
Prototyping through Wireframes

— By Engr. Dr. Sidra Sultana —

HCI Outline

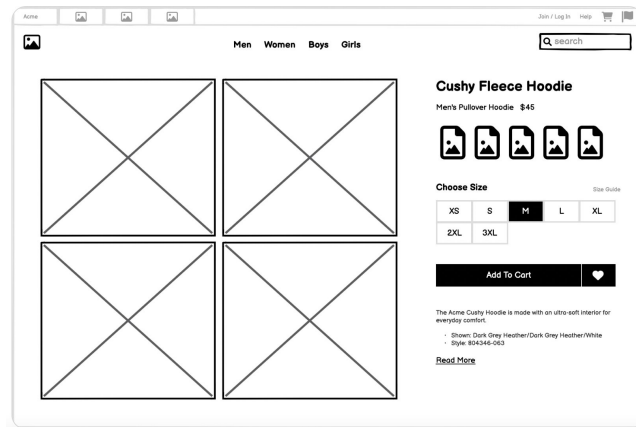
1. Introduction to HCI
2. Basic principles and guidelines of HCI
3. User-centered design and usability testing
4. Designing Effective User Interfaces
5. User interface design principles and guidelines
6. User interface prototyping

7. Prototyping through Wireframes

8. Designing for accessibility and mobile devices

What is a wireframe?

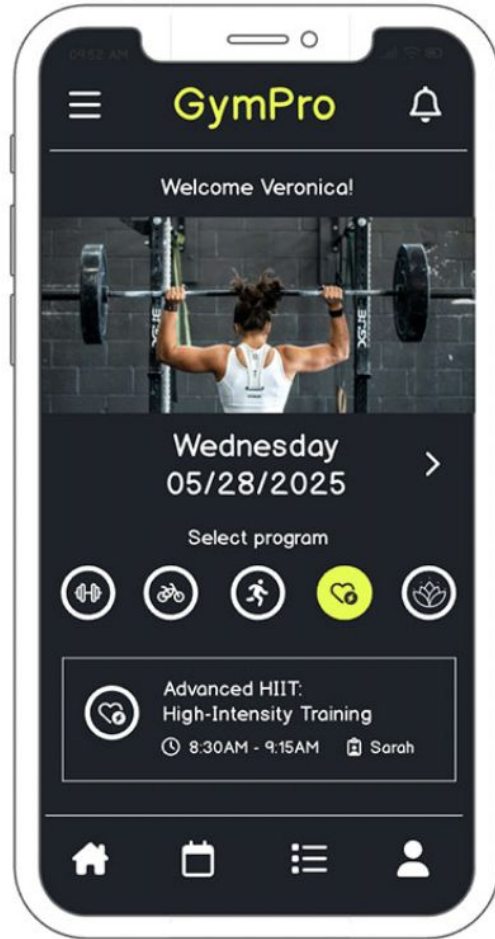
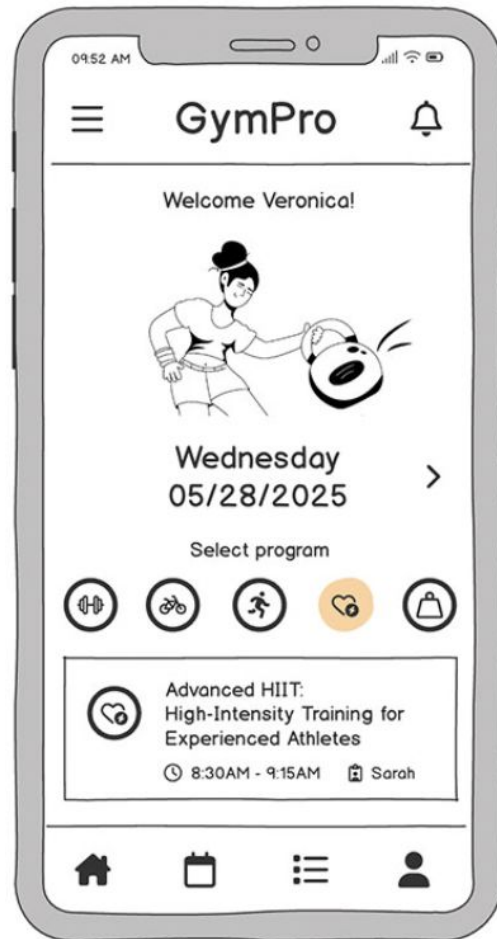
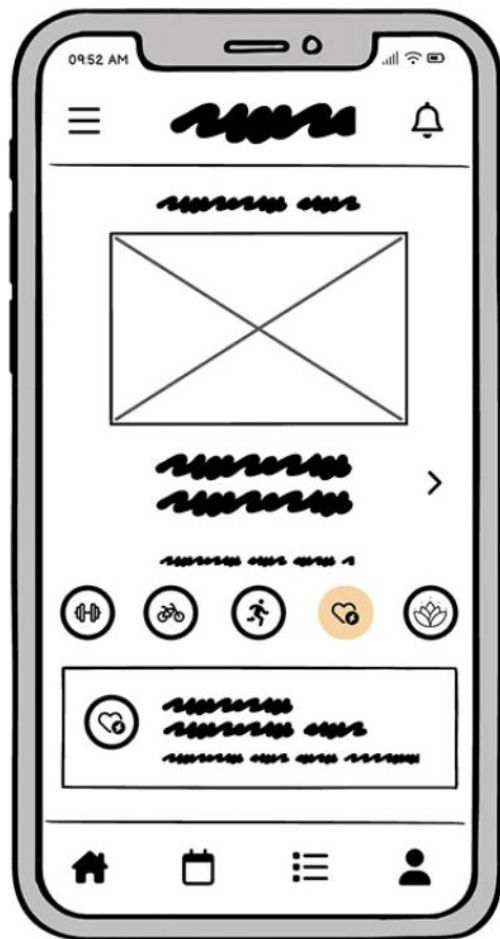
- A wireframe is the skeleton of your digital project.
- Think of it as the foundation for your website, app, or dashboard.
- It focuses on layout, and content placement—not on colors, fonts, or any visual polish.



