Course No: SWE 431

Human Computer Interaction

Assignment 1

Topic: Human-Computer Interaction (HCI) guidelines

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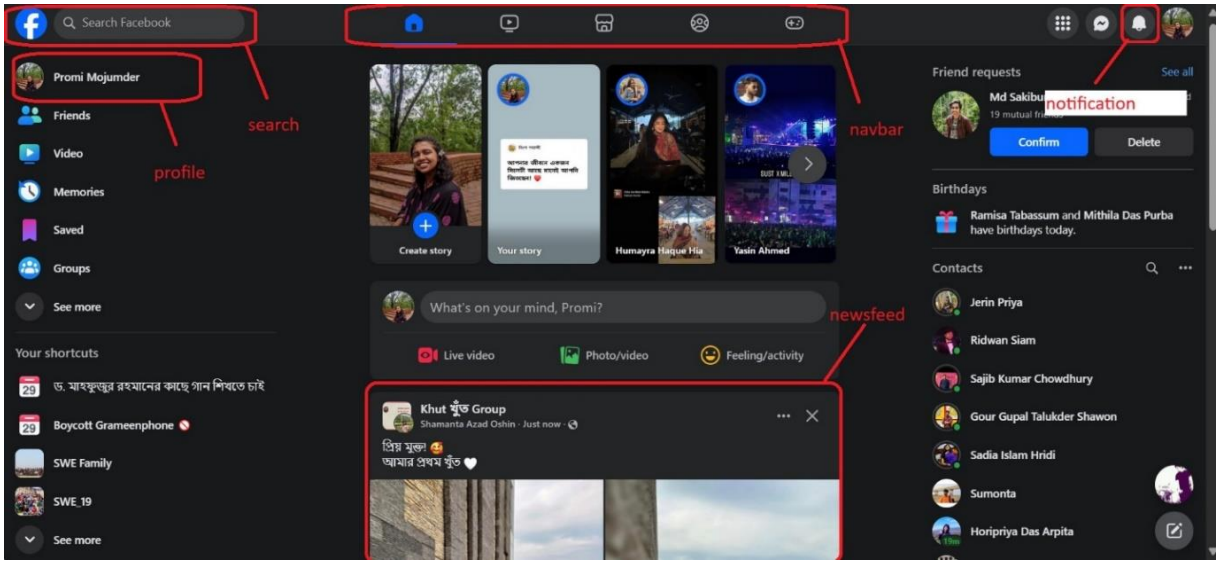
1) Avoid cluttered displays:

Score: 8/10

Explanation: Facebook's design is clean, with a focus on user profiles and news feeds. However, the presence of multiple tabs and options can sometimes feel overwhelming to new or infrequent users.



2) Minimal input actions by the user:

Score: 9/10

Explanation: This guideline focuses on minimizing the number of actions required from the user to accomplish tasks. Facebook streamlines user interactions by providing features like auto-fill suggestions, predictive text, and one-click actions for common tasks such as liking or sharing posts. While these efforts reduce user effort, some interactions, particularly in settings or customization options, may still require multiple steps.

Fig: Like/share with minimum number of actions

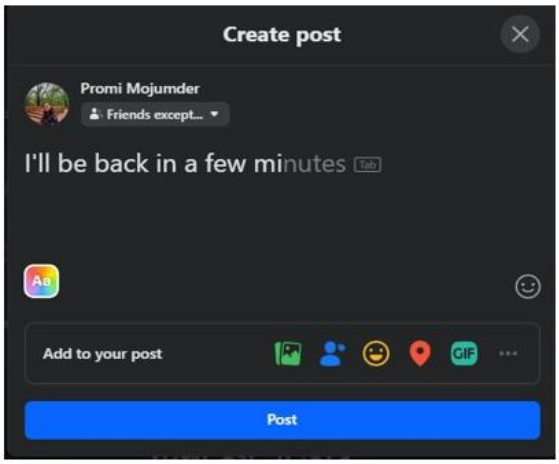
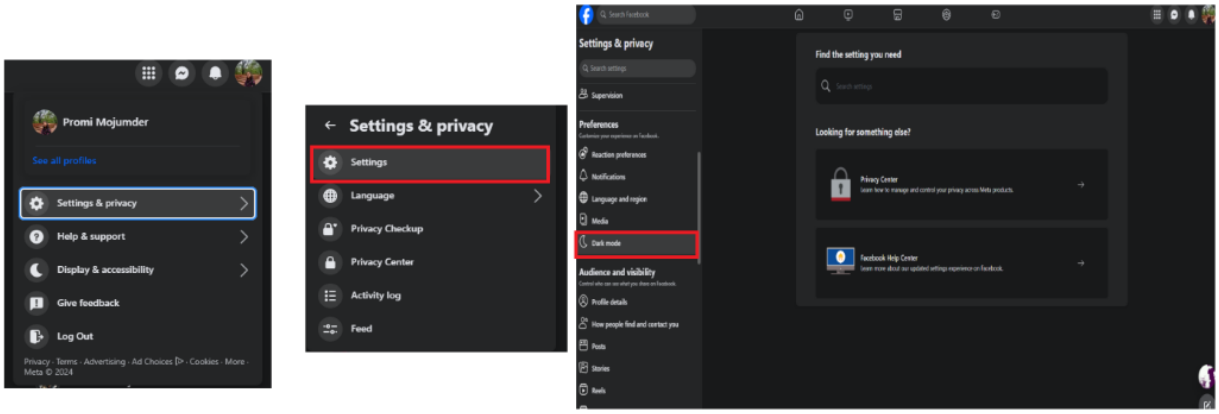


