

E Commerce Application with Coupon Management System: Case Study

OVERVIEW:

Create an e-commerce application that shows a list of products, associated categories for the products and supports user login and creation of cart per signed in user. The application should support role-based login for two categories of users i.e., "Admin" and "User".

The Admin should have the capability to add/modify/delete and update the list of products that are displayed for sale at a given point of time. Admin should also be given the capability to create coupon codes for various promotional events. Coupon code would have an associated discount percentage, expiry date and a category associated with. (For Example – The admin should be able to create a coupon code 'blackfriday2021' that enables users to get 25% discount on all products that are in the category 'Electronics')

The Users of the application should have the capability of registering to the application. Once registration is successful and the users are logged in successfully, they should have the capability to create/read/update /delete carts and add product to their respective carts. If the user logs out and then logs in back, the products added in the cart should be retained in the cart. The application should enable users to apply valid coupon codes and get respective discount on applicable products that are added in the cart. The user should be able to view the total amount after the discount is applied

SCREENS:

- **Registration screen** that would be used for registering users to the application.
- **Login screen** for enabling role-based login to the application.
- **Product Details Screen for Admin** to enable admins to add/modify/delete and update products, categories, and quantity available for sale. It should also have a searchable and sortable grid that displays all the products.
- **Coupon Details Screen for Admin** to be used by admins for managing coupon codes for promotional events. It should show a tabular representation of all available coupon codes and give the admin the capability to add/update/delete/modify the coupon codes.

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- **Home Page for Users** – The screen that all the users should be able to access (either registered/unregistered). It should show the list of all the products available for sale in various categories. If the user wants to add a product to the cart, then he should be prompted to either register/login.
- **Checkout Screen for Only Signed in Users** – If the user is authenticated successfully and wants to check out the items added in the cart, this is the screen to be used. It should show the total amount for the added items in the cart and give the users an ability to apply discount coupons.

TECHNOLOGY STACK:

- **Backend:** Java Spring Boot
- **Frontend:** Angular
- **Database:** MySQL
- **Unit Testing** (both backend and frontend)
- **Pair Programming**

NICE TO HAVE:

- Integration testing
- System/UAT testing
- Grid should be searchable and sortable
- Capability to send emails to registered users for new promotions that are created by admins

FUTURE ENHANCEMENTS:

- Capability to place orders and adjust the total quantity of available products
- Integration with a mocker for payment gateway