

CS21B2002 - Sucheta V  
CS22B1060 - Rohan Shenoy  
CS22B1080 - Avanee Lakare

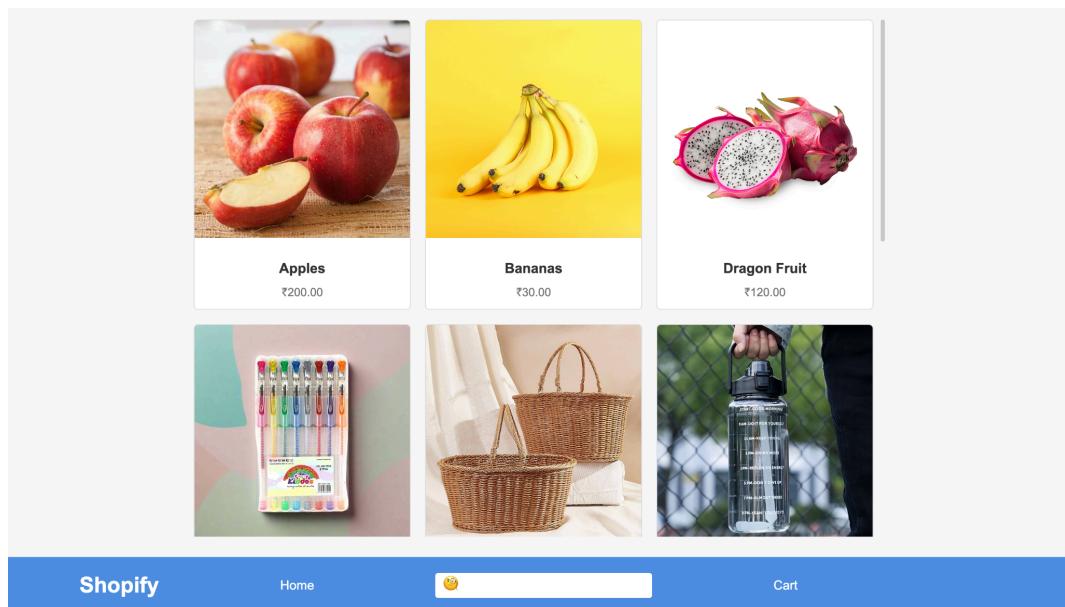
## HCI Lab Assignment 1

### Instances of Mental Model Violations

We made a shopping cart web page to show various mental model violations in that context.

#### 1) Menu Bar at the bottom

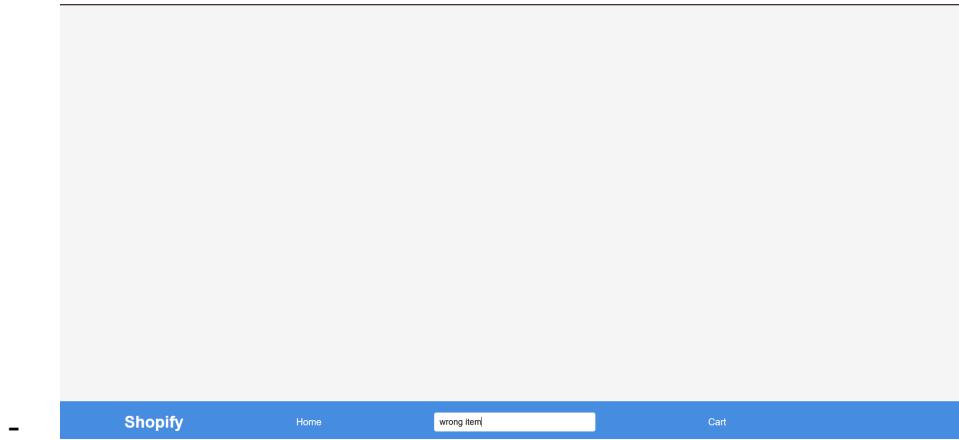
- Mental model : Users typically expect the menu bar to be located at the top of the page for easy access to website navigation.
- Our design has the menu bar at the bottom.
- Users are confused as to what the website is about in the beginning and take a short amount of time to see the webpage



#### 2) No feedback for search bar

- Mental model : Users expect search bars to provide instant feedback, such as suggestions, confirmation messages, or loading indicators.

