
User interface design principles and guidelines

UI Design is not art; it's craftsmanship in the service of the user.

— By Engr. Dr. Sidra Sultana —

HCI Outline

1. Introduction to HCI
2. Basic principles and guidelines of HCI
3. User-centered design and usability testing
4. Designing Effective User Interfaces

5. User interface design principles and guidelines

6. User interface prototyping
7. Prototyping through Wireframes
8. Designing for accessibility and mobile devices

User interface design principles and guidelines

1. Introduction & The "Why" of UI
 - a. Why UI Design matters
 - b. Defining UI Design
 - c. The Four Pillars of Good UI
2. Principles with Examples and Activities
 - a. Principle 1: Clarity
 - b. Principle 2: Efficiency
 - c. Principle 3: Consistency
 - d. Principle 4: Feedback
3. Synthesizing Knowledge: The "QuickBite" Redesign
 - a. Recap & Introduce Guidelines
 - b. Main Activity: "Rapid Redesign Workshop"
4. Conclusion & Key Takeaways

Why UI Design matters

Imagine this:

You're hungry and you've just downloaded a new food delivery app, 'QuickBite'. You open it, and you're immediately lost. The 'Menu' button is a tiny, light grey icon in the corner. You tap 'Search', but nothing happens—no loading animation, no error message. You finally find a restaurant, but the 'Add to Cart' button is the same color and size as the 'Read Reviews' button. How do you feel?

It's not about making things just 'look pretty'; it's about creating a clear, efficient, and predictable bridge between the user and the product.

Defining UI Design

- What is UI?
 - User Interface is the space where interactions between humans and machines occur. It's the screens, pages, buttons, icons, and all other visual elements a user interacts with.
- Analogy:
 - The cockpit of an airplane. All the controls, gauges, and levers are the UI. A well-designed cockpit helps the pilot (user) operate the plane (product) effectively and safely.
- Goal of UI Design:
 - To make the user's interaction as simple and efficient as possible, enabling them to achieve their goals without unnecessary friction.

The Four Pillars of Good UI

- Clarity:
 - Can the user understand what they are looking at and what they can do?
- Efficiency:
 - Can the user perform their tasks quickly and with minimal steps?
- Consistency:
 - Do familiar elements behave in predictable ways?
- Feedback:
 - Does the system communicate what is happening to the user?

Principle 1: Clarity

- What it is: The interface should be self-evident. Every element's purpose should be obvious.
- How to achieve it:
 - **Clear Visual Hierarchy:** Use size, color, and spacing to show what's most important. (Example: A large, bold headline vs. small body text).
 - **Recognizable Icons & Labels:** Use standard icons (e.g., a magnifying glass for search, a shopping cart) and pair ambiguous icons with text labels.
 - **Plain Language:** Avoid jargon. Use "Search" instead of "Initiate Query."
 - **Example (Bad):** A website where the "Submit Order" button is small and light grey. (Is it disabled? Is it unimportant?)
 - **Example (Good):** Amazon's "Proceed to Checkout" button is high-contrast, large, and clearly labeled.

Activity 1: "Clarity Critique"

What are the top 3 things that make this interface unclear?"



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Principle 2: Efficiency

- What it is: Respect the user's time. Streamline tasks and reduce the number of actions needed to complete a goal.
- How to achieve it:
 - **Smart Defaults:** Pre-fill common choices (e.g., "Country" based on IP address).
 - **Keyboard Shortcuts:** For power users (e.g., Ctrl+C / Cmd+C for copy).
 - **Autocomplete & Predictive Text:** As seen in search engines.
 - **"Frequently Used" Sections:** Like the "Recent Documents" list in Microsoft Word.
 - **Example:** Google Search. You type, and it instantly suggests queries. You hit enter, and results appear in milliseconds.

Activity 2: "Efficiency Brainstorm"

Refer back to our 'QuickBite' app scenario.

"How could we make the process of finding and ordering a pizza more efficient? Think of at least two ideas."

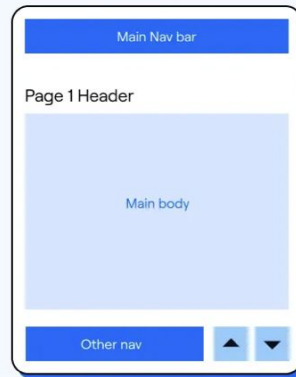
Principle 3: Consistency

- What it is: Similar elements should look and behave the same way. This builds user trust and reduces the learning curve.
- Two Types:
 - Internal Consistency: Within your own product. (e.g., All primary buttons are blue and rounded).
 - External Consistency: With common platform/industry conventions. (e.g., A hamburger menu ≡ typically reveals a navigation drawer).
- How to achieve it:
 - Use a Design System or Style Guide—a collection of reusable components and rules.
 - Example (Bad): Using a trash can icon to delete an item on one page, and a 'X' icon on another.
 - Example (Good): Google's Material Design. Buttons, cards, and menus look and behave consistently across all Google products.

