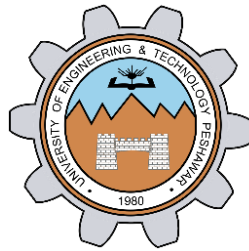


**INTRODUCTION TO RELATIONAL, LOGICAL
OPERATORS, SELECTION STATEMENTS**

LAB # 3



Spring 2022

CSE102L Computer Programming Lab

Submitted by: **Ali Asghar**

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:

Engr. Abdullah Hamid

July 4, 2022

Department of Computer Systems Engineering
University of Engineering and Technology, Peshawar

Lab Objective(s)

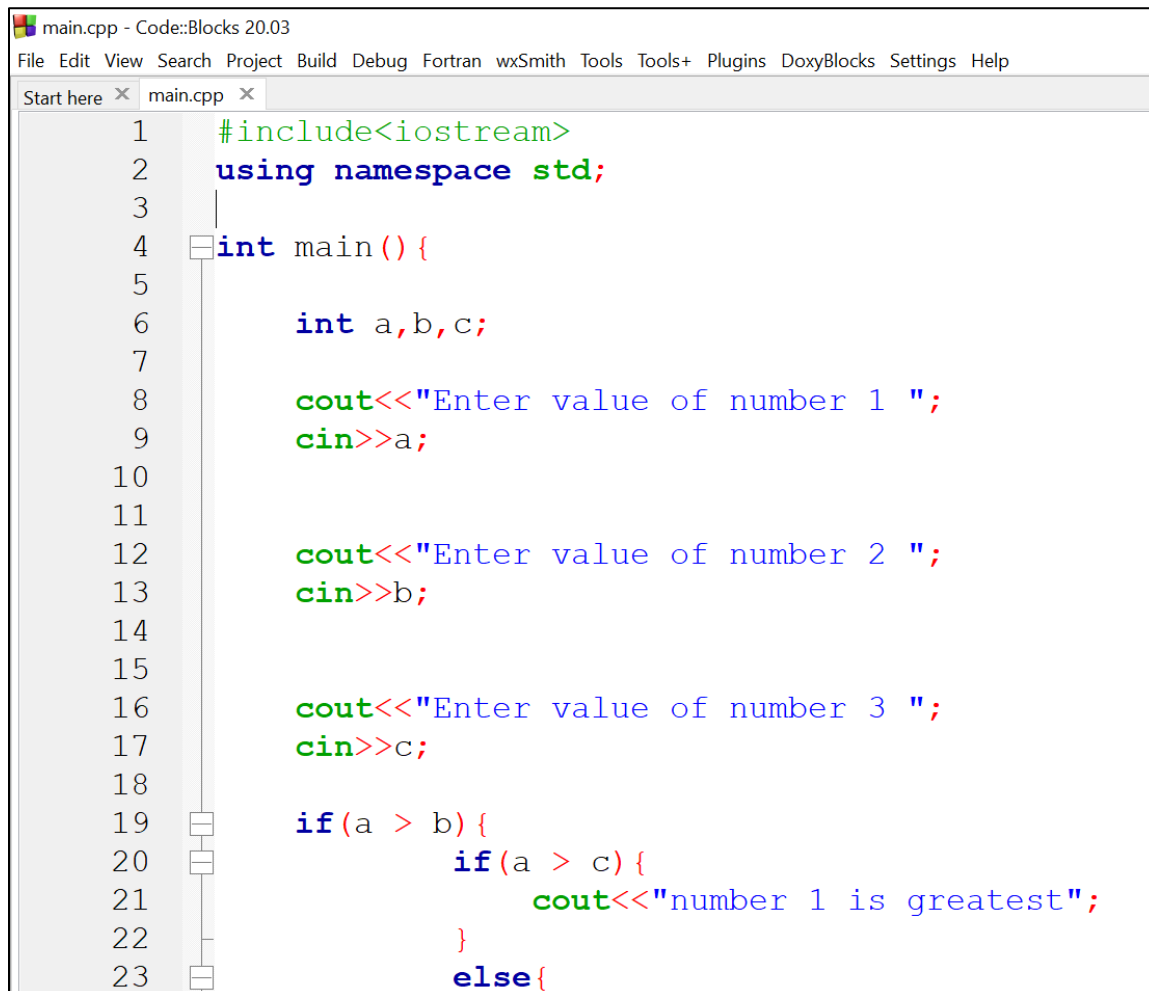
- To be familiar with Relational & Logical Operators
- To understand the programming knowledge using Selection Statements (if, if-else, if-else ladder, Nested if-else and Switch)

TASK # 1:**Title:**

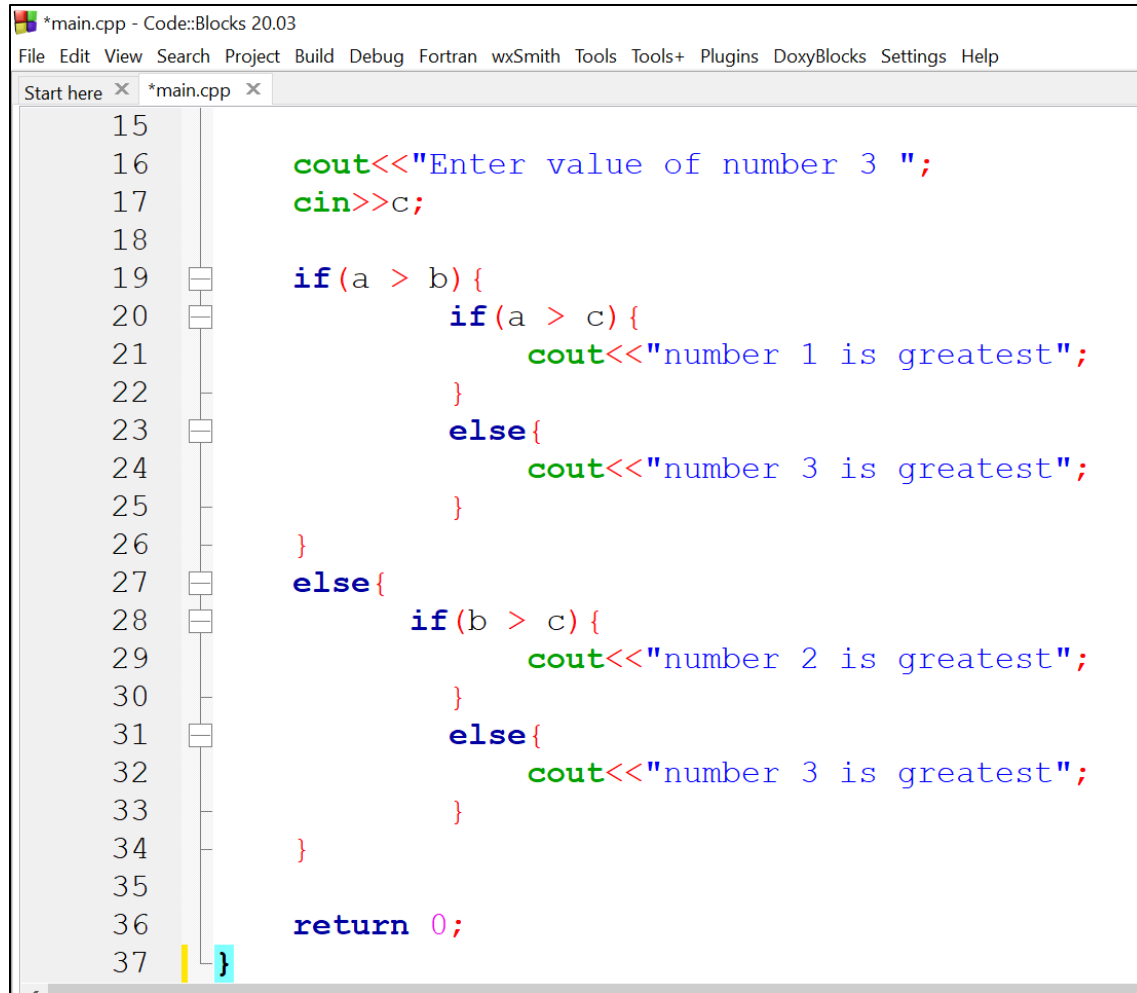
Display the largest among three numbers using if else statement?

