UI UX Design

Short notes for beginners · Figma · design students · freshers

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I. UI and UX Basics

- **UX (User Experience)** = how easy, useful and enjoyable a product feels from start to end. **UI (User Interface)** = the visible part: layout, colours, type, buttons, icons.
- A product can look beautiful (good UI) and still be confusing (bad UX). Good design needs both, and it starts with the user problem, not the screen.

➤ UI vs UX

Point	UX design	UI design
Focus	Problem solving, flow, usability	Look, feel, interaction details
Questions	Who is the user? What do they need?	How should it look and respond?
Deliverables	Research, personas, flows, wireframes	Mockups, style guide, components
Tools	Figma, FigJam, Miro, Maze	Figma, Adobe XD, Sketch
Measured by	Task success, time on task, errors	Consistency, clarity, visual polish

- **Design Thinking** has 5 stages: Empathize → Define → Ideate → Prototype → Test. It is iterative, so you can go back to any stage.

EXAMPLE Food app users abandon checkout. UX finds out why (too many form fields). UI redesigns the form with clear labels, a visible button and inline errors.

2. UX Process and Research

- **User research** methods: interviews, surveys, field study (observation), competitor analysis, usability test. Qualitative = why (interview), quantitative = how many (survey, analytics).
- **Persona**: a fictional but data based user (name, age, goals, pain points, behaviour). **Empathy map**: what the user Says, Thinks, Does and Feels.
- **User journey map**: stages the user goes through (awareness, consideration, purchase, support), with their emotions and pain points at each stage.
- **User flow**: step by step path to complete a task, drawn with boxes and arrows (start → screens → decisions → end). **Sitemap**: tree of all pages of the product.
- **Information Architecture (IA)**: organising content so people find it. Use **card sorting** (users group labels) and **tree testing** (users find items in the menu) to check it.

- Problem statement format: [User] needs [need] because [insight]. Then run a brainstorm (Crazy 8s: 8 ideas in 8 minutes) and choose by impact vs effort.

Research type	Method	When
Generative	Interviews, field study	Before design, to find problems
Evaluative	Usability test, A/B test	After prototype, to find issues
Behavioural	Analytics, heatmaps	Live product, see what users do
Attitudinal	Surveys, NPS	Understand opinions and satisfaction

3. Wireframes and Prototypes

- **Wireframe** = a basic blueprint of a screen showing structure and content placement, without colours or images. Cheap to change, so test ideas here first.

Level	Looks like	Used for
Low fidelity	Sketch or grey boxes	Quick ideas, early feedback
Mid fidelity	Digital grey layout, real text	Layout and flow review
High fidelity	Final colours, type, images	Visual approval, dev handoff

- **Mockup** = static, high fidelity design. **Prototype** = clickable, simulates the real interaction (taps, transitions) for testing and demos.
- Start with mobile first: small screens force you to prioritise content. Then scale up to tablet and desktop.
- Sketch on paper (4 to 6 versions), pick the best, build in Figma, link screens with prototype flows, test with 5 users, repeat.

REMEMBER Do not polish early. Low fidelity gets honest feedback because nobody feels bad about changing it.

4. Visual Design Principles

- **Visual hierarchy**: the most important thing should be seen first, using size, weight, colour, contrast and position. **Contrast** separates elements. **Alignment** and **proximity** show relationships.
- **White space** (negative space) gives breathing room and improves focus. It is not wasted space. **Consistency**: same button looks and acts the same everywhere.
- **Gestalt laws**: proximity (close = related), similarity, closure, continuity, figure-ground, common region.
- **Colour**: use a primary colour, a secondary, neutrals and status colours (success green, warning amber, error red). The **60-30-10 rule**: 60% neutral, 30% secondary, 10% accent.
- **Typography**: 1 or 2 font families, a clear type scale, body text about 16 px, line height 1.4 to 1.6 times font size, line length 50 to 75 characters.

EXAMPLE Type scale with ratio 1.25 starting at 16 px: 16 → 20 → 25 → 31 → 39 px. Use the steps for body, subheading, heading, title, hero.

- Use real content, not lorem ipsum, to find layout problems early. Icons must be from one consistent set (same stroke, same size, same corner style).

5. Layout, Grids and Accessibility

- **8-point grid**: sizes and spacing in multiples of 8 (8, 16, 24, 32...). Gives rhythm and easy handoff. Text can use 4-pt steps.