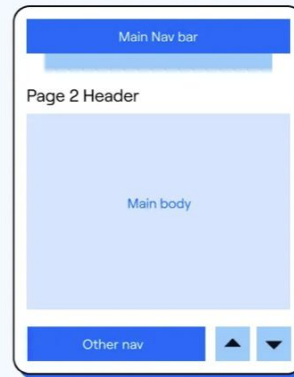
Internal Consistency



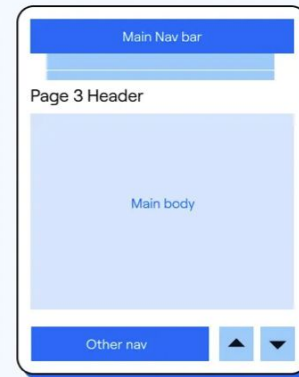
Consistent page design



Page 1



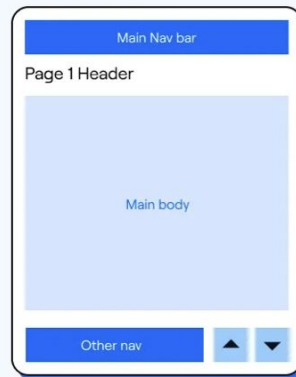
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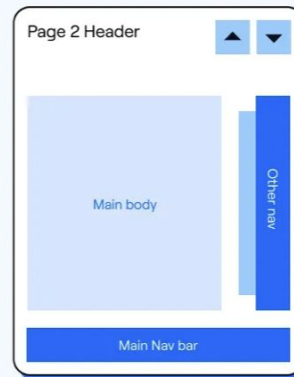
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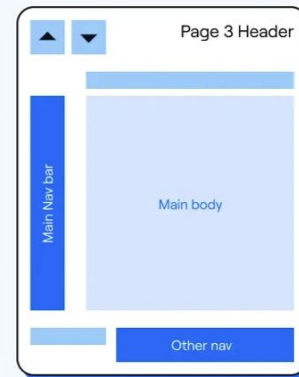
Inconsistent page design



Page 1

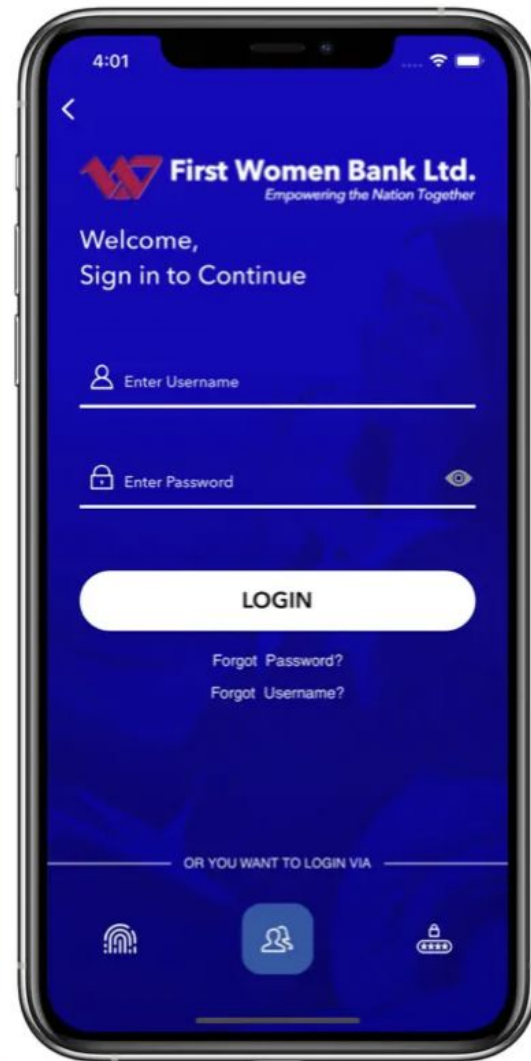
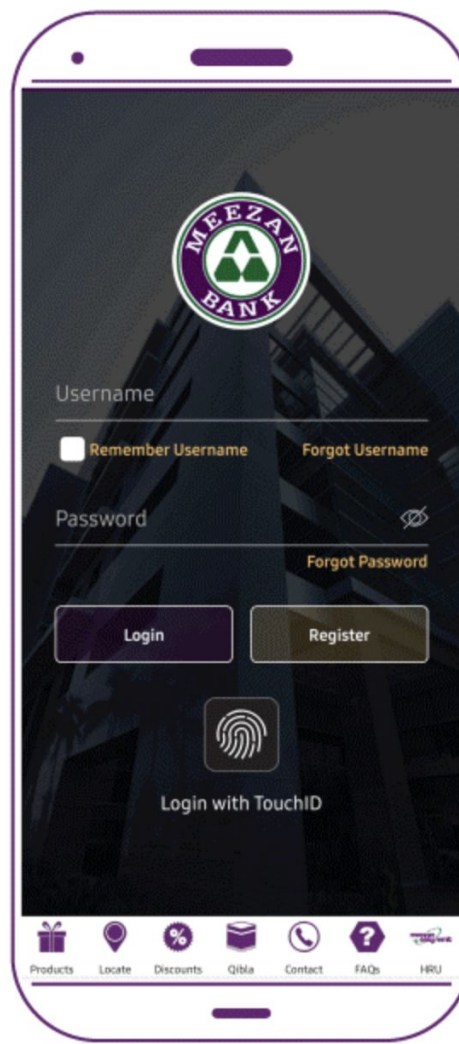
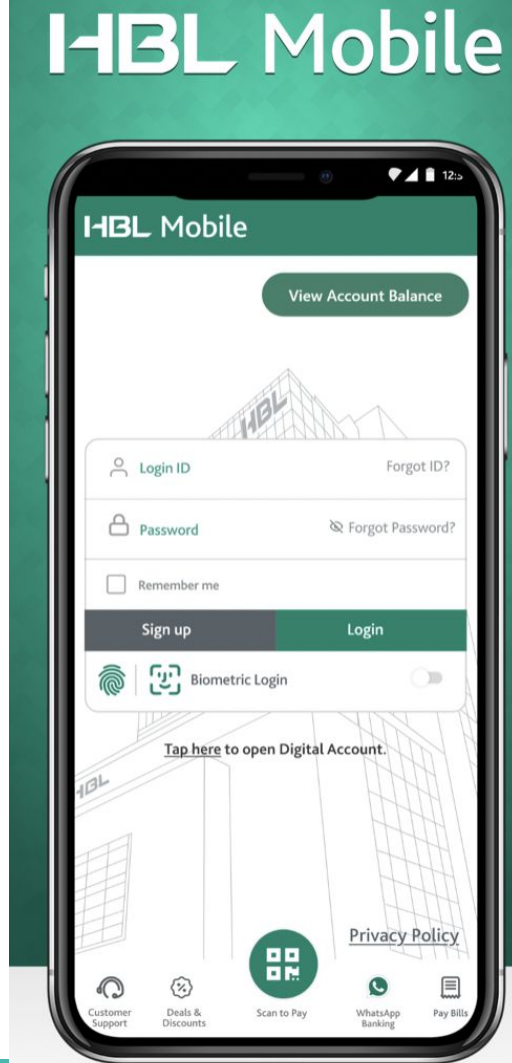


