Problem Set 1 Exercise #13: Travel

Reference: Lecture 2 notes

Learning objectives: Writing methods; Math class methods

Estimated completion time: 25 minutes

Problem statement:

Every day, Dr. Zhou will travel from **home** to his **office** in the morning. After work, he will visit **NTUC FairPrice** for groceries before returning to **home**.

Suppose we represent the locations: home, office and NTUC as two-dimensional Cartesian coordinate (x, y), write a program **PS1_Ex13_Travel.java** to calculate the total distance travelled by Dr. Zhou every day. The distance of travel is to be displayed in two decimal places.

For your information, mathematically the distance between two points (x_1, y_1) and (x_2, y_2) is calculated as follows:

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

You should exercise good sense of modular programming and define a method **`distance()`** to calculate the distance between two places; invoke it whenever you need to calculate distance.

Sample run #1:

```
Enter X Y coordinates for Home: 3 7
Enter X Y coordinates for Office: 3 15
Enter X Y coordinates for NTUC: 9 15
Distance of travel is 24.00
```

Sample run #2:

```
Enter X Y coordinates for Home: 1.5 2
Enter X Y coordinates for Office: 4.25 5.75
Enter X Y coordinates for NTUC: 7 10.2
Distance of travel is 19.76
```