CODE SCREENSHOTS:

Here are the screenshots of the code.



```
main.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here x main.cpp x
1  #include<iostream>
2  using namespace std;
3
4  int main() {
5
6      int a,b,c;
7
8      cout<<"Enter value of number 1 ";
9      cin>>a;
10
11
12     cout<<"Enter value of number 2 ";
13     cin>>b;
14
15
16     cout<<"Enter value of number 3 ";
17     cin>>c;
18
19     if(a > b) {
20         if(a > c) {
21             cout<<"number 1 is greatest";
22         }
23     } else {
```

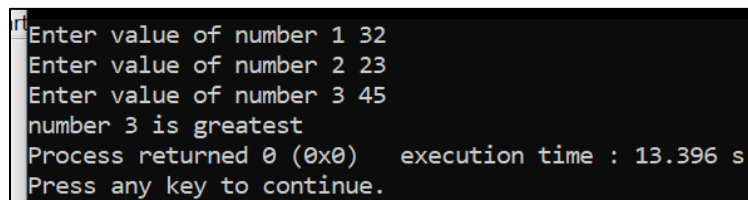


```
*main.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help

Start here x *main.cpp x
15
16     cout<<"Enter value of number 3 ";
17     cin>>c;
18
19     if(a > b){
20         if(a > c){
21             cout<<"number 1 is greatest";
22         }
23         else{
24             cout<<"number 3 is greatest";
25         }
26     }
27     else{
28         if(b > c){
29             cout<<"number 2 is greatest";
30         }
31         else{
32             cout<<"number 3 is greatest";
33         }
34     }
35
36     return 0;
37 }
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.



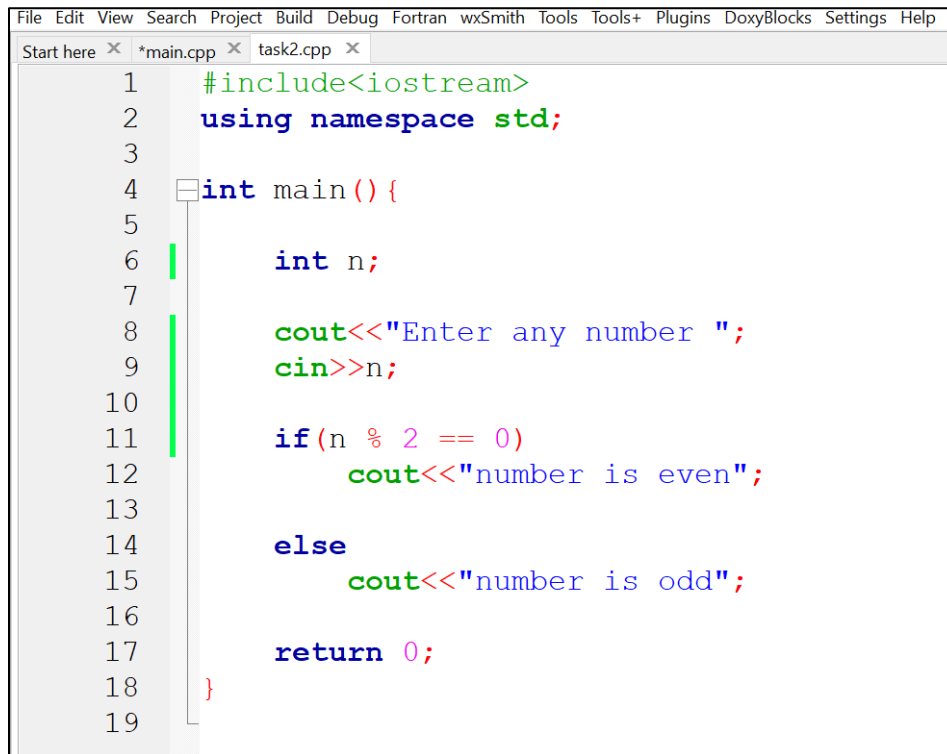
```
Enter value of number 1 32
Enter value of number 2 23
Enter value of number 3 45
number 3 is greatest
Process returned 0 (0x0)   execution time : 13.396 s
Press any key to continue.
```

TASK # 2:**Title:**

Check whether a number is even or odd?

CODE SCREENSHOTS:

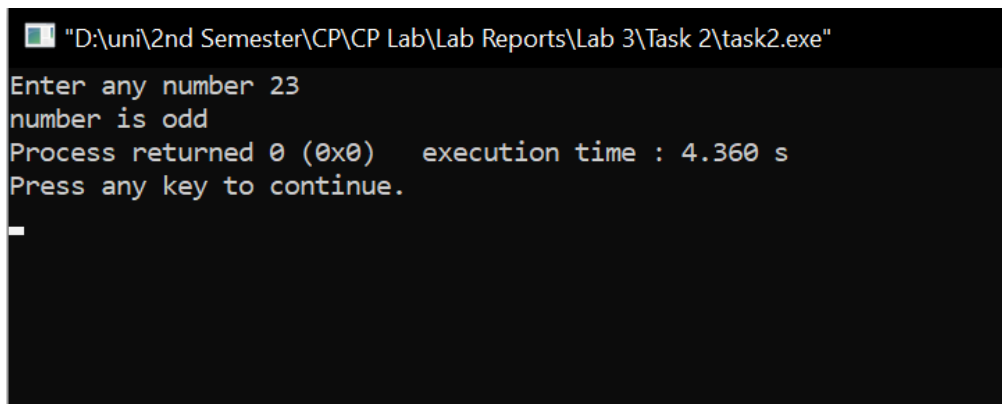
Here is the screenshot of the code.