- Our search bar did not give any feedback while entering the name of the product and it only displays once you press enter.
- Users were unsure whether their input was registered
- (Gives no feedback that item does not exist.)



### 3) Different 'remove from cart' icon

- Mental model : Users expect a trash bin icon or a cross or a universally understood symbol to represent removing an item from the cart.
- Our 'remove from cart' icon indicates a sack of garbage which is not the usual convention and would confuse users as to what it represents.
- Users struggled to identify the option to remove items from the cart.

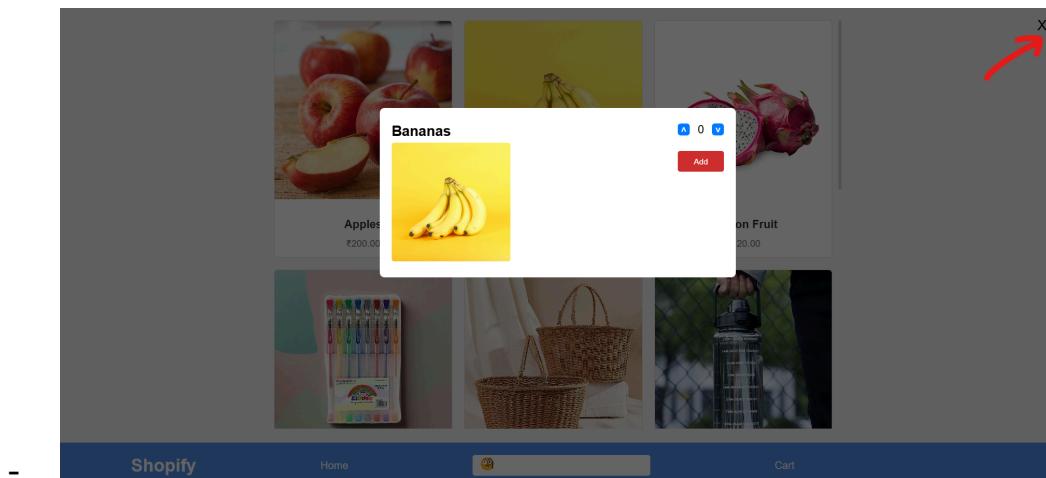
A screenshot of a shopping cart interface. The cart contains three items:

- Apples (x1)**: Price ₹200.00, icon of a bag.
- Dragon Fruit (x1)**: Price ₹120.00, icon of a fruit.
- Basket (x1)**: Price ₹80.00, icon of a basket.

The total price at the bottom is ₹400.00. At the bottom left is a red 'Buy' button, and at the bottom right is a grey 'Shop' button.

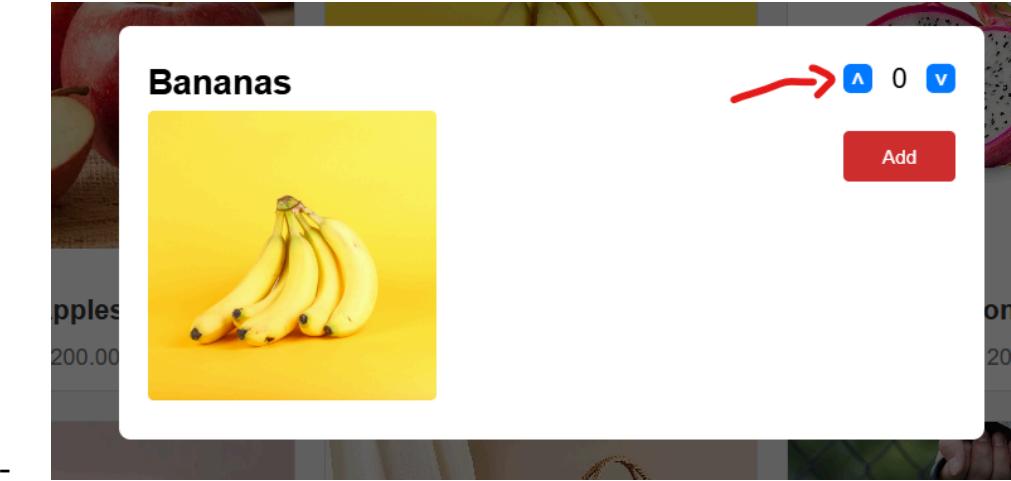
#### 4) Cross at the wrong place for modals