Fig: Auto-fill suggestions



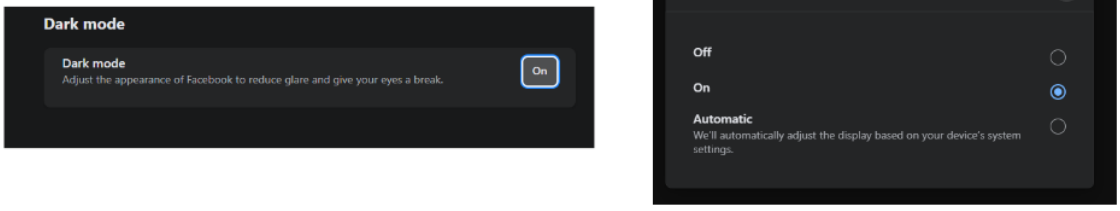


Fig: Multiple steps needed to activate/deactivate dark mode

3) Consistency of data-entry transactions:

Score: 8/10

Explanation: Facebook maintains consistency in data-entry transactions across unique features like posting updates, commenting, and messaging. However, there could be slight variations in the data-entry process across different sections of the website, leading to a slightly lower rating.

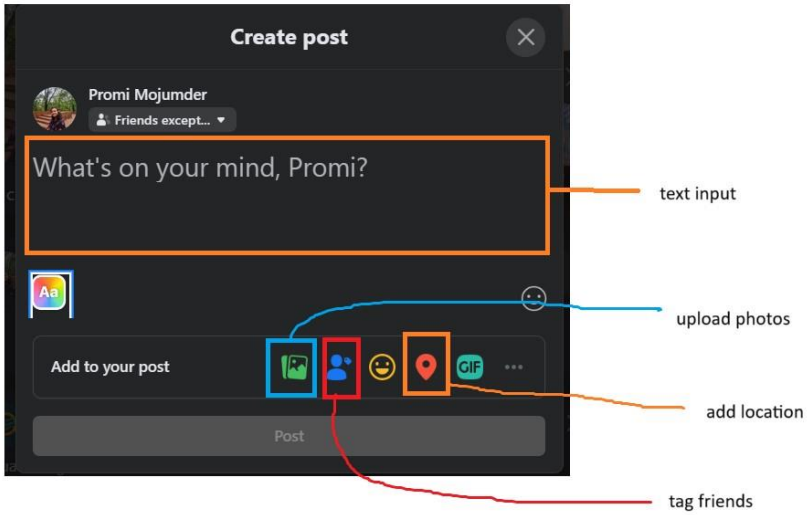


Fig: Consistent layout and design across different sections of post creation process in Facebook

4) Design of form and dialog boxes:

Score: 8 /10

Explanation: Forms and dialog boxes on Facebook are well-designed, featuring clear labels, intuitive layouts, and helpful guidance. However, there may be occasional instances where the design could be further optimized for improved usability or accessibility.

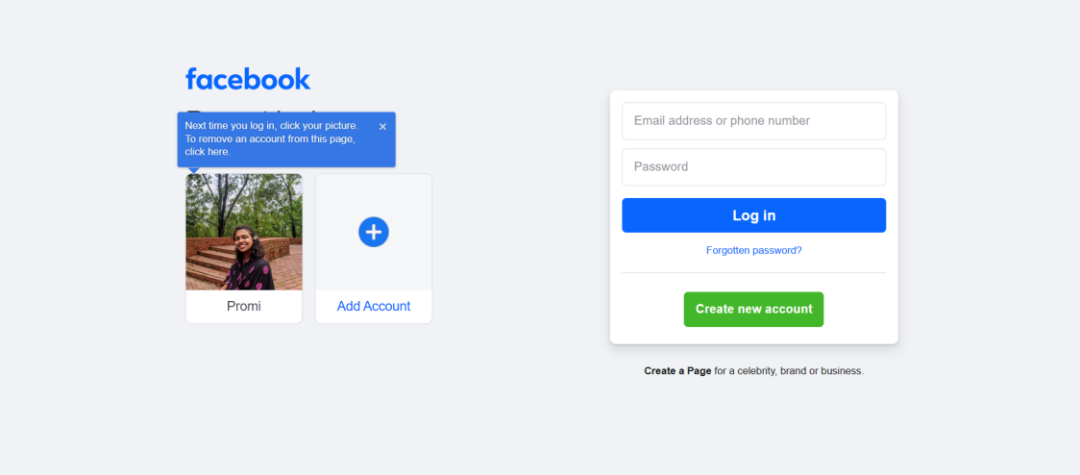


Fig: Login Form

5) Compatibility of data entry with data display:

