

CS-E5250 Data-Driven Concept Design

Concept Design: Visualization and Validation
Prototyping
Assignment 4

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Agenda

- Learning outcomes
- Concept Design: Visualization and Validation
- Prototyping
 - Low Fidelity Wireframing
 - High Fidelity Prototyping

Learning Outcomes

After this Assignment:

- You know how to create product and service concepts and develop select parts into visualised prototypes of various fidelity.

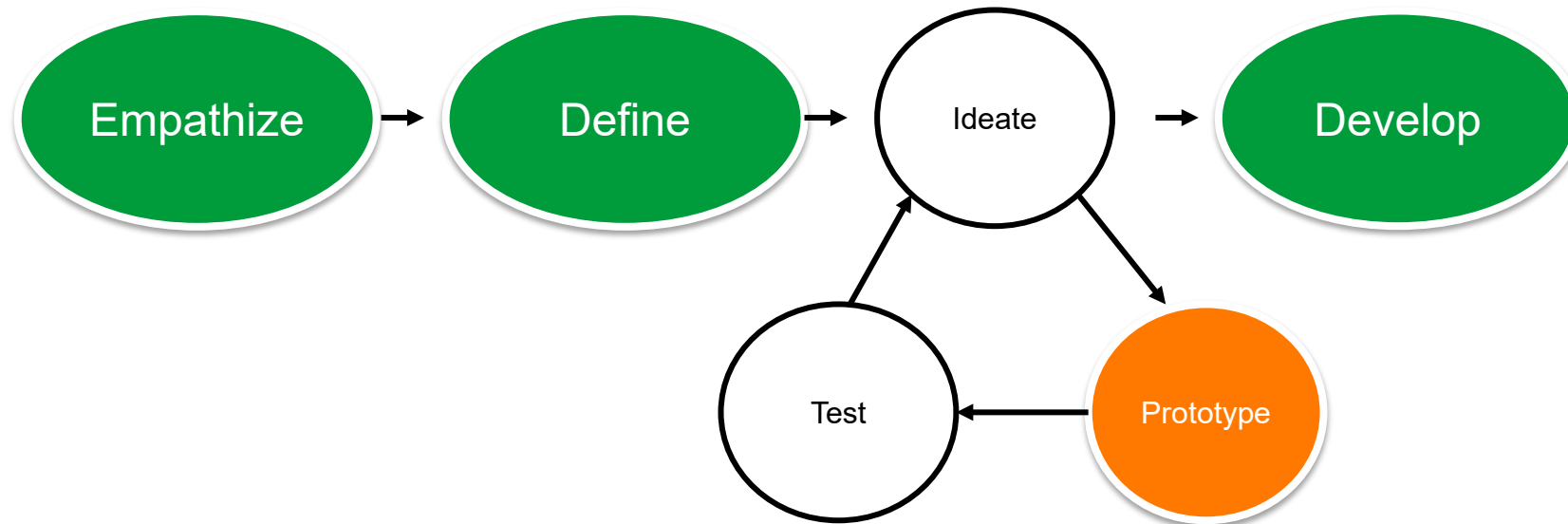
What is prototyping?

- 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?

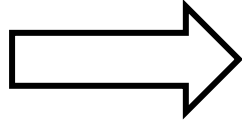
- Detect flaws and failures faster and early
- Identify wrong assumptions and oversights about user needs
- More insights about the context of use
- Enhanced communication among stakeholders
- Support in assessing and choosing among alternatives
- Reduced development costs and time

