Shopping Cart

Please make sure you read this document in its entirety.

Overview

Please write code delivering the requirements of the steps that follow. The requirements don't mention a command line or a web application, and we are not looking for one. Do write code that you would be happy delivering to a paying client.

You should not find this test to be particularly difficult. It is designed to be a straightforward coding exercise, and it should take you no more than 90 minutes.

What we are looking for:

Test Coverage: The solution should be developed "test-first", and should have excellent unit tests and test coverage.

Build file: Please provide an automated build file that compiles your code and runs the tests. Submissions without an automated build will not be accepted.

Simplicity: We value simplicity as an architectural virtue and a development practice. Solutions should reflect the difficulty of the assigned task, and should not be overly complex. Layers of abstraction, patterns, or architectural features that aren't called for should not be included.

Self-explanatory code: The solution you produce must speak for itself. Multiple paragraphs explaining the solution are a sign that it isn't straightforward enough to understand purely by reading code, and are not appropriate.

Version Control: Please include the local git folder that you are using to version your code. Also please tag each git commit that represents your final solution for each step of the test.

The problem

Create code to allow a user to add products to a shopping cart, and then calculate the total price and tax amounts for the items contained in the cart. As mentioned we are not looking for a command line or a web application, so please just use your tests to drive the code.

Please Note: All totals should be formatted to 2 decimal places, rounded up i.e. 0.567 should result in 0.57 but 0.564 should result in 0.56 (see this link)

Step 1: Add products to the shopping cart.

Given:

- An empty shopping cart
- And a product, *Dove Soap* with a unit price of *39.99*

When:

- The user adds 5 *Dove Soaps* to the shopping cart

Then:
- The shopping cart should contain *5* Dove Soaps each with a unit price of *39.99*
- And the shopping cart's total price should equal *199.95*

Ensure that you have created a git tag *step1* once you have completed this step.

Step 2: Add additional products of the same type to the shopping cart.

Given:

- An empty shopping cart
- And a product, *Dove Soap* with a unit price of *39.99*

When:

- The user adds 5 *Dove Soaps* to the shopping cart
- And then adds another 3 *Dove Soaps* to the shopping cart

Then:
- The shopping cart should contain 8 Dove Soaps each with a unit price of

39.99

- And the shopping cart's total price should equal *319.92*

Ensure that you have created a git tag *step2* once you have completed this step.

Step 3: Calculate the tax rate of the shopping cart with multiple items

Given:

- An empty shopping cart
- And a product, *Dove Soap* with a unit price of *39.99*
- And another product, *Axe Deo* with a unit price of *99.99*
- And a tax rate of 12.5%

When:

- The user adds 2 *Dove Soaps* to the shopping cart
- And then adds 2 *Axe Deo's* to the shopping cart

Then:
- The shopping cart should contain 2 Dove Soaps each with a unit price of

39.99

- And the shopping cart should contain 2 Axe Deo's each with a unit price of *99.99*
- And the total tax amount should equal *35.00*
- And the shopping cart's total price should equal *314.96*

Ensure that you have created a git tag *step3* once you have completed this step.