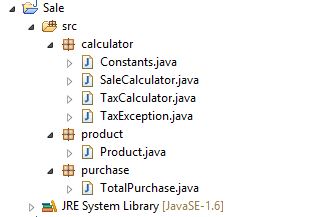
**SALE TAX CALCULATION**

**File Structure:**

**

calculator.Constants.java – Class to define constants used in tax calculation

calculator.SaleCalculator.java – Class to calculate total tax and total price of all purchased products

calculator.TaxCalculator.java – Class to calculate tax of each purchased product

calculator.TaxException.java - Exception class for tax calculation

product.Product.java – Class to define purchased product

purchase.TotalPurchase.java – Class contains main method

**Design:**

1/ taxWaiverItems.txt – text file contains all tax waiver item, can be modified from outside

I simply list 3 items for demo in this file as following:

book

chocolate

pill

2/ input.txt – input file contains all purchased products. For each product, use comma “,” to separate quantity, item type, name and price. Item type is defined as “imported” or “local”. Format as following:

1, imported, book, 12.99

1, local, chocolate, 4.23

3/ BigDecimal is used in rounding method. This works well with big number, for example: 98765432100.12

**Analysis:**

Input 1:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Quantity | Item type | Name | Price | Basic tax (10%) | Import duty (5%) | Tax total | Price total (round) |
| 1 | Local | book | 12.49 | 0.00 | 0.00 | 0.00 | 12.49 |
| 1 | Local | CD | 14.99 | 1.499 | 0.00 | 1.499 | 16.49 |
| 1 | Local | Chocolate | 0.85 | 0.00 | 0.00 | 0.00 | 0.85 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  | Sale taxes (round) | 1.59 |  |
|  |  |  |  |  | Total (round) |  | 29.83 |

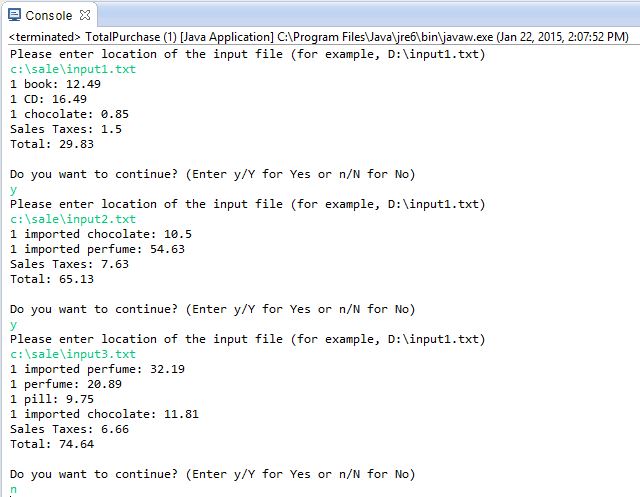
Input 2:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Quantity | Item type | Name | Price | Basic tax | Import duty | Tax | Price (round) |
| 1 | imported | chocolate | 10.00 | 0.00 | 0.50 | 0.50 | 10.50 |
| 1 | imported | perfume | 47.50 | 4.75 | 2.375 | 7.125 | 54.63 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  | Sale taxes (round) | 7.63 |  |
|  |  |  |  |  | Total (round) |  | 65.13 |

Input 3:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Quantity | Item type | Name | Price | Basic tax (10%) | Import duty (5%) | Tax total | Price total (round) |
| 1 | imported | perfume | 27.99 | 2.799 | 1.3995 | 4.1985 | 32.19 |
| 1 | Local | perfume | 18.99 | 1.899 | 0.00 | 1.899 | 20.89 |
| 1 | Local | pill | 9.75 | 0.00 | 0.00 | 0.00 | 9.75 |
| 1 | imported | chocolate | 11.25 | 0.00 | 0.5625 | 0.5625 | 11.81 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  | Sale taxes (round) | 6.66 |  |
|  |  |  |  |  | Total (round) |  | 74.64 |

**Demo:**

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