```
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here x *main.cpp x task2.cpp x
1  #include<iostream>
2  using namespace std;
3
4  int main() {
5
6      int n;
7
8      cout<<"Enter any number ";
9      cin>>n;
10
11     if(n % 2 == 0)
12         cout<<"number is even";
13
14     else
15         cout<<"number is odd";
16
17     return 0;
18 }
19
```

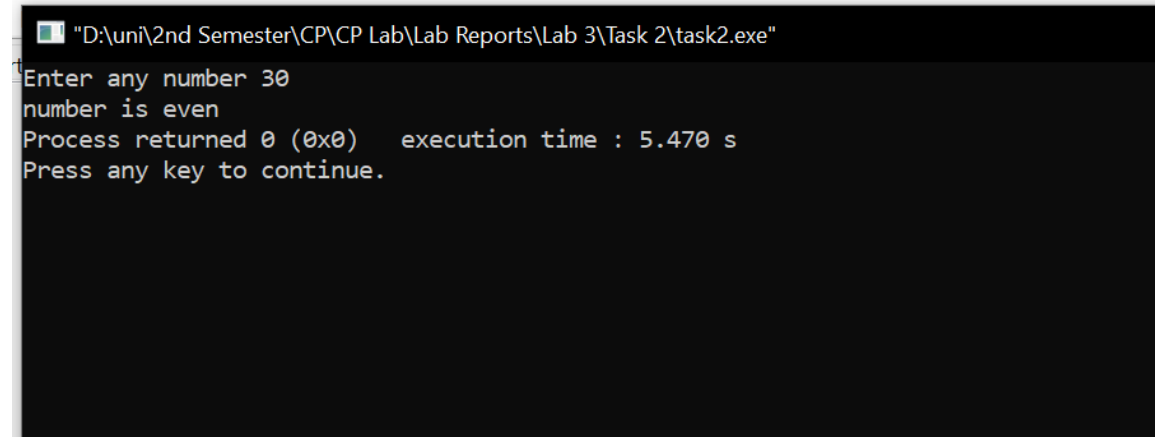
OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here are the screenshots of the output of above code.



```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 2\task2.exe"
Enter any number 23
number is odd
Process returned 0 (0x0)   execution time : 4.360 s
Press any key to continue.

```



```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 2\task2.exe"
Enter any number 30
number is even
Process returned 0 (0x0) execution time : 5.470 s
Press any key to continue.
```

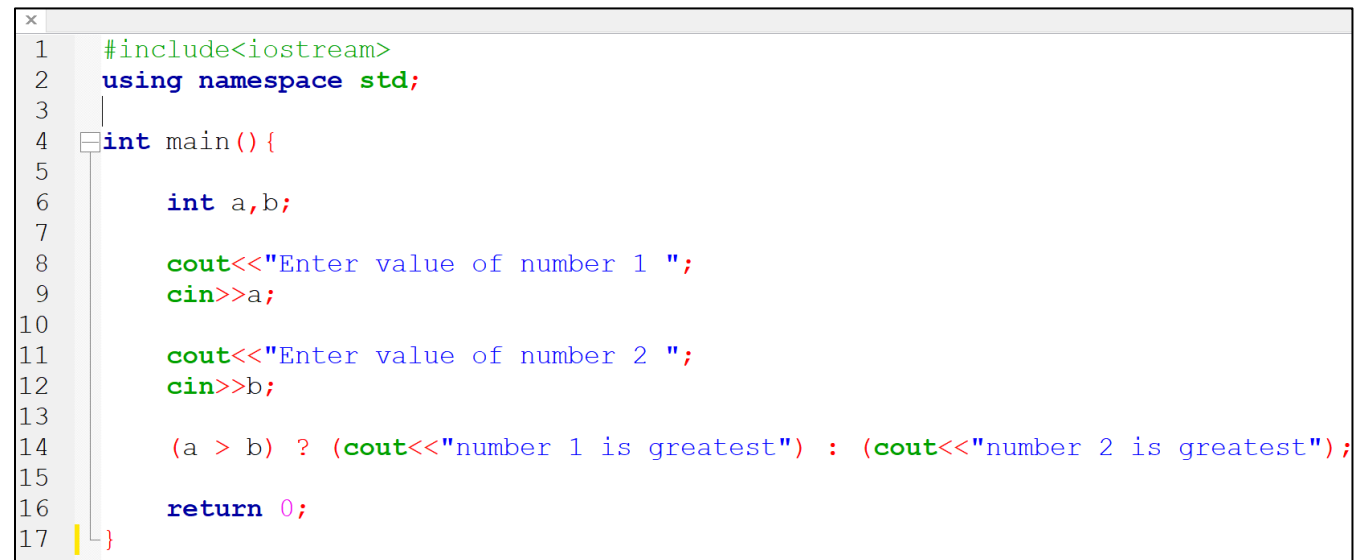
TASK # 3:

Title:

Check the greater of two numbers using ternary operator?

CODE SCREENSHOTS:

Here is the screenshot of the code.



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

int main() {
    int a,b;

    cout<<"Enter value of number 1 ";
    cin>>a;

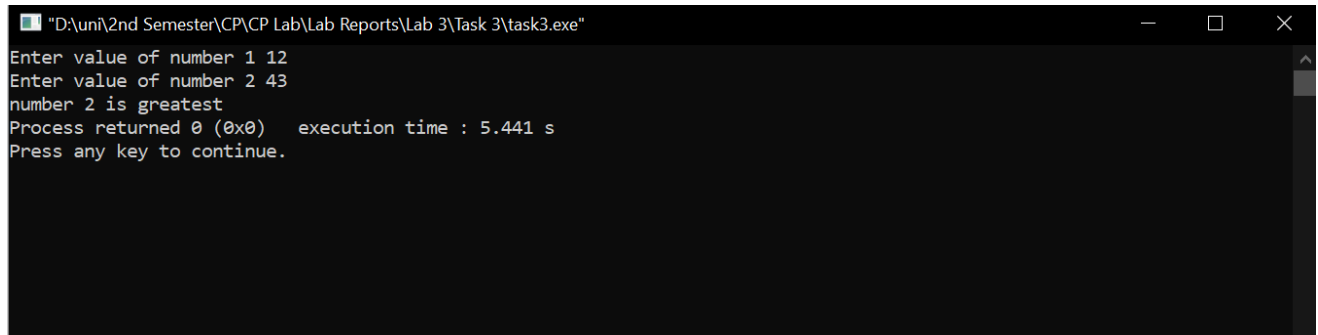
    cout<<"Enter value of number 2 ";
    cin>>b;

    (a > b) ? (cout<<"number 1 is greatest") : (cout<<"number 2 is greatest");

    return 0;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.



