



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING

SECJ1013

PROGRAMMING TECHNIQUE 1

LAB EXERCISE 2

LECTURER'S NAME : DR NIES HUI WEN

NAME	MATRIC NUMBER
PRAVINRAJ A/L SIVABATHI	A23CS0171

CODING :

labE2.cpp

```
1  /* PRAVINRAJ*/
2  /* A23CS0171*/
3  /* LAB EXERCISE 2*/
4  #include <iostream>
5  #include <iomanip> // setw function table
6  #include <cmath>
7  using namespace std;
8
9  // Function to calculate Euclidean distance
10 double euclDistance(double x1, double y1, double x2, double y2) {
11     sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
12 }
13
14 // function to display to distance of AB, AC and BC
15 void display(double distanceAB, double distanceAC, double distanceBC){
16     cout << "A(1,3), B(2,6) and C(5,4)\n" ;
17     // Table
18     cout << setw(1) << " " << setw(14) << "X" << setw(15) << "Y" << endl;
19
20     cout << setw(1) << "A" << setw(15) << 1 << setw(15) << 3 << endl;
21     cout << setw(1) << "B" << setw(15) << 2 << setw(15) << 6 << endl;
22     cout << setw(1) << "C" << setw(15) << 5 << setw(15) << 4 << endl;
23
24     cout << "\nAB = " << distanceAB;
25     cout << "\nAC = " << distanceAC;
26     cout << "\nBC = " << distanceBC;
```

labE2.cpp

```
22     cout << setw(1) << "C" << setw(15) << 5 << setw(15) << 4 << endl;
23
24     cout << "\nAB = " << distanceAB;
25     cout << "\nAC = " << distanceAC;
26     cout << "\nBC = " << distanceBC;
27
28 }
29
30 int main() { // main function
31     // Points A, B, C
32     double x_A = 1, y_A = 3;
33     double x_B = 2, y_B = 6;
34     double x_C = 5, y_C = 4;
35
36     // Calculate distances of AB, AC, BC
37     double distanceAB = euclDistance(x_A, y_A, x_B, y_B);
38     double distanceAC = euclDistance(x_A, y_A, x_C, y_C);
39     double distanceBC = euclDistance(x_B, y_B, x_C, y_C);
40
41     // Calling function to display output
42     display(distanceAB, distanceAC, distanceBC);
43
44     return 0;
45 }
```

OUTPUT :

```
labE2.cpp
1  /* PRAVINRAJ*/
2  /* A23CS0171*/
3  /* LAB EXERCISE 2*/
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5  #include <iomanip> // setw function table
6  #include <cmath>
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15 void display(double distanceAB, double distanceAC, double distanceBC){
16     cout << "A(1,3), B(2,6) and C(5,4)\n" ;
17     // Table
18     cout << setw(1) << " " << setw(14) << "X" << setw(15) << "Y" << endl;
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20     cout << setw(1) << "A" << setw(15) << 1 << setw(15) << 3 << endl;
21     cout << setw(1) << "B" << setw(15) << 2 << setw(15) << 6 << endl;
22     cout << setw(1) << "C" << setw(15) << 5 << setw(15) << 4 << endl;
23
24     cout << "\nAB = " << distanceAB;
25     cout << "\nAC = " << distanceAC;
26     cout << "\nBC = " << distanceBC;
27 }
28
29 int main() {
30     double distanceAB, distanceAC, distanceBC;
31     distanceAB = euclideanDistance(1, 3, 2, 6);
32     distanceAC = euclideanDistance(1, 3, 5, 4);
33     distanceBC = euclideanDistance(2, 6, 5, 4);
34     display(distanceAB, distanceAC, distanceBC);
35     return 0;
36 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\HP\Documents\labE2.exe
- Output Size: 1.89902973175049 MiB
- Compilation Time: 1.24s

C:\Users\HP\Documents\labE X + v

A(1,3), B(2,6) and C(5,4)

	X	Y
A	1	3
B	2	6
C	5	4

AB = 3.16228
AC = 4.12311
BC = 3.60555

Process exited after 0.2182 seconds with return value 0
Press any key to continue . . . |

C:\Users\HP\Documents\labE X + v

A(1,3), B(2,6) and C(5,4)

	X	Y
A	1	3
B	2	6
C	5	4

AB = 3.16228
AC = 4.12311
BC = 3.60555

Process exited after 0.2196 seconds with return value 0
Press any key to continue . . . |

C++ CODE:

```
/* PRAVINRAJ*/
/* A23CS0171*/
/* LAB EXERCISE 2*/

#include <iostream>

#include <iomanip> // setw function table
#include <cmath>

using namespace std;

// Function to calculate Euclidean distance
double euclDistance(double x1, double y1, double x2, double y2) {
    sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
}

// function to display to distance of AB, AC and BC
void display(double distanceAB, double distanceAC, double distanceBC){
    cout << "A(1,3), B(2,6) and C(5,4)\n" ;
    // Table
    cout << setw(1) << " " << setw(14) << "X" << setw(15) << "Y" << endl;

    cout << setw(1) << "A" << setw(15) << 1 << setw(15) << 3 << endl;
    cout << setw(1) << "B" << setw(15) << 2 << setw(15) << 6 << endl;
    cout << setw(1) << "C" << setw(15) << 5 << setw(15) << 4 << endl;

    cout << "\nAB = " << distanceAB;
    cout << "\nAC = " << distanceAC;
    cout << "\nBC = " << distanceBC;

}

int main() { // main function
```

```
// Points A, B, C

double x_A = 1, y_A = 3;

double x_B = 2, y_B = 6;

double x_C = 5, y_C = 4;


// Calculate distances of AB, AC, BC

double distanceAB = euclDistance(x_A, y_A, x_B, y_B);

double distanceAC = euclDistance(x_A, y_A, x_C, y_C);

double distanceBC = euclDistance(x_B, y_B, x_C, y_C);


// Calling function to display output

display(distanceAB, distanceAC, distanceBC);


return 0;

}
```