Introduction to Relational, Logical Operators, Selection Statements LAB # 03



Spring 2022 CSE-102L COMPUTER PROGRAMMING LAB

Submitted by: MUHAMMAD SADEEQ

Registration No.: 21PWCSE2028

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."

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Submitted to:

Engr. Abdullah Hamid (July 2022)

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

Lab 3: Introduction to Relational, Logical Operators, Selection Statements

Objectives:

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 Titles:

- 1. Display the largest among three numbers using if else statement?
- 2. Check whether a number is even or odd?
- 3. Check the greater of two numbers using ternary operator?
- 4. Write a program where you print you take a number from the user if the number is greater than 2 and then print your name and registration number 2 times or else print only 1 time.
- 5. 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)
- 6. Check whether the entered character is vowel or consonant?
- 7. Write a program that takes the weekday number as input from user and print the day name of week E.g., Print Monday if weekday number is equal to 1. Similarly, check condition for all 7 days and print the corresponding day name. Print an error message if an invalid number is entered.
- 8. Write a C++ program to enter month number between (1-12) and print number of days in month.
- 9. Write a program to calculate and print the Electricity bill of a given customer. The customer id and unit consumed by the user should be taken from the keyboard and display the total amount to pay to the customer. The charges are as follow:

Unit	Charge/unit
Up to 199	@1.20
200 and above but less than 400	@1.50
400 and above but less than 600	@1.80

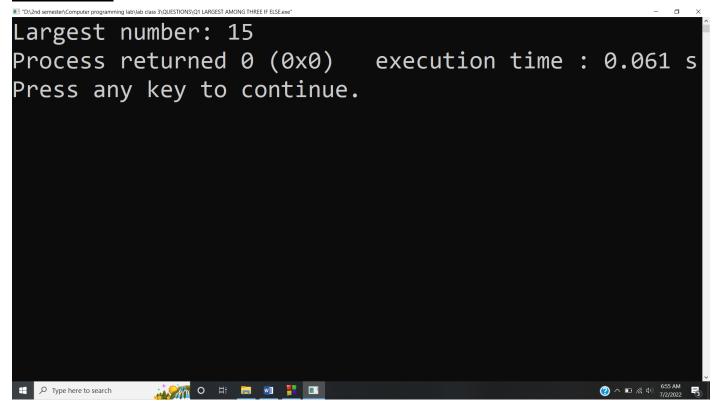
MUHAMMAD SADEEQ		п	21PWCSE2028					
600	and above	@2.00						
	100 1							
	If bill exceeds Rs. 400 then a surcharge of 15% will be charged							
Test Data:								
1001								
	Expected Output: Customer IDNO: 1001 Units Consumed: 800 Amount Charges @Rs. 2.00 per unit: 1600.00 Surcharge Amount: 240.00							
	aid by the Customer: 1840.00							

COMPUTER PROGRAMMING LAB #3

Answer #1

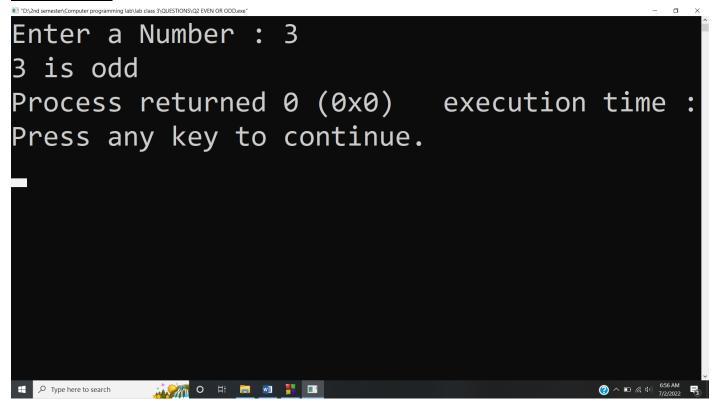
CODE:

```
*Q1 LARGEST AMONG THREE IF ELSE.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here X *Q1 LARGEST AMONG THREE IF ELSE.cpp X
                #include <iostream>
               using namespace std;
        3
        4
             —int main() {
        5
        6
                     int num=10, num2=5, num3=15;
        7
                     if (num >= num2) {
                           if (num >= num3)
        9
                                 cout << "Largest number: " << num;</pre>
       10
                           else
                                 cout << "Largest number: " << num3;}</pre>
       11
       12
                     else {
       13
                           if (num2 >= num3)
       14
                                 cout << "Largest number: " << num2;</pre>
       15
                           else
                                 cout << "Largest number: " << num3;}</pre>
       16
       17
                     return 0;}
       18
(?) ^ ■ (a 4)) 6:55
```



