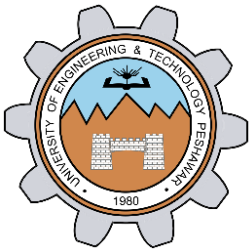
INTRODUCTION TO RELATIONAL, LOGICAL OPERATORS, SELECTION STATEMENTS

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

Name: Ali Asghar Section: C Registration # :21PWCSE2059

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)

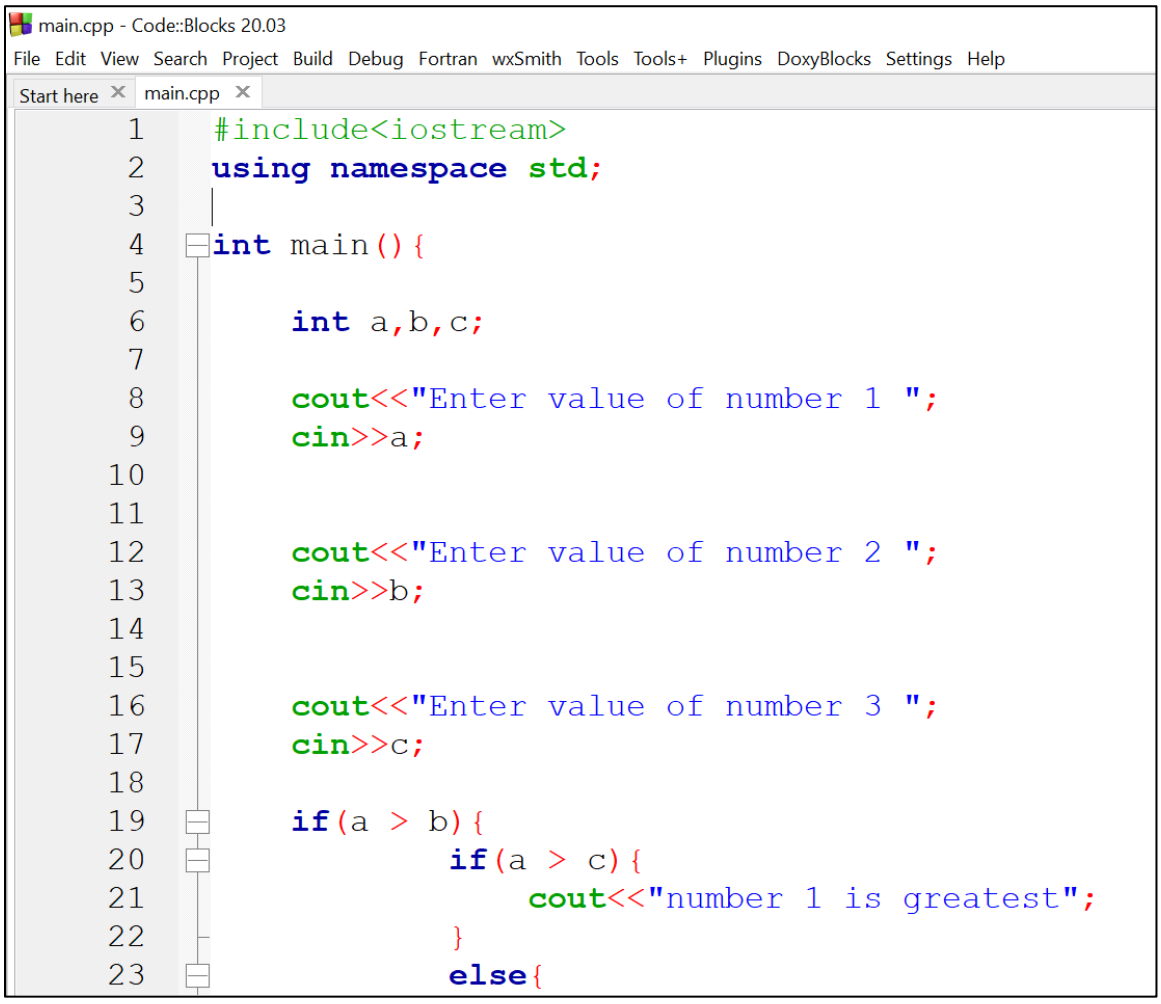
TASK # 1:

Title:

Display the largest among three numbers using if else statement?

