

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

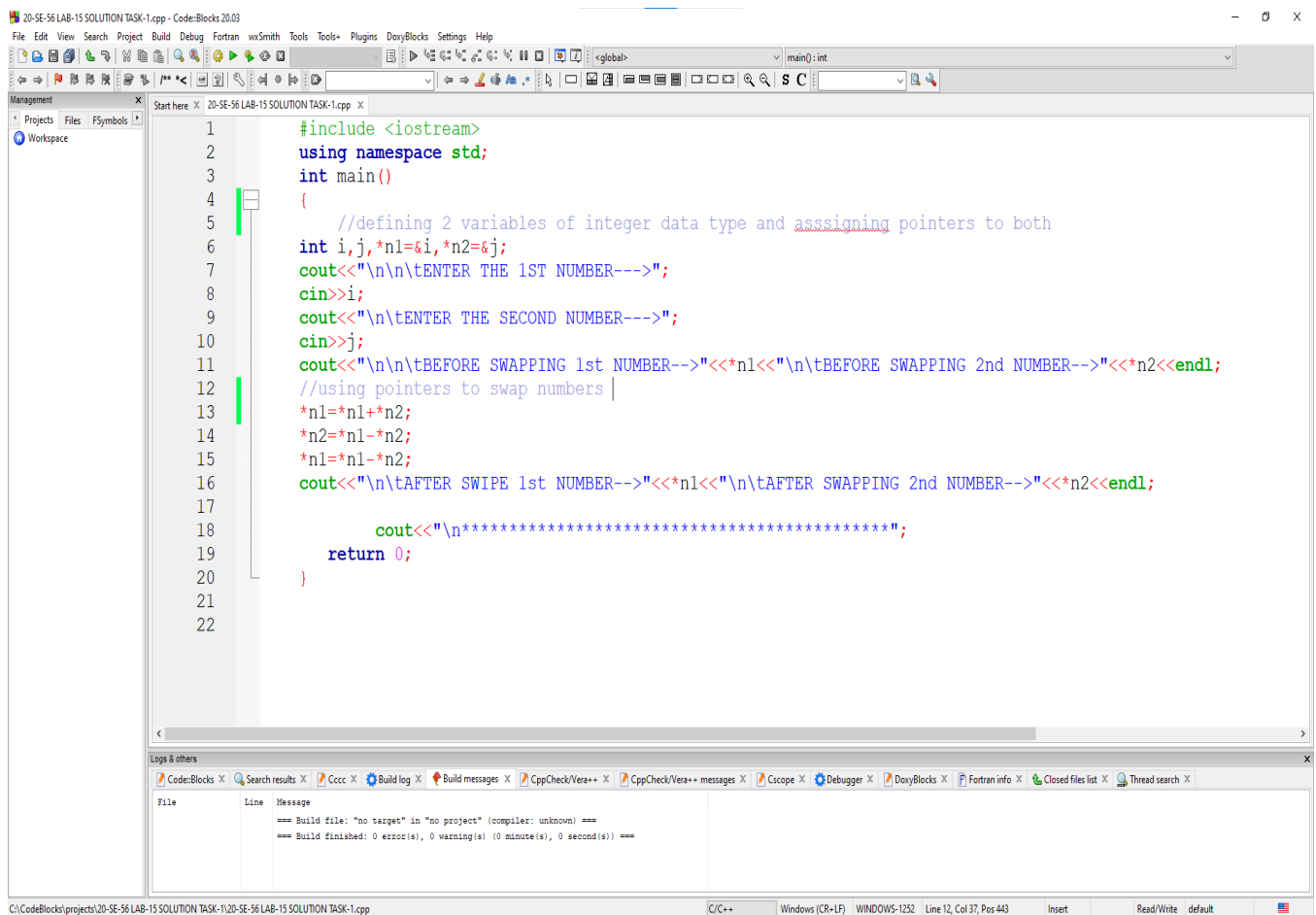
PROGRAMMING FUNDAMENTALS

TASK-1

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

SOLUTION

CODE



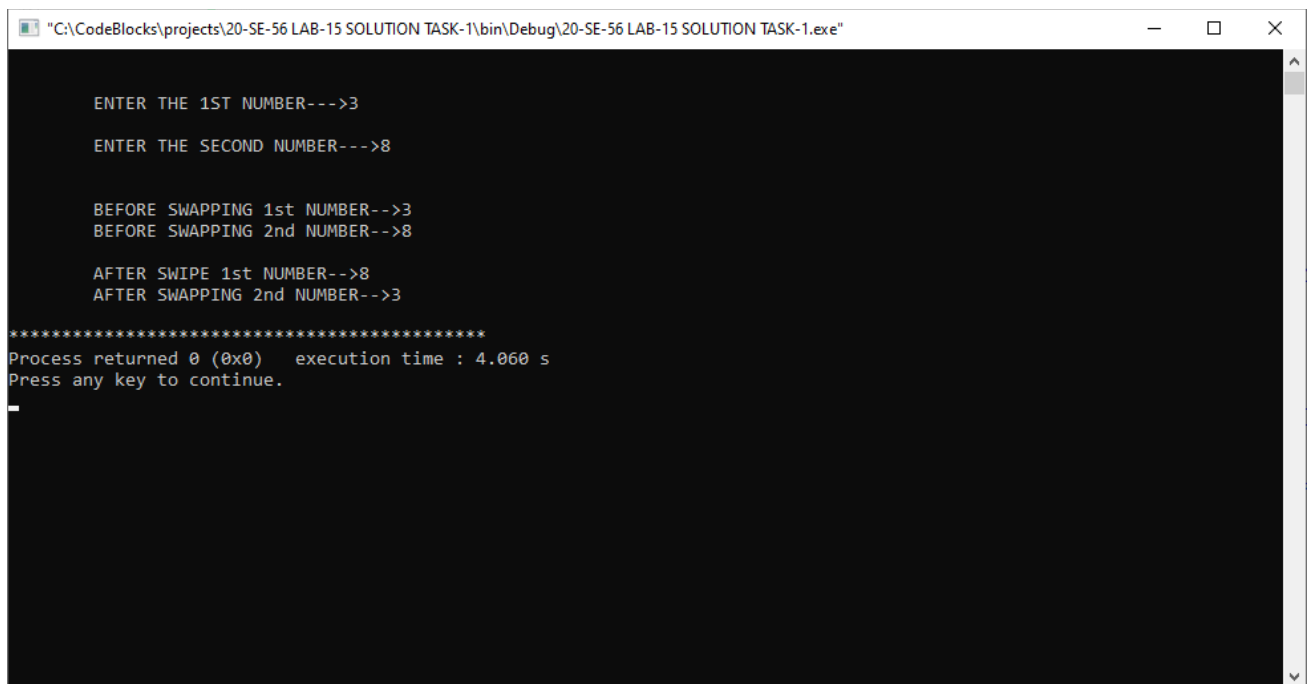
The screenshot shows a C++ IDE with a project named "20-SE-56 LAB-15 SOLUTION TASK-1.cpp". The code is as follows:

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      //defining 2 variables of integer data type and assigning pointers to both
6      int i,j,*n1=&i,*n2=&j;
7      cout<<"\n\n\tENTER THE 1ST NUMBER--->";
8      cin>>i;
9      cout<<"\n\n\tENTER THE SECOND NUMBER--->";
10     cin>>j;
11     cout<<"\n\n\tBEFORE SWAPPING 1st NUMBER-->"<<*n1<<"\n\n\tBEFORE SWAPPING 2nd NUMBER-->"<<*n2<<endl;
12     //using pointers to swap numbers |
13     *n1=*n1+*n2;
14     *n2=*n1-*n2;
15     *n1=*n1-*n2;
16     cout<<"\n\n\tAFTER SWAP 1st NUMBER-->"<<*n1<<"\n\n\tAFTER SWAPPING 2nd NUMBER-->"<<*n2<<endl;
17
18     cout<<"\n*****";
19     return 0;
20 }
21
22
```

The IDE also shows a "Logs & others" panel at the bottom with the following output:

```
File      Line      Message
=====
Build file: "no target" in "no project" (compiler: unknown)
Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s))
```

OUTPUT



```
"C:\CodeBlocks\projects\20-SE-56 LAB-15 SOLUTION TASK-1\bin\Debug\20-SE-56 LAB-15 SOLUTION TASK-1.exe"

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

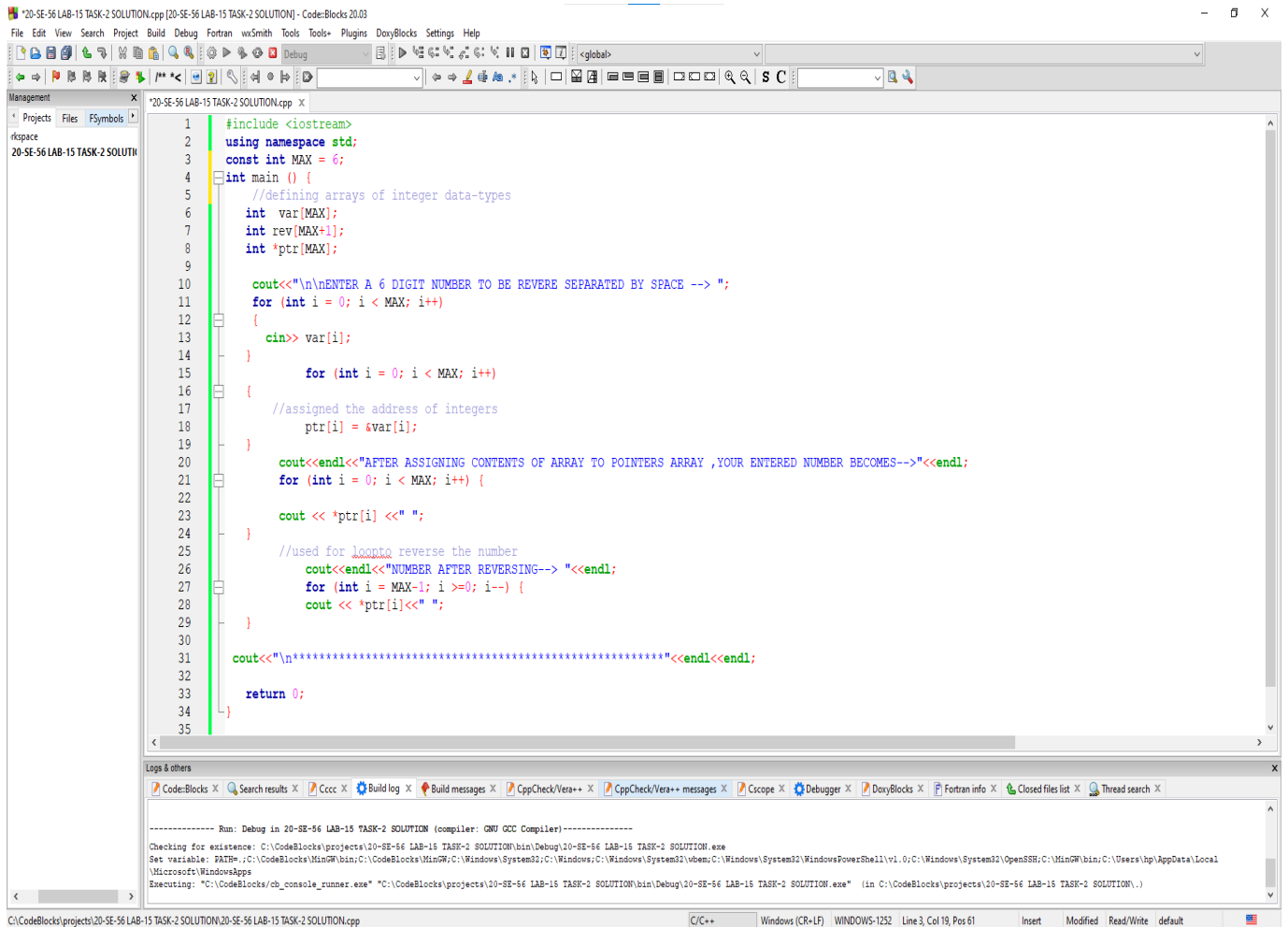
*****
Process returned 0 (0x0)   execution time : 4.060 s
Press any key to continue.
_
```

TASK-2

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

SOLUTION

CODE



