Functional Requirements

1.1 Dining Hall Selection

- **Requirement: Users must be able to view a list of available dining halls.**
  - **Description: The system should display all dining halls that are open for reservations.**
  - **Priority: High**
- **Requirement: Users must be able to select a dining hall.**
  - **Description: After selecting a dining hall, users should be redirected to the corresponding menu selection for that dining hall.**

1.2 Menu Selection

- **Requirement: Users must be able to view the menu of the selected dining hall.**
  - **Description: The menu should be displayed based on the dining hall chosen, and it should include a list of available food items, descriptions, and prices.**
  - **Priority: High**
- **Requirement: Users must be able to select multiple food items from the menu.**
  - **Description: Users should be able to select more than one item from the menu using checkboxes.**

1.3 Order Summary

- **Requirement: Users must be able to review the selected menu items before confirming their reservation.**
  - **Description: The system should provide a summary of the selected food items, displaying the names and total cost.**

1.4 Date and Time Selection

- **Requirement: Users must be able to select a date and time for their reservation.**
  - **Description: The system should allow users to choose a date and time within the operating hours of the selected dining hall. The system must validate that the time is available.**
  - **Priority: High**

1.5 Reservation Confirmation

- **Requirement: Users must be able to confirm their reservation.**
  - **Description: After selecting the menu, date, and time, users must confirm the reservation and receive a confirmation message displaying the dining hall, selected items, date, and time.**
  - **Priority: High**
- **Requirement: The system should send a confirmation email or notification to the user.**
  - **Description: Once the reservation is confirmed, users should receive a confirmation message through email or push notification (optional).**

1.6 Modify or Cancel Reservation (Future Feature)

- **Requirement: Users must be able to modify or cancel an existing reservation.**
  - **Description: Users should be able to change their reservation details (menu items, date, or time) or cancel the reservation entirely before a specific deadline.**

1.7 View Available Time Slots (Future Feature)

- **Requirement: Users must be able to view available time slots for each dining hall.**
  - **Description: The system**

<u>User Story</u>

1. User Story: Select Dining Hall

As a user,
I want to choose a dining hall where I want to make a reservation,
So that I can view the available menu and reserve a spot for dining at my preferred location.

2. User Story: Select Menu Items

As a user,
I want to select multiple food items from the menu of the selected dining hall,
So that I can order exactly what I want for my meal reservation.

3. User Story: Review Order Summary

As a user,
I want to review my selected menu items before confirming the reservation,
So that I can make sure that the order is correct before proceeding.

4. User Story: Select Date and Time

As a user,
I want to select a date and time for my reservation,
So that I can choose when I want to dine.

5. User Story: Confirm Reservation

As a user,
I want to receive a confirmation of my reservation,
So that I know my reservation is successfully made.

6. User Story: Modify Reservation (Optional Future Feature)

As a user,
I want to modify or cancel my reservation,
So that I can change the time or items if my plans change.

7. User Story: View Available Time Slots (Optional Future Feature)

As a user,
I want to see available time slots for a dining hall,
So that I can make my reservation for an available time.

8. User Story: Dietary Preferences (Optional Future Feature)

As a user with dietary restrictions,
I want to filter the menu based on my dietary needs,
So that I can easily find and select meals that meet my preferences.

Acceptance Test

1. User Story: Select Dining Hall
Acceptance Test:
Scenario: The user selects a dining hall.

- **Given**: The user is on the homepage and clicks the "Make a Reservation" button.
- **When**: The user is presented with a list of dining halls (e.g., Dining Hall A, Dining Hall B).
- **Then**: The user selects a dining hall from the available list.
- **And**: The user is redirected to the menu selection page for the chosen dining hall.

Test Steps:
1. Go to the homepage.
2. Click the "Make a Reservation" button.
3. Verify that a list of dining halls is displayed.
4. Select a dining hall.
5. Verify that the user is taken to the menu selection page.

2. User Story: Select Menu Items
Acceptance Test:
Scenario: The user selects multiple menu items.

- **Given**: The user is on the menu selection page for a dining hall.
- **When**: The user is presented with a list of menu items.
- **Then**: The user can select multiple menu items using checkboxes.
- **And**: The user clicks the "Next" button after making their selection.
- **And**: The user is taken to the order summary page.

Test Steps:
1. Navigate to the menu selection page.
2. Verify that menu items are displayed with checkboxes.
3. Select multiple menu items.
4. Click the "Next" button.
5. Verify that the user is taken to the order summary page.

3. User Story: Review Order Summary
Acceptance Test:
Scenario: The user reviews their order summary.

- **Given**: The user has selected multiple menu items.
- **When**: The user is on the order summary page.
- **Then**: The selected menu items are displayed in a list.
- **And**: The user clicks the "Proceed" button to continue.
- **And**: The user is taken to the date and time selection page.

Test Steps:
1. After selecting menu items, verify that the order summary page is displayed.
2. Verify that the selected menu items are displayed correctly in a list.
3. Click the "Proceed" button.
4. Verify that the user is taken to the date and time selection page

4. User Story: Select Date and Time
Acceptance Test:
Scenario: The user selects a date and time for their reservation.

- **Given**: The user is on the date and time selection page.
- **When**: The user selects a date from a date picker and a time from a time picker.
- **Then**: The system ensures that both date and time are selected.
- **And**: The user clicks the "Confirm Reservation" button.
- **And**: The user is taken to the reservation confirmation page.

Test Steps:
1. Navigate to the date and time selection page.
2. Select a date from the date picker.
3. Select a time from the time picker.

