Shopping Cart

Please read through the document entirely before coding.

Overview

Please write code delivering the requirements outlined in the steps that follow. We are not looking for a command line, web or any other type of application. Just use automated tests to drive your code.

Do write code that you would be happy delivering for production software.

The problem

As you work through the steps, you'll create code to allow a user to add products to a shopping cart, calculate the total price and then the sales tax for the items contained in the cart. As mentioned previously, we are not looking for a command line or a web application, so please just use your tests to drive the code (e.g. class libraries).

Please Note: All totals should be rounded up to 2 decimal places, i.e. 0.475 should result in 0.48 but 0.4749 should result in 0.47.

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Step 1: *Add products to the shopping cart.*

Given:

An empty shopping cart

And a product, Shower Gel with a unit price of 49.99

When:

The user adds 5 Shower Gels to the shopping cart

Then:

The shopping cart should contain 5 Shower Gels each with a unit price of 49.99

And the shopping cart's total price should equal 249.95

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

Given:

An empty shopping cart

And a product, Shower Gel with a unit price of 49.99

When:

The user adds 5 Shower Gel to the shopping cart

And then adds another 3 Shower Gel to the shopping cart

Then:

The shopping cart should contain 8 Shower Gels each with a unit price of 49.99

And the shopping cart's total price should equal 399.92

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

Given:

An empty shopping cart

And a product, Shower Gel with a unit price of 49.99

And another product, Deodorant with a unit price of 99.99

And a sales tax rate of 12.5%

When:

The user adds 2 Shower Gels to the shopping cart

And then adds 2 Deodorant to the shopping cart

Then:

The shopping cart should contain 2 Shower Gels each with a unit price of 49.99

And the shopping cart should contain 2 Deodorant each with a unit price of 99.99

And the total sales tax amount for the shopping cart should equal 37.50

And the shopping cart's total price should equal 337.46

What we are looking for:

Language: Javascript/nodejs

Test Coverage: The solution should have excellent unit tests and test coverage.

Build file: Please provide an automated build file that compiles your code and runs the tests.

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.

Deliverable

Please submit your solution by pushing it to a publicly available Github.com repository.

Include a readme: Please include a readme file in the root of the project which states any requirements to run the code, and commands needed to run the code. Assume the reviewer is unfamiliar with your choice of framework and/or build tools and maybe using a different IDE.

Send the submission to careers-eng@different.com.au