CODE SCREENSHOTS:

Here are the screenshots of the code.



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*main.cpp - Code::Blocks 20.03

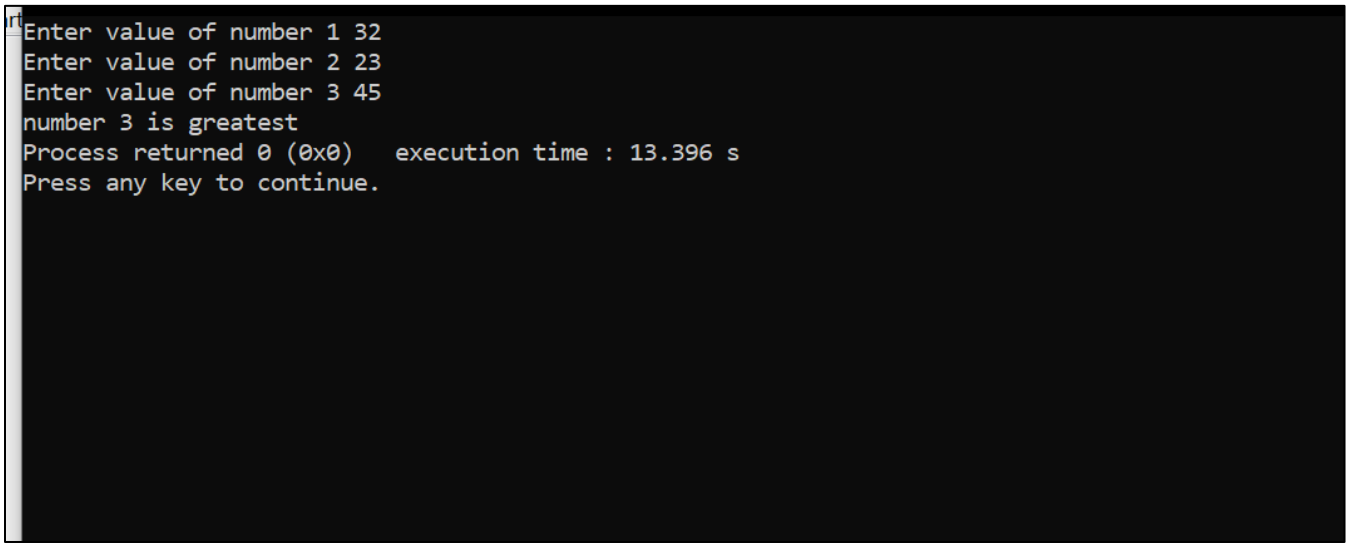
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help