4. Verify that both date and time are selected.
5. Click the "Confirm Reservation" button.
6. Verify that the user is taken to the confirmation page.

5. User Story: Confirm Reservation

Acceptance Test:

Scenario: The user receives confirmation of their reservation.

- **Given**: The user has completed the date and time selection.

- **When**: The system confirms the reservation.

- **Then**: The user is shown a confirmation message with the reservation details (dining hall, selected menu items, date, time).

- **And**: The user receives a confirmation email (if applicable).

Test Steps:
1. After confirming the date and time, verify that the confirmation page is displayed.
2. Verify that the confirmation page shows the selected dining hall, menu items, date, and time.
3. Verify that a confirmation email is sent to the user (if applicable).

6. User Story: Modify Reservation (Optional Future Feature)

Acceptance Test:

Scenario: The user modifies or cancels their reservation.

- **Given**: The user has an existing reservation.

- **When**: The user views their reservation.

- **Then**: The user can update the date, time, or menu items.

- **And**: The user can cancel the reservation if needed.

Test Steps:
1. Navigate to the "My Reservations" page.
2. Select an existing reservation.
3. Verify that the user can update the date, time, or menu items.
4. Verify that the user can cancel the reservation if necessary.

7. User Story: View Available Time Slots (Optional Future Feature)

Acceptance Test:

Scenario: The user views available time slots for a dining hall.

- **Given**: The user is on the date and time selection page.

- **When**: The user clicks the time picker.

- **Then**: The system shows a list of available time slots for the selected dining hall.

- **And**: The user can select a valid time slot for their reservation.

Test Steps:
1. Navigate to the date and time selection page.
2. Click the time picker.
3. Verify that a list of available time slots is shown.
4. Select a valid time slot.
5. Verify that the user can proceed to confirm the reservation.

8. User Story: Dietary Preferences (Optional Future Feature)

Acceptance Test:

Scenario: The user filters menu items based on dietary preferences.

- **Given**: The user has dietary restrictions (e.g., vegetarian, vegan).

- **When**: The user selects their dietary preferences from a filter.

- **Then**: The system filters the menu items to display only those that meet the selected preferences.

Test Steps:
1. Navigate to the menu selection page.
2. Select a dietary filter (e.g., vegetarian).
3. Verify that only menu items that meet the dietary preference are displayed.
4. Select multiple items and proceed to the next step.

Functionalities Implemented So Far

1. Dining Hall Selection

The system allows users to choose a dining hall from a list of available options.

- **Input**: Users see a list of dining halls on the main screen after clicking the "Make a Reservation" button.
- **Output**: After selecting a dining hall, the user is taken to the corresponding menu selection screen for that dining hall.

2. Menu Selection

The menu for the selected dining hall is displayed, and users can choose multiple food items.

- **Input**: Users are presented with the menu items of the selected dining hall (e.g., Pizza, Salad, Burger).
- **Output**: Users select multiple items from the menu using checkboxes and proceed to the next step by clicking the "Next" button.

3. Order Summary

After selecting menu items, users are presented with a summary of their order.

- **Input**: The selected menu items are displayed in a list format for the user to review.
- **Output**: Users review their selected items and proceed to the date and time selection page by clicking the "Proceed" button.

4. Date and Time Selection

Users can select a date and time for their reservation using date and time pickers.

- **Input**: The user selects a date from a date picker and a time from a time picker.
- **Output**: The system validates that both the date and time are within the operating hours of the selected dining hall. Users can confirm the reservation once a valid date and time are chosen.

5. Reservation Confirmation

After selecting the date and time, users are shown a confirmation screen.

- **Input**: The user clicks "Confirm Reservation" after selecting the date and time.
- **Output**: The system shows a confirmation message with details of the reservation, including the selected dining hall, menu items, date, and time.

Pages and Workflow

1. Homepage

- **Description**: The homepage allows users to start their reservation process by clicking the "Make a Reservation" button.
- **Actions**: Users are directed to the dining hall selection page.

2. Dining Hall Selection

- **Description**: Users are presented with a list of available dining halls to choose from.
- **Actions**: Upon selecting a dining hall, users are taken to the menu selection page for that hall.

3. Menu Selection

- **Description**: Users can select multiple items from the menu of the chosen dining hall.
- **Actions**: Users select items by checking the corresponding checkboxes and proceed to the order summary by clicking the "Next" button.

4. Order Summary

- **Description**: The selected menu items are displayed in a list for review.
- **Actions**: Users can review their order and proceed to the date and time selection page by clicking the "Proceed" button.

5. Date and Time Selection

- **Description**: Users select a date and time for their meal reservation.
- **Actions**: The user chooses a valid date and time and confirms the reservation.

6. Reservation Confirmation

- **Description**: The system confirms the reservation with the selected details.
- **Actions**: A success message is displayed with the selected dining hall, menu items, date, and time.

Future Enhancements:

1. **User Authentication**: Currently, the app does not require users to log in. A future version will implement user accounts to manage reservations and track order history.
2. **Time Slot Availability**: Implement a feature that shows available time slots based on current reservations and prevents overbooking.
3. **Modify/Cancel Reservation**: Provide users with the option to modify or cancel their existing reservations.
4. **Mobile Optimization**: While the app is responsive, further testing and optimization are needed to ensure a seamless experience on all mobile devices.
5. **Dietary Preferences**: Add filters for dietary preferences (e.g., vegan, gluten-free) to help users select suitable menu items.