CSE102L Computer Programming Lab

LAB # 2

2020

Submitted to:

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Registration No :

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Semester: **2nd**

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."

March 2 , 2020

Department of Computer Systems Engineering

University of Engineering and Technology, Peshawar

Objective:

To be familiar with different data types, Operators and Expressions in C++.

Task # 1

Title:

Write a program that takes the temperature in Fahrenheit and convert it to Celsius and Kelvin:

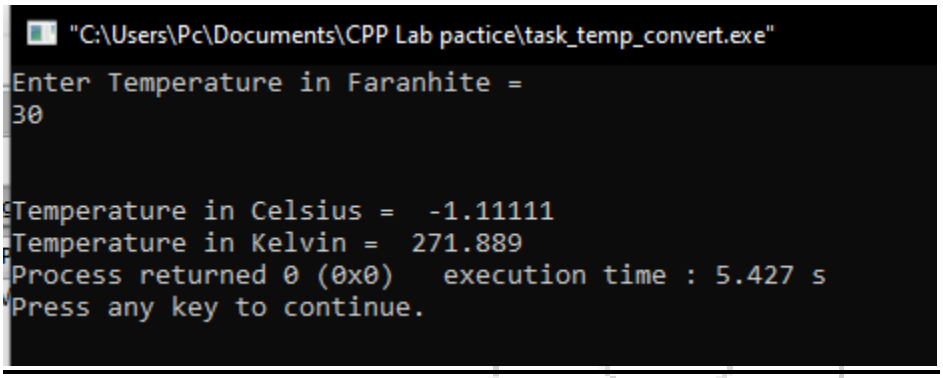
$$K = C + 273$$

$$C = (F - 32) / 1.8$$

Code:

```
# include < iostream>// library for writing the output to console window
using namespace std;


int main ()
{
   float x,y;
          cout<<"Enter Temperature in Faranhite = \n";
          cin>>x;
          cout<<"\n\n";


          cout<<"Temperature in Celsius =  "<< (x-32)/1.8;
          cout<<"\n";


          cout<<"Temperature in Kelvin =  "<<((x-32)/1.8)+273;


}
```

Output (Compilation, Debugging & Testing):



Task # 2

Title:

Write the C++ code that takes the integer a, b, c, d and e from the user and display the output according to the following equation.

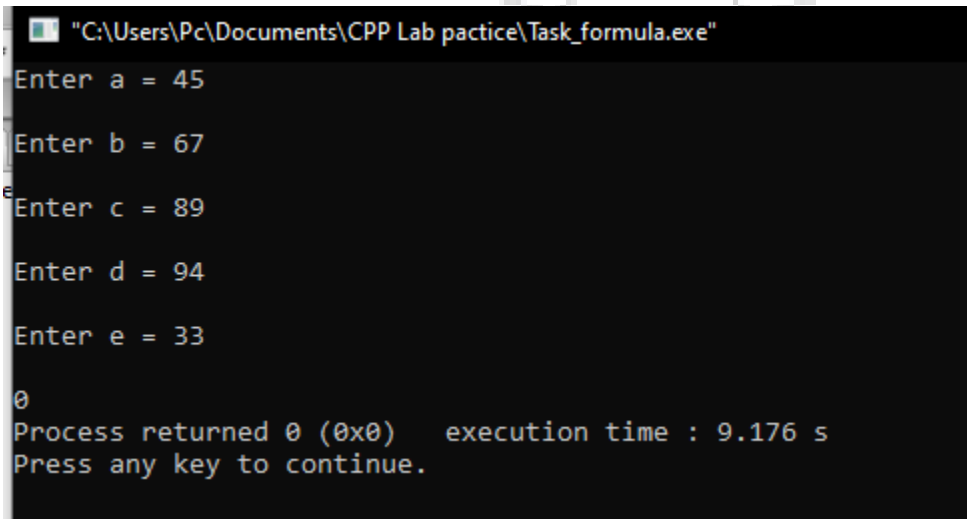
$$\frac{a^3 + b^2 - d / b}{a\,(\,b + c\;(\,e + a\,)\,/\,b\,) - 10}$$

Code:

```
#include <iostream>// library for writing the output to console window

using namespace std;

int main()

{

float a,b,c,d,e,k,m;

        cout<<"Enter a = ";

        cin>>a;

        cout<<"\n";


        cout<<"Enter b = ";

        cin>>b;

        cout<<"\n";
```

```
        cout<<"Enter c = ";
        cin>>c;
        cout<<"\n";

        cout<<"Enter d = ";
        cin>>d;
        cout<<"\n";

        cout<<"Enter e = ";
        cin>>e;
        cout<<"\n";

        k=((a*a*a)+(b*b)-d)/b;
        m=a*(b+c*(e+a)/b)-10;
        int answer =k/m ;
        cout<<answer;
   return 0;
}
```

Output (Compilation, Debugging & Testing):



Task # 3:

Title:

Write a program to declare two integer and one float variables then initialize them to 10, 15, and 12.6. Also print the variable values in the screen