Start here | *main.cpp

```
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.



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TASK # 2:

Title:

Check whether a number is even or odd?

CODE SCREENSHOTS:

Here is the screenshot of the code.

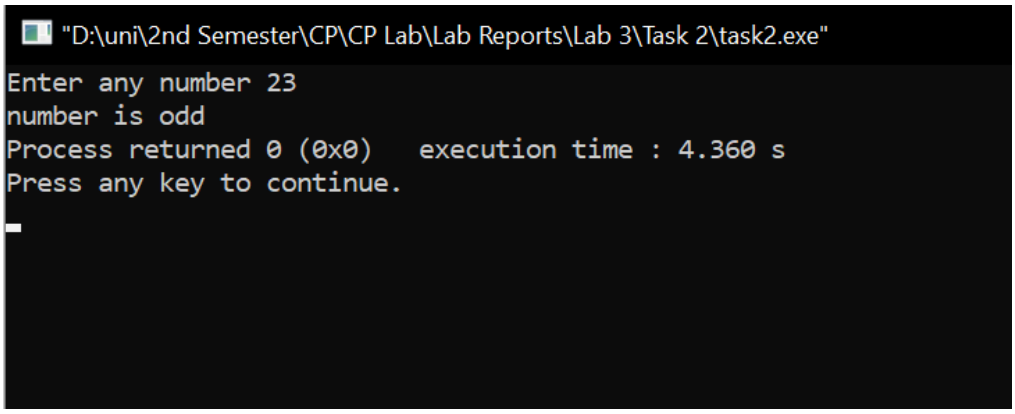
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help

Start here | *main.cpp | task2.cpp

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

int main(){

    int n;

    cout<<"Enter any number ";
    cin>>n;

    if(n % 2 == 0)
        cout<<"number is even";

    else
        cout<<"number is odd";

    return 0;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here are the screenshots of the output of above code.



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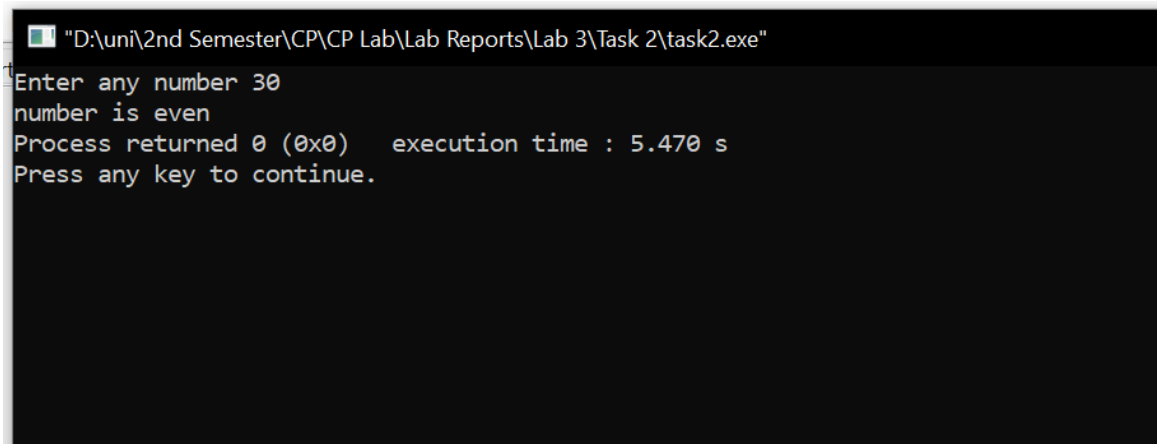

TASK # 3:

Title:

Check the greater of two numbers using ternary operator?

CODE SCREENSHOTS:

Here is the screenshot of the code.

