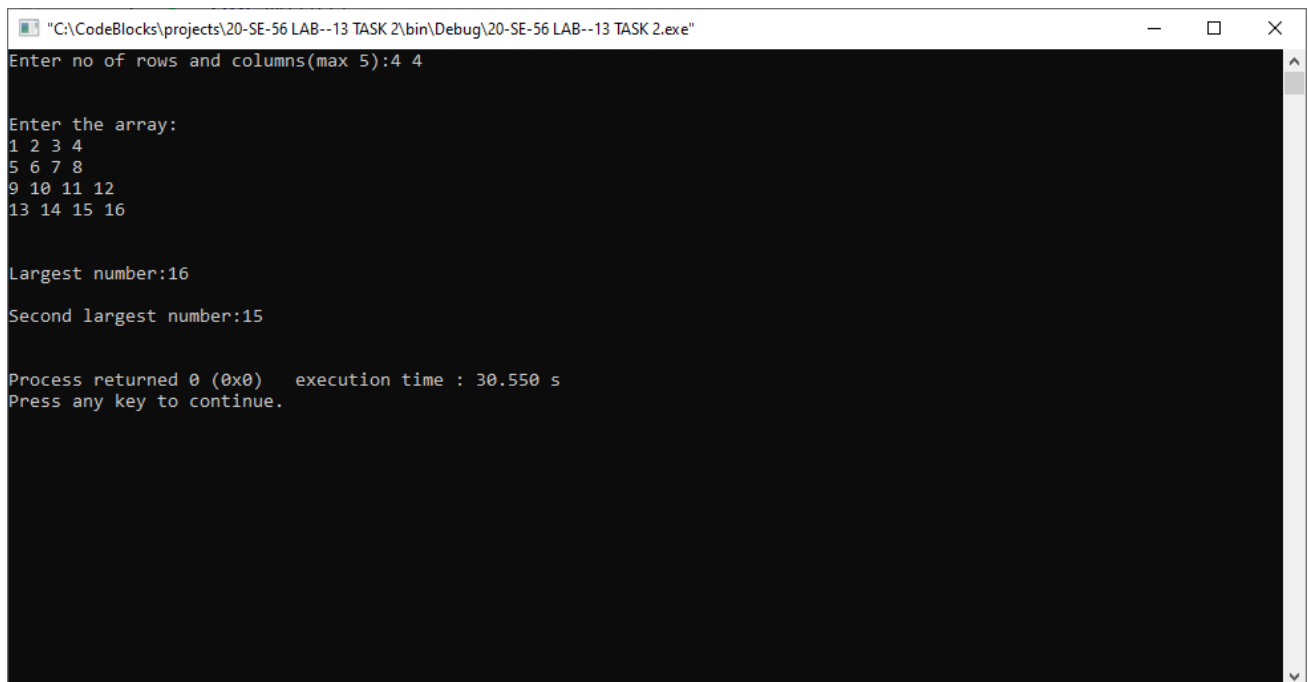
SOLUTION

CODE

```cpp
#include<iostream>
using namespace std;
int main()
{
    //declared an array
    int a[5][5],big1=1,big2=0,p,q,i,j;
    //user choose number of rows and column

        cout<<"Enter no of rows and columns(max 5):";
        cin>>p>>q;
        cout<<"\n\nEnter the array:\n";

            for(i=0;i<p;i++)
            for(j=0;j<q;++j)
                cin>>a[i][j];

            for(i=0;i<p;++i)
            for(j=0;j<q;++j)
            {
                if(a[i][j]>big1)
                big1=a[i][j];
            }

            for(i=0;i<p;++i)
            for(j=0;j<q;++j)
            {
                if(a[i][j]>big2&&a[i][j]<big1)
                big2=a[i][j];
            }
//printing largest and 2nd largest numberd
            cout<<"\n\nLargest number:"<<big1;
            cout<<"\n\nSecond largest number:"<<big2<<endl<<endl;

                return 0;
}
```

OUTPUT

```
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.
```