1.4. PRINCIPLES OF GOOD DESIGN

Introduction:

- UI (User Interface) and UX (User Experience) design play a vital role in the success of digital products such as websites, mobile applications, software systems, and interactive platforms.
- Good design is not merely about making a product visually attractive; it is about creating meaningful, efficient, accessible, and enjoyable experiences for users.
- The **Principles of Good Design** serve as guidelines that help designers create products that are easy to use, visually appealing, and capable of meeting user needs effectively.
- These principles improve usability, increase user satisfaction, reduce errors, and enhance overall user experience.



1. User-Centered Design.

- User-Centered Design (UCD) is a design approach that places users at the center of the design process.
- Every design decision is made based on user needs, goals, behaviors, and expectations.

Characteristics.

- ✓ Focuses on user requirements.
- ✓ Involves users throughout the design process.
- ✓ Uses research and feedback for improvement.

Importance.

- ✓ Creates products that solve real problems.
- ✓ Increases user satisfaction.
- ✓ Improves product acceptance.

Example:

A mobile banking application should prioritize quick balance checking and fund transfers because these are common user tasks.

2. Simplicity.

Simplicity means removing unnecessary elements and presenting information clearly and concisely.

Characteristics.

- ✓ Clean interface.
- ✓ Minimal design elements.
- ✓ Clear instructions.
- ✓ Easy navigation.

Importance.

- ✓ Reduces cognitive load.
- ✓ Makes learning easier.
- ✓ Improves efficiency.

Example:

A login page requiring only username and password is simpler and more effective than one containing multiple unnecessary fields.

3. Consistency.

Consistency ensures that similar elements behave and appear similarly throughout the interface.

Types of Consistency:

a. **Visual Consistency:** Using the same colors, fonts, and layouts.
b. **Functional Consistency:** Buttons and controls perform expected actions.
c. **Internal Consistency:** Uniformity within the application.
d. **External Consistency:** Following industry standards and conventions.

Importance.

- ✓ Improves learnability.
- ✓ Reduces confusion.
- ✓ Builds user confidence.

Example: All primary action buttons should use the same color and style throughout an application.

4. Visibility.

Visibility means making important information and controls easily noticeable.

Characteristics.

- ✓ Important options are easy to find.
- ✓ Menus are clearly displayed.
- ✓ Key actions are prominent.

Importance.

- ✓ Helps users understand available actions.
- ✓ Reduces mistakes.
- ✓ Enhances navigation.

Example: The "Checkout" button on an e-commerce website should be clearly visible.

5. Feedback.

Feedback refers to informing users about the result of their actions.

Types of Feedback:

a. **Visual Feedback:** Color changes, animations, notifications.
b. **Audio Feedback:** Sounds indicating successful actions.
c. **Haptic Feedback:** Vibrations on mobile devices.

Importance.

- ✓ Confirms actions.
- ✓ Reduces uncertainty.
- ✓ Improves trust.

Example: A success message appears after submitting a registration form.

6. Accessibility.

Accessibility ensures that products can be used by people with different physical, sensory, and cognitive abilities.

Accessibility Features.

- ✓ Screen reader support.
- ✓ Keyboard navigation.
- ✓ Alternative text for images.
- ✓ Sufficient color contrast.
- ✓ Captions for videos.

Importance.

- ✓ Promotes inclusivity.
- ✓ Reaches a wider audience.
- ✓ Meets accessibility standards.

Example:

Providing captions for educational videos helps hearing-impaired users.

7. Efficiency.

Efficiency means enabling users to complete tasks with minimum effort and time.

Characteristics:

- ✓ Streamlined workflows.
- ✓ Reduced number of steps.
- ✓ Automation of repetitive tasks.

Importance.

- ✓ Improves productivity.
- ✓ Saves time.
- ✓ Enhances user satisfaction.

Example: Auto-complete search suggestions help users find information faster.

8. Learnability.

Learnability refers to how easily users can understand and begin using a product.

Characteristics.

- ✓ Familiar design patterns
- ✓ Intuitive controls
- ✓ Clear navigation

Importance.

- ✓ Reduces training requirements.
- ✓ Increases user adoption.

Example: Using a magnifying glass icon to represent search functionality.

9. Error Prevention and Recovery.

Good design prevents users from making mistakes and helps them recover when errors occur.

Methods.

- ✓ Input validation.
- ✓ Confirmation dialogs.
- ✓ Undo functionality.
- ✓ Clear error messages.

Importance.

- ✓ Reduces frustration.
- ✓ Improves reliability.
- ✓ Enhances user confidence.

Example: Displaying a warning before permanently deleting a file.

10. Visual Hierarchy.

Visual hierarchy organizes information so users naturally focus on the most important content first.

Techniques.

- ✓ Size
- ✓ Contrast
- ✓ Positioning
- ✓ Color
- ✓ Typography
- ✓ Spacing

Importance.

- ✓ Guides user attention.
- ✓ Improves readability.
- ✓ Supports decision-making.

Example: Headings are larger and bolder than body text.

11. Aesthetic and Minimalist Design.

Interfaces should be visually appealing while containing only essential elements.

Characteristics.

- ✓ Clean layouts.
- ✓ Balanced spacing.
- ✓ Limited visual clutter.

Importance.

- ✓ Improves focus.
- ✓ Enhances user satisfaction.
- ✓ Creates professional appearance.

Example: A search engine homepage with only a search bar and essential navigation options.

12. Flexibility.

Flexibility allows users to interact with a system in different ways according to their preferences and skill levels.

Characteristics.