CODE:

```
*Q2 EVEN OR ODD.cpp - Code::Blocks 20.03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - o ×
   File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
                                                                                                  #include <iostream>
                                                                                                 using namespace std;
                                                        2
                                                        3
                                                        4
                                                                                   —int main() {
                                                        5
                                                                                                                    int a;
                                                                                                                    cout << "Enter a Number : ";</pre>
                                                        6
                                                        7
                                                                                                                    cin >> a;
                                                        8
                                                        9
                                                                                                                    if ( a % 2 == 0)
                                                                                                                                       cout << a << " is even";</pre>
                                              10
                                              11
                                                                                                                    else
                                              12
                                                                                                                                       cout << a << " is odd";</pre>
                                              13
                                              14
                                                                                                              return 0;}
                                              15
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CODE:

```
- o ×
4Q3 GREATER OF TWO TERNARY.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help Start here X *Q3 GREATER OF TWO TERNARY.cpp X
                 #include <iostream>
          2
                  #include <string>
          3
                  using namespace std;
          4
          5
              int main() {
          6
          7
                     int a=10, b=20;
          8
          9
                     a > b? cout<<"the grater value is = "<<a
        10
                     : cout<<"the greater value is = "<<b;
        11
        12
                     return 0;
        13
        14
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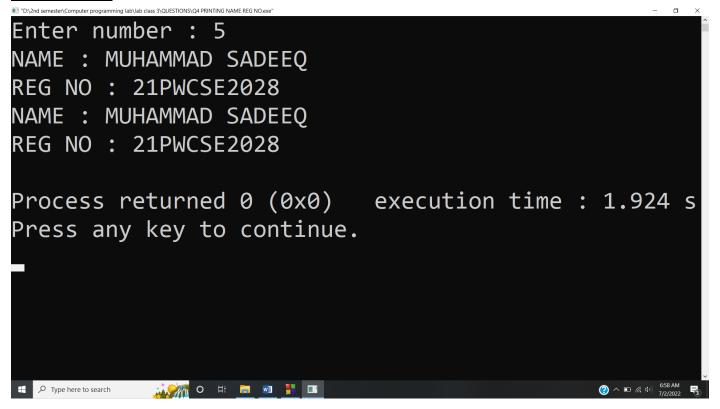
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■ Q3 GREATER OF TWO TERNARY.cpp - Code:Blocks 20.03

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Start here X Q3 GREATER OF TWO TERNARY.cpp X
                 #include <iostream>
                #include <string>
 ■ "D:\2nd semester\Computer programming lab\lab class 3\QUESTIONS\Q3 GREATER OF TWO TERNARY.exe"
 the greater value is = 20
 Process returned 0 (0x0) execution time: 0.032 \text{ s}
 Press any key to continue.
                     : cout<<"the greater value is = "<<b;
        11
        12
                     return 0;
        13
        14
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```