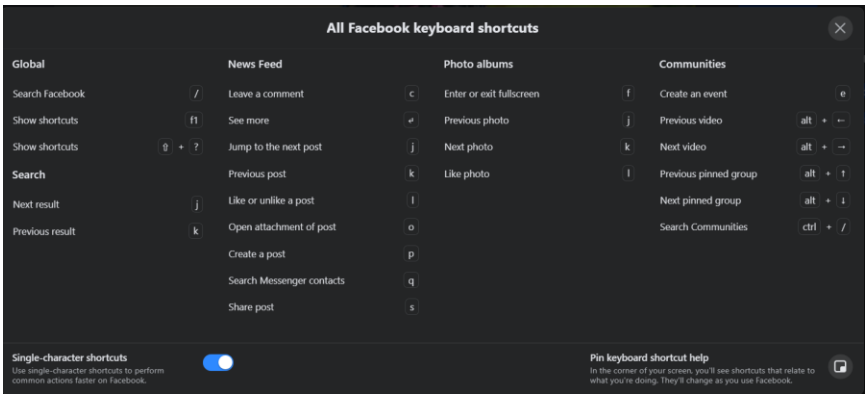
Score: 9/10

Explanation: Facebook ensures compatibility between data entry and data display by providing real-time previews (e.g., when composing a post) and consistent formatting across different sections. This facilitates a seamless transition between entering data and viewing the final output.

6) Make all functionality available from a keyboard:

Rating: 8/10

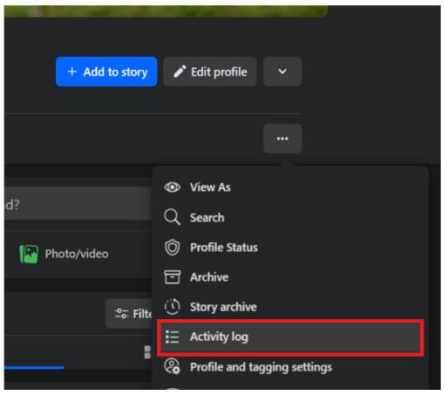
Justification: Facebook ensures that all functionality is accessible via keyboard navigation. Users can navigate through the website, interact with posts, comments, and messages, access notifications, and utilize most features without relying on a mouse. However, there might be some minor features or actions that are not fully optimized for keyboard navigation, such as certain contextual menus or advanced settings.



7) **Make it easy to undo actions** (Source: [Guidelines in Human Computer Interface(HCI) - GeeksforGeeks](#))

Score: 10/10

Explanation: Facebook allows users to delete posts, reactions, and comments, with the ability to undo these actions from the activity log. Additionally, users can archive and restore deleted posts, providing comprehensive control over their content.