```cpp
#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;
}
```

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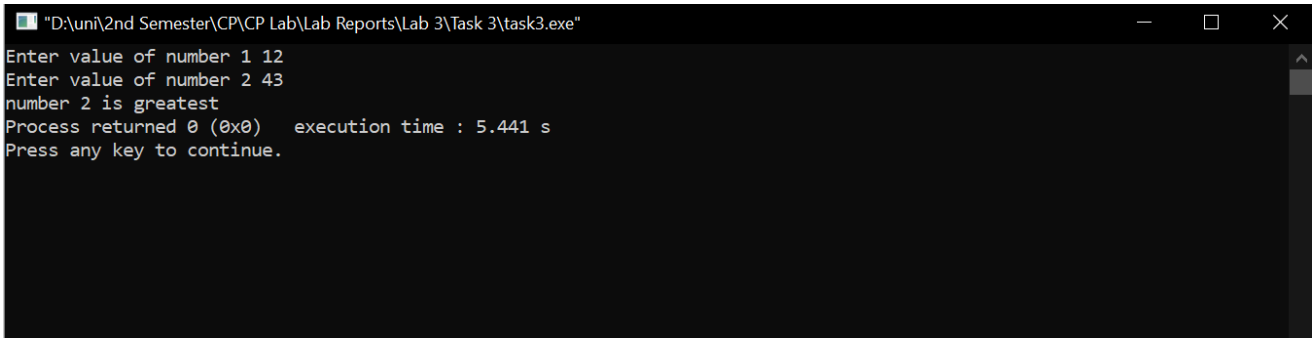
OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.



TASK # 4:

Title:

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

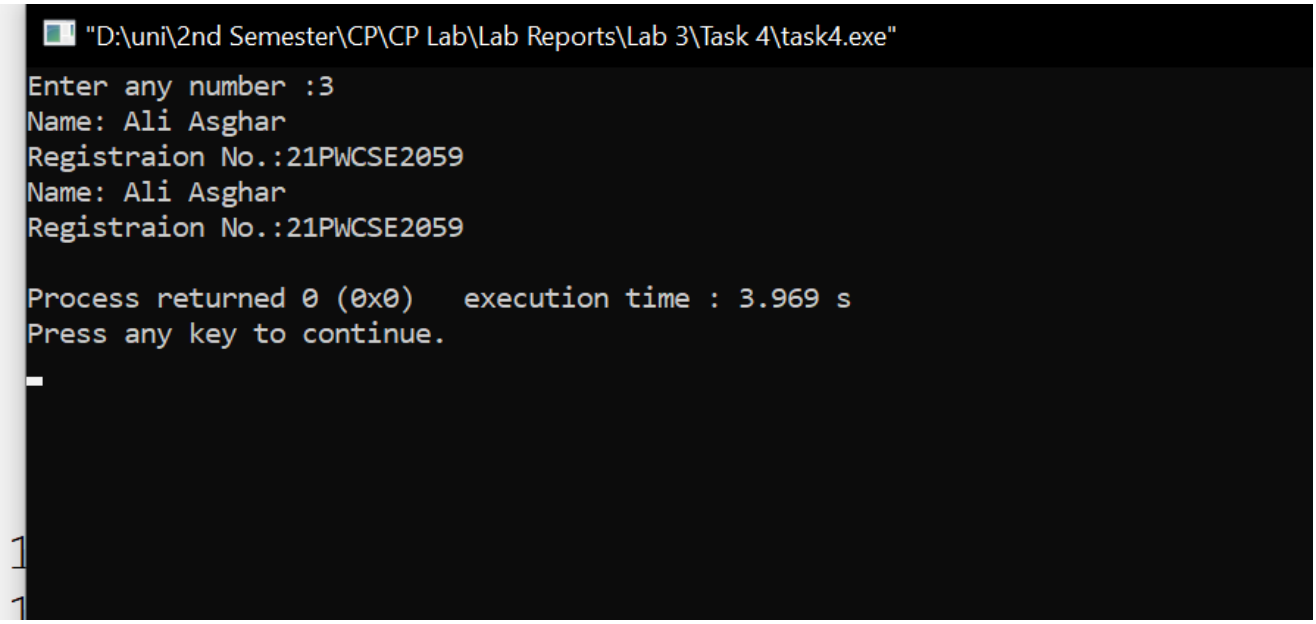
CODE SCREENSHOTS:

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.



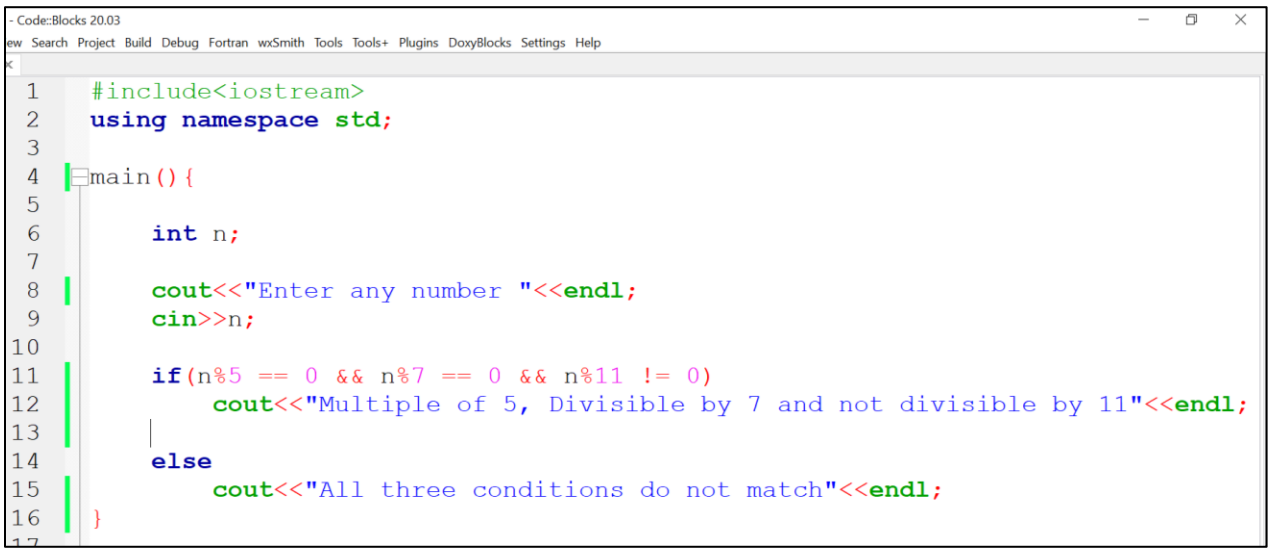
