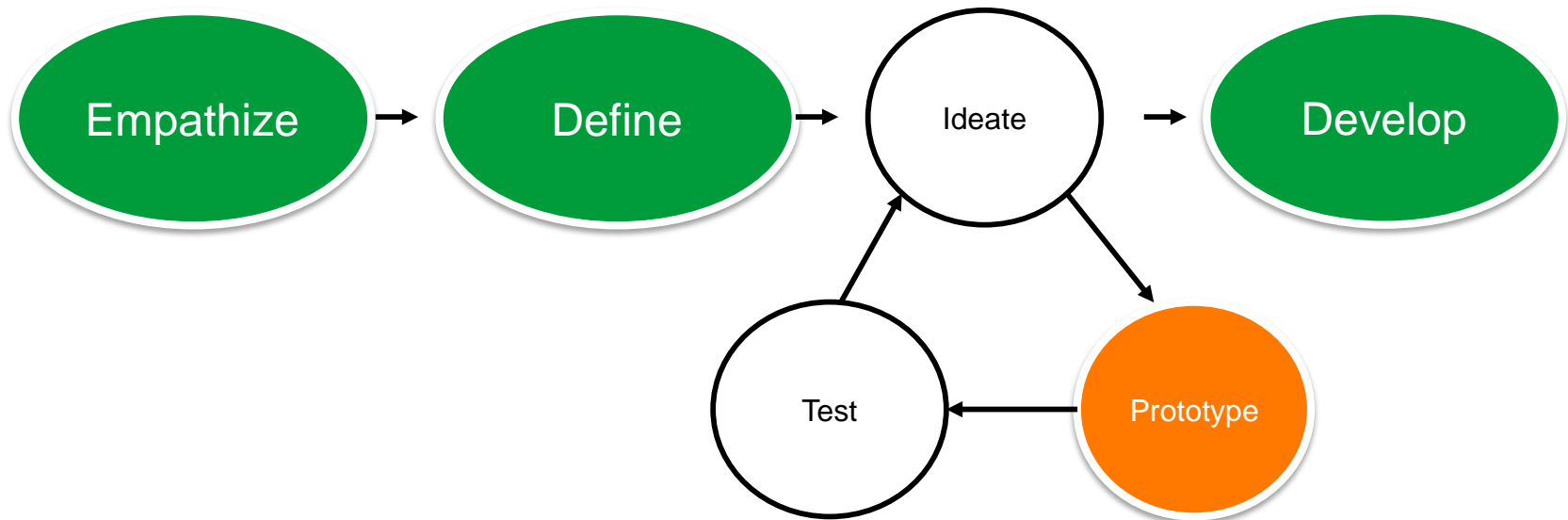# Prototyping

Aqdas Malik

What is prototyping?

- A process of generating preliminary versions of a software (or any product) with an aim to ideate further, gather data from target users, and test its functionality.

- In UCD framework, prototyping is one of the integral tool used for learning as well as evaluating the design and performance.

- Goal is to build a software that is intuitive and easy to use.

Why prototype?

- Detect flaws and failures faster and early
- Identify wrong assumptions and oversights about user needs
- More insights about the context of use
- Enhanced communication among stakeholders
- Support in assessing and choosing among alternatives
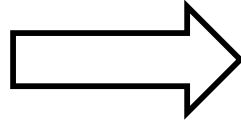- Reduced development costs and time

Prototyping in UCD

Prototyping fidelity

Visual design

Content   ⟹   Low fidelity

Interactivity   Medium fidelity

High fidelity

Stages of prototype development

Sketch — Drawing a basic concept

Wireframe — Refining the concept further

Mockup — Creating visual graphic and content

Prototype — A detailed visual representation of your product

Low fidelity   **Medium fidelity**   **High fidelity**

Low fidelity prototyping

- Aims to gather basic and initial requirements
- Focuses on users, context of use, flow of events
- Used within interviews, focus groups, design workshops
- Communicate and generate ideas among team
- Proof of concept
- Sticky notes, wireframes, paper prototypes/sketches, Powerpoint, Pencil project, Balsamiq