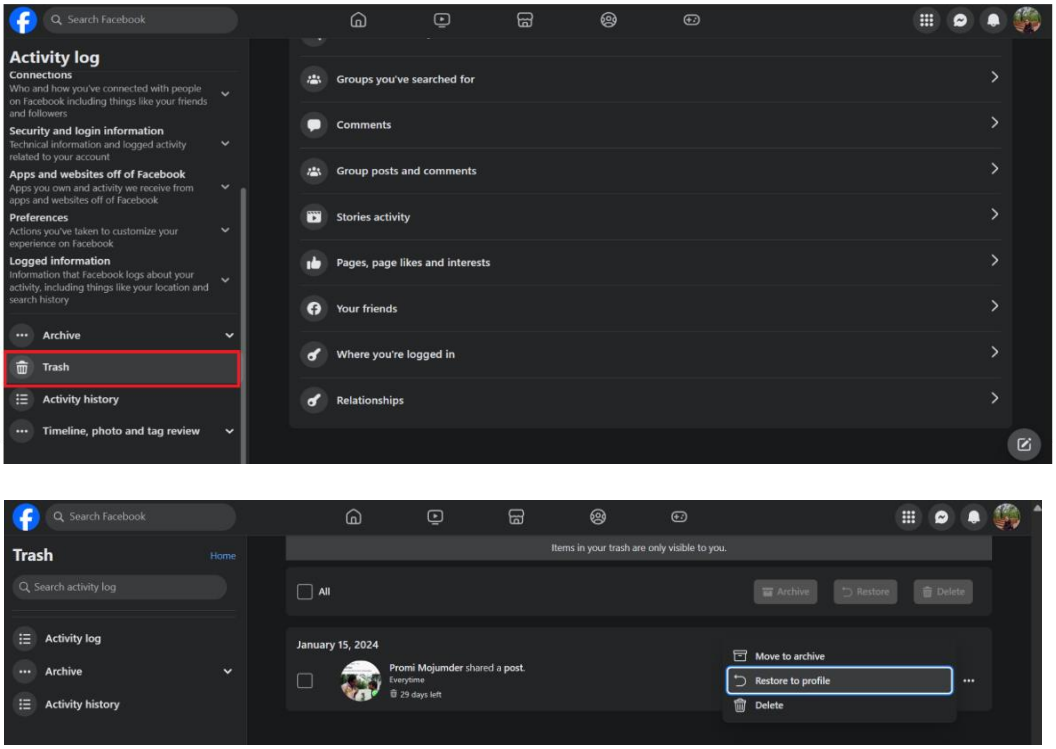


Fig: Deleting posts and restoring them

8) **Prevent errors** (Source: [Guidelines in Human Computer Interface(HCI) - GeeksforGeeks](#))

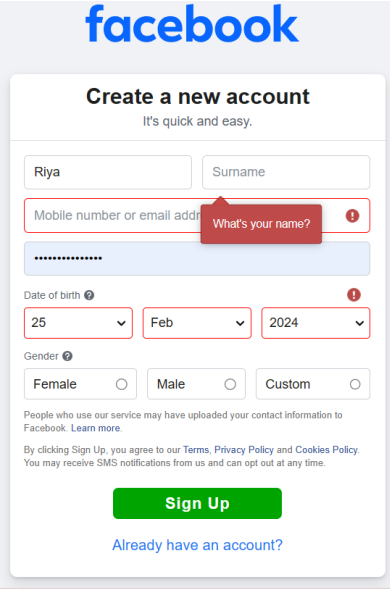
Score: 8/10

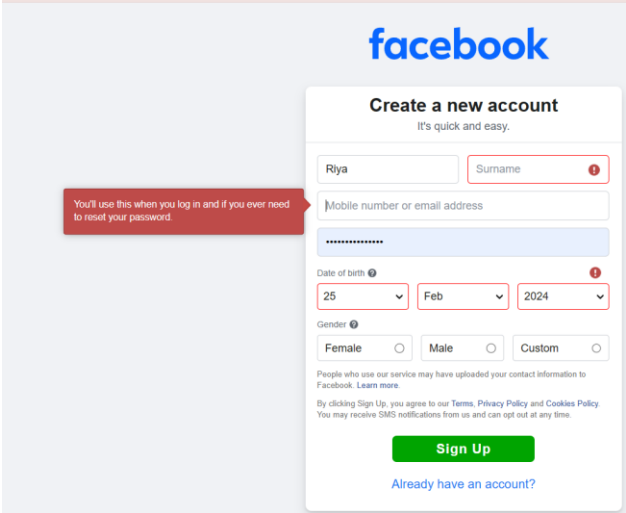
Explanation: Facebook's registration form exemplifies the principle of preventing errors by providing clear instructions and validation. Here is why:

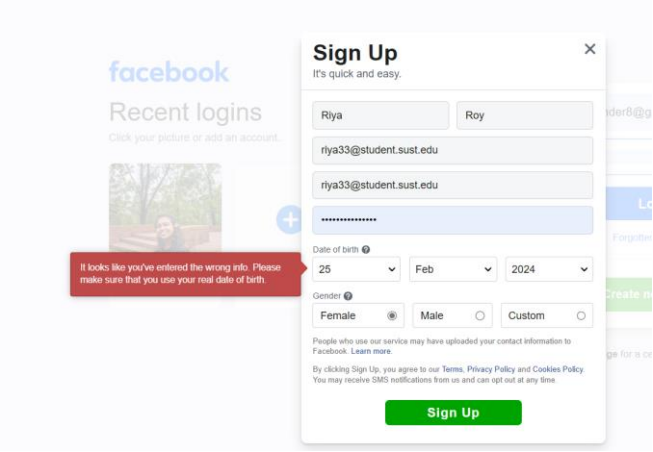
a) ***Clear Instructions:*** Facebook's registration form includes clear labels and prompts to guide users through the sign-up process. Instructions are concise and easy to understand, reducing the likelihood of users making errors due to confusion.
b) ***Validation:*** As users enter their information, Facebook validates each input field in real-time. For example, if a user enters an invalid email address, Facebook immediately prompts them with a validation message indicating the error and providing guidance on how to correct it.
c) ***Error Prevention:*** By offering real-time validation and clear instructions, Facebook helps users input their information

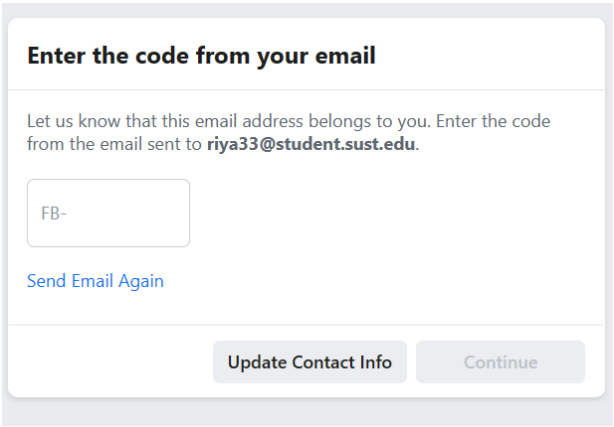
accurately from the outset, minimizing the occurrence of errors during the registration process.

d) ***User-Friendly Design:*** The registration form is designed with user experience in mind, featuring a clean layout and intuitive interface elements that make it easy for users to interact with and complete the form without encountering errors.