TASK # 5:

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.



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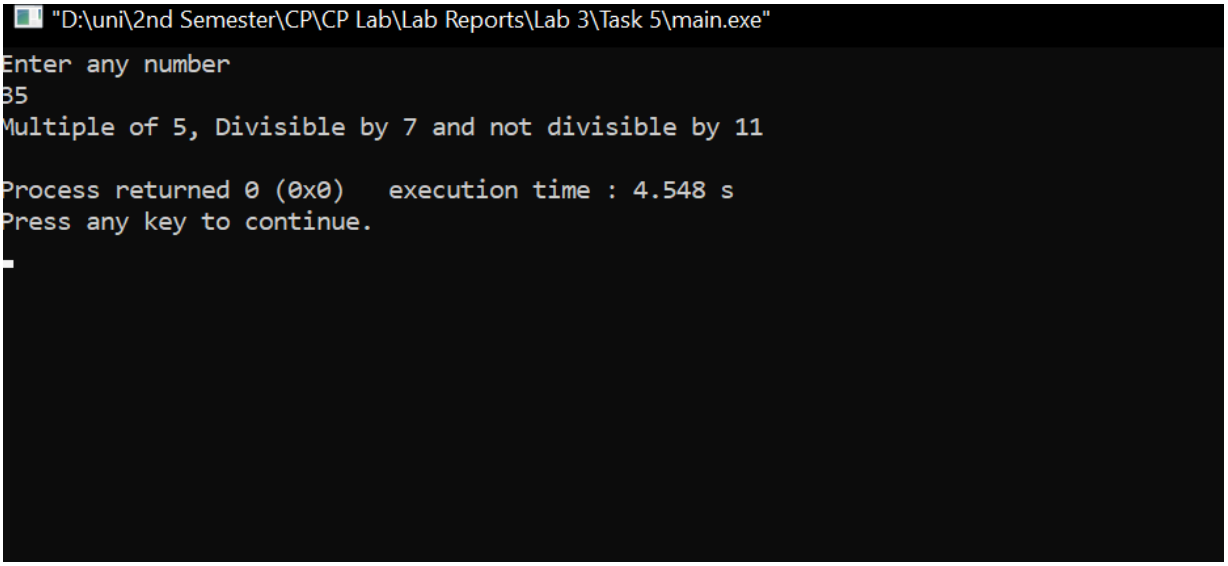
OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.



TASK # 6:

Title:

Check whether the entered character is vowel or consonant?

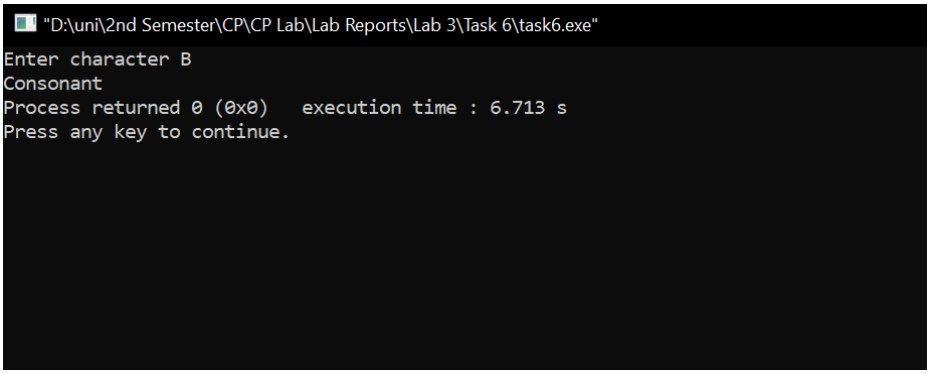
CODE SCREENSHOTS:

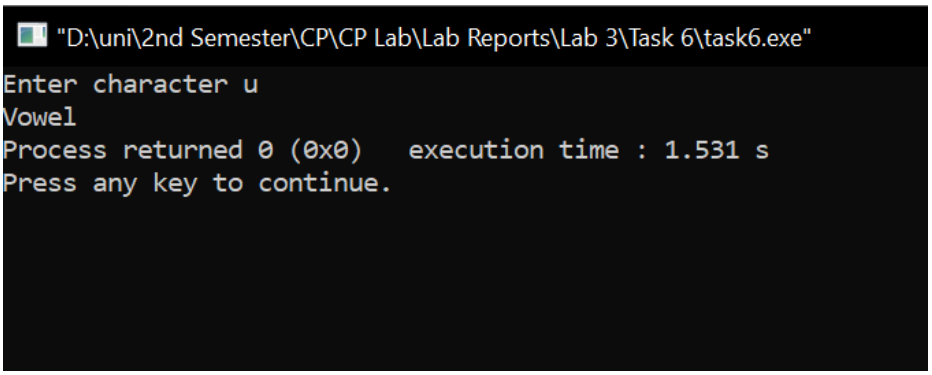
Here is the screenshot of the code.