```
1  #include <iostream>
2  using namespace std;
3  const int MAX = 6;
4  int main () {
5      //defining arrays of integer data-types
6      int var[MAX];
7      int rev[MAX+1];
8      int *ptr[MAX];
9
10     cout<<"\n\nENTER A 6 DIGIT NUMBER TO BE REVERE SEPARATED BY SPACE --> ";
11     for (int i = 0; i < MAX; i++)
12     {
13         cin>> var[i];
14     }
15     for (int i = 0; i < MAX; i++)
16     {
17         //assigned the address of integers
18         ptr[i] = &var[i];
19     }
20     cout<<endl<<"AFTER ASSIGNING CONTENTS OF ARRAY TO POINTERS ARRAY ,YOUR ENTERED NUMBER BECOMES-->"<<endl;
21     for (int i = 0; i < MAX; i++) {
22
23         cout << *ptr[i] << " ";
24     }
25     //used for loop to reverse the number
26     cout<<endl<<"NUMBER AFTER REVERSING--> " <<endl;
27     for (int i = MAX-1; i >=0; i--) {
28         cout << *ptr[i]<<" ";
29     }
30
31     cout<<"\n*****"<<endl<<endl;
32
33     return 0;
34 }
35
```

Log & others

CodeBlocks X Search results X Cccc X Build log X Build messages X CppCheck/Ver++ X CppCheck/Ver++ messages X Cscope X Debugger X DoxyBlocks X Fortran info X Closed files list X Thread search X

----- Run: Debug in 20-SE-56 LAB-15 TASK-2 SOLUTION (compiler: GNU GCC Compiler)-----

Checking for existence: C:\CodeBlocks\projects\20-SE-56 LAB-15 TASK-2 SOLUTION\bin\Debug\20-SE-56 LAB-15 TASK-2 SOLUTION.exe

Set variable: PATH=C:\CodeBlocks\MinGW\bin;C:\CodeBlocks\MinGW\bin;C:\Windows\System32;C:\Windows;C:\Windows\System32\wbem;C:\Windows\System32\WindowsPowerShell\v1.0;C:\Windows\System32\OpenSSH;C:\MinGW\bin;C:\Users\hp\AppData\Local\Microsoft\WindowsApps

Executing: "C:\CodeBlocks\cb_console_runner.exe" "C:\CodeBlocks\projects\20-SE-56 LAB-15 TASK-2 SOLUTION\bin\Debug\20-SE-56 LAB-15 TASK-2 SOLUTION.exe" (in C:\CodeBlocks\projects\20-SE-56 LAB-15 TASK-2 SOLUTION\.)

C:\CodeBlocks\projects\20-SE-56 LAB-15 TASK-2 SOLUTION\20-SE-56 LAB-15 TASK-2 SOLUTION.cpp C/C++ Windows (CR-LF) WINDOWS-1252 Line 3, Col 19, Pos 61 Insert Modified Read/Write default

OUTPUT



```
"C:\CodeBlocks\projects\20-SE-56 LAB-15 TASK-2 SOLUTION\bin\Debug\20-SE-56 LAB-15 TASK-2 SOLUTION.exe"

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.
_
```