Problem Set 2 Exercise #21: Tray

Reference: Lecture 5 notes

Learning objective: Repetition statements; Algorithm design

Estimated completion time: 30 minutes

Problem statement:

[CS1010 AY2013/14 Semester 1 Practical Exam 1 Exercise 1 Part(b)]

A tray is made of foldable material. Supposed you are to fold the tray in half **three** times, each time either horizontally or vertically. Compute the minimum perimeter of the tray after the foldings.

Below is one way of folding the tray. The tray has been resized in the drawing to conserve space. In the example below, the perimeter of the tray after folding is 26, but this is not the minimum perimeter possible. The minimum perimeter is 22.

Write a program **tray.c** to read in the *length* and *width* of a tray (both are of type **double**), print out the minimum perimeter of the tray after it is folded in half 3 times. Note that the perimeter is printed in 2 decimal places.

Sample run #1:

```
Enter size of tray: 12 20
Minimum perimeter after folding = 22.00
```

Sample run #2:

```
Enter size of tray: 12345 139
Minimum perimeter after folding = 3364.25
```