Prototyping 101: The Difference between Low-Fidelity and High-Fidelity Prototypes and When to Use Each

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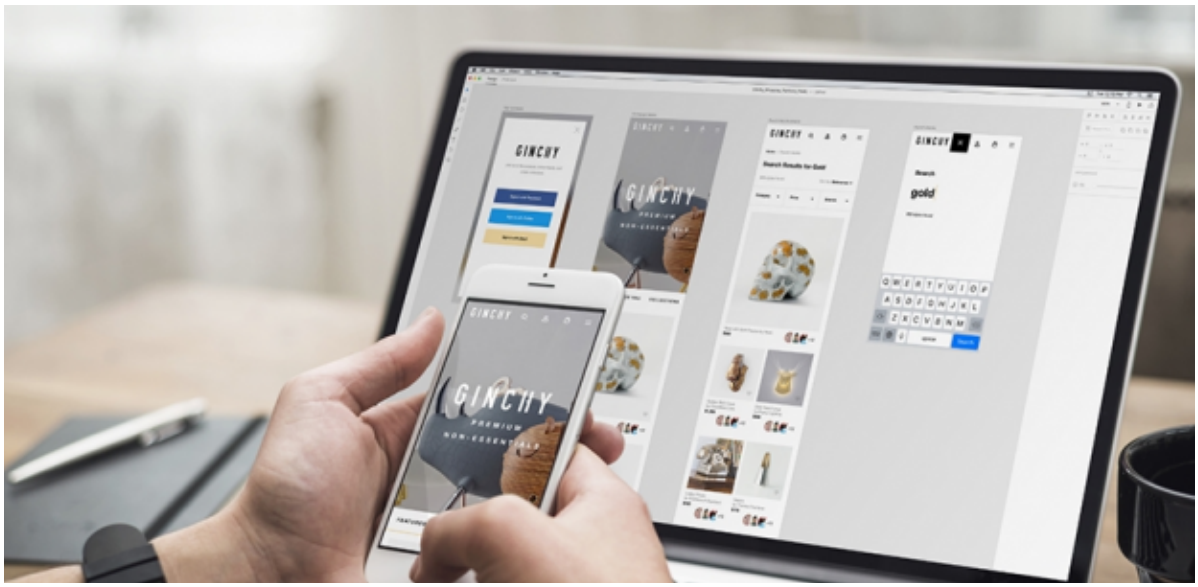
- What techniques can be used to build prototypes?

What a prototype is, and what it isn't

We often hear the term "prototype" in a lot of different contexts. Because of this, there might confusion regarding its meaning.

In its basic form, a prototype is an expression of design intent. Prototyping allows designers to ir designs and see them in action. In the context of digital products, a prototype is a of the final interaction between the user and the interface. Depending on what a product a prototype to do, it can simulate an entire app or just a single interaction.



The primary goal of building a prototype is to test designs (and product ideas) before creating real products. Your product's success is directly related to whether you test it or not. Without any doubt, your design will be tested when the product becomes available on the market and people begin using it. If this is the first-ever testing, there's a high likelihood of negative feedback from users. Therefore, it's always better to collect feedback during the low-risk research phase, and before public release.

The following are two cases that require a prototype:

re the design concept works as intended. In most cases, it's relatively easy to test a ept with real users. Once an interactive version of a product idea is in the hands of real , a product team will be able to see how a target audience wants to use the product. l on this feedback, it's possible to adjust an initial concept.

rmine if people are able use a product. Prototyping is essential for finding and resolving lity issues before launch. Testing reveals areas that need improvement. That's why so product teams create prototypes, have users test them, and iterate the design until it's enough.

is fidelity?

don't necessarily look like final products — they can have different fidelity. The fidelity of refers to how it conveys the look-and-feel of the final product (basically, its level of ealism).

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Low-fidelity (lo-fi) prototyping is a quick and easy way to translate high-level design concepts into tangible and testable artifacts. The first and most important role of lo-fi prototypes is to check and test functionality rather than the visual appearance of the product.

