

# | HCI Topics - Jaish Khan

## Human Computer Interaction

The study and design of how people interact with computers. It aims to create systems that are efficient, user-friendly, and accessible.

## Importance of HCI

- *Improves User Experience*: Makes systems easy and enjoyable to use.
- *Boosts Productivity*: Helps users complete tasks faster with fewer errors.
- *Increases Accessibility*: Designs inclusive systems for all users.
- *Encourages Adoption*: Users are more likely to use tech that's intuitive.

## How is HCI applied?

By user research, usability testing, designing intuitive interfaces, prototyping and interaction design and evaluating user satisfaction.

## Why is HCI important?

Good HCI leads to better products, happier users, and successful technology.

## Usability Engineering Lifecycle

It's a structured process focused on ensuring a product is usable and user-friendly from start to finish and helps integrate usability into every phase of development.

## What are the steps to Usability Engineering Lifecycle?

1. **Know User / Requirements**: Understand users and what they want.
2. **Conceptual Design / Prototyping**: High-level design ideas, basic prototypes.
3. **Detailed Design**: Specify UI details, look & feel.
4. **Implementation**: Build the product.
5. **Evaluation**: Test its usability.

6. **Deploy / Maintain:** Release and gather feedback for next iteration.

## User Interface Designing

Designing the look, feel, and interactivity of the user-facing part of a system.

### How is User Interface Designing done?

1. Understand Users & Requirements.
2. Plan the structure (Information Architecture).
3. Create Sketch & Wireframe.
4. Create Prototype (interactive mockups).
5. Visual Design & Styling (colors, fonts, etc.).
6. Testing & Iteration (based on user feedback).

## Ergonomics

The science of designing the work environment and tools to fit the user, ensuring comfort, efficiency, and reducing risk of injury.

### What is Visual Design?

Using visual elements (color, type, layout, imagery) to improve the look and feel of a UI.

## Typography

Arranging text for readability, and visual appeal in UI.

### Main Fonts

1. **Sans-serif** → Clean, modern, no extra strokes (serifs).
  - ✓ Great for UI, web apps, mobile apps
2. **Serif** → Decorative strokes at the ends of letters.
  - ✓ Good for long-form reading (e.g., blogs, print)

3. **Monospace** → Each character takes up the same width.

✓ Good for code editors, developer tools

### 🔗 Font Styles for readability

1. **Font Size** → 12px, bigger for headings.
2. **Bold** → For emphasis or headings.
3. **Italics** → To highlight text.
4. **Line Height** → 1.5× the font size.
5. **Contrast** → Use *high contrast* (black text on white).
6. **Alignment** → Left-aligned.

### 🔗 How to do Logo Design?

1. Understand the Brand
2. Choose the Logo Type (only-text, only-icon or both)
3. Pick the Right Fonts & Colors Scheme
4. Sketch & Conceptualize
5. Design Digitally (in Illustrator)
6. Keep it Simple & Scalable
7. Get Feedback & Iterate

### ✍ Efficiency of Websites

Users can quickly and easily complete tasks with minimal effort and errors.

### 🔗 How to improve website efficiency?

Fast loading times

Clear, intuitive navigation

Minimal steps to complete actions

Responsive design for all devices

Consistent, familiar UI elements

### 🔗 What to know about the user before designing a website?

1. **User Goals** → What does the user want to do?

2. **User Demographics** → Age, gender, location, education etc.
3. **Technical Skill Level** → Are they beginners, intermediate, or advanced users?
4. **Mental Models** → How do they expect the interface to behave?
5. **Pain Points & Frustrations** → What challenges do they face with current solutions?
6. **Context of Use** → When, where, and how will they use the product?

## Sketch

A quick, rough drawing of interface ideas to explore **layout, flow, and structure** before moving to digital design. It helps visualize concepts and solve design problems early.

### How to Sketch?

1. Start with Paper or Whiteboard
2. Sketch one screen/interaction at a time
3. Use boxes, arrows, symbols etc.
4. Keep It Simple
5. Iterate Quickly

## Wireframe

A blueprint of a web or app interface. It shows **structure, content placement, and functionality**—without colors, images, or detailed styles.

### How to Wireframe?

1. Define the Purpose
2. Choose a Tool (Figma)
3. Draw the Layout
4. Focus on structure, not design