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 :

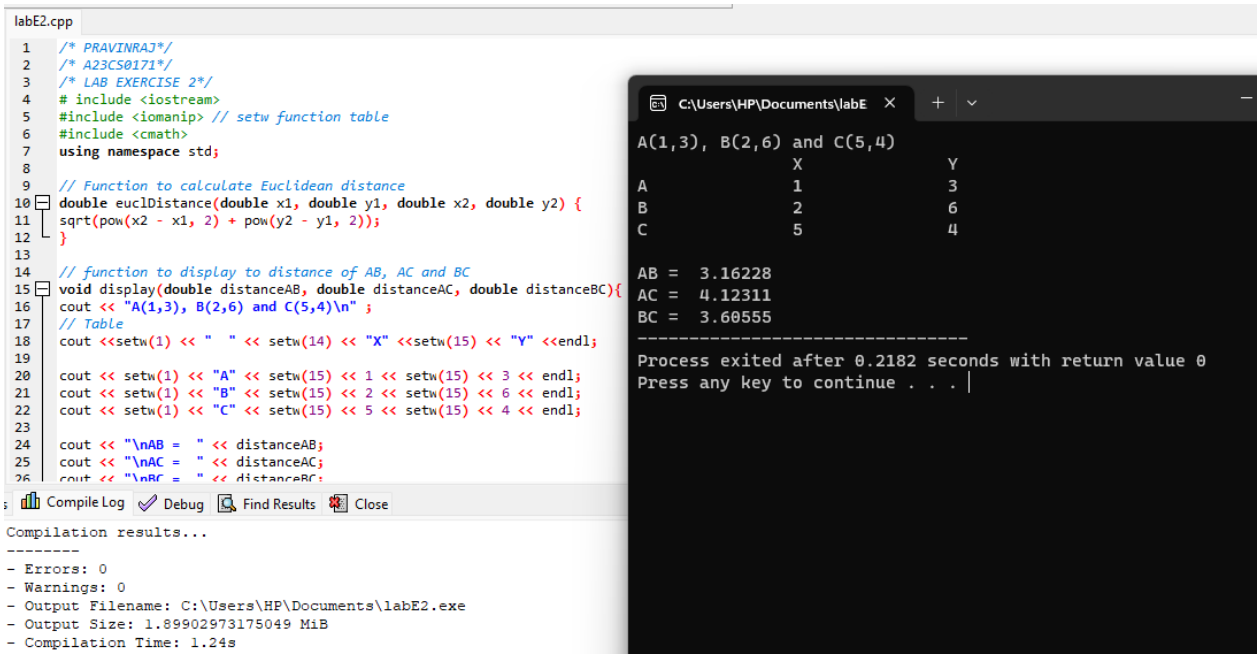
labE2.cpp

```cpp
/* 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;
```

labE2.cpp

```cpp
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;
}
```

OUTPUT :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// Table
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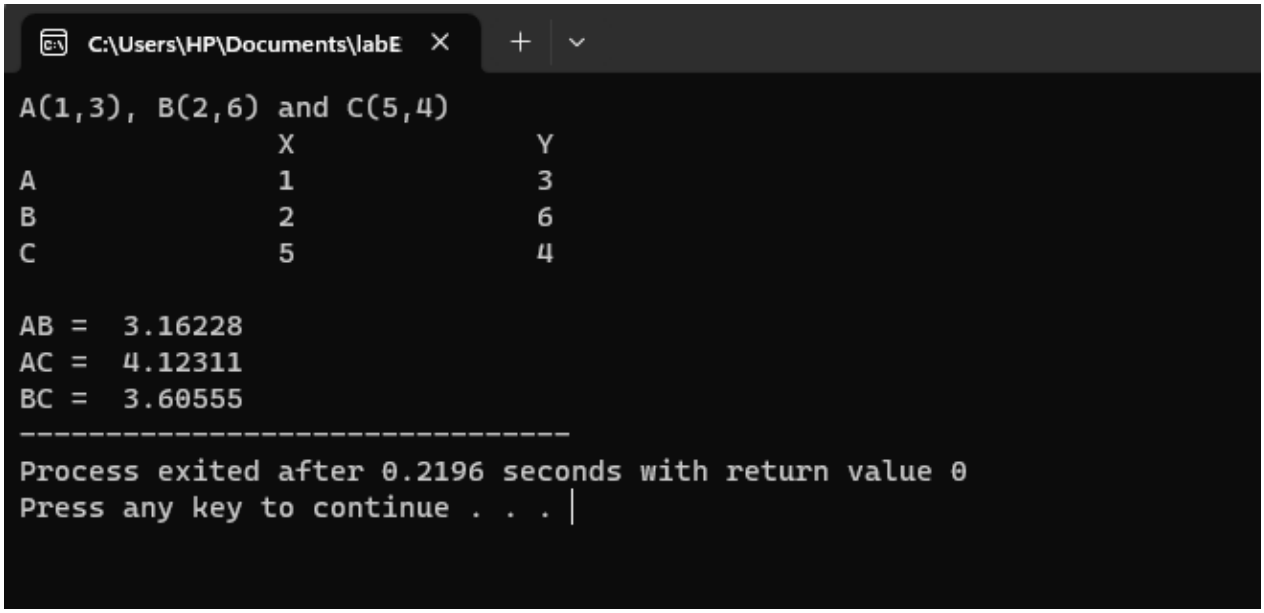
cout << setw(1) << "A" << setw(15) << 1 << setw(15) << 3 << endl;
cout << setw(1) << "B" << setw(15) << 2 << setw(15) << 6 << endl;
cout << setw(1) << "C" << setw(15) << 5 << setw(15) << 4 << endl;
cout << "\nAB = " << distanceAB;
cout << "\nAC = " << distanceAC;
Compile Log
Debug
Find Results
Close
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
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
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:

```
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sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
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// 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;
}
```