```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 3\task3.exe"
Enter value of number 1 12
Enter value of number 2 43
number 2 is greatest
Process returned 0 (0x0) execution time : 5.441 s
Press any key to continue.
```

TASK # 4:**Title:**

Write a program where you print you take a number from the user 2 times or else print only 1 time.

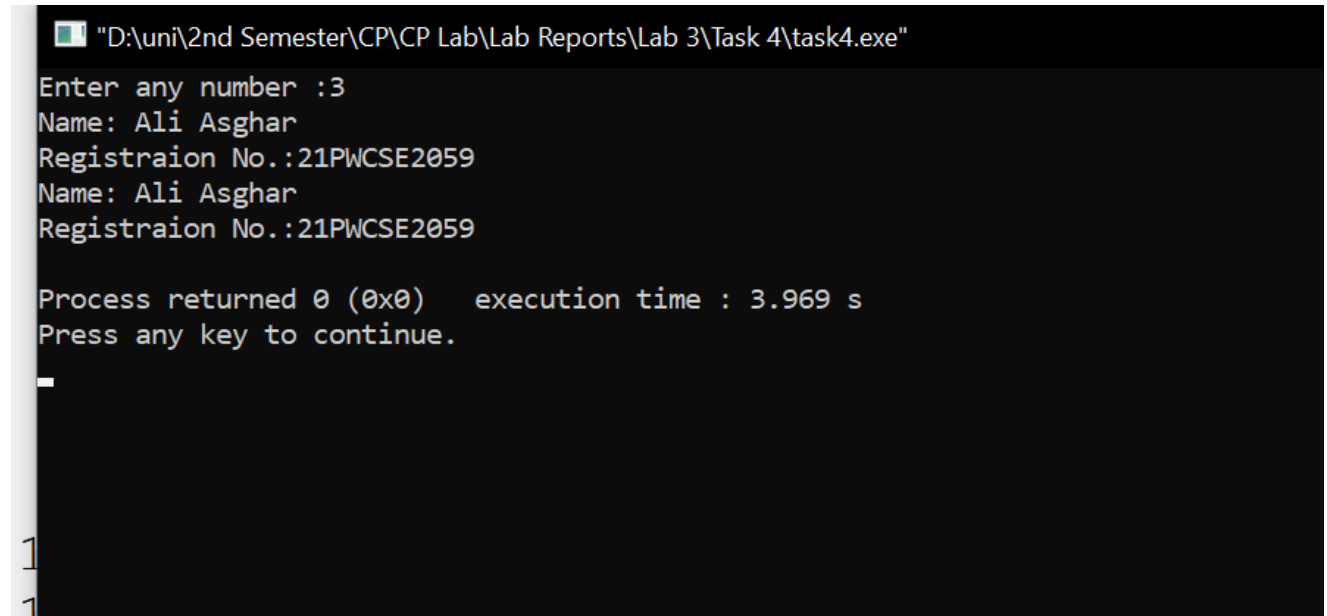
CODE SCREENSHOTS:

Here is the screenshot of the code. Info is defined above main function.

```
1  #include<iostream>
2
3  using namespace std;
4
5  #define info cout<<"Name: Ali Asghar\nRegistraion No.:21PWCSE2059"<<endl;
6  int main() {
7
8      int n;
9
10     cout<<"Enter any number :";
11     cin>>n;
12
13     if(n > 2) {
14         info
15         info
16     }
17     else
18         info
19
20     return 0;
21 }
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

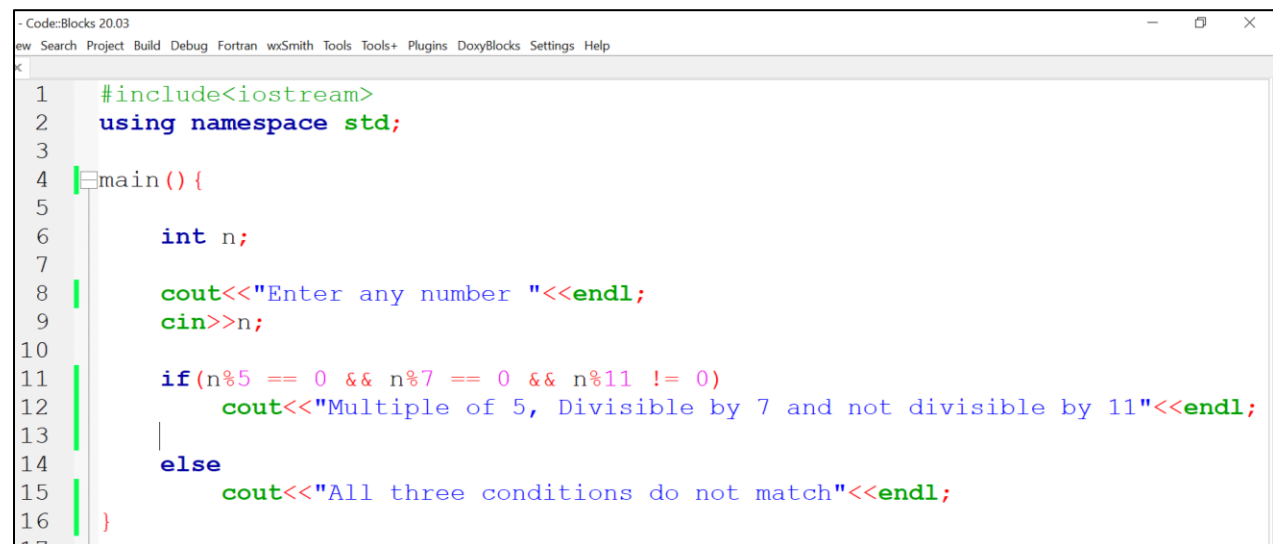
Here is the screenshot of the output of above code.

**TASK # 5:****Title:**

Write a program that asks a number and test the number whether it is multiple of 5 or not, divisible by 7 but not by eleven. (all three conditions should match)

CODE SCREENSHOTS:

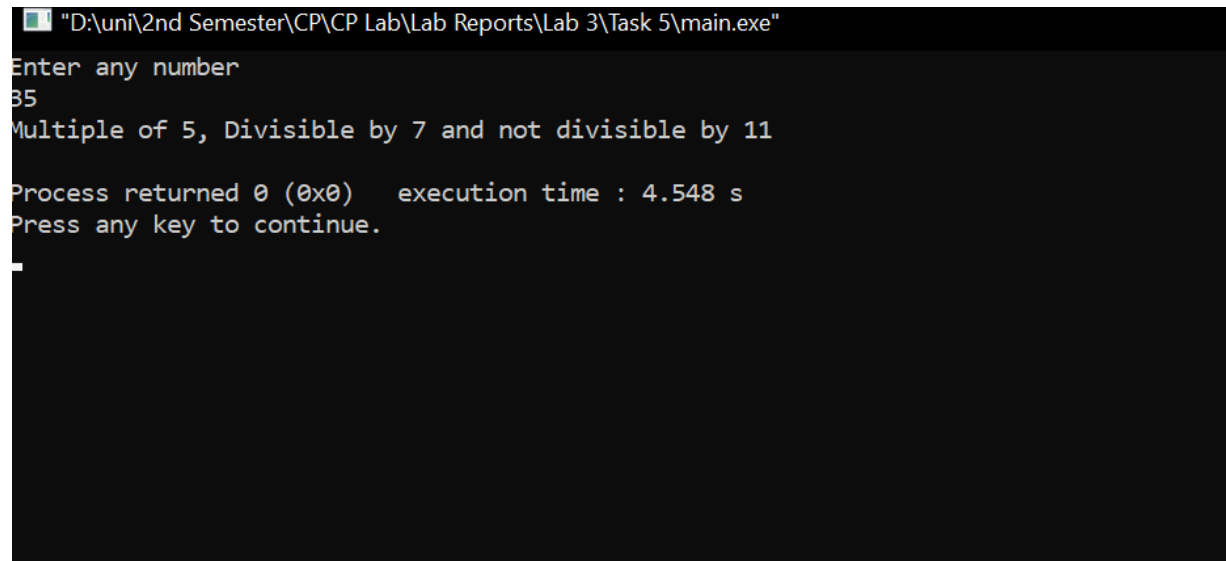
Here is the screenshot of the code.



```
1  #include<iostream>
2  using namespace std;
3
4  main() {
5
6      int n;
7
8      cout<<"Enter any number "<<endl;
9      cin>>n;
10
11     if(n%5 == 0 && n%7 == 0 && n%11 != 0)
12         cout<<"Multiple of 5, Divisible by 7 and not divisible by 11"<<endl;
13     |
14     else
15         cout<<"All three conditions do not match"<<endl;
16 }
17
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.



```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 5\main.exe"
Enter any number
35
Multiple of 5, Divisible by 7 and not divisible by 11

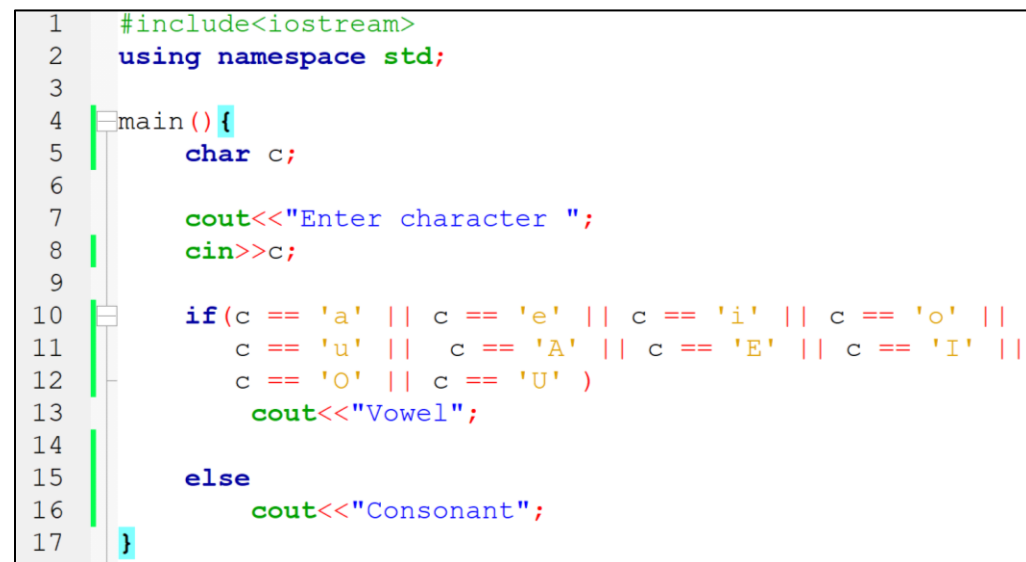
Process returned 0 (0x0)   execution time : 4.548 s
Press any key to continue.
_
```

TASK # 6:**Title:**

Check whether the entered character is vowel or consonant?

CODE SCREENSHOTS:

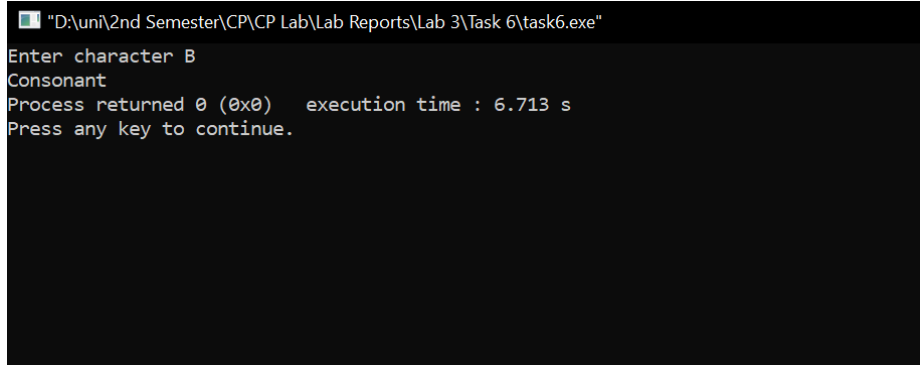
Here is the screenshot of the code.



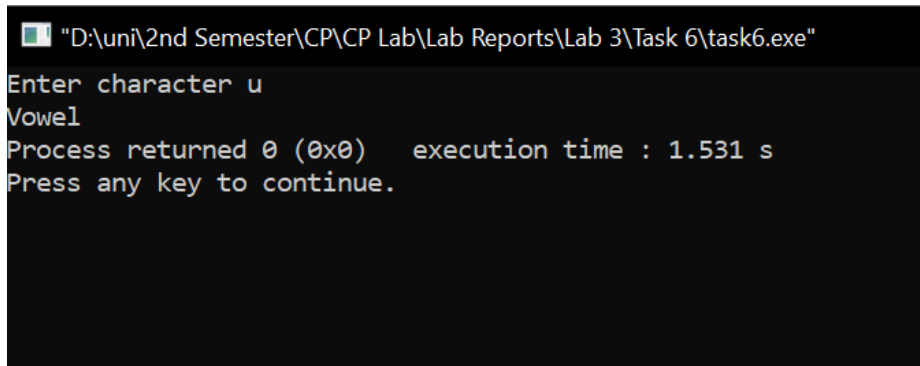
```
1  #include<iostream>
2  using namespace std;
3
4  main(){
5      char c;
6
7      cout<<"Enter character ";
8      cin>>c;
9
10     if(c == 'a' || c == 'e' || c == 'i' || c == 'o' ||
11        c == 'u' || c == 'A' || c == 'E' || c == 'I' ||
12        c == 'O' || c == 'U' )
13         cout<<"Vowel";
14
15     else
16         cout<<"Consonant";
17 }
```


OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here are the screenshots of the output of above code.