The benefits of wireframes

Wireframes are super helpful because they directly address common design challenges:

1. **Clarify structure:** They help you pinpoint what major components—like headers, navigation, and content areas—should be included. This clarification can ease anxiety over the “big picture” of your site, app, or dashboard.
2. **Communicate ideas:** Wireframes serve as a simple language to share early concepts with teammates, stakeholders, or clients. It’s much easier to discuss functionality and flow when you’re not distracted by design details like colors and fonts.
3. **Improved feedback:** When there’s something tangible to look at, it becomes easier for key stakeholders to provide meaningful feedback. They have something to comment on, rather than vague ideas to comment about. Best of all...wireframes take care of those impossibly long page requirements.
4. **Save time and money:** By identifying problems early, wireframes prevent costly revisions and code rewritings. They’re quick to create and modify—making sure you don’t invest too much into details before the idea is fully baked.
5. **Faster path to launch:** Wireframes help you confirm ideas before you commit to building. Instead of spending weeks developing something that might miss the mark, you can sketch it out, share it, and quickly iterate.



Who is responsible for creating wireframes?

The primary reason for wireframing is to generate and communicate ideas, so making wireframes isn't limited to any single role or specialization in an organization.

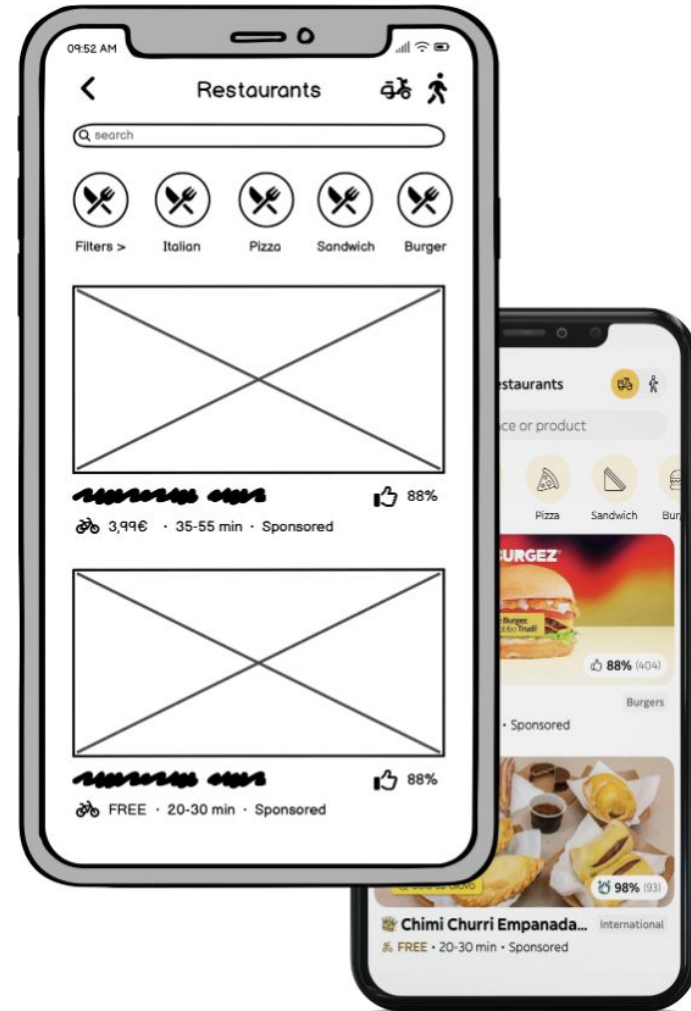
Here are some roles that commonly make and use wireframes:

1. **Founders and business owners** use them to communicate or pitch their product or app ideas to investors or product teams.
2. **Product Managers and Business Analysts** use wireframes to translate requirements into visual specifications for designers or developers.
3. **Developers** use them to sketch out user interfaces when they don't have a designer or when working directly with clients.
4. **UX Designers** use them to explore and refine concepts before moving to high-fidelity.
5. **Marketers and Copywriters** use wireframes to explore landing page concepts and visualize the placement and size of copy on the page.

Types of wireframes: low-fidelity vs. high-fidelity

Wireframes come in different levels of detail, often described as “low-fidelity” and “high-fidelity.”

Fidelity refers to how closely the wireframe resembles the final product.



Low-fidelity wireframes

What they are: Basic sketches or block diagrams.

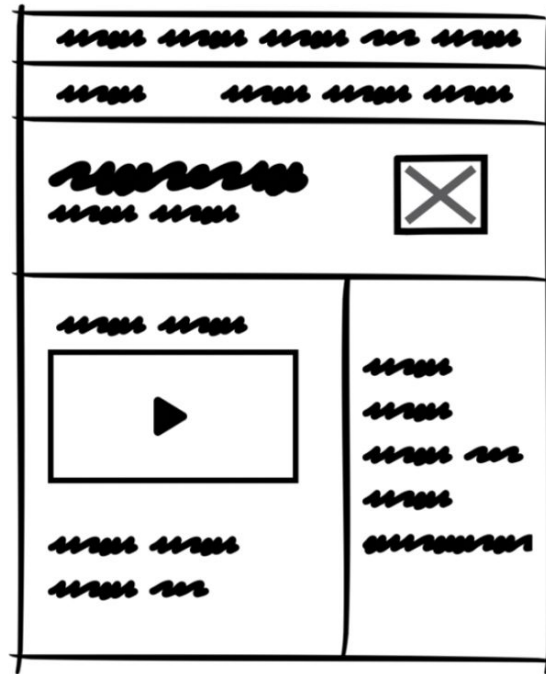
Focus: Emphasize layout, information hierarchy, and overall structure.

Appearance: Typically simple black-and-white or grayscale, keeping visual distractions to a minimum.

Perfect for: Teams who need to validate ideas before jumping into code or high-fidelity design tools like Figma.

