Assignment 2

(due Saturday 3/5 at 11:59 pm)

CMSC 428 – Mobile Programming (iOS)
Spring 2022

In this assignment you will be developing a Shopping app called ShopME.

Initial (Home) Screen:

It will show a screen with the shopping categories (initially 8 categories) and other two user items to reach "recent orders" and "cart" directly. Navigation Controller should be used to have back navigation capability from each new screen opened. Set the navigation controller's title view to app logo.

Total 10 items (first two are for user convenience)
1) Recent Orders, 2) Cart, 3) Grocery, 4) Clothing, 5) Movies, 6) Garden,
7) Electronics, 8) Books, 9) Appliances, 10) Toys

View:
- Use UICollectionView as grid layout (each item with size 125 x 125).
- Each item needs to be designed as a custom "CategoryCell" instance with an image and a label under it.
- Landscape mode should work too. The number of items shown per row (in landscape mode) will be automatically adjusted by CollectionView.
- Use a background image with some high transparency (alpha value).

Functions:
- Clicking each category opens corresponding category page **(do not create a VC for each category, just dynamically populate the other single VC with selected category).**
- "Recent Orders" will open recent orders page with the list of only last 10 orders done by the customer.
- "Cart" should go to the cart page.

Category Page:

View:
- Should be designed as UITableView.
- The name of the **category** will be seen at the top (as title).
- Cart should be shown as a "right bar button item" on the navigation bar with a label on it (as subview) showing the current item count in the cart.
- Current list of items in that category will be listed.
- Each item should be customized as a cell with an image (on the left), labels showing name (with 1 line and background color), description (3 lines) and price (in the middle) and Add button with an image of "+" on the right.

Functions:

- Clicking "+" button in each item will add it to the cart and the cart label on the top right will be updated with the updated item count in the cart.
- Go back to Home page.
- Go to Cart by clicking Cart button.

View: The list of items in the cart (UITableView).
           Each cell will show name, subtotal (unit price x count), count and increase/decrease arrows.
           There should be **sections** with each shopping category.
           Total amount that needs to be paid.
           Total item count in the cart.
           Buy and Empty buttons.
           Title as "Your Cart"

Functions:
1. Edit the number of each item by clicking increase and decrease buttons.
2. Remove an item: This will be done by setting the current count (of each item) to 0. When item count is 0, it should be removed from the cart and cart should be updated.
3. Empty cart: Remove all.
4. Buy:
   - Alerts the user about the price with "Cancel" and "Place order" options. Cancel will only close the alert and do nothing.
   - Place order option should record the order to recent orders page with only item count and total price information and with date of the purchase.
   - Empties the Shopping cart.
   - Goes to Home screen.

View: The list of only last 10 orders (UITableView) sorted by date. Most recent one first.
           Each cell will show only item count purchased, total price and date of the transaction.

Functions:
1. Remove the selected order by clicking Edit button. If user did 11 orders and only last 10 orders are shown in the list, removing one will show 9 orders. It does not need to fill removing item's space with 11th order. So, just keep track of last 10 orders only.

View: You can reach this screen from the home screen with a right/left bar button named "Manage". The page will let you enter a new shopping item, with a category currently defined or with a new category. Use your judgement on the design (no screenshot provided) and the necessary UI items that need to be used and necessary information that needs to be received from the user (image, name, description, price etc.).

Functions:
1. Use ImagePicker to receive the item's image from user, and if a new category will be defined to get category image from user. Once all the necessary information is entered, by clicking "Add" the item will be entered to the defined category. If there is no matching category is defined, an error should be shown, unless it is submitted as a new category and image. User can go back to Home screen any time and new added items should be seen in the categories added or under the new category added. New category should also be seen in home screen with its image.

General Guidelines:

- You need to use Classes like Category, CategoryItem (For UI) subclass of UICollectionViewCell, ShoppingItem, ShoppingItemCell (For UI) sublass of UITableViewCell etc.
- You can use stackviews for auto layout if needed.
- The app should look similar for every iPhone/iPad type (In home screen number of items in each row can be different per design of Collection view).
- It should work for both landscape and portrait.
- Shopping Cart page will need to have Home button as navigation bar right item (with unwind segue).
- Some image resources are provided but you are free to create/use your own. Make sure, every category has **at least 5 items** with name, image, some description and price. For the image resources provided for some shopping items, you can set your own name, description and price. Make them reasonable.
- Do not use SwiftUI.