```
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.





TASK # 7:

Title:

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

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CODE SCREENSHOTS:

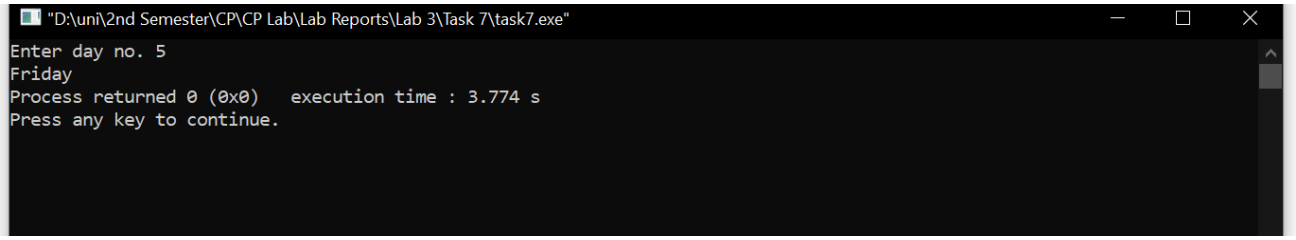
Here is the screenshot of the code.

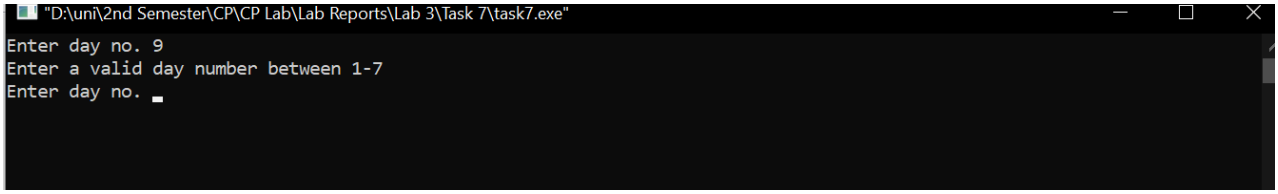
re task8.cpp main.cpp *task7.cpp

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

main(){
    int d;
    cout<<"Enter day no. ";
    cin>>d;

    if(d == 1)
        cout<<"Monday";
    else if(d == 2)
        cout<<"Tuesday";
    else if(d == 3)
        cout<<"Wednesday";
    else if(d == 4)
        cout<<"Thursday";
    else if(d == 5)
        cout<<"Friday";
    else if(d == 6)
        cout<<"Saturday";
    else if(d == 7)
        cout<<"Sunday";
    else
        cout<<"Enter a valid day number between 1-7"<<endl;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here are the screenshots of the output of above code.





