

## CMSC 100 - Web Programming

2nd Semester, 2023-2024

### FINAL PROJECT REQUIREMENTS

#### Farm-to-table

"Farm-to-table" means a social movement emphasizing a direct link between consumers and farmers as the source of food. Your task involves developing an e-commerce website that will be used by the Department of Agriculture (DA) to facilitate transactions between farmers and customers directly. The DA will have the capability to compile a catalog of items for sale in the public market.

Develop a dedicated User Interface/User Experience (UI/UX) designed to cater to both **customers** and DA as the **merchant**. Ensure that the website is intuitive by incorporating the most common user interface design that represents both the agriculture sector and the e-commerce industry. **Form a team of 4 to develop the prototype.**

#### GitHub guidelines

- Your lab instructor will create a GitHub Classroom assignment for the project. Only 1 group member should accept this assignment. This group member should add his/her group mates as collaborators to the repository.
- Use the standard conventions for commit messages shared in the Google Classroom.
- Minimum number of significant GitHub commits per member: 5
- Add a **README** to your project repository outlining project features, screenshots, usage guidelines, and how to run.
- The final submitted project must be in a single branch of a single repository. Modules that are "working separately" or "not connected" will not be accepted.

#### Technology stack

- Front end: React JS
- Back end: Node JS based web server using Express JS
- Database: MongoDB

#### Functional specifications

1. **User types and accounts:** Customers (Registered users), Department of Agriculture (Administrator or Merchants)

- a. Users can register using their email address. There is no need for verification or OTP; they can simply register with a username using an email format.
- b. Upon signing up, users are automatically assigned as **customer** users—individuals with the capability to make purchases from the **shop**.
- c. The Department of Agriculture (DA) has only one user account that manages the entire catalog of items available for distribution in the public market. They do not need to go through the registration process, as they already have their assigned accounts as **merchants**.
- d. The Department of Agriculture, as a built-in administrative user, also oversees the **e-commerce management** such as *management of accounts, product listings, order fulfillment, and sales reports*.
- e. The general public cannot access the website unless they register in the system
- f. Login/Logout functionality, customers can only enter the system once logged in (implement **authentication**), they can also log out. Customers may not see the admin dashboard or any routes/endpoints that should only be exclusive to Admin. Protect necessary routes.

## 2. E-commerce management (Administrator or Merchant Users)

- a. Create a dashboard to render the modules below
- b. Management of user accounts
  - i. Oversees the list of registered users and reports its total.
- c. Product listings
  - i. Create a list of products, including their inventory. Inventory is categorized as follows:
    1. Product Name
    2. Product Type: The product type could be either crops or poultry items.
    3. Product Price: Price is a variable.
    4. Product Description
    5. Quantity: The quantity is a variable; manage the inventory quantity of products by decreasing the number of items when order is confirmed, and update categories as needed.
  - ii. List the products in the inventory in ascending or descending order by name, type, price, or quantity.
- d. Order fulfillment
  - i. After the customer creates an order, the merchant needs to confirm it. Once confirmed, the order is considered final and ready for delivery to the customer.
- e. Sales reports

- i. Create a list of products sold, including the sales income generated by each product and the total amount of sales.
- ii. The sales report must be able to present the summary of transactions weekly, monthly and annual sales.

### 3. Shop (Customer Users)

- a. Product listings and order fulfillment
  - i. Manage shopping cart
    - 1. Delete shopping cart items.
    - 2. Count all the items added in the shopping cart
    - 3. Set the total price of items added in the shopping cart
  - ii. List the products in the inventory in ascending or descending order by name, type, price, or quantity.
- b. Manage orders
  - i. Orders serve as confirmations for items purchased in the shopping cart. The default and only mode of transaction is *cash-on-delivery*. Users have the option to cancel the order if it has not yet been confirmed by the merchant user.

### Database Structure

You may follow this database structure for your project. This will cover the listed functional specifications above but you are free to design your own schema or add to this.

- 1. User
  - a. First Name (String)
  - b. Middle Name (String) : *Optional*
  - c. Last Name (String)
  - d. User Type (String)
  - e. Email (String)
  - f. Password (for the application) (String)
- 2. Products
  - a. Product ID (String)
  - b. Product Name (String)
  - c. Product Description (String)
  - d. Product Type (Int: 1 Crop / 2 Poultry)
  - e. Product Quantity (Int)
- 3. Order Transaction
  - a. Transaction ID (String) : *This is the ID for each record*
  - b. Product ID (String) : *This is the ID reference to the product*

- c. Order Quantity (Int) : *Upon confirmation of purchase, it will decrease the product quantity.*
- d. Order Status (Int: 0 Pending / 1 Completed / 2 Canceled )
- e. Email (String) : *This is the ID reference to the user*
- f. Date ordered (Date)
- g. Time (Time)

**Grading scheme:**

**Functional Specifications (70%)**

Design	10
User types and accounts	15
E-commerce management	15
Shop	30

**Presentation (30%)**

Code demonstration and walkthrough	20
Q & A responses	10

**Sample computation**

$$\text{Student\_grade} = ( \text{Functional Specifications} \times \text{Peer Evaluation} ) + \text{Presentation}$$

**Additional points** (Choose 1 (Max of 5 points)):

1. The shopping cart is only rendered in the UI. If you create data persistence for the shopping cart, 5 points are added to your total score.
2. User management is not required for customers. If you create a profile for the user that contains the history of items purchased and enables them to update their personal information, 5 points are added to your total score.