Submission Guidelines:

- Make sure your app is running before submitting and all files are inside the zip.
- Submissions should be made in Canvas before midnight on 3/5.
- Up to 2 days late submissions only.
- Make sure all your images and other resources used are inside the project folder. When copying an image inside the Assets folder, always make sure "copy" is checked and select the target as the project.
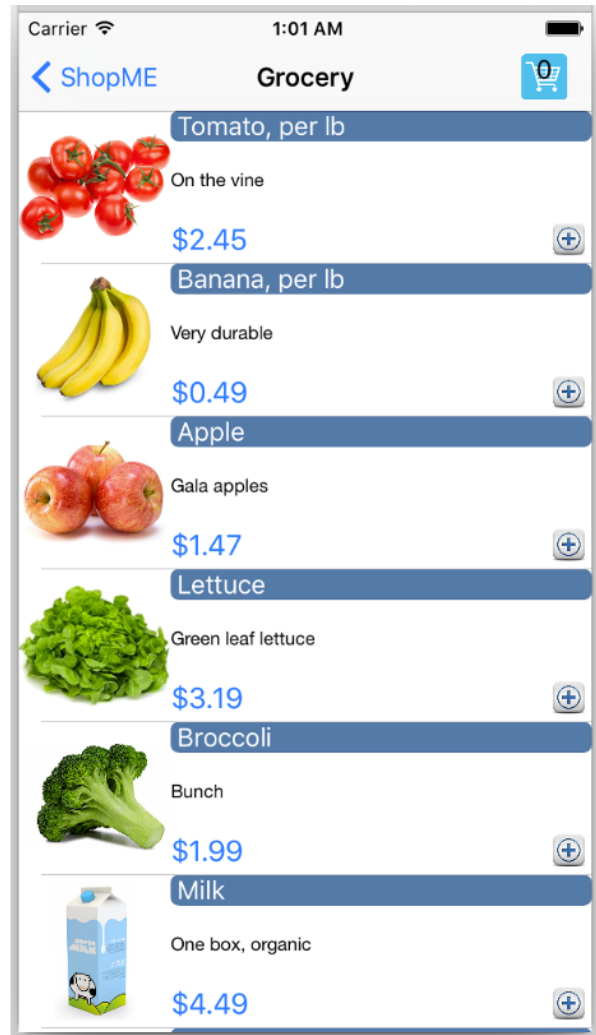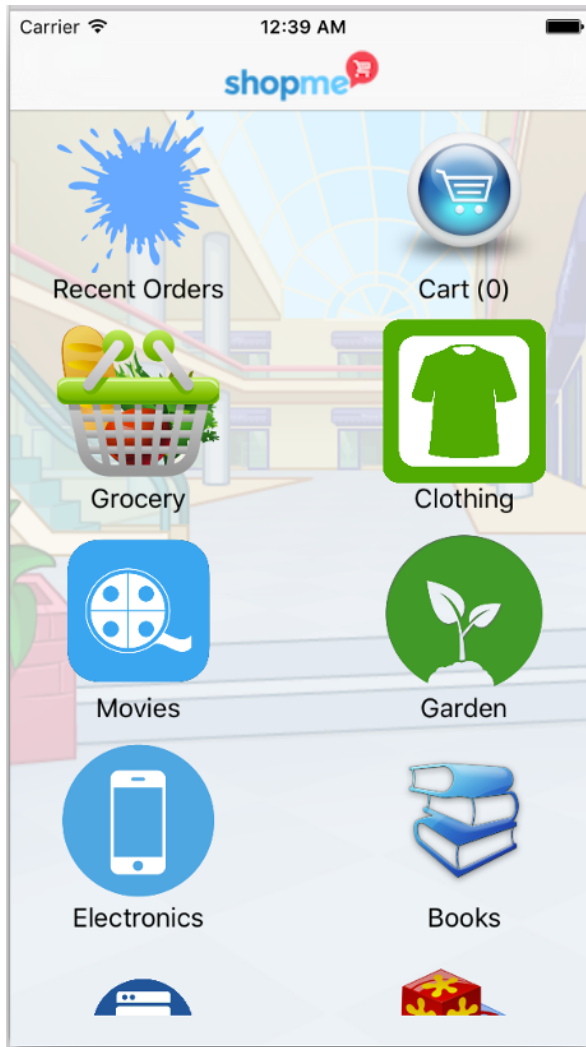
General Grading Criteria:
1- Appearance: (50%)
   a. Initial Screen
   b. Category Page
   c. Shopping Cart Page
   d. Recent Orders Page (sorted orders)
2- Functionality: (50%)
   a. Adding items to shopping cart
   b. Updating item counts in shopping cart (Removing item when item count drops to 0).
   c. Emptying the cart
   d. Buying the order and placing it to recent orders page
   e. Deleting Orders in recent orders page

f. Error Alerts
3- Bonus – Manager page (15%)
   a. Add a new item with an existing category
   b. Add a new item with a new category that will be defined.