Low-fidelity wireframes cont'd

- A low-fidelity wireframe (also referred to as lo-fi wireframe) is a simple, rough sketch of a user interface.
- It's not about visual design or interactivity—it's all about layout, structure, and functionality.
- Think of it as the digital equivalent of drawing on a napkin.
- It uses basic shapes like boxes and lines to represent things like buttons, text, and images, without worrying about colors, fonts, or brand styling.
- The goal is to communicate ideas quickly and clearly, so you can focus on how things work, not how they look.
- Your lo-fi wireframes are the starting points—the rough and ready versions of your concept.



High-fidelity wireframes

What they are: More detailed representations that include placeholder text, images, and even interactive elements.


Focus: While they're closer to what the final product will look like, they still prioritize structure over complete visual design.

Appearance: Often resemble the finished product more closely, which helps you to visualize content placement and how on-screen elements interact with each other.

Perfect for: Teams preparing for design handoff, user testing, or refining layouts before moving to prototypes.

High-fidelity wireframes cont'd

- A high-fidelity wireframe (also referred to as hi-fi wireframe) is a detailed, polished wireframe that more accurately represents your user interface.
- Unlike low-fidelity wireframes—which look more like rough sketches—high-fidelity ones are closer to the final design in both appearance and interactivity.
- Think of these as evolving sketches that are beginning to mimic real interactions without being the final design.



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Choose a password*

Please provide a password of at least 8 characters.

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High-fidelity wireframes cont'd

Unlike lo-fi wireframes, this more detailed approach includes:

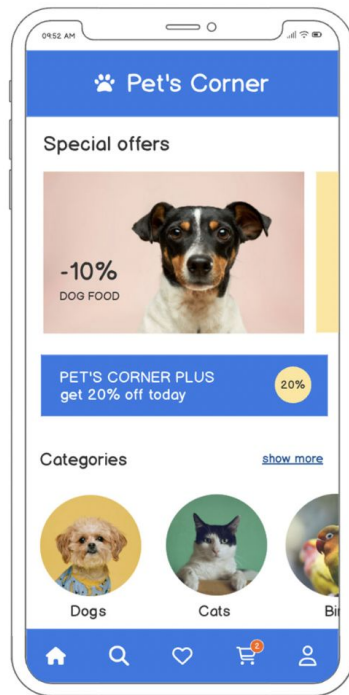
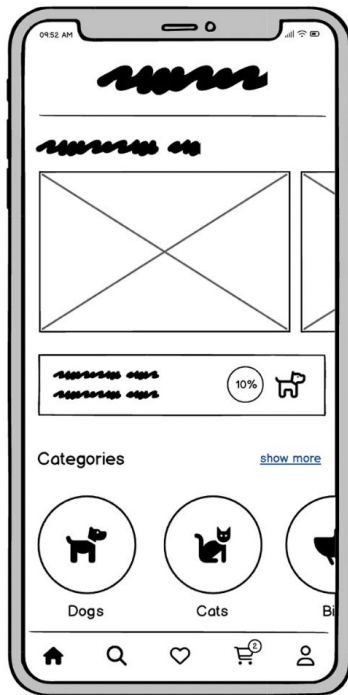
- Real content (instead of lorem ipsum placeholder text)
- Accurate layout and spacing
- Typography, colors, and brand elements (it feels closer to your finished product)
- Responsive behavior for different screen sizes

Wireframe vs prototype

	Wireframe (lo-fi design)	Prototype (hi-fi design)
Purpose	Structure and layout	Close simulation
Level of detail	Low	High
Interactivity	Minimal	Yes

Wireframe vs prototype

- Prototypes are high-fidelity designs intended to pass as a realistic representation of the final product.
- The viewer of a prototype should feel as if they're in front of a real product and any interaction with it should mimic the intended behavior.
- A wireframe, in contrast, is like a sketch of a digital product.
- It doesn't include all of the details of a final product and it wouldn't be mistaken for one.



Wireframe vs prototype

- While prototypes let users engage with a close simulation, wireframes are all about building that essential framework quickly and efficiently.
- Because they're faster to create and modify, wireframes should always be created before prototypes.