Low fidelity prototyping - Advantages

- Fastest way for visualizing concepts
- Can be applied to any type of software/device
- Rapid experimentation
- Quick initial feedback from users
- Supports in clarifying the user needs and requirements
- Useful in detecting usability issues early very early
- Communication channel between users and designers
- Anyone can do it
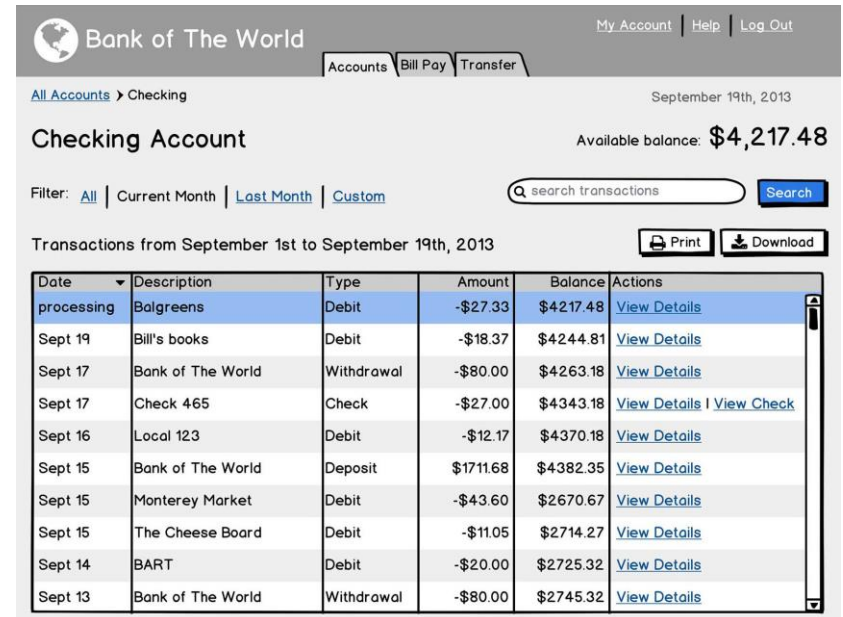- Minimal resources and effort

Low fidelity prototyping - Limitations

- Requires effort and imagination from users
- Hard to convey complex operations
- Lacks interactivity, feeling, experience
- Testing uncertainty

Balsamiq

- Low fidelity
- Rapid wireframing
- Digital paper sketching tool
- Focus on structure and content
- UI components, icons, drag & drop, resize
- Limited interactivity
- Windows, Mac, Cloud
- 30 days free trial

www.balsamiq.com
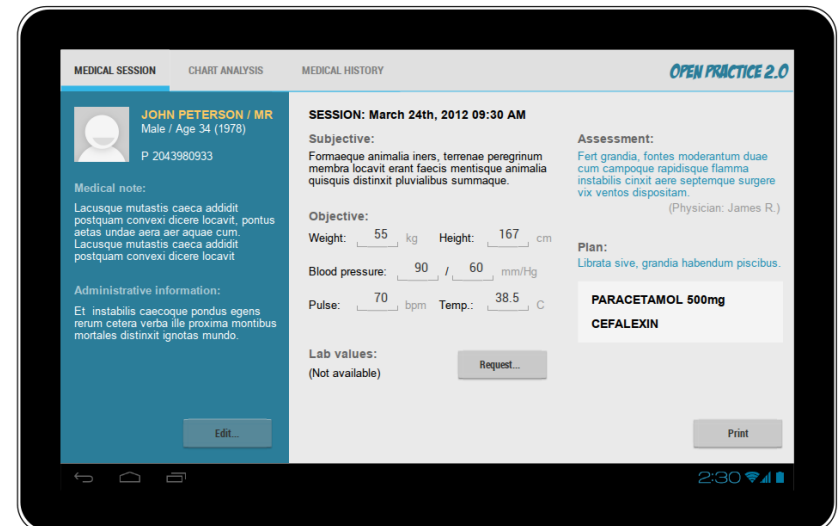

DEMO
https://www.youtube.com/watch?v=11LK7QSTaAU

Pencil project

- Open source
- Low fidelity prototyping
- Mockups and wireframes
- Easy to use
- Wide selection of stencils for Android, iOS
- Some issues with download
- Limited customer support/training
- Free

https://pencil.evolus.vn/

High fidelity prototyping

- Visualizes the user requirements in detail
- Users can interact with dialogs, enter data, navigate between screens, view transitions etc.
- Pretty close to real-life behavior with the intended system
- Detect critical usability issues related to interactivity
- Support in enhancing the overall UX
- Feed to the UI specification

High fidelity prototyping - Advantages

- More natural behavior and realistic feedback from users
- Specific UI elements and interactions can be evaluated
- Clear idea and easy buy-in from stakeholders and clients

High fidelity prototyping - Limitations

- Costs
- Resources
- One or two design alternatives
- Learning curve

Invision

- Highly popular prototyping tool
- Collaborative
- Export static screens
- Transform to clickable prototypes through animations, transitions, and gestures
- Web-based
- Free license for Aalto
- Validation code: 56-73-13-19