- Mental Model : Users expect the close ('X') icon for modals to be located at the top right corner on the modal.
- Our design has the close icon at the top right corner of the screen which makes it harder for users to locate it and get out of it.
- Modals can usually be closed when clicked anywhere on the screen other than the modal but we disallowed that and made sure that it can be closed only when clicked on the close icon.
- Users had difficulty dismissing the modal.



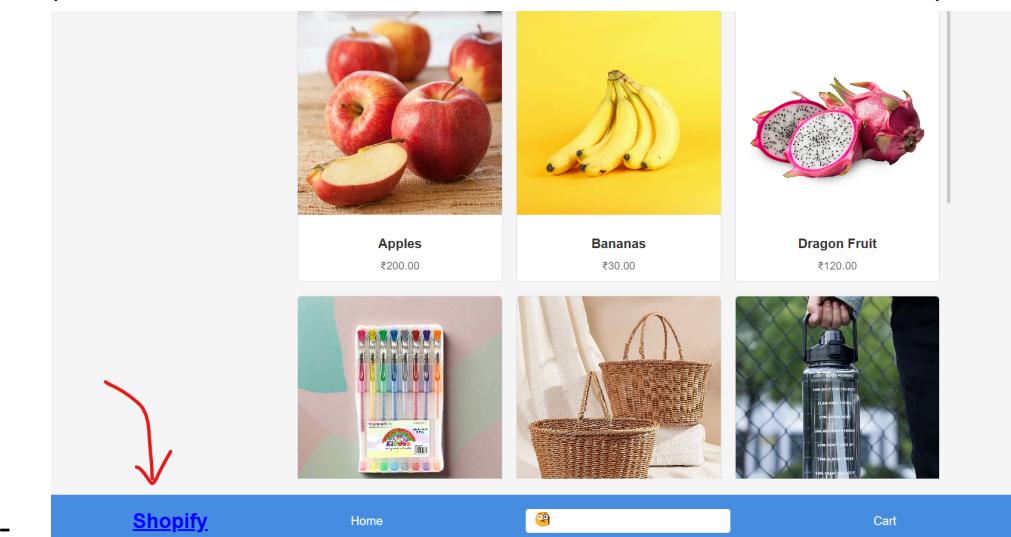
#### 5) Adding items quantity arrows at the wrong place

- Mental Model : According to the number line, the convention is to have the increase number button on the right and decrease button on the left.
- We swapped both which created confusion among users as they went to the right button first to increase the quantity of the product.
- Users took more time to adjust quantities.



