

/\* Lab 1a - Whose Line Is It Anyway?

Eyad Alsahori

Algorithm

1. Ask for the x and y coordinates of the two points on the line
2. calculates the slope and midpoint of the line
3. print (output) x1, y1, x2, y2, first point coordinate, second point coordinate, slope, midpoint

Scope: Based on user inputs of the x and y coordinates of the two points on a line we will calculate the slope and midpoint of the line

\*/

```
#include <iostream>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    //declare variables
```

```
    double x1, y1, x2, y2, slope, xmidpoint, ymidpoint;
```

```
    // ask the user for input
```

```
    cout << "please enter the coordinates of the first point seperated by a space : ";
```

```
    cin >> x1 >> y1;
```

```
    cout << "please enter the coordinates of the first point seperated by a space : ";
```

```
    cin >> x2 >> y2;
```

```
    slope = ((y2 - y1) / (x2 - x1));
```

```
    xmidpoint = (x1 + x2) / 2;
```

```
    ymidpoint = (y1 + y2) / 2;
```

```
    cout << "first points coordinate is: (" << x1 << ", " << y1 << ")" << endl;
```

```
    cout << "second points coordinate is: (" << x2 << ", " << y2 << ")" << endl;
```

```
    cout << "slope of the line: " << slope << endl;
```

```
    cout << "midpoint is: (" << xmidpoint << ", " << ymidpoint << ")" << endl;
```

```
    system("pause");
```

```
    return 0;
```

```
}
```

```
/*
```

```
    please enter the coordinates of the first point seperated by a space : 4 6
```

```
    please enter the coordinates of the first point seperated by a space : 16 18
```

```
    first points coordinate is: (4, 6)
```

```
    second points coordinate is: (16, 18)
```

```
    slope of the line: 1
```

midpoint is: (10, 12)

please enter the coordinates of the first point seperated by a space : 4 6

please enter the coordinates of the first point seperated by a space : 14 19

first points coordinate is: (4, 6)

second points coordinate is: (14, 19)

slope of the line: 1.3

midpoint is: (9, 12.5)

please enter the coordinates of the first point seperated by a space : -10 8

please enter the coordinates of the first point seperated by a space : 14 4.2

first points coordinate is: (-10, 8)

second points coordinate is: (14, 4.2)

slope of the line: -0.158333

midpoint is: (2, 6.1)

please enter the coordinates of the first point seperated by a space : 3.4 -6

please enter the coordinates of the first point seperated by a space : 20 16

first points coordinate is: (3.4, -6)

second points coordinate is: (20, 16)

slope of the line: 1.3253

midpoint is: (11.7, 5)

please enter the coordinates of the first point seperated by a space : 5 2

please enter the coordinates of the first point seperated by a space : 1 7

first points coordinate is: (5, 2)

second points coordinate is: (1, 7)

slope of the line: -1.25

midpoint is: (3, 4.5)

please enter the coordinates of the first point seperated by a space : 9 10

please enter the coordinates of the first point seperated by a space : 4 1

first points coordinate is: (9, 10)

second points coordinate is: (4, 1)

slope of the line: 1.8

midpoint is: (6.5, 5.5)

\*/