Here are the basic characteristics of low-fidelity prototyping:

- **Visual design**: Only some of the visual attributes of the final product are presented (such as shapes of elements, basic visual hierarchy, etc.).
- **Content**: Only key elements of the content are included.

activity: The prototype can be simulated by a real human. During a testing session, a cular person who is familiar with design acts as a computer and manually changes the n's state in real-time. Interactivity can also be created from wireframes, also known as nected wireframes." This type of prototype is basically wireframes linked to each other e an application like PowerPoint or Keynote, or by using a special digital prototyping tool as Adobe XD.

pensive. The clear advantage of low-fidelity prototyping is its extremely low cost.

It's possible to create a lo-fi paper prototype in just five to ten minutes. This allows uct teams to explore different ideas without too much effort.

borative. This type of prototyping stimulates group work. Since lo-fi prototyping doesn't re special skills, more people can be involved in the design process. Even non-designers lay an active part in the idea-formulation process.

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Paper prototyping and clickable wireframes are two popular low-fidelity prototyping techniques. Both techniques are focused on providing the fastest-possible way to iterate design ideas until both the project team and the stakeholders are happy with the basics.

Paper prototyping

Paper prototyping allows you to prototype a digital product interface without using digital software. The technique is based on creating hand drawings of different screens that represent user interfaces of a product. While this is a relatively simple technique, it can be useful when a product team needs

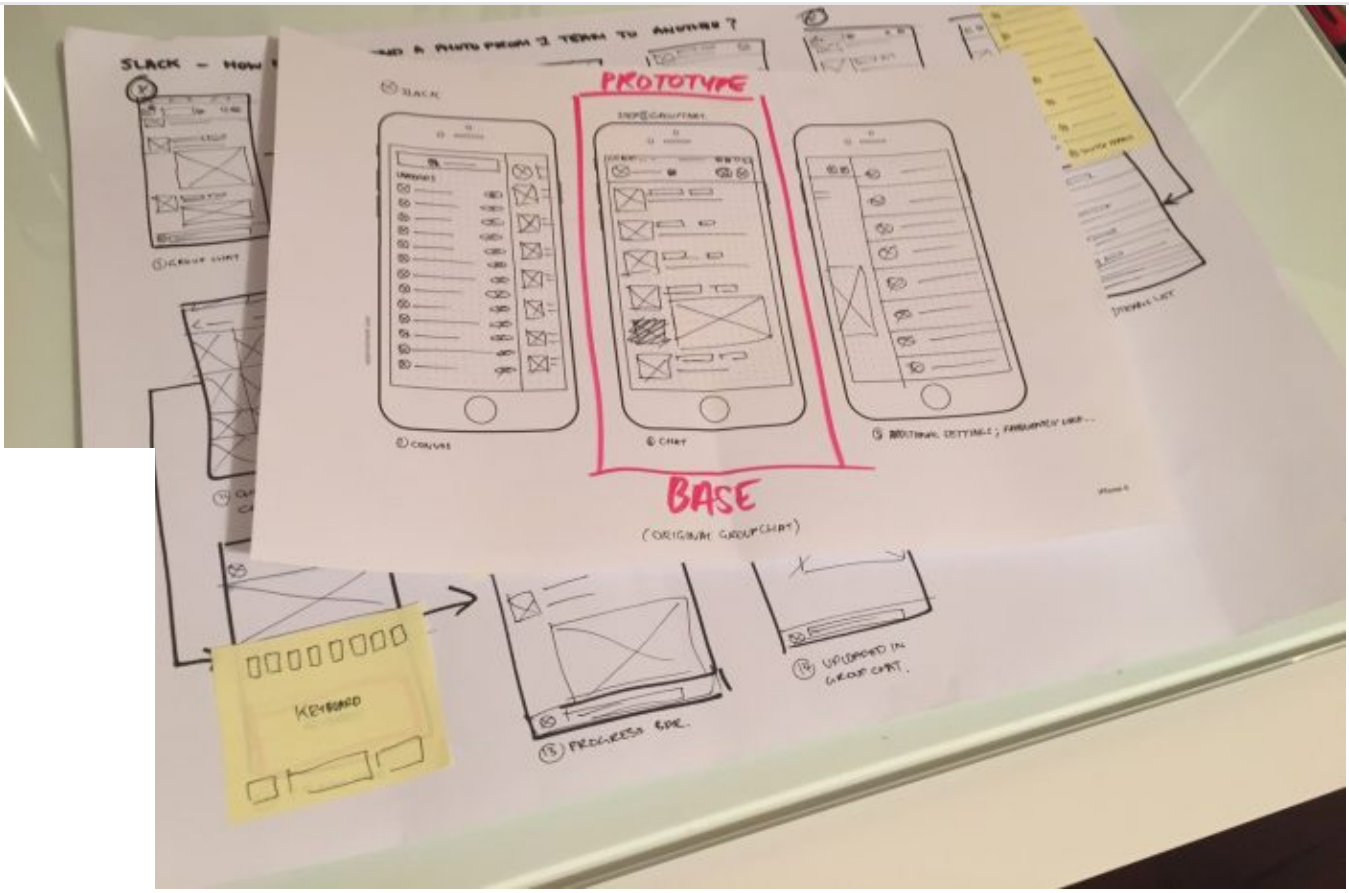
different ideas and refine designs quickly. This is especially true in the early stages of