Code:

```
#include <iostream>>

using namespace std;

int main()

{

   int x=10; ; //declare variable and assign value to variable



   int y=15; ; //declare variable and assign value to variable



   float z=12.6; ; //declare variable and assign value to variable
   cout<<x<<endl; //display x
  cout<<y<<endl; //display y

  cout<<z<<endl; //display z

  return 0;

}
```

Output (Compilation, Debugging & Testing):

```
10
15
12.6

Process returned 0 (0x0)   execution time : 2.333 s
Press any key to continue.
```

Task # 4:

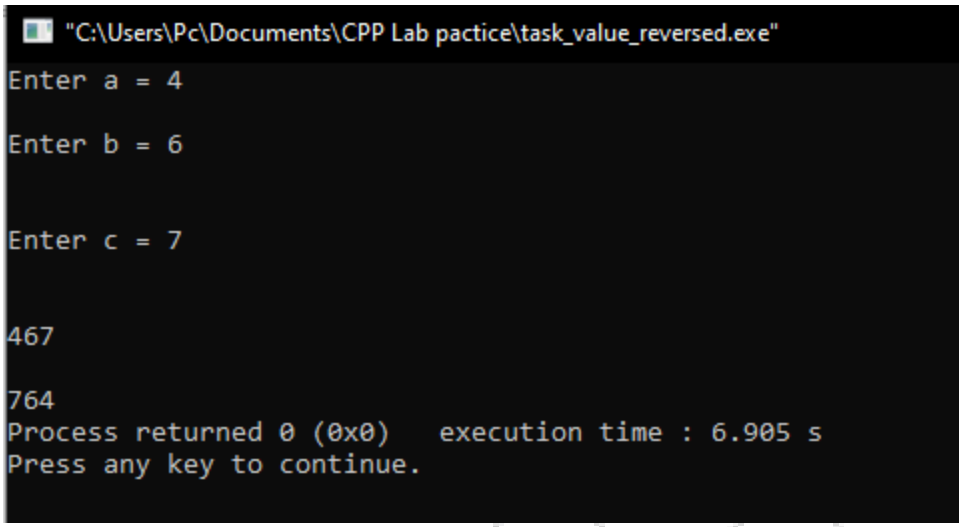
Title:

Write a C++ program to prompt the user to input 3 integers values and print these values in forward and reversed order.

Code:

```
#include <iostream>

using namespace std;

int main()

{

   int a,b,c; //variable declaration

          cout<<"Enter a = ";

          cin>>a;

          cout<<"\n";


          cout<<"Enter b = ";

          cin>>b;

          cout<<"\n\n";


          cout<<"Enter c = ";

          cin>>c;

          cout<<"\n\n";


          cout<<a<<b<<c;

          cout<<"\n\n";

          cout<<c<<b<<a;

           return 0;

}
```

Output (Compilation, Debugging & Testing):



Task # 5:

Title:

Write a program to swap two variables values with and without using third variables.

Code:

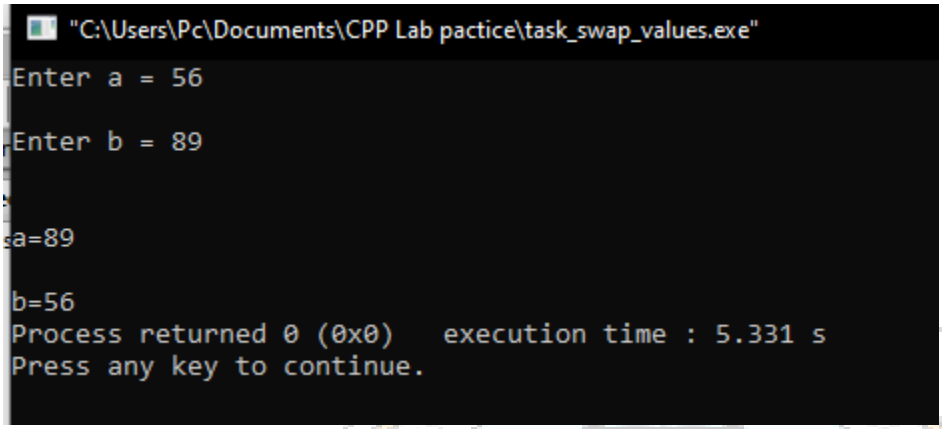
Code:

Without Using 3rd Variable:

```
#include <iostream>

using namespace std;

int main()

{

float a,b;

        cout<<"Enter a = ";

        cin>>a;

        cout<<"\n";


        cout<<"Enter b = ";

        cin>>b;

        cout<<"\n\n";

        cout<<"a"<<"="<<b;
```

```
        cout<<"\n\n";
        cout<<"b"<<"="<<a;
}
```

Output (Compilation, Debugging & Testing):