```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 6\task6.exe"
Enter character B
Consonant
Process returned 0 (0x0)   execution time : 6.713 s
Press any key to continue.
```



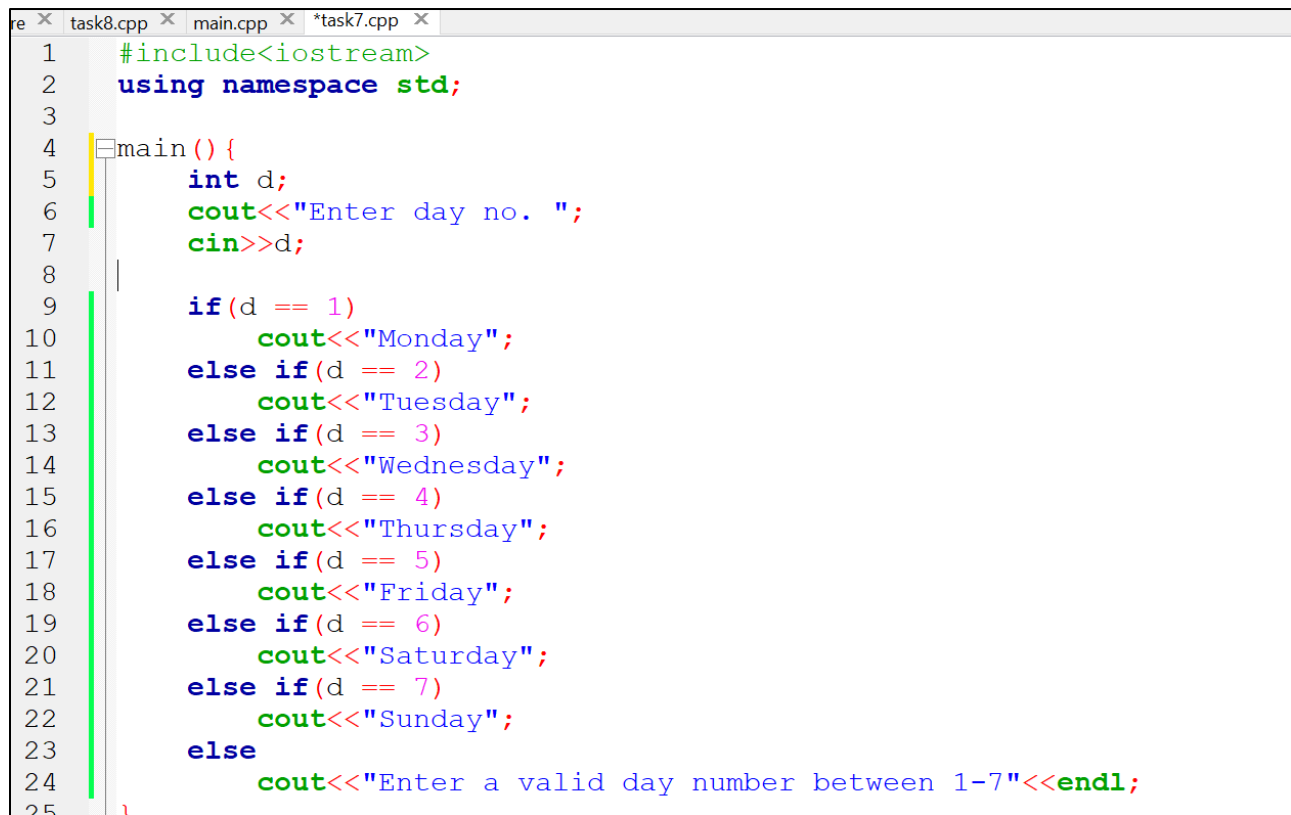
```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 6\task6.exe"
Enter character u
Vowel
Process returned 0 (0x0)   execution time : 1.531 s
Press any key to continue.
```

TASK # 7:**Title:**

Write a program that takes the weekday number as input from user and print the day name of week

CODE SCREENSHOTS:

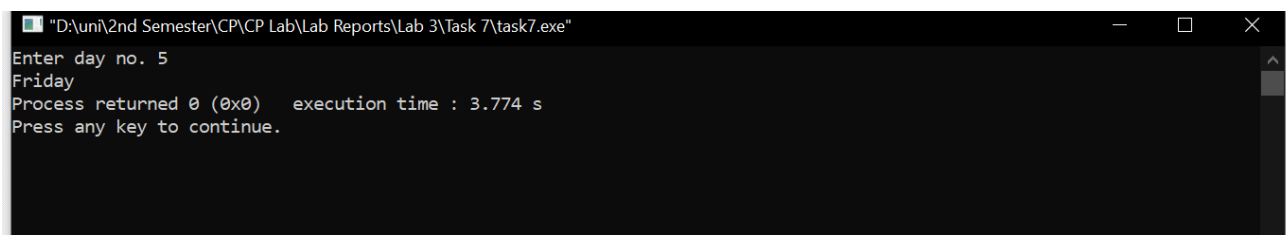
Here is the screenshot of the code.



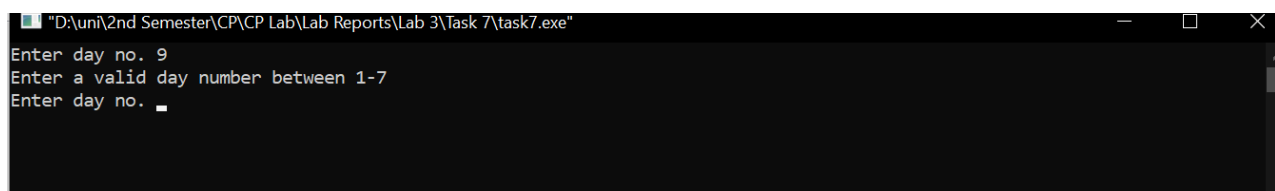
```
1  #include<iostream>
2  using namespace std;
3
4  main(){
5      int d;
6      cout<<"Enter day no. ";
7      cin>>d;
8
9      if(d == 1)
10         cout<<"Monday";
11     else if(d == 2)
12         cout<<"Tuesday";
13     else if(d == 3)
14         cout<<"Wednesday";
15     else if(d == 4)
16         cout<<"Thursday";
17     else if(d == 5)
18         cout<<"Friday";
19     else if(d == 6)
20         cout<<"Saturday";
21     else if(d == 7)
22         cout<<"Sunday";
23     else
24         cout<<"Enter a valid day number between 1-7"<<endl;
25 }
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here are the screenshots of the output of above code.



```
"D:\un\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 7\task7.exe"
Enter day no. 5
Friday
Process returned 0 (0x0)   execution time : 3.774 s
Press any key to continue.
```