- ✓ Keyboard shortcuts.
- ✓ Multiple navigation options.
- ✓ Customization features.

Importance.

- ✓ Supports novice and expert users.
- ✓ Improves usability.

Example: Allowing users to switch between light mode and dark mode.

13. Responsiveness.

Responsiveness ensures that interfaces adapt smoothly to different devices and screen sizes.

Characteristics.

- ✓ Mobile-friendly layouts.
- ✓ Flexible grids.
- ✓ Adaptive content.

Importance.

- ✓ Provides consistent experiences.
- ✓ Increases accessibility.

Example: A website automatically adjusting its layout on smartphones, tablets, and desktops.

14. Affordance.

Affordance refers to design elements that suggest how they should be used.

Characteristics.

- ✓ Buttons look clickable.
- ✓ Sliders appear draggable.
- ✓ Links appear distinguishable.

Importance.

- ✓ Improves usability.
- ✓ Reduces confusion.

Example: A raised button indicates that it can be pressed.

15. Emotional Design.

Emotional design focuses on creating positive emotional responses in users.

Characteristics

- ✓ Attractive visuals.
- ✓ Friendly interactions.
- ✓ Delightful animations.

Importance.

- ✓ Builds emotional connections.

- ✓ Increases engagement.
- ✓ Improves brand loyalty.

Example: Celebratory animations after completing a task in an application.

16. Credibility and Trust.

Users should feel confident and secure while interacting with a product.

Characteristics.

- ✓ Professional appearance.
- ✓ Transparent communication.
- ✓ Secure interactions.

Importance.

- ✓ Builds trust.
- ✓ Encourages continued use.

Example: Displaying security badges on online payment pages.

17. Information Architecture.

Information Architecture (IA) is the process of organizing and structuring content logically.

Characteristics.

- ✓ Clear categorization
- ✓ Effective navigation
- ✓ Logical content hierarchy

Importance.

- ✓ Helps users find information quickly.
- ✓ Improves navigation efficiency.

Example.

Organizing an e-commerce website into categories such as Electronics, Clothing, and Home Appliances.

1.5. HUMAN-CENTERED DESIGN

What is Human-Centered Design?

- ★ **Human-Centered Design (HCD)** is a design philosophy and problem-solving approach that places **people (users)** at the center of the entire design and development process.
- ★ Instead of designing products based on what designers or developers think users need, HCD begins by understanding the users—their goals, needs, abilities, behaviors, challenges, and environments. Every design decision is made to improve the user's experience.

The primary aim of Human-Centered Design is to create products, systems, or services that are:

- **Useful** – They solve real user problems.
- **Usable** – They are easy to learn and operate.
- **Accessible** – They can be used by people with different abilities.
- **Desirable** – They are enjoyable and satisfying to use.

Definition (ISO 9241-210):

Human-Centered Design is an approach to interactive system development that focuses on making systems usable and useful by involving users throughout the design process and applying human factors, ergonomics, and usability knowledge.

Why is Human-Centered Design Important?

Many products fail because they are designed based on assumptions instead of real user needs.

Example:

Imagine a college develops a mobile application.

Without Human-Centered Design

Developers decide the features themselves.

Problems:

- Students cannot find attendance quickly.
- Timetable is hidden inside multiple menus.
- Buttons are too small.
- Login process is complicated.

Result:

- Students stop using the app.

With Human-Centered Design

Before designing:

- Designers interview students.
- Observe how they currently access information.
- Ask about common problems.

Students say:

- Attendance should appear on the home page.
- The timetable should be available in one click.
- Notifications should remind them about assignments.

The final app becomes:

- Easier to use
- Faster
- More useful
- More satisfying

Characteristics of Human-Centered Design:

1. User-Focused: The user's needs always come first.

Instead of asking:

"What technology should we build?"

HCD asks:

"What problem does the user have?"

Example:

Instead of adding many unnecessary features to a calculator app, designers focus on:

- Large buttons
- Clear display
- Quick calculations

2. Empathy: Empathy means understanding the user's emotions, frustrations, motivations, and expectations.

Designers imagine: "If I were the user, what would I expect?"

Example: While designing an app for elderly users:

Designers consider:

- Poor eyesight
- Limited technical knowledge
- Difficulty remembering passwords

Solutions:

- Large text
- Voice assistance
- Simple navigation

3. User Participation

Users actively participate throughout development. They:

- Answer surveys
- Attend interviews
- Test prototypes
- Give feedback

Instead of guessing what users want, designers ask users directly.

4. Iterative Design

Design is never finished after the first version.

It follows this cycle:

Design
↓
Prototype
↓
Test
↓
Improve
↓
Repeat

Every version becomes better than the previous one.

5. Evidence-Based Decisions

Design decisions are based on:

- User research
- Observations
- Data
- Testing

Not personal opinions.

Principles of Human-Centered Design

Principle 1: Understand the Context of Use.

Know:

- Who the users are
- Where they use the product
- Why they use it
- When they use it

Example: Food delivery app:

- Used while travelling
- Used in poor internet conditions
- Used with one hand

Principle 2: Involve Users.

Users participate throughout development.

Example: College students test every version of the learning portal.

Principle 3: Continuous Evaluation

- Every design decision is tested.
- Bad designs are corrected immediately.

Principle 4: Address the Whole User Experience: Not only the interface.

Also consider:

- Performance
- Emotions
- Accessibility
- Satisfaction
- Trust

Principle 5: Multidisciplinary Team: HCD involves different experts:

- UX Designers
- UI Designers
- Developers
- Psychologists
- Marketing experts
- Domain specialists

Everyone contributes.