www.invasionapp.com/education-signup

DEMO

https://www.youtube.com/watch?v=0qisGSwZym4

Keynotopia

- Mockups and interactive prototypes in Powerpoint or Keynote
- Numerous UI design templates
- iOS, Android, Web, Blackberry, Windows
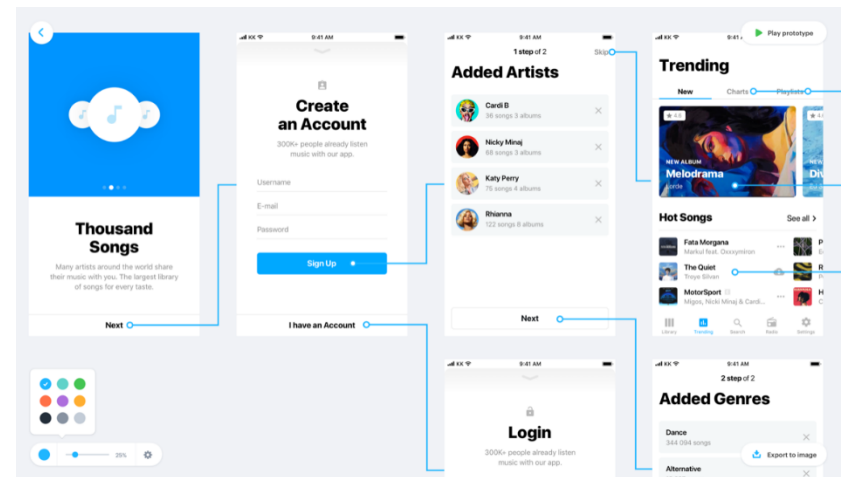- No support for gestures (e.g. swiping, pinching)
- Cost: $39 - $149

www.keynotopia.com

Marvel

- Design and prototyping
- Collaboration
- Web-based
- Very easy to use
- Exports from Sketch and Photoshop
- Support for gestures and transitions
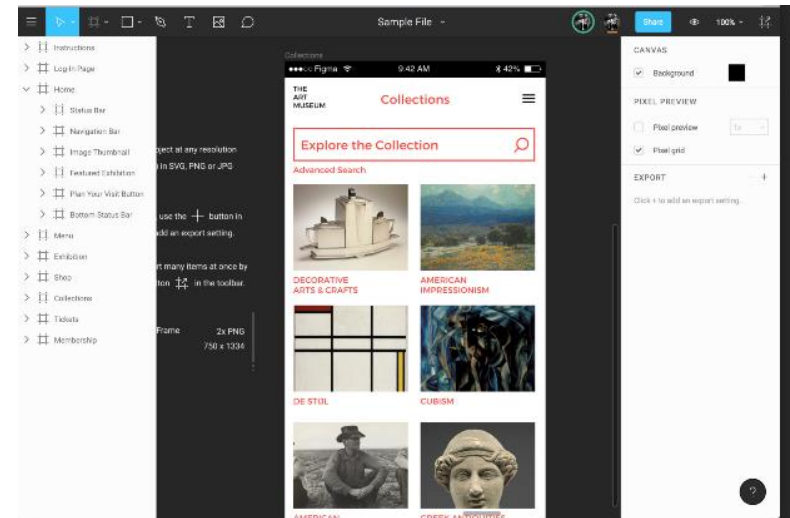- Web, iOS, Android, Apple watch
- Price: Free - $84/month

www.marvelapp.com

Figma

- Web-based (offline desktop version)
- Very similar to Sketch
- Real-time design collaboration
- Team library
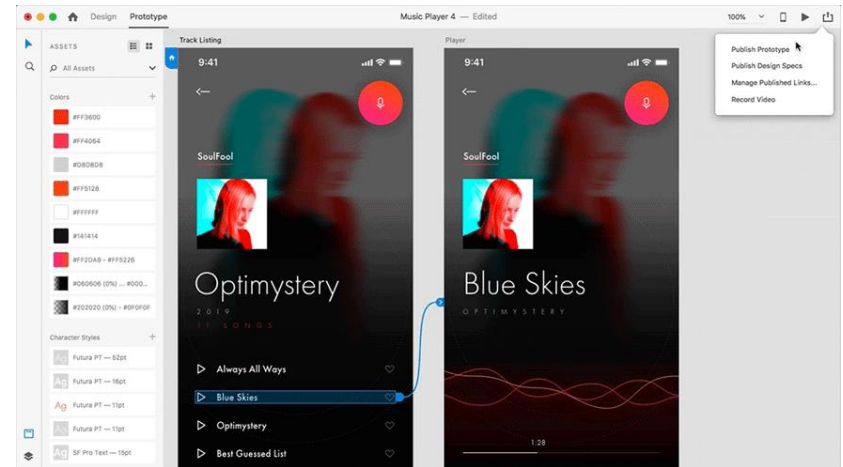- Steep learning curve
- Price: Free - $45/user/month

www.figma.com

Adobe XD

- Similarity and integration with Photoshop and Illustrator

- Lightweight

- Single app or part of Adobe creative cloud

- New features constantly added

- Price: Free - $9.99/month

https://www.adobe.com/products/xd.html

Assess and compare prototyping tools

https://www.prototypr.io/prototyping-tools/

http://www.prototypingtools.co/

https://www.cooper.com/prototyping-tools

https://uxtools.co/tools/design

Tutorials

https://balsamiq.com/tutorials/

https://www.invisionapp.com/inside-design/sketch-tutorials/

https://www.lynda.com/Marvel-tutorials/9530-0.html

https://www.figma.com/resources/courses/

https://helpx.adobe.com/xd/tutorials.html

A"
Aalto-yliopisto
Perustieteiden
korkeakoulu

Thank you