UNIVERSITY OF ENGINEERING AND TECHNOLOGY,TAXILA

SOFTWARE ENGINEERING

LAB-15 SOLUTION

SUBMITTED TO : ENGR.SABA AWAN

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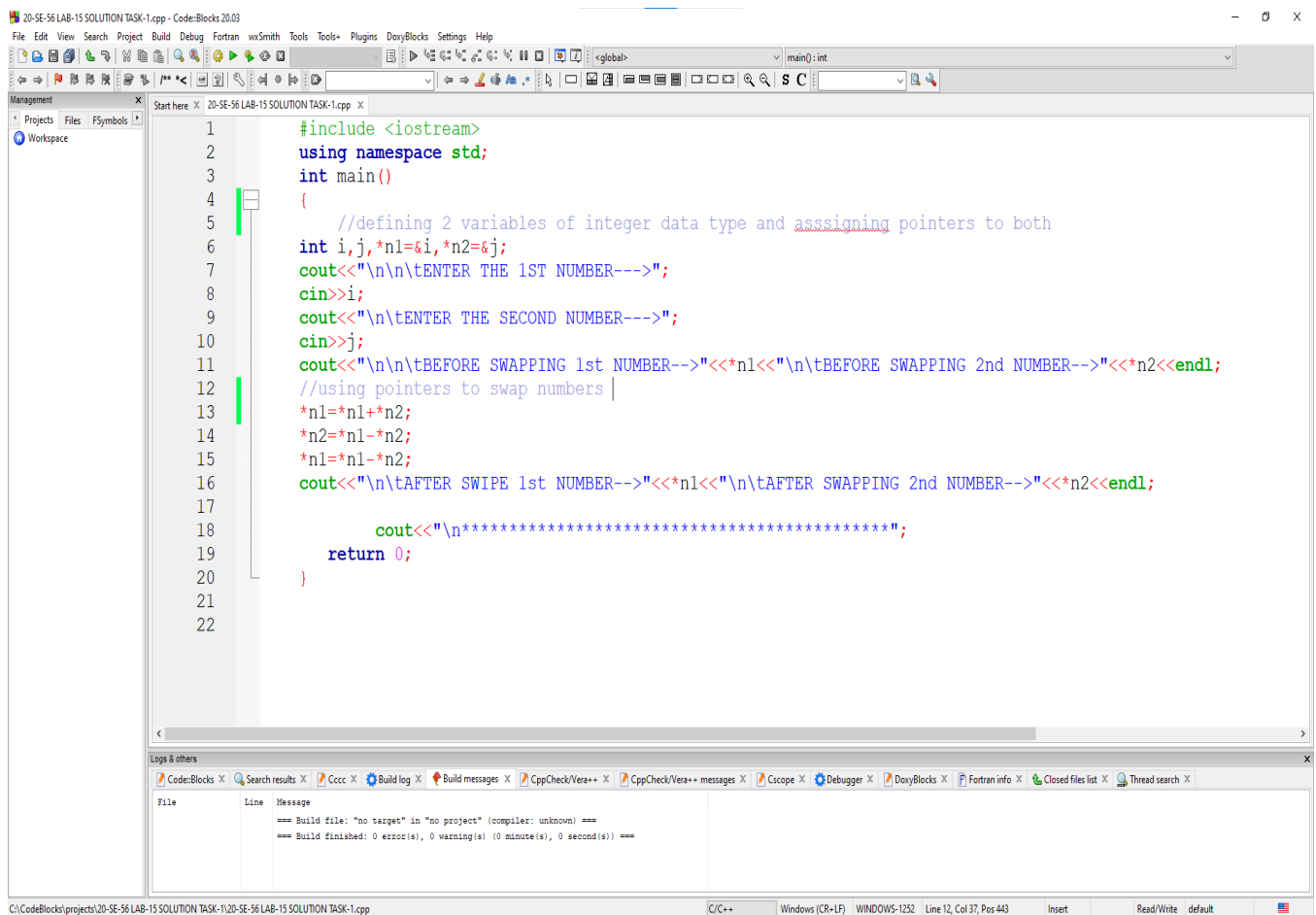
REG NO   : 20-SE-56

