

ThoughtWorks Assignment

Below is a programming problem. We ask that you read the description thoroughly then create a program to solve the problem.

- **[Important!]** For the solution, you can use any programming language you are good at. You **MAY NOT** use any external libraries to solve this problem, but you may use external libraries or tools for building or testing purposes. Specifically, you may use unit testing libraries or build tools available for your chosen language (e.g., JUnit, Ant, NUnit, Rspec, Rake, etc.) For security reasons, please do not submit your code as a binary file (.exe, .dll, .msi, .jar).
- **[Important!]** You should provide an instruction on how to build and run your program. We should be able to build and run your program according to the instruction or we will treat it as a failure. The instruction should be in a plain text format (e.g. txt, markdown or HTML). Microsoft Word or other rich text format file is **NOT** acceptable.
- **[Important!]** Your program should be at least create the correct output for the example inputs.
- You may also include a brief explanation of your design and assumptions along with your code.
- **[Important!]** We allow two days from the date that you receive this letter to submit your code, Since we may use your code as an interview tool, ThoughtWorks reserves the right to postpone your technical interview if your code is not received.

ThoughtWorks would like the opportunity to offer you a challenging career with our dynamic team. We wish you luck and look forward to receiving your response.

PROBLEM : SALES TAXES

Basic sales tax is applicable at a rate of 10% on all goods, except books, food, and medical products that are exempt. Import duty is an additional sales tax applicable on all imported goods at a rate of 5%, with no exemptions.

When I purchase items I receive a receipt which lists the name of all the items and their price (including tax), finishing with the total cost of the items, and the total amounts of sales taxes paid. The rounding rules for sales tax are that for a tax rate of $n\%$, a shelf price of p contains ($n \times p/100$ rounded up to the nearest 0.05) amount of sales tax.

Write an application that prints out the receipt details for these shopping baskets.

[Important!] The input should be placed in 3 text files named **“input1.txt”**, **“input2.txt”** and **“input3.txt”**. Your program should be able to read these 3 input files and generate expected output respectively (e.g. ./your_application.exe ./input1.txt). The output can be printed on console directly (recommended) or saved to text files.

The content of **“input1.txt”** should be as follows:

```
1 book at 12.49
1 music CD at 14.99
1 chocolate bar at 0.85
```

The content of **“input2.txt”** should be as follows:

```
1 imported box of chocolates at 10.00
1 imported bottle of perfume at 47.50
```

And the content of **“input3.txt”** should be as follows:

```
1 imported bottle of perfume at 27.99
1 bottle of perfume at 18.99
1 packet of headache pills at 9.75
1 box of imported chocolates at 11.25
```

The expected output for **“input1.txt”** is:

```
1 book : 12.49
1 music CD: 16.49
1 chocolate bar: 0.85
Sales Taxes: 1.50
Total: 29.83
```

The expected output for **“input2.txt”** is:

```
1 imported box of chocolates: 10.50
1 imported bottle of perfume: 54.65
Sales Taxes: 7.65
Total: 65.15
```

And the expected output for **“input3.txt”** is:

1 imported bottle of perfume: 32.19
1 bottle of perfume: 20.89
1 packet of headache pills: 9.75
1 box of imported chocolates: 11.85
Sales Taxes: 6.70
Total: 74.68