

## Home Test for Backend Developer

### Task E-commerce (Advanced)

Write a basic E-commerce with any program that models a User, Product, ShoppingCart and Promotion Rule.

- Products have a name, color and price.
- Users have a name, email, group (UNREGISTER, REGISTER, SILVER, GOLD), and associated ShoppingCart.
- ShoppingCarts have an associated User and list of Products.
- A User can add or remove a Product from their ShoppingCart.
- A ShoppingCart must be able to provide a total price for its list of Products.
- ShoppingCart price rules create discounts for carts based on a set of conditions. The discount can be applied automatically when the conditions are met.
- A ShoppingCart price rule condition contains:
  - From Date: the start date for the promotion.
  - To Date: the end date for the promotion.
  - User Group: which user group the rule should apply to.
  - Color & Subtotal: if specified, the rule is met if all products with the Rule Color have the total price greater than the Rule Subtotal.
  - Discount: the amount of the discount on the ShoppingCart

The code must pass two tests:

1. Create a User "John Doe 1", Group GOLD with email address "john.doe@example.com", then add 2 "Iphone Silver" Products for \$999 each and 1 "Iphone Black" Product for \$899. Check that the ShoppingCart total price is correct.
2. Create a Rule with From Date, To Date, User Group GOLD, Color Black, Subtotal 1500\$, Discount: 50\$
3. Check the ShoppingCart total after applying the promotion rule.

You may either use unit tests to run the tests or a simple script which can be run via the command line.

Notes:

- \* You should NOT use a full-featured framework, just plain code.
- \* No database, user interaction or other functionality is required (so no HTML/CSS/JavaScript); it just needs to be the code which runs and passes the tests

