



LAB ASSIGNMENT

Computer Systems and Programming Lab Manual 1 Home Task

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Class: ME-15 C



Question 1

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

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

```
1  #include <iostream>
2  #include <cmath>
3  using namespace std;
4
5  int main() {
6      float x1,y1,x2,y2,d;
7      cout <<"input x coordinate of point 1"<<endl;
8      cin >> x1;
9      cout <<"input y coordinate of point 1"<<endl;
10     cin >> y1;
11     cout <<"input x coordinate of point 2"<<endl;
12     cin >> x2;
13     cout <<"input y coordinate of point 2"<<endl;
14     cin >> y2;
15     d=sqrt((x2-x1)*(x2-x1)+(y2-y1)*(y2-y1));
16     cout<<"the value of d="<<d<<endl;
17     return 0;
18 }
```

```
input x coordinate of point 1
3
input y coordinate of point 1
2
input x coordinate of point 2
6
input y coordinate of point 2
5
the value of d=4.24264
```

```
Process returned 0 (0x0)   execution time : 3.644 s
Press any key to continue.
```

Question 2

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

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main(){
6      float lcm,lm,lkm;
7      cout << "Input value of length in cm" << endl;
8      cin >> lcm;
9      lm=lcm/100;
10     lkm=lcm/100000;
11     cout << "length in m:" << lm << "meters" << endl;
12     cout << "length in km:" << lkm << "kilometers" << endl;
13
14     return 0;
15 }
16
```

```
Input value of length in cm
500
length in m:5meters
length in km:0.005kilometers
```

```
Process returned 0 (0x0)   execution time : 2.409 s
Press any key to continue.
```



Question 3

3. Write a code in C++ that takes values of a and b from the user and displays result of polynomial $a^2 + 2ab + b^2$.

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
6      float a,b,c;
7      cout << " enter value for a" << endl;
8      cin >> a;
9      cout << "enter value for b" << endl;
10     cin >> b;
11     c= (a*a)+(b*b)+(2*a*b);
12     cout << "answer:" << c << endl;
13     return 0;
14 }
15
```

enter value for a

2

enter value for b

5

answer:49

Process returned 0 (0x0) execution time : 2.151 s

Press any key to continue.



Question 4

4. Write a program in C++ to convert temperature in Fahrenheit to Celsius.

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
6      float k, f, c;
7      cout << "enter temperature in kelvin:" << endl;
8      cin >> k;
9      c=k-273.15;
10     f=(k-273.15) * 9/5 + 32;
11     cout << "temperature in celcius:" << c << endl;
12     cout << "temperature in fahrenheit:" << f << endl;
13     return 0;
14 }
15
```

```
enter temperature in kelvin:
305
temperature in celcius:31.85
temperature in fahrenheit:89.33
```

```
Process returned 0 (0x0)   execution time : 2.608 s
Press any key to continue.
```

