# Computer Systems & Programming

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## Home Tasks of Lab Manual 2

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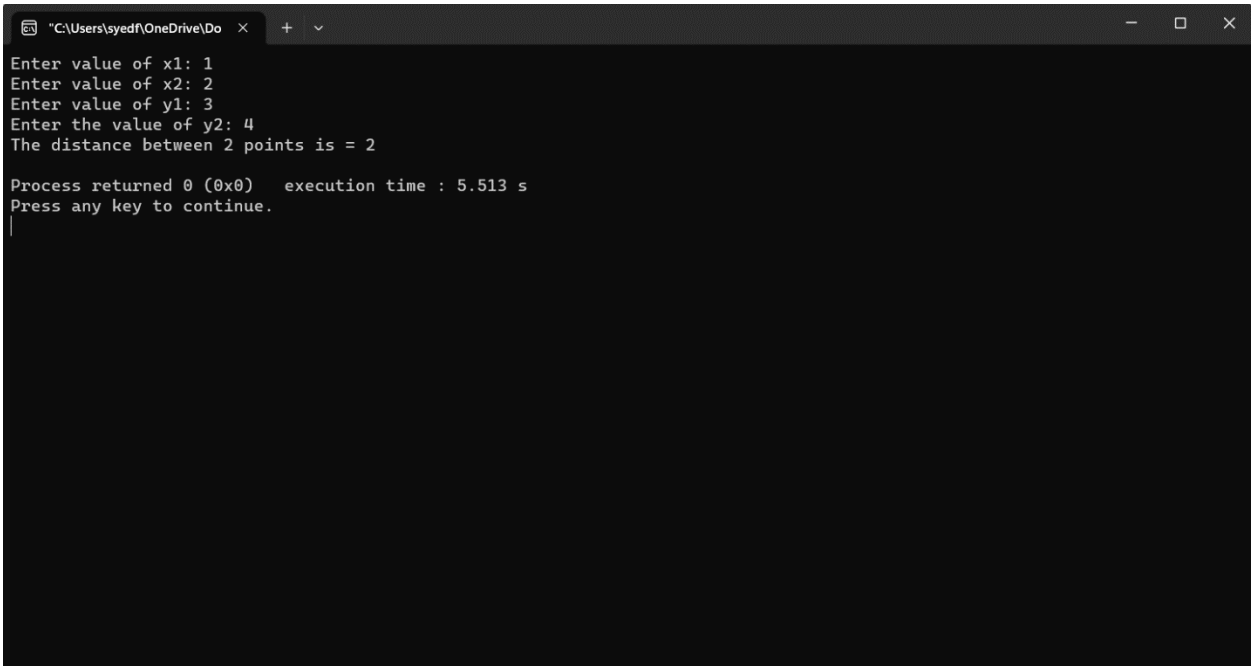
**Home Task # 1:** Write a C++ program to calculate distance between two points. The values of coordinates should be input by user.

Start here | Home Task #1(Manual 2).cpp

```cpp
//Library
#include <iostream>
using namespace std;
//scope
int main() {
//Declaring the variables
int x1 ;
int x2 ;
int y1;
int y2;
int x;
int y;
int z;
//Get the value of x1
cout << "Enter value of x1: ";
cin >> x1;
//Get the value of x2
cout << "Enter value of x2: ";
cin >> x2;
//Get the value of y1
cout<<"Enter value of y1: ";
cin >> y1;
//Get the value of y2
cout<<"Enter the value of y2: ";
cin>>y2;
x=(x2-x1)*(x2-x1);
y=(y2-y1)*(y2-y1);
// Calculate the result
z = x + y ;
// Display the result or Output
cout << "The distance between 2 points is = " << z << endl;

return 0;
}
```