Page 2



Page 3

Activity 3: "Consistency Spotting"



Principle 4: Feedback

- What it is: The system must always inform the user about what is happening. No silence!
- How to achieve it:
 - Instant Feedback: Buttons should visually depress when clicked.
 - Loading Indicators: A spinner or skeleton screen shows that work is being done.
 - Error Messages: Should be helpful and human. (Bad: "Error 404." Good: "We couldn't find that page. Here's a link to the homepage.")
 - Success Confirmation: "Your order has been placed!" with an order number.
 - Example: When you "Like" a post on social media, the heart icon instantly fills with color, providing immediate feedback.

Activity 4: "Feedback Fix-it"

- "In our QuickBite app, a user taps 'Place Order,' but the payment processing takes 10 seconds. The screen is frozen with no indication of what's happening. What will the user likely do?"
- "How can we provide better feedback here?"

Recap & Introduce Guidelines

- Introduce practical guidelines that bring the principles to life:
 - Layout & Grid: Use a grid to align elements and create visual structure.
 - Typography: Use a clear, limited font hierarchy (Headline, Subhead, Body).
 - Color & Contrast: Ensure text is readable. Use color purposefully (e.g., one primary color for actions).
 - Interaction: Make buttons look tappable/clickable.

Main Activity: "Rapid Redesign Workshop"

- Task:

"In small groups of 3-4, you are now the design team for 'QuickBite'. Using the principles and guidelines we've discussed, sketch a wireframe (a simple, low-fidelity drawing) for the main menu screen of the app."

- Provide a brief: "The screen should show a list of restaurants, each with a name, rating, delivery time, and a clear way to select it. Include a main navigation bar at the bottom."
- Give them 15 minutes to sketch on paper or a digital whiteboard. Circulate and provide guidance.
- Key questions to prompt them: "How will you establish hierarchy? What will your primary button look like? How will you ensure consistency? How will you provide feedback when a user taps a restaurant?"

Conclusion & Key Takeaways

- Summary:
 - "The four pillars—Clarity, Efficiency, Consistency, and Feedback—are your foundation."
 - "Use guidelines on layout, typography, and color to build interfaces that are not just beautiful, but usable and intuitive."
- Final Thought & Next Steps:
 - "Remember our frustrating 'QuickBite' app? You now have the tools to fix it."
 - "Every app and website you use from now on, look at it with these principles in mind. You'll start to see the good, the bad, and the ugly everywhere!"

Thanks

Any Question