

VIT

Vellore Institute of Technology

**School of Computer Science Engineering
and Information Systems**

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Internal Assessment

Case Study - 1

Programme Name & Branch: B Tech (IT)

Course Name & Code: Human Computer Interaction & BITE311L

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Question 1: Affordances and Signifiers in Daily Apps (5 Marks)

Task: Identify 5 examples of affordances and 5 signifiers in apps you use daily.

We will analyze two popular applications: **WhatsApp** and **Instagram**.

App 1: WhatsApp

Affordances in WhatsApp:

1. **Text Input Field:** Allows users to type and send messages
2. **Voice Message Button:** Enables recording and sending audio messages
3. **Camera Icon:** Provides functionality to capture and share photos/videos
4. **Contact List:** Allows selection and initiation of conversations
5. **Swipe Gesture on Messages:** Enables quick reply functionality

Signifiers in WhatsApp:

1. **Microphone Icon:** Visual indicator showing voice recording capability
2. **Blue Checkmarks:** Indicate message delivery and read status
3. **Green Send Button:** Clear visual cue for message transmission
4. **Typing Indicator:** Shows when the other person is actively typing
5. **Online Status Dot:** Green dot indicating user's active presence

App 2: Instagram

Affordances in Instagram:

1. **Double-tap Gesture:** Allows users to like posts quickly
2. **Swipe Left/Right:** Enables navigation through stories
3. **Pull-to-refresh:** Allows updating the feed with new content
4. **Pinch-to-zoom:** Provides ability to zoom into images
5. **Camera Shutter Button:** Enables photo/video capture for stories

Signifiers in Instagram:

1. **Heart Icon:** Clear indicator for the like function
2. **Plus (+) Icon:** Visual cue for adding new content
3. **Circular Story Rings:** Colorful borders indicating unviewed stories
4. **Paper Plane Icon:** Signifies sharing/direct message functionality
5. **Three Dots Menu:** Universal signifier for additional options

Question 2: Minimalist vs Cluttered Interface Comparison (5 Marks)

Task: Compare minimalist vs cluttered interfaces in any 2 Apps; map to design principles; suggest improvements.

We will compare **Apple Calculator** (minimalist) with **Facebook** (cluttered).

App Analysis

Apple Calculator (Minimalist Design)

Design Characteristics:

- Clean, uncluttered interface with essential functions only
- High contrast between numbers and operators
- Consistent button sizing and spacing
- Single-purpose design focused on calculations
- Minimal color palette (black, white, orange)

Norman's Design Principles Applied:

1. **Visibility:** All essential functions are immediately visible
2. **Affordance:** Buttons clearly look pressable and functional
3. **Constraint:** Limited to mathematical operations only
4. **Mapping:** Logical layout following conventional calculator design
5. **Feedback:** Clear visual feedback when buttons are pressed
6. **Consistency:** Uniform design language throughout

Facebook (Cluttered Design)

Design Characteristics:

- Multiple content types competing for attention
- Dense information architecture with many navigation options
- Various font sizes, colors, and UI elements
- Advertising mixed with organic content
- Multiple action buttons per post

Design Principle Violations:

1. **Poor Visibility:** Important features often buried in menus
2. **Unclear Affordances:** Some interactive elements are not obvious

3. **Lack of Constraints:** Too many options leading to choice overload
4. **Inconsistent Mapping:** Similar functions located in different places
5. **Overwhelming Feedback:** Notifications and alerts compete for attention
6. **Inconsistency:** Different design patterns across various sections

Comparative Analysis

Aspect	Apple Calculator	Facebook
Cognitive Load	Low - single task focus	High - multiple competing elements
Learning Curve	Minimal - intuitive design	Steep - complex navigation
User Efficiency	High for calculation tasks	Variable - depends on task
Error Prevention	Good - clear button layout	Poor - easy to tap wrong elements
Visual Hierarchy	Excellent - clear priority	Weak - everything seems important

Table 1: Comparison of Design Approaches

Suggested Improvements

For Apple Calculator:

1. **Enhanced Feedback:** Add subtle haptic feedback for button presses
2. **History Feature:** Include a minimalist calculation history
3. **Accessibility:** Improve voice-over support for visually impaired users

For Facebook:

1. **Simplified Navigation:** Reduce the number of top-level menu items
2. **Content Prioritization:** Implement better visual hierarchy to distinguish content types
3. **Reduced Cognitive Load:** Group related functions and reduce redundant actions
4. **Consistent Design Language:** Standardize button styles and layouts across features
5. **Progressive Disclosure:** Hide advanced features behind secondary menus

Conclusion

The comparison demonstrates that minimalist design (Apple Calculator) generally provides better usability through reduced cognitive load and clearer user pathways. While complex applications like Facebook require more features, they can benefit from applying minimalist principles through better information architecture and progressive disclosure techniques.

The key takeaway is that good design balances functionality with simplicity, ensuring that users can accomplish their goals efficiently without being overwhelmed by unnecessary complexity.