Shopping Cart

Investment Management Technology Assessment

You will be added as a collaborator to a unique repository for this assignment, please clone this to your local machine and work on it as you see fit and in order to meet the criteria outlined below.

When you're ready to submit your code please commit your changes and push them back to the same repository, with a comment stating that this is your final submission, ready for review.

Scenario

You are a software engineer new to ShopMan, an online shopping merchant wishing to offer discounts and promotions across its online shopping portal.

The Shopping Cart project calculates the price of the items in the customer's basket and adds any shipping costs.

Instructions

Your task is to alter the API to make it take exactly one coupon code. The coupon code represents a discount that you must then apply to the cart.

Behaviours and Static Data

- You should model three distinct types of discount:

    - Supplier based discount
      X% off each item in the cart for a specified supplier, e.g. APPLE15 gives you 15% off all 'Apple' products

    - Free shipping
      Free shipping regardless of total cost

    - Category based discount
      Y% off each item in a specified product category, e.g. AUDIO10 gives 10% off 'Audio' category
      Products can have more than one category

- Cart total to return item costs plus shipping costs

- Shipping costs

    - £7.00 for cart totals less than £20
    - £5.00 for cart totals less than £40
    - Free for cart totals £40 or over

- You should introduce three product categories: Electronics, Accessories, Audio

- You should introduce three suppliers: HP, Dell, Apple

Shopping Cart

Tests

- Implement the following unit tests based on the sample cart composition and category profile shown below

    - Apply an "AUDIO10" coupon
    - Apply an "APPLE5" coupon
    - Apply a "FREESHIPPING" coupon
    - Apply an invalid or unknown coupon

Sample Cart Composition

- Your sample cart should be comprised of

    - 2 x headphones   Apple   10 per unit
    - 1 x USB cable   Apple   4 per unit
    - 1 x monitor   HP   100 per unit
    - 1 x laptop   Dell   1000 per unit

- Product – category mappings as follows

    - Headphones   Accessories, Electronics, Audio
    - USB cable   Accessories
    - Monitor   Electronics
    - Laptop   Electronics

Hints

- nUnit is currently used for unit tests, you can use an alternative if you wish
- Feel free to add to or change any classes or code if appropriate
- Make your solution extensible and SOLID compliant if possible
- Add comments to the solution around what you think of the design and code
- Are there any bugs, potential bugs or misleading elements?