How to create a great wireframe in 5 steps

Creating an effective wireframe isn't about getting every detail right—it's about planning the user's journey and ensuring that your ideas are clearly communicated. Here's a simple 5-step approach:

1. Define the goals
2. Sketch layouts
3. Map navigation
4. Add key elements
5. Iterate and test

1. Define the goals

- Like with any project, you need to understand the why behind what you're building.
- Before you start working on your wireframe, you need to understand what your users are trying to achieve on each screen.
- What actions should they be taking?
- What problems are you solving for them?

2. Sketch layouts

- Get your ideas out of your head and onto screen (or paper).
- It's okay to start rough.
- You can use boxes to represent images, lines for text, and simple shapes for buttons.
- Let your ideas flow without getting stuck in the details.

3. Map navigation

- Put yourself into the mind of your user; imagine their journey.
- Visualize how they'll move from one screen to another.
- Consider paths, links, and the overall flow of the app or website.
- Make the process feel smooth for somebody making their way around your product.

4. Add key elements

- Think of essential components like headers, calls-to-action (CTAs), search bars, and menus.
- Add these to your layout in a way that makes sense.
- If you have a hard time finding it, odds are your user will have a similar experience.

5. Iterate and test

- Share your wireframes with teammates early in the process.
- Their feedback will help you refine the layout and ensure the UX is functional and intuitive.
- Sometimes it can be difficult to get outside of your comfort zone, but honest feedback from real people is the best way to improve.

Wireframe design checklist

- What screens are essential to meet user needs
- User flow through conversion funnels
- Usability considerations, including navigation and organization
- Main goals and user flows for each screen
- Key UI design elements, plus content and interactive features on each screen
- How design components fit together to form screen templates

Tips for better wireframing

- **Start simple:** Resist the urge to perfect every element right away. A simple structure is your best friend in the early stages.
- **Focus on usability:** Center your design around the users' needs, shaping the interface around essential actions.
- **Use real content early:** Even rough headlines or CTAs can ground your design better than “Lorem Ipsum” copy.
- **Ask for feedback:** Remember, wireframes are communication tools, not just a design step. Gather input from people you trust to ensure your ideas are coming across clearly.
- **Don't over-polish:** Fun fact—it's perfectly fine for wireframes to look messy!

Wireframes put usability first

Focusing creative attention on elements that are essential to the user experience, including:

- User flows and scenarios
- UX design fixes for potential pain points
- Navigation and wayfinding functionality
- Information hierarchy built into screen templates

Real-world wireframe examples

Signup form wireframe - A clean design with clearly defined input fields, a submit button, and minimal distraction so users can easily sign up.

Sign Up

* Name:

* Email:

* Password: ?

* Re-type password:

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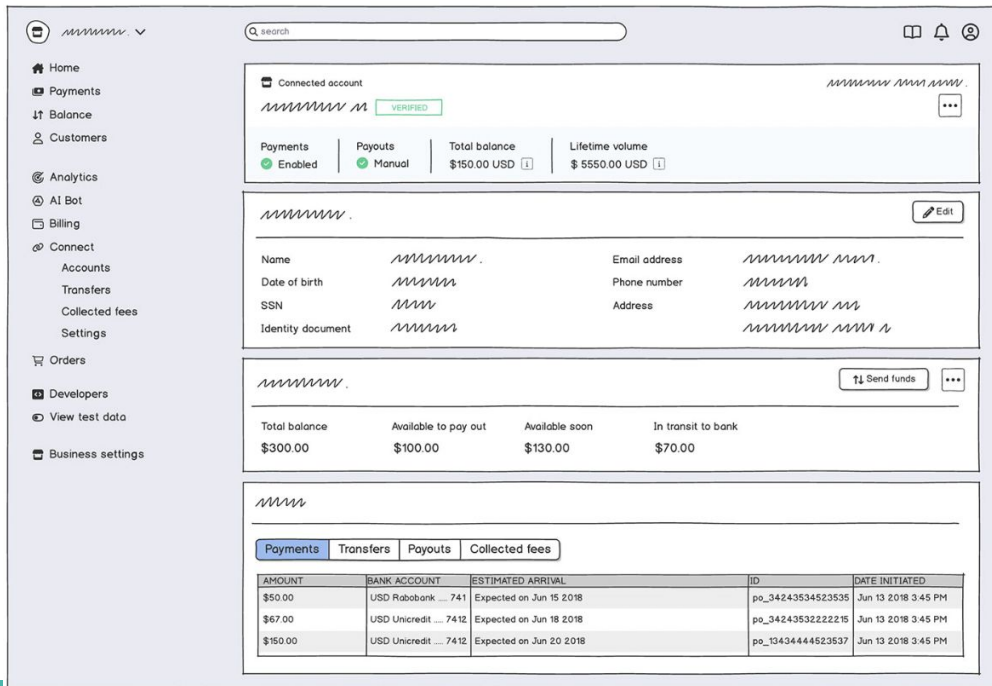
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OR