#### 6) Non clickable website logo (name) which looks clickable

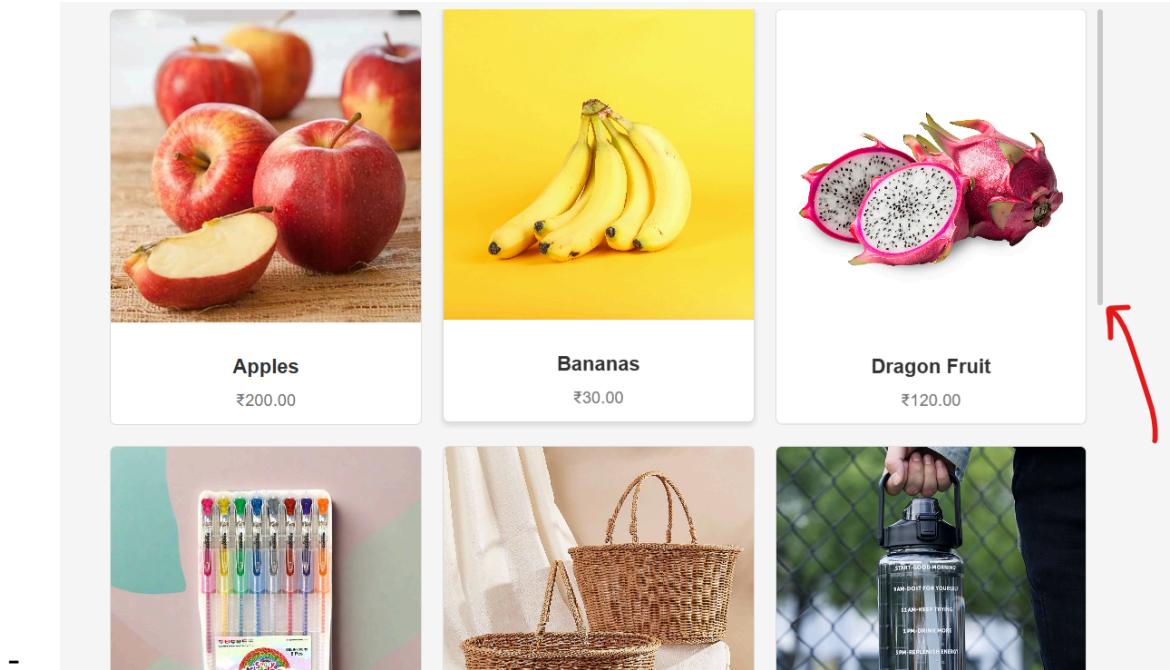
- Mental Model : Users expect the website logo to be clickable and redirect to the homepage.
- We showed that the website name was a hyperlink but it didn't take you anywhere, it remained static.
- Users were confused and frustrated when clicking the logo.
- (Transitions to blue text with underline when hovered over)



#### 7) Non mouse-scrollable item list

- Mental Model : Users expect lists of items to be scrollable using the mouse wheel, keypad or up and down arrow keys.
- Our design made sure that horizontal scrolling would not be allowed unless the user drags the scroll bar down.

- Users were annoyed as they couldn't see the full content of the website or navigate and understand it.
- (Users have to click and drag the scroll)



## USER SURVEY

We tested on 21 users to get the following results (average)

### A. Test by Avanee (CS22B1080)

#### 1. Menu Bar at the Bottom

Task Completion Time: Time to locate and use the menu. **4s**

Error Count: Number of mis-clicks or wrong area clicks. **0**

Subjective Rating: User rating of navigation ease. (1-5) **4**

(users suggested that having icons for home and cart would be better and on the top of the webpage)

#### 2. No Feedback for Search Bar

Time to find search bar : **6s**

Task Completion Time: Time to complete a search. **12.5s**

Error/Retry Count: Number of re-entries or corrections made. **1.6**

Subjective Rating: Clarity of feedback (e.g., confidence in input registration).  
(1-5) **3**

### 3. Different 'Remove from Cart' Icon

Task Completion Time: Time to correctly remove an item. **9s**

Error Count: Mis-clicks or hesitation before correct action. **11.2s**

Subjective Rating: Ease of understanding the icon.(1-5)**1.4**

(one user thought it was a bell icon to receive notifications about the product and once an item is removed by clicking on that icon they wanted confirmation)

### 4. Cross at the Wrong Place for Modals

Task Completion Time: Time to locate and click the close icon. **20s**

Error Count: Number of incorrect clicks before closing. **9**

Subjective Rating: Ease of dismissing the modal - **1.5**

Task Abandonment Rate: Percentage of users who give up or reload page - **0%**  
(one user added an item and clicked add to get out of the modal)

### 5. Adding Items Quantity Arrows at the Wrong Place

Task Completion Time: Time to adjust quantity correctly. **5.57s**

Error Count: Incorrect arrow presses or multiple attempts. **1.3**

Subjective Rating: Clarity of the quantity controls. (1-5) **3.8**

### 6. Non-Clickable Website Logo That Looks Clickable

Click Count: Number of clicks on the logo expecting redirection. **4.2**

Task Interruption Time: Delay caused by misclicks. **3.8s**

Subjective Rating: Frustration or confusion level. (1-5) **2**

### 7. Non Mouse-Scrollable Item List

Task Completion Time: Time to navigate through the list. **30s**

Error/Attempt Count: Number of failed mouse scroll attempts. **8.9**

Subjective Rating: Ease of list navigation. (1-5) **1**

Task Abandonment Rate: Percentage of users who give up or become frustrated during navigation. **82%**

