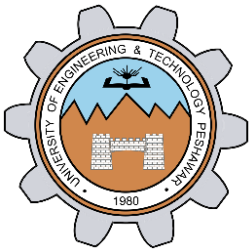
ASSIGNMENT # 1



Spring 2022

CSE102 Computer Programming

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Registration No. : **21PWCSE2059**

Class Section: **C**

"On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

Student Signature: _____

Submitted to:

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April 25, 2022

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Part 1 - Implement 8X1 Multiplexer using if-else structure.

Code:

Using_Ternary.cpp | using_If_else.cpp

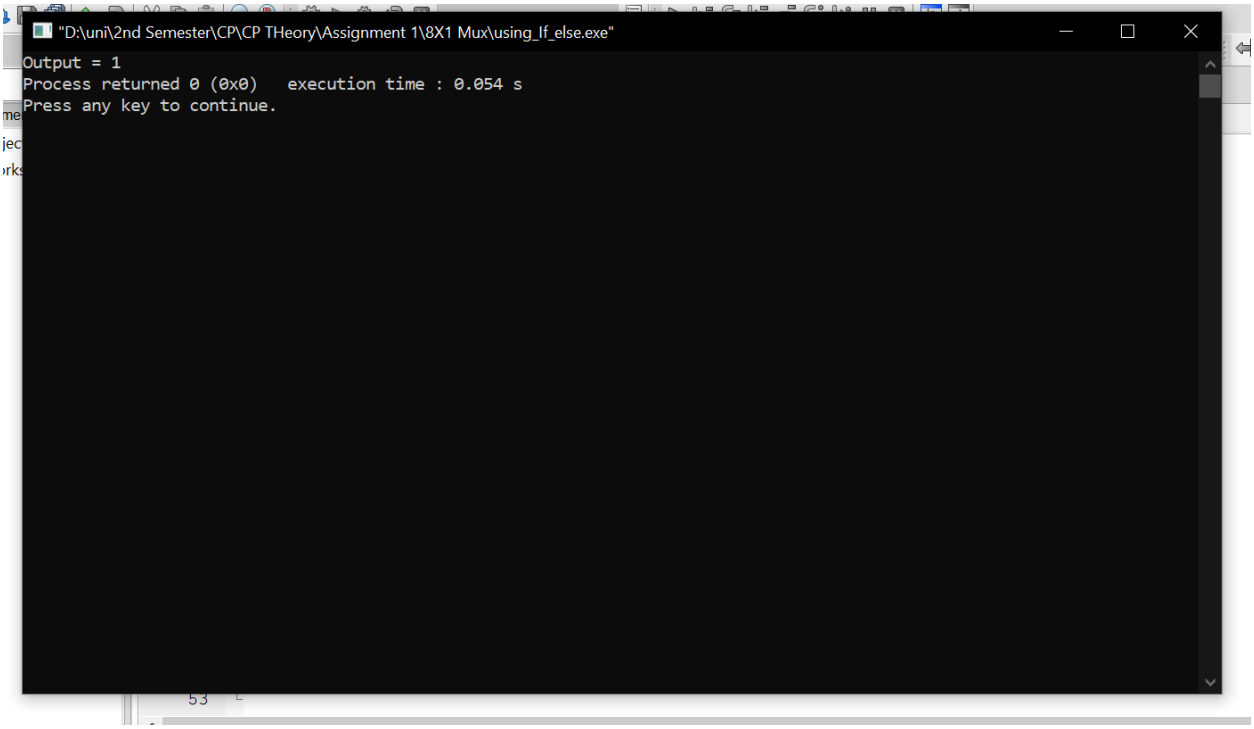
```cpp
#include<iostream>
using namespace std;

main()
{

    //Declaring and initializing input lines
    int inputI0 = 0,inputI1 = 1,inputI2 = 3,inputI3 = 3, inputI4 = 4, inputI5 = 5, inputI6 = 6, inputI7 = 7;

    //Declaring and initializing select lines
    int s2=0, s1=0, s0 =1;

    //Declaring and initializing output line
    int outputF=0;

    //Using If Else logic to implement 8x1 MUX

    if(s2 == 0){
            if(s1 == 0){
                if(s0 == 0)
                outputF = inputI0;

                else
                outputF = inputI1;
            }

            else{
                if(s0 == 0)
```

Using_Ternary.cpp | using_If_else.cpp

```cpp
            else{
                if(s0 == 0)
                outputF = inputI2;

                else
                outputF = inputI3;
            }
    }
    else{
            if(s1 == 0){
                if(s0 == 0)
                outputF = inputI4;

                else
                outputF = inputI5;
            }
            else{
                if(s0 == 0)
                outputF = inputI6;

                else
                outputF = inputI7;
            }
    }
    cout<<"Output = "<<outputF;
}
```

Output:

For s2 = 0, s1 = 0 and s0 = 1



Part 2 - Implement 8X1 Multiplexer using conditional operator.

Code:

Using_Ternary.cpp

```cpp
#include<iostream>
using namespace std;

main(){

    //Declaring and initializing input lines
    int inputI0 = 0,inputI1 = 1,inputI2 = 2,inputI3 = 3, inputI4 = 4, inputI5 = 5, inputI6 = 6, inputI7 = 7;


    //Declaring and initializing select lines
    int s2=1, s1=0, s0 =0;

    //Declaring and initializing output line
    int outputF=0;


    //Using Conditional Operator to implement 8x1 MUX
    outputF = (s2 == 0) ? (s1 == 0) ? (s0 == 0) ? inputI0 : inputI1
      : (s0 == 0) ? inputI2 : inputI3 : (s1 == 0) ? (s0 == 0) ? inputI4 : inputI5 : (s0 == 0) ? inputI6 : inputI7;

    //Displaying the output
    cout<<"Output="<<outputF;

}
```

Output:

For s2 = 1, s1 = 0 and s0 = 0