n the team is trying different approaches.

- **Support rapid experimentation**. Different user interface elements can be drawn, cut out, copied to make extras, and then assembled on a new piece of paper. With paper prototypes, it's also possible to mimic complex interactions, such as scrolling.

can be quickly prototyped and tested. Image source: Vimeo

as documentation. Unlike digital prototypes, paper prototypes can be used as a



ɔes can assist in documentation. Notes and revisions will support designers and developers when they will create luct. Image source: inesnorman

itate adjustments. Using paper prototypes, it's possible to make changes during the g session. If designers need to add a change to the prototype they can quickly sketch a nse or erase part of the design.

to use paper prototyping for usability testing it's important to consider the natural

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A wireframe is a visual representation of a product page that the designer can use to arrange page elements. Wireframes can be used as a foundation for lo-fi prototypes. Clickable wireframes are the simplest form of interactive prototype — created by linking static wireframes together.

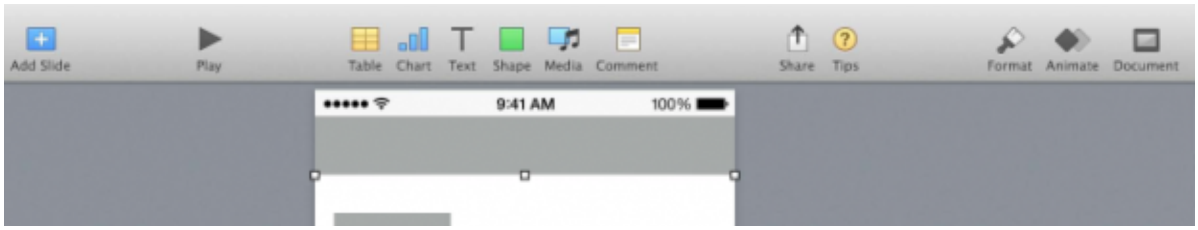
Just like paper prototypes, clickable wireframes often don't look like the finished product, but they do have one significant advantage over paper prototypes — they don't require a separate person to work as a facilitator during the testing session.

The benefits of using this technique include:

ing design deliverables can be reused. During a particular phase of the design process l have wireframes or sketches that represent your product's UI design. In most cases, it's ble to use them to create a clickable flow.

uts can be easily changed. Designers can easily adapt wireframes based on user feedback epeat the testing process. With the right tool, it's easy to create or modify click-through types without spending a lot of extra time.