Sign up using your account with

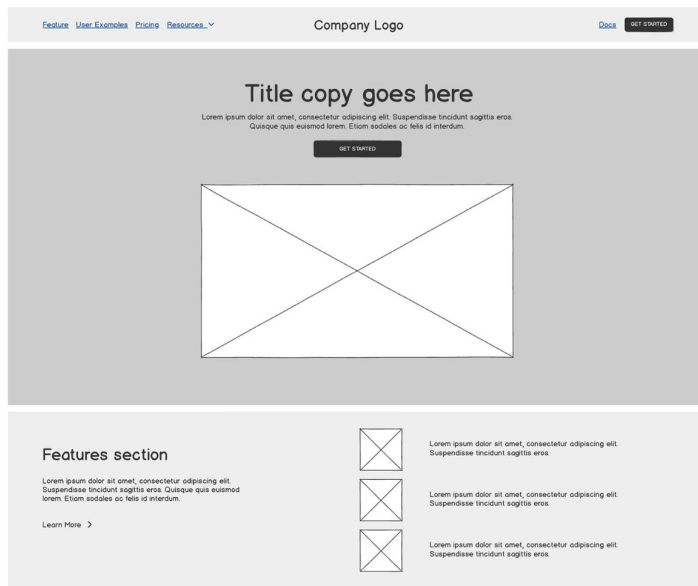
App dashboard wireframe

Consider a dashboard with a sidebar for navigation, content cards that highlight key data points, and a primary action button to encourage engagement.



Homepage wireframe

Imagine a layout with a prominent logo, navigation menu at the top, hero section to grab attention, and a clear CTA.



Exploring wireframing tools

One of the benefits of wireframes is that you can create them using lots of different tools, many of which you already have.

However, there are clear benefits to using a tool that's optimized for wireframing.

The most popular tools for making wireframes are:

- **Pencil (or pen) and paper:** Great for quick sketches.
- **Presentation software:** Tools like PowerPoint or Google Slides can be adapted for simple layouts.
- **Diagramming or whiteboard software:** Excellent for creating process and flow charts.
- **UX prototyping tools:** These help you create more refined designs.
- **Wireframing-specific software:** Optimized for rapid wireframing, making it easy to learn and use right away.

	Pencil/Pen and Paper	Presentation software	Diagramming / Whiteboarding tools	UX prototyping tools	Balsamiq
Minimal learning curve	✓	✓	✓	✗	✓
Basic shapes included by default	✗	✓	✓	✓	✓
User interface controls included by default <i>(no plugins or upgrade required)</i>	✗	✗	✗	<i>varies</i>	✓
No design experience needed	✓	✓	✓	✗	✓
Easily sharable via a web link	✗	<i>varies</i>	✓	✓	✓

Purpose of Prototyping Through Wireframes

- Visualize the structure of an interface early.
- Test usability before investing time and resources in development.
- Clarify requirements among designers, developers, and stakeholders.
- Enable feedback loops through rapid iteration.
- Reduce design risks by validating ideas early.

Benefits

- Fast and inexpensive iteration
- Encourages collaboration
- Improves user understanding
- Helps identify usability issues early
- Acts as documentation for developers

Limitations

- Does not convey the final look or branding
- Might oversimplify interactions
 - Some stakeholders may find them too abstract

Thanks

Any Question