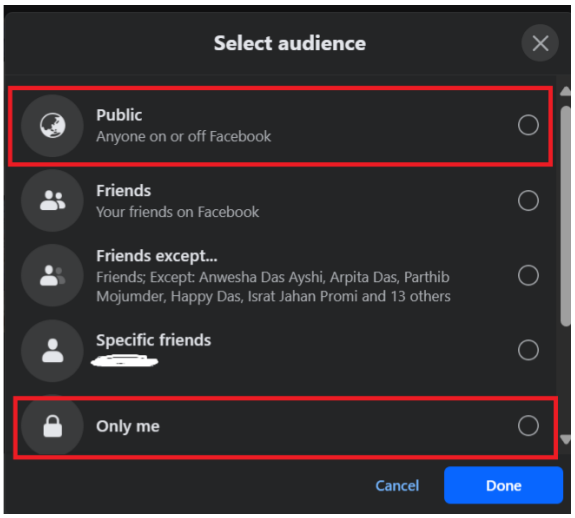


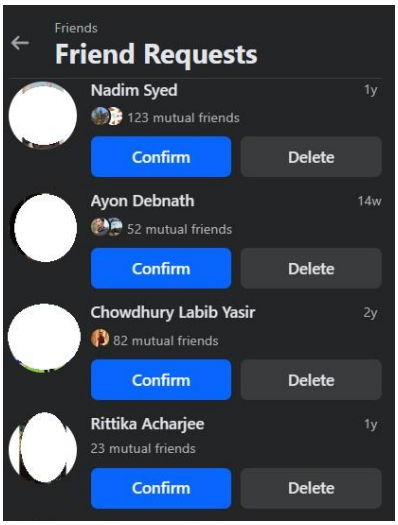


9) Do not place semantically opposing entry/selection options close together.

Score: 8/10

Explanation: Imagine you are setting your Facebook privacy settings. You want to choose who can see your posts: only your friends or everyone. Facebook is careful not to put options like "Only Me" and "Public" right next to each other because they are opposite choices. Instead, they group them logically and make them easy to find. This way, you are less likely to accidentally choose the wrong setting. Facebook keeps things clear and organized to help you make the right choices without getting confused.





10) Structure for easy comparison:

Score: 9/10

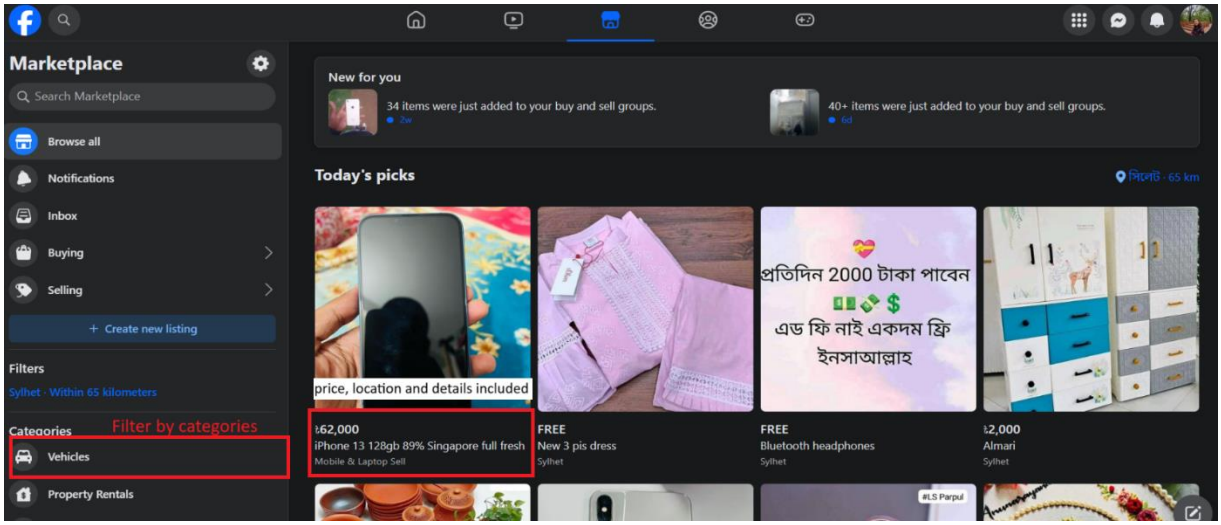
Explanation: Facebook's marketplace provides a structured interface for easy comparison of products. Here is why it aligns well with the guideline:

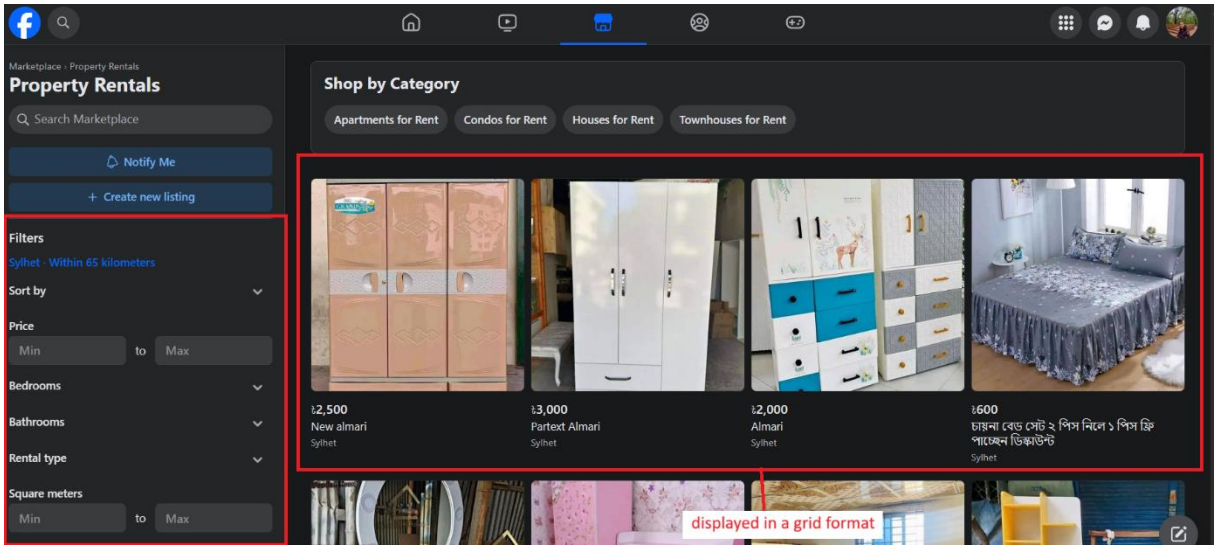
a) ***Clear Presentation:*** Products are displayed in a grid format with concise titles and thumbnails, allowing users to quickly scan and compare multiple items.
b) ***Key Attributes Highlighted:*** Key details such as price, condition, location, and seller ratings are prominently featured

for each product, facilitating comparison based on essential criteria.

c) ***Filter and Sort Options:*** Users can filter search results based on specific attributes (e.g., price range, condition) and sort products by relevance, price, or other factors, enabling them to refine their comparisons.

d) ***Visual Consistency:*** The layout and design of product listings are consistent across the marketplace, ensuring that users can easily navigate and compare items without encountering unexpected variations.

