Practice Exercise #06: Taxi Fare

http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html

Reference: Week 3, Exercise #8

Date of release: 25 August 2014

Objective: Selection statement (if-else)

Task statement:

Write a program **TaxiFare.c** to read the following input data (all of type **int**) from the user, and compute the taxi fare:

- **dayType**:
  0 represents weekends and public holidays (PH for short);
  1 represents weekdays and non-PH
- **boardHour**, **boardMin**:
  The hour and minute the passengers board the taxi (eg: 14 27 means the passengers board the taxi at 2:27pm).
- **distance**:
  The distance (in metres) of the journey.

Your program should contain a function

```
float computeFare(int dayType, int boardTime, int distance)
```

where the parameter **boardTime** is converted from the input data boardHour and boardMin. It is a number of minutes since 0:00 hour.

Example: If **boardHour** and **boardMin** are 14 and 27 respectively, then **boardTime** is 867.

We use a (grossly) simplified fare structure:

- Basic fare:

Flag-down (inclusive of first km or less)	$3.40
Every 400m thereafter or less up to 10.2km	$0.22
Every 350m thereafter or less after 10.2km	$0.22

- Surcharge:

dayType	*Midnight charge (12am – 5:59am)*	*Peak-hour charge (6am – 9:29am)*	*Peak-hour charge (6pm – 11:59pm)*
0: Weekends & PH	50% of metered fare	None	25% of metered fare
1: Weekdays & non-PH	50% of metered fare	25% of metered fare	25% of metered fare

Your program should output the boarding time (in minutes since 0:00 hour), and the total taxi fare.

Some sample runs, with working, are shown below.

Sample runs:

```
Day type: 0
Boarding hour and minute: 14 27
Distance: 10950
Boarding time is 867 minutes
Total taxi fare is $9.12
```

First 1km: $3.40
Next 9.2km: 23 × $0.22 = $5.06
Next 750m: 3 × $0.22 = $0.66
Basic fare = $9.12
No surcharge
Total fare = $9.12

```
Day type: 1
Boarding hour and minute: 9 20
Distance: 6123
Boarding time is 560 minutes
Total taxi fare is $7.83
```

First 1km: $3.40
Next 5123m: 13 × $0.22 = $2.86
Basic fare = $6.26
Surcharge = 25% × $6.26 = $1.57
Total fare = $7.83

```
Day type: 1
Boarding hour and minute: 5 59
Distance: 9000
Boarding time is 359 minutes
Total taxi fare is $11.70
```

First 1km: $3.40
Next 8km: 20 × $0.22 = $4.40
Basic fare = $7.80
Surcharge = 50% × $7.80 = $3.90
Total fare = $11.70