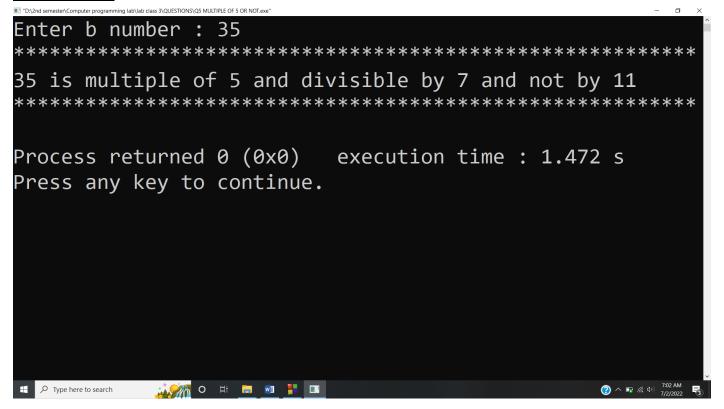
CODE:

```
★Q4 PRINTING NAME REG NO.cpp - Code::Blocks 20.03
                                                                                                  - o ×
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Start here × *Q4 PRINTING NAME REG NO.cpp
             #include <iostream>
              #include <string>
        3
            using namespace std;
        5 = int main() {
        6
                   int number;
        7
                   cout<<"Enter number : ";</pre>
        8
                  cin>>number;
        9
      10
               if(number>2) {
      11
                         cout<<"NAME : MUHAMMAD SADEEQ"<<endl;</pre>
      12
                         cout<<"REG NO : 21PWCSE2028"<<endl;</pre>
      13
                         cout<<"NAME : MUHAMMAD SADEEQ"<<endl;</pre>
                         cout<<"REG NO : 21PWCSE2028"<<endl;</pre>
      14
      15
      16
                         else{
      17
                         cout<<"NAME : MUHAMMAD SADEEQ"<<endl;</pre>
                         cout<<"REG NO : 21PWCSE2028"<<endl;}</pre>
      18
      19
      20
                return 0;}
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CODE:

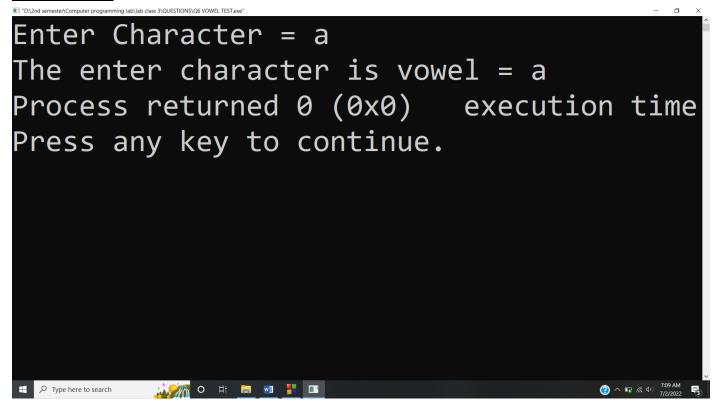
```
S MULTIPLE OF 5 OR NOT.cpp - Code::Blocks 20.03
                                                                         - o ×
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
         #include <iostream>
     2
         #include <string>
     3
         using namespace std;
     4
     5 ☐int main(){
     6
     7
              int b;
     8
              cout<<"Enter b number : ";</pre>
     9
              cin>>b;
        10
    11
         cout<<b<" is multiple of 5 and divisible by 7 and not by 11"<<endl;</pre>
    12
         13
    14
         return 0;}
    15
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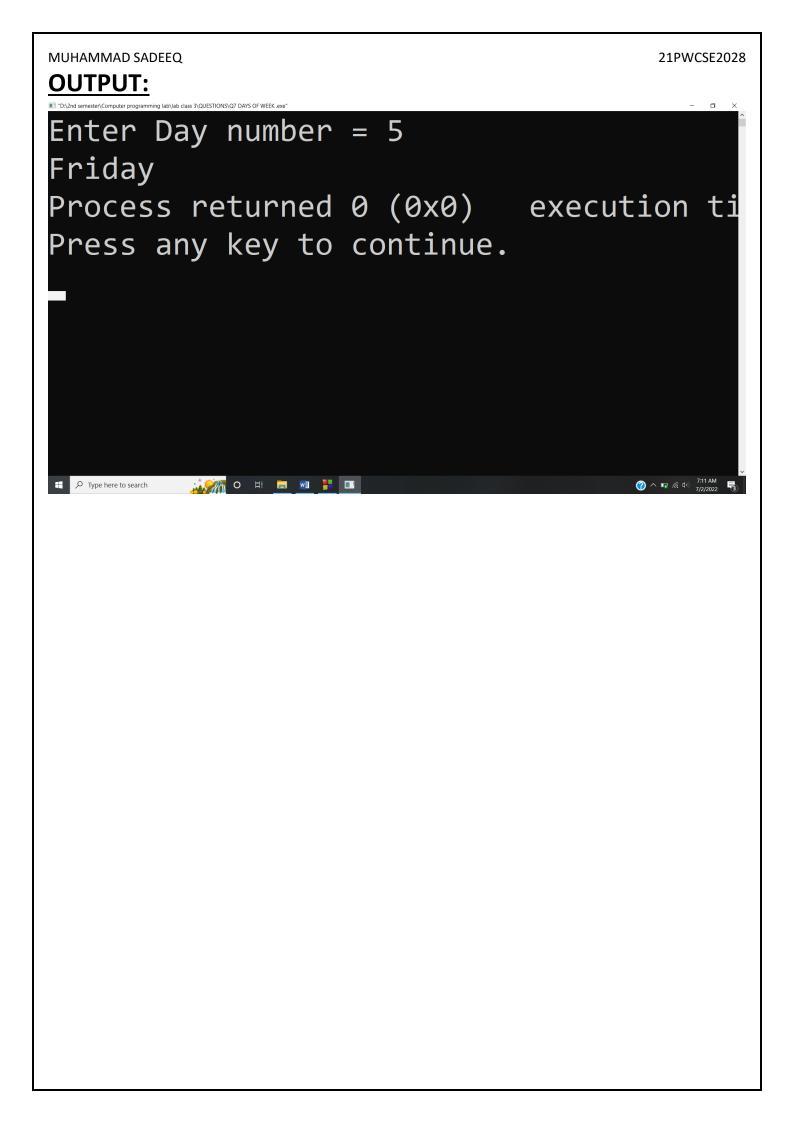
Answer #6