PROGRAMMING FUNDAMENTALS

TASK-1

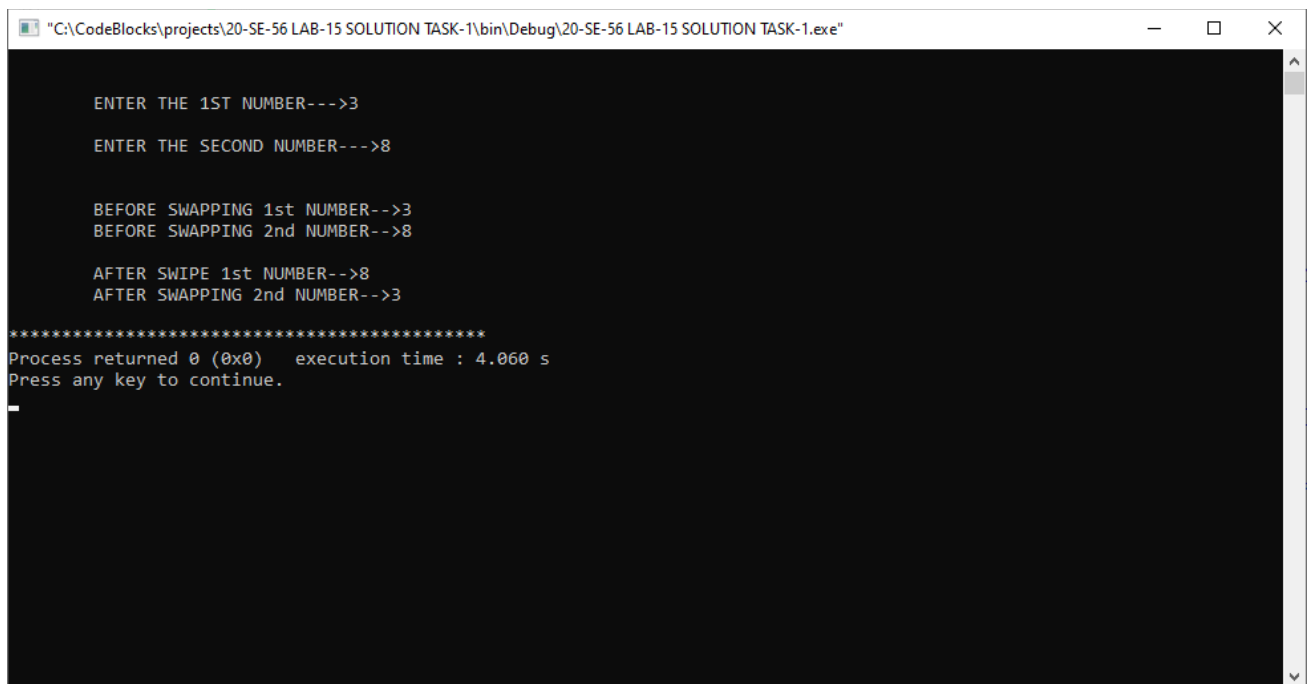Write a C++ program to swap 2 numbers without using 3rd variable by using only 2 pointers.

SOLUTION

CODE

```cpp
#include <iostream>
using namespace std;
int main()
{
    //defining 2 variables of integer data type and asssigning pointers to both
int i,j,*n1=&i,*n2=&j;
cout<<"\n\n\tENTER THE 1ST NUMBER--->";
cin>>i;
cout<<"\n\tENTER THE SECOND NUMBER--->";
cin>>j;
cout<<"\n\n\tBEFORE SWAPPING 1st NUMBER-->"<<*n1<<"\n\tBEFORE SWAPPING 2nd NUMBER-->"<<*n2<<endl;
//using pointers to swap numbers
*n1=*n1+*n2;
*n2=*n1-*n2;
*n1=*n1-*n2;
cout<<"\n\tAFTER SWIPE 1st NUMBER-->"<<*n1<<"\n\tAFTER SWAPPING 2nd NUMBER-->"<<*n2<<endl;

        cout<<"\n*******************************************";
    return 0;
}
```