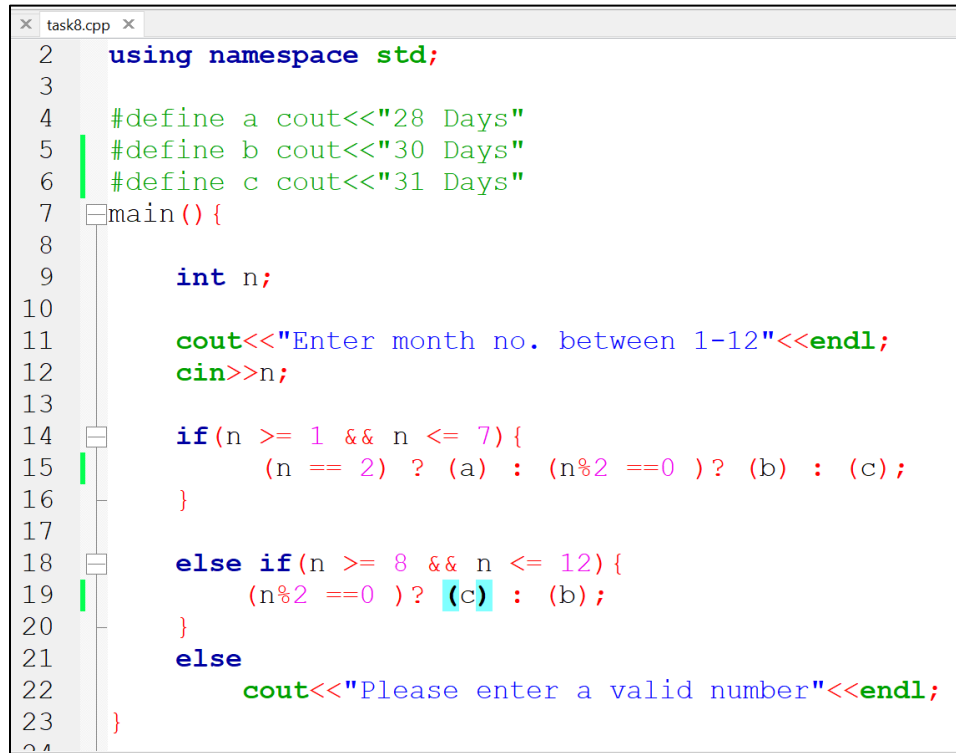
```
"D:\un\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 7\task7.exe"
Enter day no. 9
Enter a valid day number between 1-7
Enter day no. _
```

TASK # 8:**Title:**

Write a C++ program to enter month number between (1-12) and print number of days in month.

CODE SCREENSHOTS:

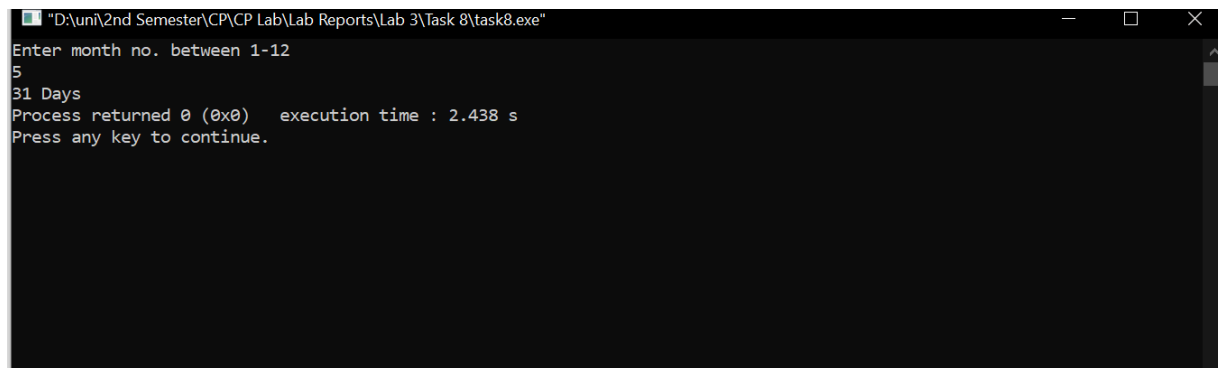
Here is the screenshot of the code. Please note that I have defined a b and c above in the code for making code look smaller and concise.



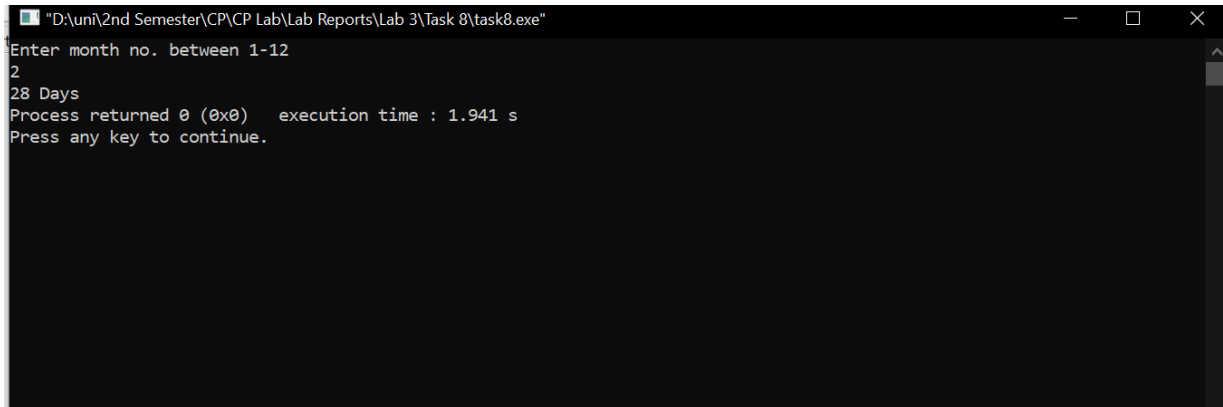
```
task8.cpp
2   using namespace std;
3
4   #define a cout<<"28 Days"
5   #define b cout<<"30 Days"
6   #define c cout<<"31 Days"
7   main() {
8
9       int n;
10
11       cout<<"Enter month no. between 1-12"<<endl;
12       cin>>n;
13
14       if(n >= 1 && n <= 7) {
15           (n == 2) ? (a) : (n%2 ==0 )? (b) : (c);
16       }
17
18       else if(n >= 8 && n <= 12) {
19           (n%2 ==0 )? (c) : (b);
20       }
21       else
22           cout<<"Please enter a valid number"<<endl;
23   }
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here are the screenshots of the output of above code.