CODE:

```
*Q6 VOWEL TEST.cpp - Code::Blocks 20.03
                                                                                                   - o ×
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
            #include <iostream>
       2
            using namespace std;
       3
       4 | int main() {
       5
                 char a;
                 cout<<"Enter Character = ";</pre>
       6
                 cin>>a;
       8
       9
              switch(a) {
      10
                 case 'a':
                 cout <<"The enter character is vowel = "<<a;break;</pre>
      11
      12
                 cout <<"The enter character is vowel = "<<a;break;</pre>
      13
                 cout <<"The enter character is vowel = "<<a;break;</pre>
      15
      16
      17
                 cout <<"The enter character is vowel = "<<a;break;</pre>
      18
      19
                 cout <<"The enter character is vowel = "<<a;break;</pre>
      20
      21
                 cout <<"The enter character is consonant = "<<a;break;}</pre>
             return 0;}
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```
CODE:
*Q7 DAYS OF WEEK .cpp - Code::Blocks 20.03
                                                                                                     o ×
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
                 #include <iostream>
          1
          2
                 using namespace std;
          3
          4
               —int main() {
          5
                        int a;
          6
                        cout<<"Enter Day number = ";</pre>
          7
                        cin>>a;
          8
                        switch(a) {
          9
                        case 1:
        10
                        cout <<"Monday";break;</pre>
        11
                        case 2:
        12
                        cout <<"Tuesday";break;</pre>
        13
                        case 3:
        14
                        cout <<"Wednesday";break;</pre>
        15
                        cout <<"Thursday";break;</pre>
        16
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(2) ^ $\overline{\pi}$ $\langle$ $\langle$ $\langle$$
*Q7 DAYS OF WEEK .cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help Start here X *Q7 DAYS OF WEEK.cpp X
                        cout <<"Tuesday";break;</pre>
        12
        13
                        case 3:
                        cout <<"Wednesday";break;</pre>
        14
        15
                        cout <<"Thursday";break;</pre>
        16
        17
                        case 5:
        18
                        cout <<"Friday";break;</pre>
        19
                        case 6:
        20
                        cout <<"Saturday";break;</pre>
        21
                        case 7:
                        cout <<"Sunday";break;</pre>
        22
        23
                        default:
        24
                        cout <<"Invalid day number";</pre>
        25
                        break; }
        26
                        return 0;}
        27
                                                                                          ② ^ ➡ @ Φ) 7:11 AM ₹3
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```