Device	Typical width	Columns	Margin / gutter
Mobile	360 to 480 px	4	16 / 16
Tablet	768 to 1024 px	8	24 / 24
Desktop	1280 px and above	12	Auto / 24

- **Touch target**: minimum 44 x 44 pt (Apple) or 48 x 48 dp (Material) with space between targets. Keep primary actions in the thumb zone at the bottom.
- **WCAG contrast**: normal text at least 4.5:1 (AA), large text and UI parts 3:1, AAA is 7:1. Grey #767676 on white is about 4.5:1, the lightest grey that passes AA.
- Accessibility basics: do not use colour alone to show meaning, add alt text, visible focus states, labels on inputs, support text resize, and keyboard navigation.
- Dark mode: do not just invert colours. Use dark grey (not pure black), lower saturation and re-check contrast.

6. Figma Basics

- Figma is a browser based design tool with real time collaboration. Files contain pages, pages contain **frames** (artboards for each screen). Everything is a layer.

Key	Action	Key	Action
V	Move	F	Frame
R	Rectangle	O	Ellipse
T	Text	P	Pen
Shift+A	Auto layout	Ctrl+Alt+K	Create component
Ctrl+G	Group	Ctrl+D	Duplicate
Shift+1	Zoom to fit	Shift+2	Zoom to selection

- **Auto layout**: frames that resize with content (padding, gap, direction). Best for buttons, lists, cards, navbars. **Constraints**: how a layer behaves when its parent frame is resized.
- **Components**: reusable elements, edit the main component and all instances update. **Variants**: states in one component (default, hover, pressed, disabled).
- **Styles and variables**: save colours, text, effects and tokens once and reuse. **Prototype** tab: connect frames, set triggers (on click) and animations (smart

animate).

- **Dev Mode** lets developers inspect spacing, CSS and export assets. Useful plugins: Unsplash, Iconify, Stark (contrast), Content Reel.

7. Design Systems and Usability

- **Design system** = style guide + component library + rules. Built with Atomic Design: atoms (button, input) → molecules (search bar) → organisms (header) → templates → pages. Examples: Material Design, Apple HIG.
- **Design tokens** store values like color-primary or space-16 so design and code stay in sync.

➤ Nielsen's 10 usability heuristics

- Visibility of system status • Match with the real world • User control and freedom • Consistency and standards • Error prevention.
- Recognition rather than recall • Flexibility and efficiency • Aesthetic and minimalist design • Help users recover from errors • Help and documentation.

➤ Laws of UX

- **Hick's law**: more choices = longer decision time, $T = b \log_2(n+1)$. **Fitts's law**: bigger and closer targets are faster to hit. **Jakob's law**: users expect your product to work like others they know. **Miller's law**: people hold about 7 ± 2 items, so chunk information.

EXAMPLE Hick's law: 7 menu options → $\log_2(8) = 3$ units. Cut the menu to 3 options → $\log_2(4) = 2$ units, so the decision is about one third faster.

8. Testing, Metrics and Handoff

- **Usability testing**: give real users tasks, watch silently, note where they struggle. 5 users find about 85% of problems in a round (Nielsen), so test small, fix, repeat.
- **A/B testing** compares two versions on live traffic. **SUS** (System Usability Scale) gives a 0 to 100 score, average is about 68. Also track task success rate, time on task, error rate and conversion.
- **Handoff**: name layers clearly, use components and styles, add states (empty, loading, error), export assets (SVG, PNG @1x @2x @3x) and write short notes on behaviour.
- Typical team: product manager, UX researcher, UX / UI designer, developer. Share work early. Take feedback on the design, not on you.
- Portfolio: 3 to 4 case studies showing problem, process, your role, final screens and result. Process matters more than pretty screens.

9. Most Asked Questions (practice)

1. Difference between UI and UX. Explain the design thinking process.
2. What are personas, empathy maps and user journey maps?
3. Low, mid and high fidelity wireframes: when to use which?
4. Explain visual hierarchy, Gestalt laws and the 60-30-10 rule.
5. What is auto layout, a component and a variant in Figma?
6. List Nielsen's 10 heuristics with an example each.
7. Explain Hick's, Fitts's and Jakob's laws.
8. What is WCAG contrast and why does accessibility matter?
9. How do you run a usability test? How many users do you need?

10. Walk through one project from problem to final design.

TIP Interviews: be ready to explain why you made each decision. Keep 2 case studies ready and a Figma file you can share live.