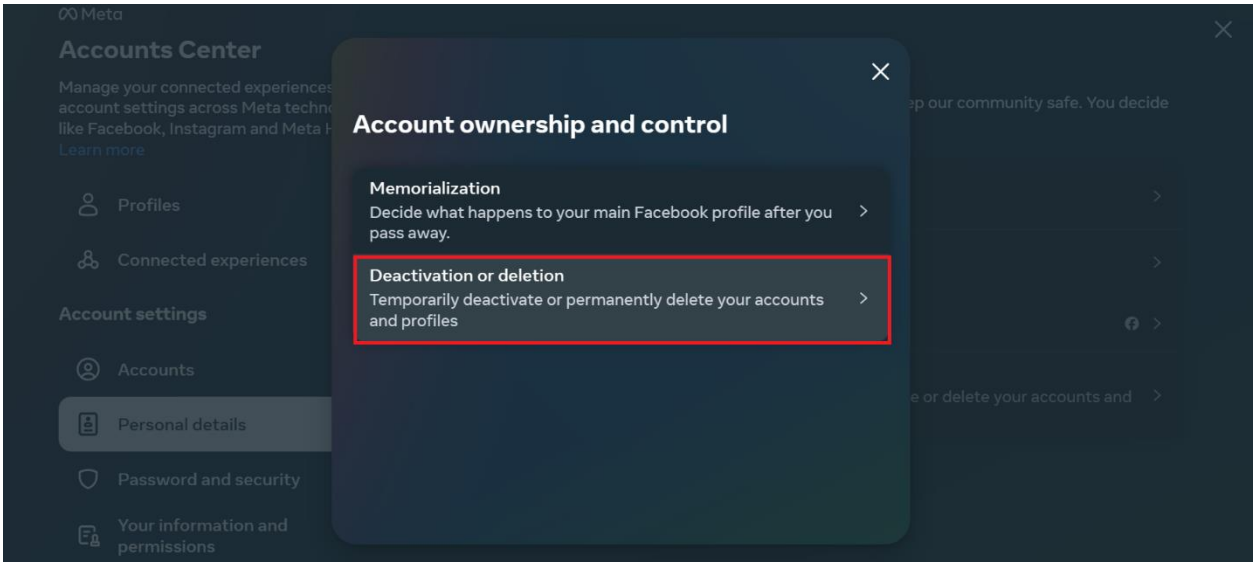


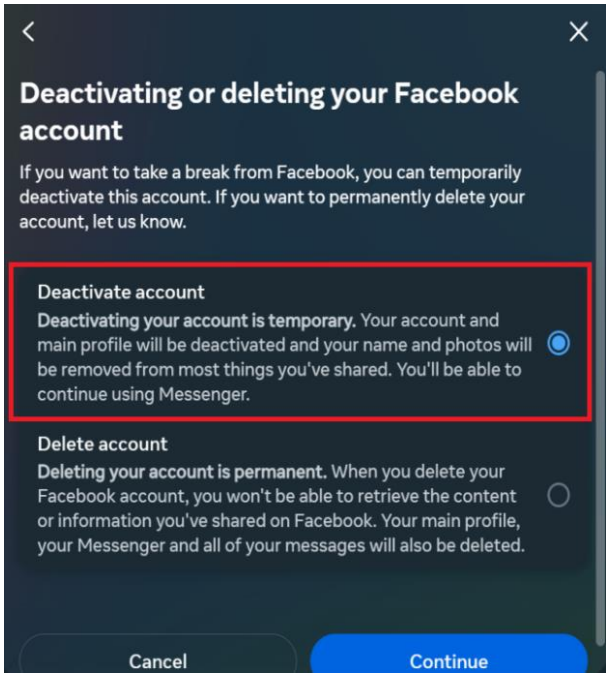


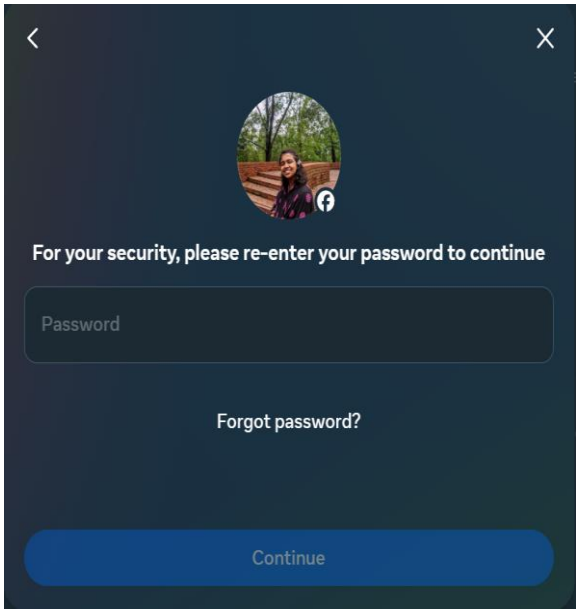
11)Ask for authentication of any non-trivial critical action (Source: Guidelines in HCI (tutorialspoint.com))

Score: 10/10

Explanation: Asking for authentication for any non-trivial critical action is a crucial security measure to prevent unauthorized access or accidental changes to sensitive information. Facebook consistently adheres to this guideline by implementing authentication mechanisms for actions such as changing account settings, accessing private messages, or making significant changes to profile information. For example, when a user attempts to change their password or modify privacy settings, Facebook prompts them to re-enter their password or use additional authentication methods such as two-factor authentication (2FA). This ensures that only authorized users can perform critical actions, adding an extra layer of security to the platform. By requiring authentication for non-trivial critical actions, Facebook effectively protects user accounts and sensitive data from unauthorized access or malicious activities. This practice enhances user trust and confidence in the platform's security measures, contributing to a safer and more secure user experience.