```
CODE:
*Q8 NUMBER OF DAYS IN MONTH .cpp - Code::Blocks 20.03
                                                                                                              0 X
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here X *Q8 NUMBER OF DAYS IN MONTH .cpp X
        1
                #include <iostream>
        2
               using namespace std;
        3
        4
             int main(){
        5
                      int a;
        6
                      cout<<"Enter Day number = ";</pre>
        7
                     cin>>a;
        8
        9
                     switch(a) {
       10
                      case 1:
       11
                     cout <<"January days = "<<31;break;</pre>
       12
                     cout <<"February days = "<<28<<"or"<<29;break;</pre>
       13
       14
       15
                     cout <<"March days = "<<31;break;</pre>
       16
                      case 4:
                      cout <<"April days = "<<30;break;</pre>
       17
       18
                      case 5:
       19
                      cout <<"May days = "<<31;break;</pre>
       2.0
                      case 6:
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                                                                                                  (2) ^ ■ (6. 4) 7:13 AM
*Q8 NUMBER OF DAYS IN MONTH .cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help Start here X *Q8 NUMBER OF DAYS IN MONTH .cpp X
       19
                     cout <<"May days = "<<31;break;</pre>
       20
                     case 6:
       21
                      cout <<"June days = "<<30;break;</pre>
       22
                     case 7:
                     cout <<"July days = "<<31;break;</pre>
       23
       24
                     case 8:
       25
                     cout <<"August days = "<<31;break;</pre>
       26
                     case 9:
       27
                     cout <<"September days = "<<30;break;</pre>
       28
                     case 10:
       29
                     cout <<"October days = "<<31;break;</pre>
       30
                      case 11:
       31
                     cout <<"November days = "<<30;break;</pre>
       32
                      cout <<"December days = "<<31;break;</pre>
       33
       34
                      cout <<"Invalid month number";break;}</pre>
       35
       36
               return 0;}
       37
                                                                                                  (?) ^ ■ (6 4) 7:13 AM
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```

MUHAMMAD SADEEQ 21PWCSE2028 **OUTPUT:** Enter Day number = 5 May days = 31Process returned 0 (0x0) execution time Press any key to continue. (?) ∧ ➡ (% Φ)) 7:14 AM 7/2/2022 ■3

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CODE:
                                                                                                    o ×
Q9 Electricity bill.cpp - Code::Blocks 20.03
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        1
             #include <iostream>
             using namespace std;
        2
        3
        4
          -int main(){
        5
              int c id, unit, charges, surcharge;
              cout<<"Enter customer ID : ";</pre>
        6
        7
              cin>>c id;
              cout<<"Enter the number of units consumed : ";</pre>
        8
        9
              cin>>unit;
      10
      11
          = if ( unit >= 0 && unit <= 199 ) {
      12
             -charges=unit*1.20;}
      13
           else if( unit >= 200 && unit < 400 ) {</pre>
      14
      15
            -charges=unit*1.50;}
      16
           =else if( unit >= 400 && unit < 600 ){
      17
      18
             -charges=unit*1.80;}
      19
           else if( unit > 600 ){
      2.0
                     O H 🥫 💌 📙
Type here to search
                                                                                          (2) ^ ■ (6. 40)
Q9 Electricity bill.cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here X Q9 Electricity bill.cpp X
      13
      14
          else if( unit >= 200 && unit < 400 ) {</pre>
      15
             -charges=unit*1.50;}
      16
      17
           \blacksquareelse if( unit >= 400 && unit < 600 ){
             -charges=unit*1.80;}
      18
      19
           else if( unit > 600 ) {
      20
            -charges=unit*2.00;}
      21
      22
      23
          \negif( charges > 400 ){
      24
                   surcharge=0.15*charges;}
      25
              cout<<"Customer IDNO : "<<c id<<endl;</pre>
              cout<<"Units consumed : "<<unit<<endl;</pre>
      26
              cout<<"Amount Charges : "<<charges<<endl;</pre>
      2.7
              cout<<"surcharges Amount :"<<surcharge<<endl;</pre>
      28
      29
              cout<<"Net Amount paid by the customer : "<<charges+surcharge<<end1;</pre>
      30
                return 0;}
      31
                                                                                          (?) ^ ■ (6 4) 7:14 AM

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