

Lab 5.3.8 Points in 2D: part 1

Objectives

Familiarize the student with:

- modelling real-world entities with classes and objects;
- interactions between objects of the same type.

Scenario

A point in two-dimensional space can be represented by two coordinates, usually denoted as x and y.

The distance between two points in space can be calculated using the Pythagorean theorem.

Your program should read two sets of x and y coordinates and calculate the distance between the two points the sets represent.

```
#include <iostream>

using namespace std;

class Point2D{
public:
    Point2D(double x, double y);
    string toString();
    double toDouble();
    // ...
    double distanceTo(Point2D that);
private:
    double x;
    double y;
};

// implement Point2D methods
```

Example input

```
0 0
3 4
```

Example output

```
5
```

Example input

```
9, 16
4, 4
```

Example output

```
13
```

Example input

```
-3 -6.7
-8.5 9
```

Example output

16.6355042