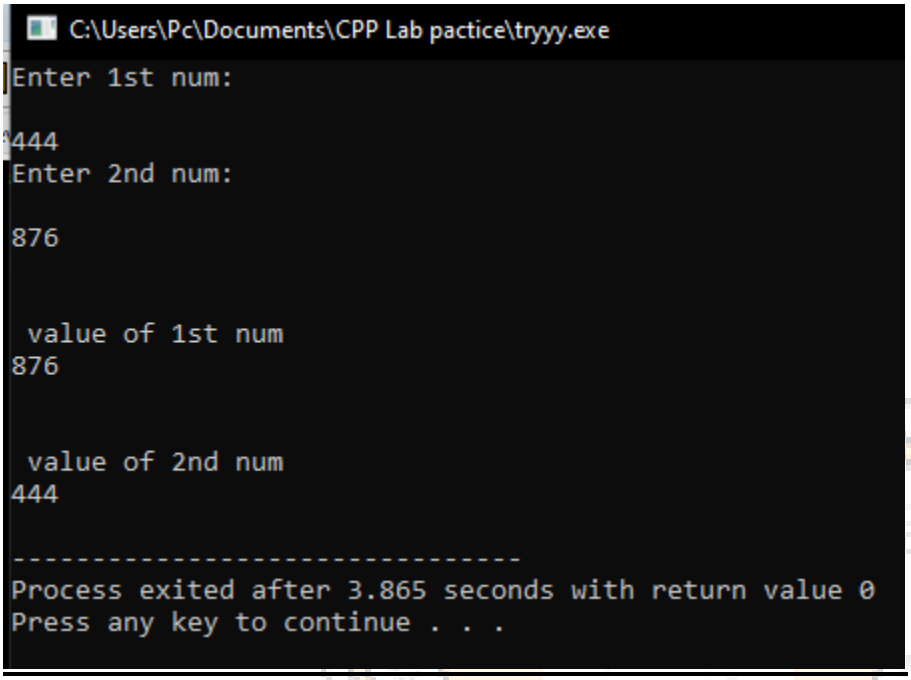


With using 3rd variable:

```
#include <iostream>
using namespace std;
int main()
{
   int a,b,c;
   cout <<"Enter 1st num:"; //user enters the value of 1st num
   cin >>a;
   cout <<"Enter 2nd num:"; //user enters the value of second num
   cin >>b;
   c=a; //c is equal to 1st num
   a=b; //1st num is equal to 2nd num
   b=c; //2nd num is qual to c
   cout <<"value of 1st num"<<endl;
   cout<<a<<endl; //display a
```

```
cout <<"value of 2nd num"<<endl;

cout <<b<<endl; //display b

return 0; //end the program  }
```

Output (Compilation, Debugging & Testing):

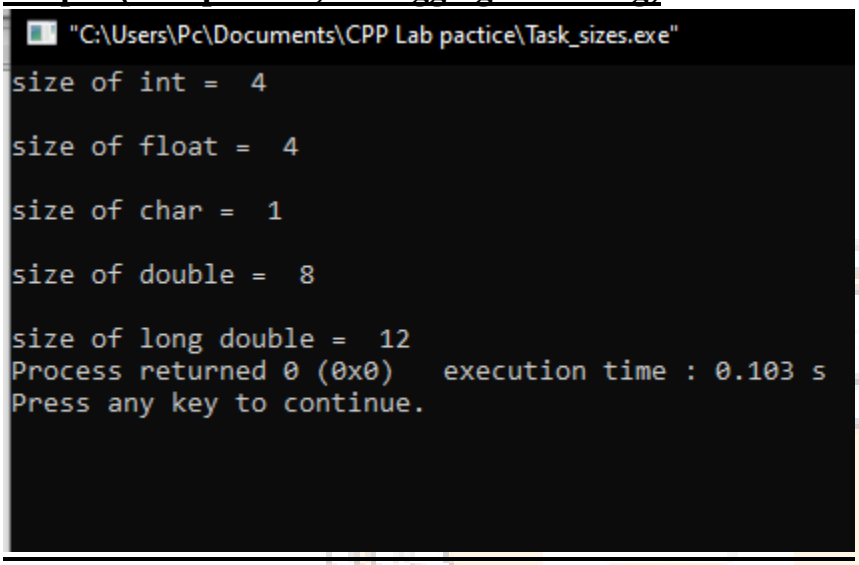


TASK # 6:

Write a program to print the size of char, float, double and long double data types in C.

Code:

```
#include <iostream> /* library for writing the output to console window*/
using namespace std;
int main()
{ //start the program

int a;
        float b;
        char c;
        double d;
        long double e;

        cout<<"size of int =  "<<sizeof(a);
        cout<<"\n\n";
```

```
        cout<<"size of float =  "<<sizeof(b);
        cout<<"\n\n";
        cout<<"size of char =  "<<sizeof(c);
        cout<<"\n\n";
        cout<<"size of double =  "<<sizeof(d);
        cout<<"\n\n";
        cout<<"size of long double =  "<<sizeof(e);

}
```

Output (Compilation, Debugging & Testing;