Problem Set 4 Exercise #14: Tiles

Reference: Lecture 11 notes

Learning objectives: Array of structures

Estimated completion time: 20 minutes

Problem statement:

Write a program **tiles.c** to read in an integer (greater than 1) indicating the number of tiles, followed by the tiles' data (*length*, *width* and *price* per square metre). A structure called `tile_t` should be created and the tiles' data should be stored in an array of such structure. The program then computes and outputs the difference in cost between the cheapest tile and the most expensive tile.

The *length* and *width* are integers in metres, while the *price*, in dollars, is of type `double`. You may assume that there are at least 2 tiles and at most 20 tiles.

You should write a modular program with the following two functions:

- **`scan_tiles()`** that reads tiles' data into array tiles and returns the number of tiles read.
- **`difference()`** that returns the difference in cost between cheapest tile and most expensive tile in the array tiles.

Note:

Actually, to get the answer there is no need to store the data in an array. This is done just for practice.

Sample run #1:

```
Enter number of tiles: 5
Enter data for 5 tiles:
5 8 0.20
3 5 0.18
6 10 0.31
4 6 0.27
2 4 0.38
Largest difference = $15.90
```

Sample run #2:

```
Enter the number of tiles: 8
Enter data for 8 tiles:
10 12 0.6
15 9 0.45
8 15 0.72
9 7 0.6
13 11 0.52
8 15 0.5
6 18 0.47
11 11 0.72
Largest difference = $49.32
```