y prototypes can be created using tools for presentation (such as PowerPoint or



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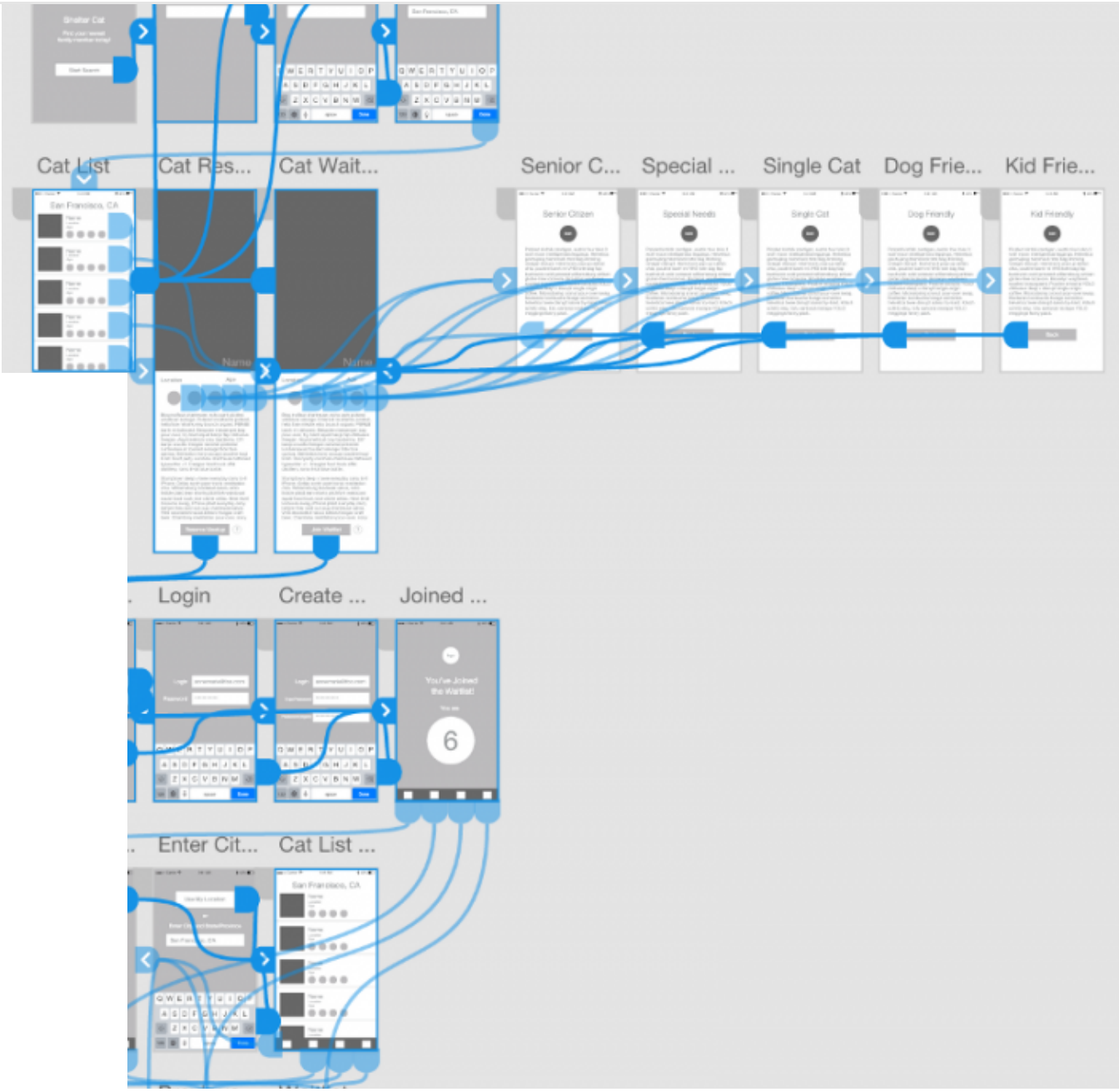
They can also be created using tools made specifically for prototyping. Using such tools has one crucial advantage: you can move from a low-fidelity to a high-fidelity prototype without switching the prototyping tool.



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Visual design: Realistic and detailed design — all interface elements, spacing, and graphics look just like a real app or website.

- **Content:** Designers use real or similar-to-real content. The prototype includes most or all of the content that will appear in the final design.
- **Interactivity:** Prototypes are highly realistic in their interactions.