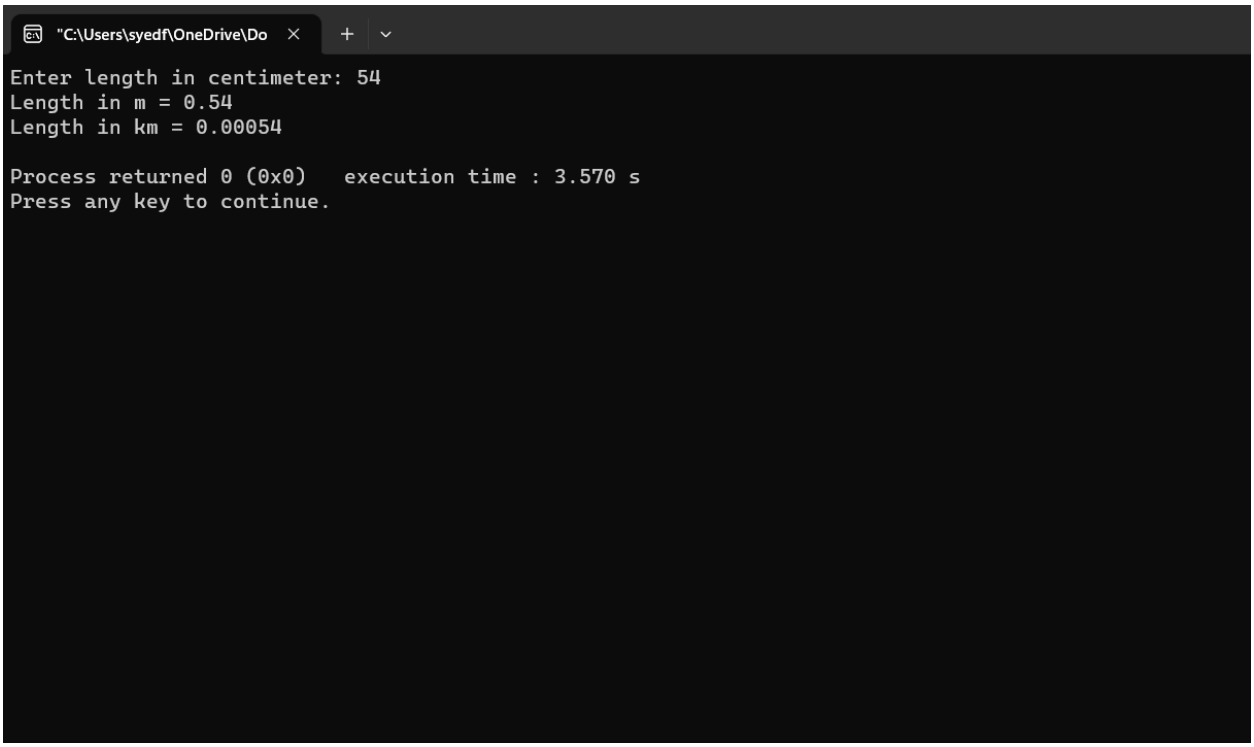



**Home Task # 2:** Write a code in C++ to take length from user in centimeter and convert it into meter and kilometer.

Start here | Home Task #2(Manual 2).cpp

```cpp
//library
#include <iostream>
using namespace std;
//scope
int main() {
//Declaring the variables
float a;
float b;
float c;
//Get Length in cm from user
cout << "Enter length in centimeter: ";
cin >> a;
// Converting centimeter into meter and kilometer.
b = a / 100.0;
c = a / 100000.0;
//Display the result
cout << "Length in m = "<<b<< endl;
cout << "Length in km = " <<c<< endl;

return 0;
}
```




**Home Task #3:** Write a code in C++ that takes values of a and b from the user and displays result of polynomial $a2 + 2ab + b2$.

Start here | Home Task #3(Manual 2).cpp

```cpp
//library
#include <iostream>
using namespace std;
//scope
int main() {
//Declaring the variables
int a ;
int b ;
int result;
//Get the value of a
cout << "Enter value of a: ";
cin >> a;
//Get the value of b
cout << "Enter value of b: ";
cin >> b;
// Calculate the result of the polynomial
result = a * a + 2 * a * b + b * b;
// Display the result
cout << "Result of the polynomial a^2 + 2ab + b^2 = " << result << endl;

return 0;
}
```

```
"C:\Users\syedf\OneDrive\Do
Enter value of a: 1
Enter value of b: 2
Result of the polynomial a^2 + 2ab + b^2 = 9

Process returned 0 (0x0)   execution time : 5.379 s
Press any key to continue.
```

**Home Task #4:** Write a program in C++ to convert temperature in Fahrenheit to Celsius.

Start here | Home Task #4(Manual 2).cpp

```cpp
//library
#include <iostream>
using namespace std;
//scope
int main() {
//Declaring the variables
double f;
double c;
//Get the temperature in Fahrenheit
cout << "Enter temperature in Fahrenheit: ";
cin >> f;
// Converting Fahrenheit to Celsius.
c = (f - 32.0) * 5.0 / 9.0;
//Display the result
cout << "Temperature in Celsius = " <<c<< endl;
return 0;
}
```