(some users thought only the first 6 items shown on home page were the only items)

## *B. Test by Rohan (CS22B1060)*

### 1. Menu Bar at the Bottom

Task Completion Time: Time to locate and use the menu. **13.7s**

Error Count: Number of mis-clicks or wrong area clicks. **0.85**

Subjective Rating: User rating of navigation ease. (1-5) **3.75**

**Comments:** Navbar is visible but could've been at the top for better visibility

### 2. No Feedback for Search Bar

Time to find search bar **18s**

Task Completion Time: Time to complete a search. **13.5s**

Error/Retry Count: Number of re-entries or corrections made. **2.4**

Subjective Rating: Clarity of feedback (e.g., confidence in input registration).  
(1-5) **3**

**Comments:** Search only works after pressing the enter key and could've been better if it gave live results/suggestions.

### 3. Different 'Remove from Cart' Icon

Task Completion Time: Time to correctly remove an item. **7.5s**

Error Count: Mis-clicks or hesitation before correct action. **1.4**

Subjective Rating: Ease of understanding the icon.(1-5)  
**2.75**

**Comments:** Bad choice of logo.

### 4. Cross at the Wrong Place for Modals

Task Completion Time: Time to locate and click the close icon. **17.1s**

Error Count: Number of incorrect clicks before closing. **5.7**

Subjective Rating: Ease of dismissing the modal. **1.1**

Task Abandonment Rate: Percentage of users who give up or reload page. **44%**

**Comments:** Close button is very inconveniently placed.

### 5. Adding Items Quantity Arrows at the Wrong Place

Task Completion Time: Time to adjust quantity correctly. **5.57s**

Error Count: Incorrect arrow presses or multiple attempts. **1.3**

Subjective Rating: Clarity of the quantity controls. (1-5) **3.8**

## (No comments)

### 6. Non-Clickable Website Logo That Looks Clickable

Click Count: Number of clicks on the logo expecting redirection. **4.2**

Task Interruption Time: Delay caused by misclicks. **3.8s**

Subjective Rating: Frustration or confusion level. (1-5) **2**

**Comments:** Logo should've led to the Home page.

### 7. Non Mouse-Scrollable Item List

Task Completion Time: Time to navigate through the list. **23.4s**

Error/Attempt Count: Number of failed mouse scroll attempts. **5.3**

Subjective Rating: Ease of list navigation. (1-5) **1**

Task Abandonment Rate: Percentage of users who give up or become frustrated during navigation. **42%**

**Comments:** The scroll bar is extremely bad design

## C. Test by Sucheta (CS21B2002)

### 1. Menu Bar at the Bottom

Success Rate: **30**

Task Completion Time: **3s on avg**

Error Count: **4 wrong clicks on avg**

Subjective Rating: User rating of navigation ease: **2**

### 2. No Feedback for Search Bar

Task Completion Time: **5s avg**

Error/Retry Count: **3 retries on avg**

Subjective Rating: Clarity of feedback: **1.5**

### 3. Different 'Remove from Cart' Icon

Task Completion Time: **3s on avg**

Error Count: **3 misclicks**

Subjective Rating: **1**

### 4. Cross at the Wrong Place for Modals

Task Completion Time: **6s**

Error Count: **3**

Subjective Rating: **1**

Task Abandonment Rate: **15%**

5. Adding Items Quantity Arrows at the Wrong Place

Task Completion Time: **3s**

Error Count: **2 misclicks**

Subjective Rating: **3.5**

6. Non-Clickable Website Logo That Looks Clickable

Click Count: **5**

Task Interruption Time: **6s**

Subjective Rating: **1**

7. Non Mouse-Scrollable Item List

Task Completion Time: **4s**

Error/Attempt Count: **2**

Subjective Rating: **3**

Task Abandonment rate: **0%**