OUTPUT


```
    ENTER THE 1ST NUMBER--->3

    ENTER THE SECOND NUMBER--->8


    BEFORE SWAPPING 1st NUMBER-->3
    BEFORE SWAPPING 2nd NUMBER-->8

    AFTER SWIPE 1st NUMBER-->8
    AFTER SWAPPING 2nd NUMBER-->3

************************************************
Process returned 0 (0x0)    execution time : 4.060 s
Press any key to continue.
```
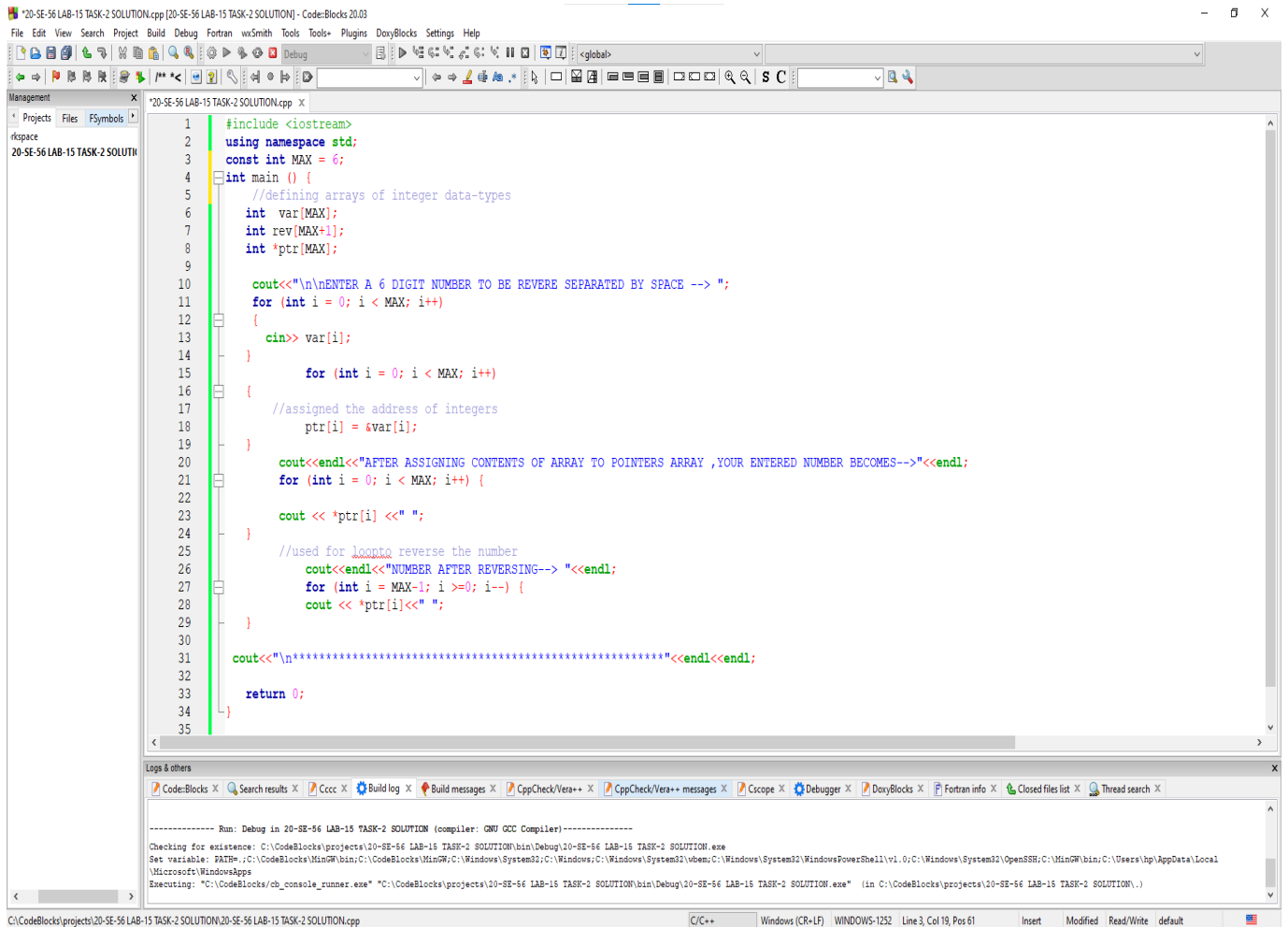
TASK-2

Write a C++ Program to reverse an array using pointers.

SOLUTION

CODE

```cpp
#include <iostream>
using namespace std;
const int MAX = 6;
int main () {
    //defining arrays of integer data-types
    int  var[MAX];
    int rev[MAX+1];
    int *ptr[MAX];

    cout<<"\n\nENTER A 6 DIGIT NUMBER TO BE REVERE SEPARATED BY SPACE --> ";
    for (int i = 0; i < MAX; i++)
    {
      cin>> var[i];
    }
            for (int i = 0; i < MAX; i++)
    {
        //assigned the address of integers
            ptr[i] = &var[i];
    }
        cout<<endl<<"AFTER ASSIGNING CONTENTS OF ARRAY TO POINTERS ARRAY ,YOUR ENTERED NUMBER BECOMES-->"<<endl;
        for (int i = 0; i < MAX; i++) {

        cout << *ptr[i] <<" ";
    }
        //used for loopto reverse the number
        cout<<endl<<"NUMBER AFTER REVERSING--> "<<endl;
        for (int i = MAX-1; i >=0; i--) {
        cout << *ptr[i]<<" ";
    }

    cout<<"\n***********************************************************"<<endl<<endl;

    return 0;
}
```

OUTPUT

```
ENTER A 6 DIGIT NUMBER TO BE REVERE SEPARATED BY SPACE --> 1 2 3 4 5 0

AFTER ASSIGNING CONTENTS OF ARRAY TO POINTERS ARRAY ,YOUR ENTERED NUMBER BECOMES-->
1 2 3 4 5 0
NUMBER AFTER REVERSING-->
0 5 4 3 2 1
********************************************************


Process returned 0 (0x0)   execution time : 7.104 s
Press any key to continue.
```