Pros

- **Meaningful feedback during usability testing**. High-fidelity prototypes often look like real ıcts to users. This means that during usability testing sessions, test participants will be likely to behave naturally — as if they were interacting with the real product.

  bility of specific UI elements or interactions. With hi-fi interactivity, it's possible to test ıical elements like affordance or specific interactions, such as animated transitions and ›interactions.

  buy-in from clients and stakeholders. This type of prototype is also good for ›nstrations to stakeholders. It gives clients and potential investors a clear idea of how a ıct is supposed to work. An excellent high-fidelity prototype gets people excited about design in ways a lo-fi, bare-bones prototype can't.

  er costs. In comparison with low-fidelity prototypes, creating high-fidelity prototypes es higher costs, both temporal and financial.

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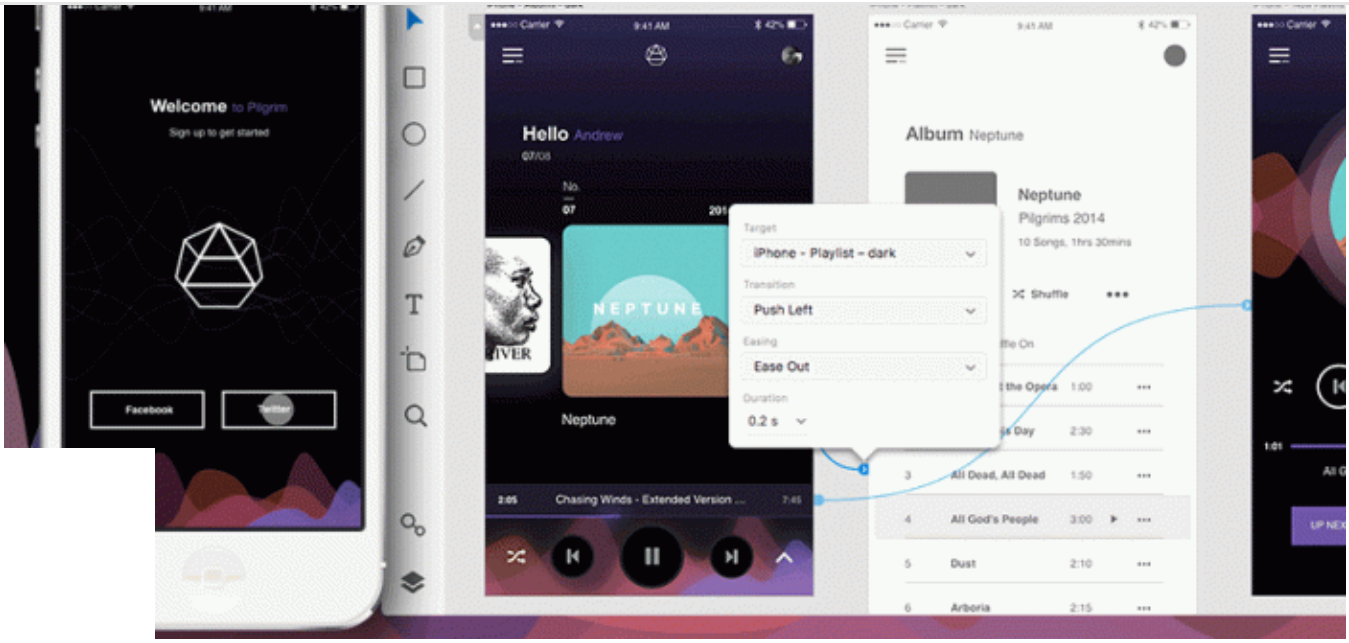

interactive prototype created in Adobe XD and mirrored on an iPhone.

s of using this technique include:

nization for devices. Specialized software allows designers to preview a prototype in a browser or on any desktop or mobile device. This helps UX and UI designers achieve nal layouts on different types of devices.

clarification during usability testing. High-fidelity interactivity frees the designer from g to clarify concepts during testing, allowing the designer to focus on observation nd.

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to understand that prototyping is largely about speed — the goal is not to create reusable code, it's to implement a design in a way that people can interact with as quickly as possible.

Conclusion

If delivering a good user experience is the goal of your project —and it should be — then prototyping must be a part of your UX design process. It's crucial to choose the most effective method of prototyping — minimizing work and maximizing learning — based on your product's

end result will be overall improved design that is based on prototype testing.

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by Nick Babich
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