Some screenshots from run time.

1) Initial Screen with a navigation bar having a title view with logo of the app. The first two items are "Recent Orders" and "Cart (X)" where X is current item count in the cart. During the shopping, anytime you come back to this screen, X should show the right item count currently in your cart.

2) After clicking a category (except the first two items), it will open category page, with corresponding title. Example shows "Grocery" page opened. There should be cart button as navigation bar right button with a label as subview on it showing the current item count in the cart. As "+" buttons clicked for each item, the cart should be updated.

3) Clicking Cart icon in Category page or in Home page will present the ShoppingCart page with items listed with sections. The count of each item should be able to be edited with increase and decrease arrows. Subtotal and Total price amount in the cart should be updated as well. If one item count becomes zero, it should be deleted from the cart and current view should not show it anymore. An alert here should inform the user about the item deleted, saying "item X deleted".

4) Buy button should ask either "Cancel" or "Place order". "Place order" should record the order info in recent orders page and empty the current cart, and should take the user to home screen automatically.

5) Clicking "Recent Orders" in home screen should present a new screen with recent 10 order information. Only item count, total price and date of the transaction should be shown. There is an Edit button as right bar button which allows deleting the orders in the list. Make sure your data is also updated and in sync with what is shown in the table.

Screen 1

‹ Garden   **Your Cart**   🏠

	Subtotal:	Quantity

Grocery

Item	Subtotal		Qty	
Tomato, per lb	$7.35	⬇	3	⬆
Apple	$2.94	⬇	2	⬆
Broccoli	$3.98	⬇	2	⬆
Lettuce	$3.19	⬇	1	⬆
Milk	$4.49	⬇	1	⬆

Movies

Item	Subtotal		Qty	
Lord of the Rings	$1.99	⬇	1	⬆
Shawshank Redemption	$1.99	⬇	1	⬆

Garden

Item	Subtotal		Qty	
Garden Soil	$65.98	⬇	2	⬆
Mower	$199.99	⬇	1	⬆
Tomato Plant	$2.99	⬇	1	⬆
Shovel	$3.99	⬇	1	⬆
Fruit Tree	$29.54	⬇	1	⬆

Total: $328.42   17

Empty   Buy

Screen 2

‹ Garden   **Your Cart**   🏠

	Subtotal:	Quantity

Grocery

Item	Subtotal		Qty	
Tomato, per lb	$7.35	⬇	3	⬆
Apple	$2.94	⬇	2	⬆
Broccoli	$3.98	⬇	2	⬆
Lettuce	$3.19	⬇	1	⬆
Milk	$4.49	⬇	1	⬆

PAYMENT

Your card will be charged $328.42.

Cancel | Place Order

Garden

Item	Subtotal		Qty	
Garden Soil	$65.98	⬇	2	⬆
Mower	$199.99	⬇	1	⬆
Tomato Plant	$2.99	⬇	1	⬆
Shovel	$3.99	⬇	1	⬆
Fruit Tree	$29.54	⬇	1	⬆

Total: $328.42   17

Empty   Buy

Screen 1 (Left):

‹ ShopME   **Recent Orders**   Edit

5 items ($6.37)	Feb/23, Tue, 10:20 AM
13 items ($23.27)	Feb/23, Tue, 10:20 AM
6 items ($11.94)	Feb/23, Tue, 10:20 AM
13 items ($256.2)	Feb/23, Tue, 10:20 AM
7 items ($11.27)	Feb/23, Tue, 10:20 AM

Screen 2 (Right):

‹ ShopME   **Recent Orders**   Done

ems ($6.37)	Feb/23, Tue, 10:20 AM	Delete
⊖ 13 items ($23.27)	Feb/23, Tue, 10:20 AM	
⊖ 6 items ($11.94)	Feb/23, Tue, 10:20 AM	
⊖ 13 items ($256.2)	Feb/23, Tue, 10:20 AM	
⊖ 7 items ($11.27)	Feb/23, Tue, 10:20 AM	