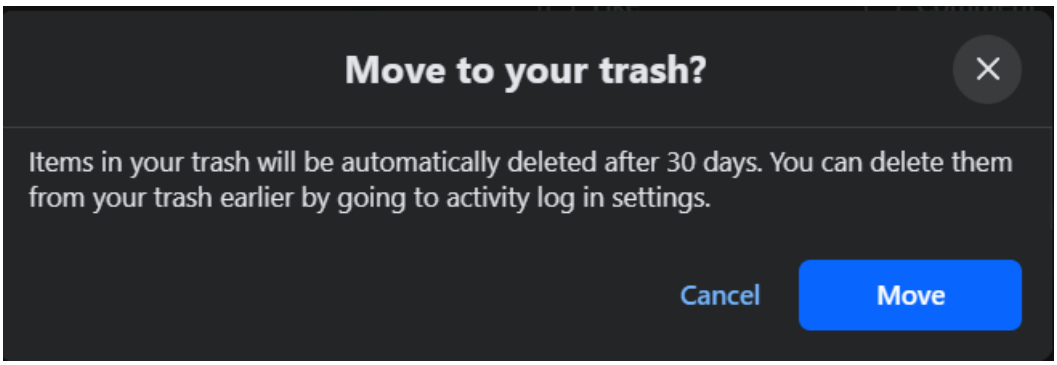


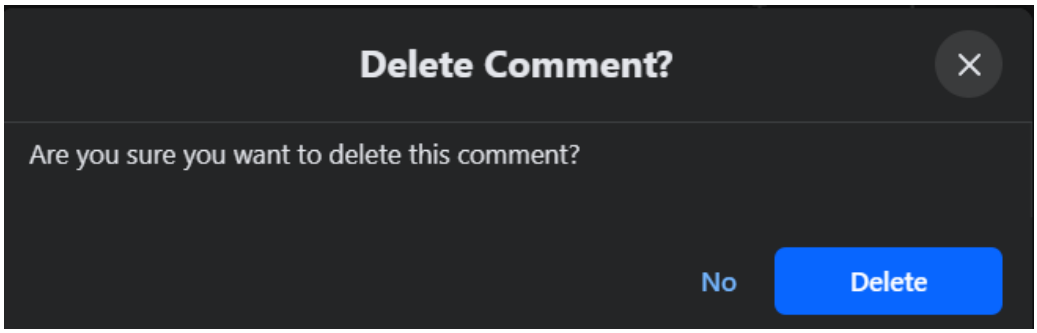




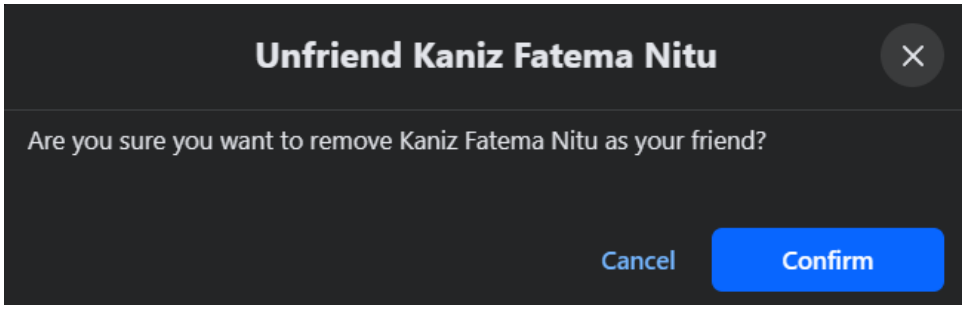
12)Design for Errors: (Source: [Microsoft PowerPoint - Principles handout.ppt (ed.ac.uk)]) 9/10: Facebook's design effectively incorporates error prevention mechanisms, such as validation messages and confirmation prompts, to help users avoid mistakes. However, there may be instances where error recovery options could be further enhanced to provide clearer guidance for users in resolving errors or misunderstandings. Overall, Facebook's approach to designing for errors is highly effective in mitigating user mistakes. For example,

a) When a user attempts to delete a post/comment on Facebook, a confirmation dialog box appears, asking the user to confirm the action. This dialog box typically includes a message such as "Are you sure you want to delete this post/comment?" along with buttons for "Cancel" and "Delete."





b) When a user clicks on the "Unfriend" button next to a friend's name on Facebook, a confirmation dialog box appears. The dialog typically displays a message like "Are you sure you want to unfriend [Friend's Name]?" with options to "Cancel" or "Unfriend".



13) Reduce short term memory loads. Use functionally organized screens and menus.

Score: 8/10

Explanation: Facebook organizes its screens and menus in a way that makes it easy for users to find what they need without having to remember too much. For example, when you open Facebook, you see familiar sections like the News Feed, Groups, and Notifications, each serving a specific purpose. Within these sections, posts and content are arranged logically, so you do not have to hunt around to find what you are looking for. The menu on the side also helps by offering quick links to key features like your profile, friends, and settings. Everything is labeled clearly, so you know exactly where to go to do what you want. While Facebook does a decent job overall, there's always room for improvement to make things even easier and more intuitive for users.

14)Don't burden the user with data, use a presentation layout that allows rapid integration of information (Source: Guidelines in HCI (tutorialspoint.com))

Score: 9/10

Explanation: Facebook does an excellent job of presenting information in a way that does not overwhelm users. The layout is clean and easy to navigate, allowing users to quickly integrate and understand the content they see. However, there may be occasional instances where certain features or sections could be further optimized for rapid information integration, suggesting minor areas for improvement. Overall, Facebook's approach effectively balances information presentation with user experience, resulting in a positive and engaging platform for its users.

15)Information Structuring and Navigation:

Score: 8/10

Explanation: While Facebook provides various navigation options, the sheer volume of content and features can make it challenging for users to find specific information. While Facebook offers a range of navigation options and search functionality to help users find information, there may be room for improvement in terms of simplifying the navigation structure and enhancing discoverability, particularly for less frequently accessed features or settings.