```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 8\task8.exe"
Enter month no. between 1-12
5
31 Days
Process returned 0 (0x0)   execution time : 2.438 s
Press any key to continue.
```



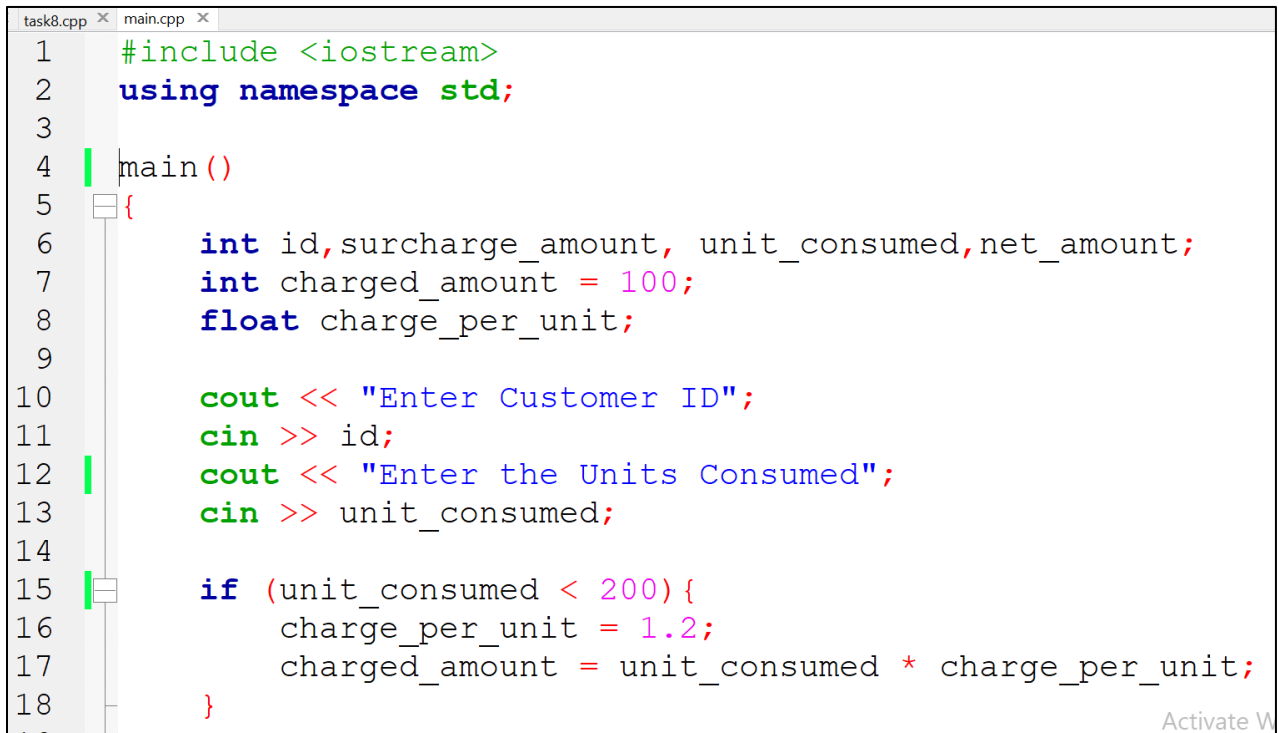
```
"D:\uni\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 8\task8.exe"
Enter month no. between 1-12
2
28 Days
Process returned 0 (0x0) execution time : 1.941 s
Press any key to continue.
```

TASK # 9:**Title:**

Write a program to calculate and print the Electricity bill of a given customer.....the customer.

CODE SCREENSHOTS:

Here are the screenshots of the code.



```
task8.cpp x main.cpp x
1  #include <iostream>
2  using namespace std;
3
4  main()
5  {
6      int id,surcharge_amount, unit_consumed,net_amount;
7      int charged_amount = 100;
8      float charge_per_unit;
9
10     cout << "Enter Customer ID";
11     cin >> id;
12     cout << "Enter the Units Consumed";
13     cin >> unit_consumed;
14
15     if (unit_consumed < 200){
16         charge_per_unit = 1.2;
17         charged_amount = unit_consumed * charge_per_unit;
18     }
19 }
```

Activate W

```
task8.cpp x main.cpp x
16         charge_per_unit = 1.2;
17         charged_amount = unit_consumed * charge_per_unit;
18     }
19
20     else if (unit_consumed > 200 && unit_consumed < 400){
21         charge_per_unit = 1.5;
22         charged_amount = unit_consumed * charge_per_unit;
23     }
24
25     else if (unit_consumed > 400 && unit_consumed < 600){
26         charge_per_unit = 1.8;
27         charged_amount = unit_consumed * charge_per_unit;
28     }
29
30     else if (unit_consumed > 600){
31         charge_per_unit = 2;
32         charged_amount = unit_consumed * charge_per_unit;
33     }
```

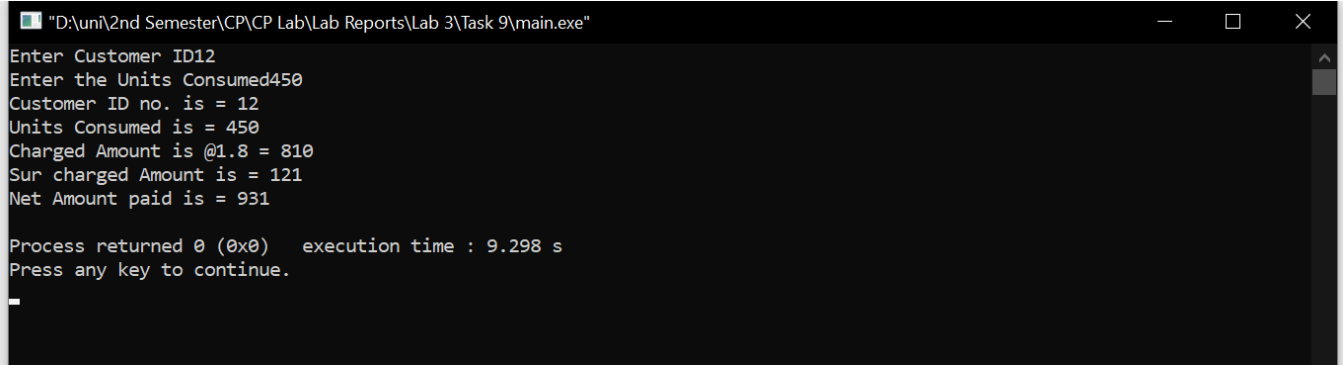
Activate Wi

```
task8.cpp x *main.cpp x
29
30     else if (unit_consumed > 600){
31         charge_per_unit = 2;
32         charged_amount = unit_consumed * charge_per_unit;
33     }
34
35     if (charged_amount > 400)
36         surcharge_amount = charged_amount * 0.15;
37     else
38         surcharge_amount = 0;
39
40     net_amount = surcharge_amount + charged_amount;
41
42     cout<<"Customer ID no. is = "<<id<<endl;
43     cout<<"Units Consumed is = "<<unit_consumed<<endl;
44     cout<<"Charged Amount is @"<<charge_per_unit<<" = "<<charged_amount<<endl;
45     cout<<"Sur charged Amount is = "<<surcharge_amount<<endl;
46     cout<<"Net Amount paid is = "<<net_amount<<endl;
47 }
48
```

Activate Windows

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.



```
"D:\un\2nd Semester\CP\CP Lab\Lab Reports\Lab 3\Task 9\main.exe"
Enter Customer ID12
Enter the Units Consumed450
Customer ID no. is = 12
Units Consumed is = 450
Charged Amount is @1.8 = 810
Sur charged Amount is = 121
Net Amount paid is = 931

Process returned 0 (0x0)   execution time : 9.298 s
Press any key to continue.
_
```