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TASK # 8:

Title:

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

CODE SCREENSHOTS:

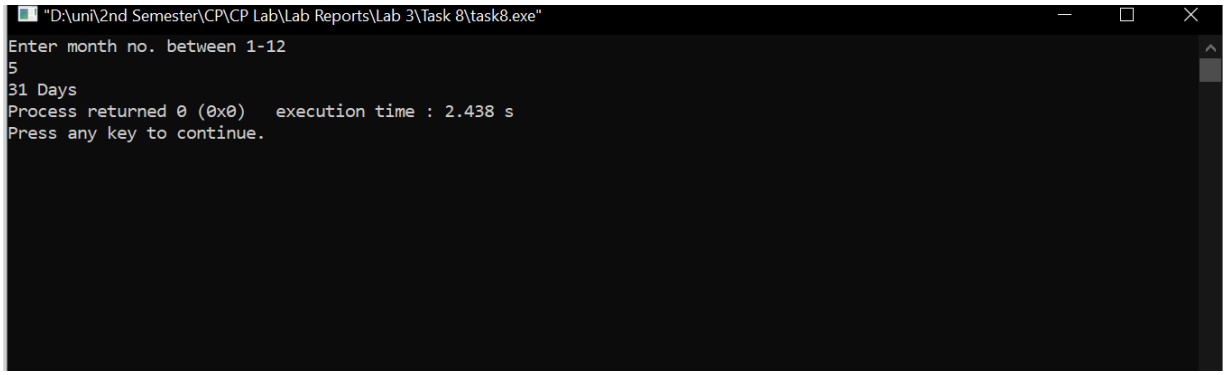
Here is the screenshot of the code. Please note that I have defined a b and c above in the code for making code look smaller and concise.

task8.cpp

```
using namespace std;

#define a cout<<"28 Days"
#define b cout<<"30 Days"
#define c cout<<"31 Days"
main(){

    int n;

    cout<<"Enter month no. between 1-12"<<endl;
    cin>>n;

    if(n >= 1 && n <= 7){
        (n == 2) ? (a) : (n%2 ==0 )? (b) : (c);
    }

    else if(n >= 8 && n <= 12){
        (n%2 ==0 )? (c) : (b);
    }
    else
        cout<<"Please enter a valid number"<<endl;
}
```

OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here are the screenshots of the output of above code.



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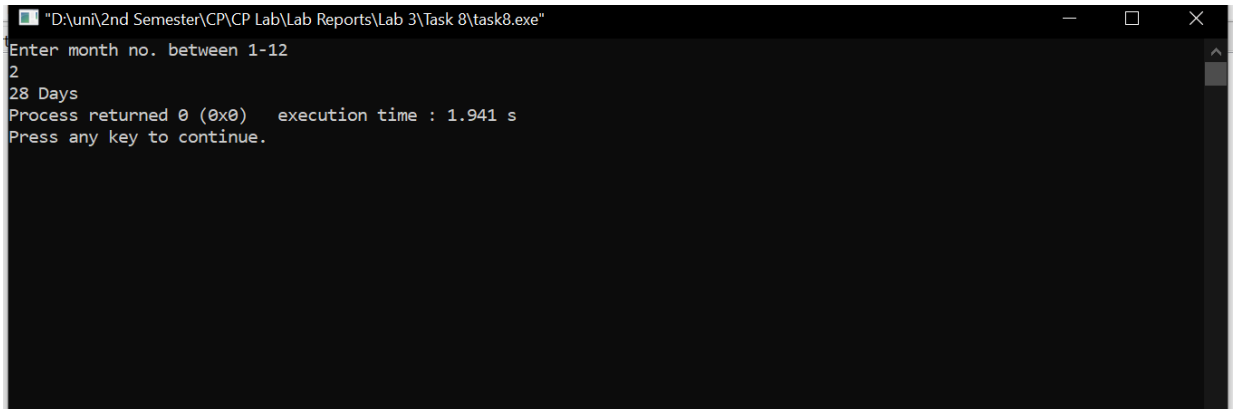

TASK # 9:

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 main.cpp

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

main()
{
    int id,surcharge_amount, unit_consumed,net_amount;
    int charged_amount = 100;
    float charge_per_unit;

    cout << "Enter Customer ID";
    cin >> id;
    cout << "Enter the Units Consumed";
    cin >> unit_consumed;

    if (unit_consumed < 200){
        charge_per_unit = 1.2;
        charged_amount = unit_consumed * charge_per_unit;
    }
```

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task8.cpp | main.cpp

```
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      }
```


task8.cpp | *main.cpp

```
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
```

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OUTPUT (COMPILATION, DEBUGGING & TESTING):

Here is the screenshot of the output of above code.