Prototyping in UCD



Prototyping fidelity

Visual design
Content
Interactivity



Low fidelity
Medium fidelity
High fidelity

Stages of prototype development



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

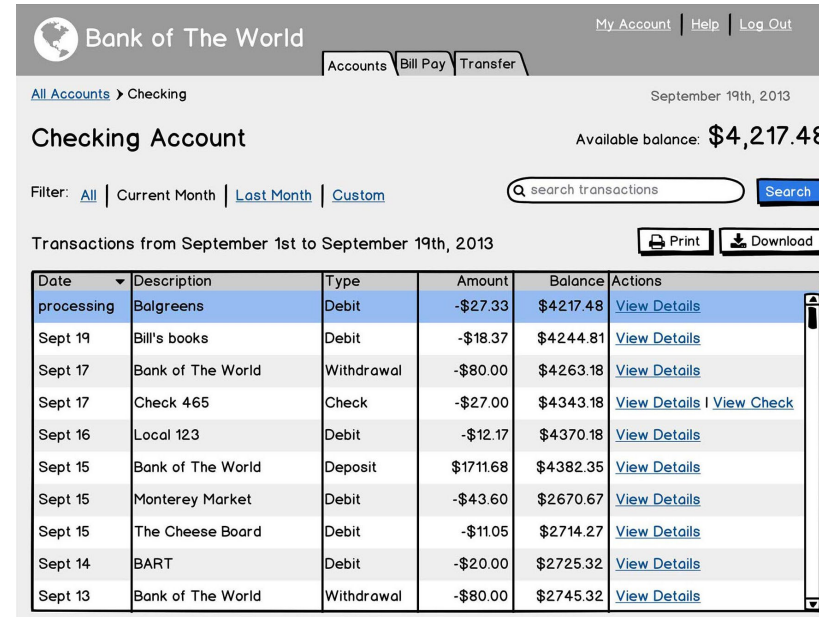
Low fidelity prototyping - Limitations

- 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



Bank of The World

My Account | Help | Log Out

Accounts | Bill Pay | Transfer

All Accounts > Checking

September 19th, 2013

Checking Account Available balance: \$4,217.48

Filter: All | Current Month | Last Month | Custom

search transactions Search

Transactions from September 1st to September 19th, 2013

Print Download

Date	Description	Type	Amount	Balance	Actions
processing	Balgreens	Debit	-\$27.33	\$4217.48	View Details
Sept 19	Bill's books	Debit	-\$18.37	\$4244.81	View Details
Sept 17	Bank of The World	Withdrawal	-\$80.00	\$4263.18	View Details
Sept 17	Check 465	Check	-\$27.00	\$4343.18	View Details View Check
Sept 16	Local 123	Debit	-\$12.17	\$4370.18	View Details
Sept 15	Bank of The World	Deposit	\$1711.68	\$4382.35	View Details
Sept 15	Monterey Market	Debit	-\$43.60	\$2670.67	View Details
Sept 15	The Cheese Board	Debit	-\$11.05	\$2714.27	View Details
Sept 14	BART	Debit	-\$20.00	\$2725.32	View Details
Sept 13	Bank of The World	Withdrawal	-\$80.00	\$2745.32	View Details

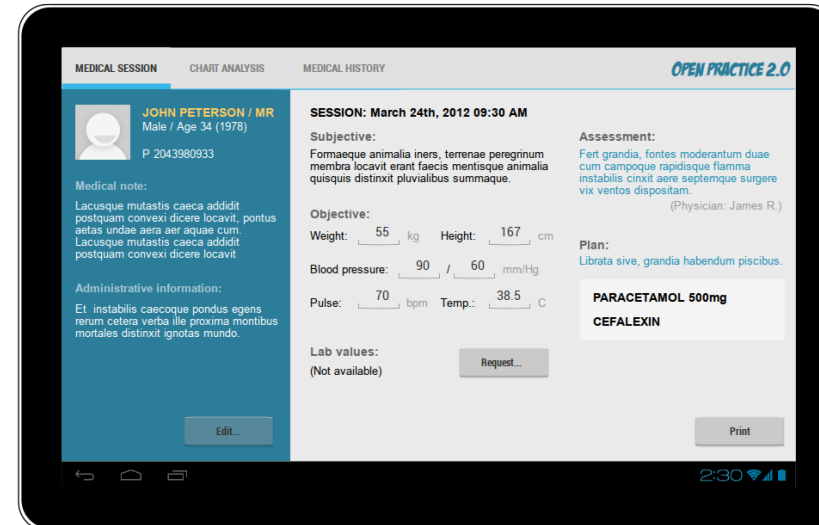
DEMO

<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.invisionapp.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

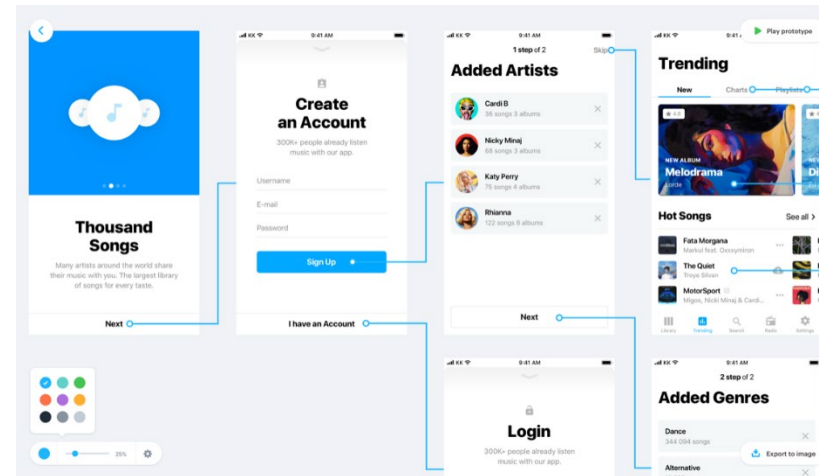
www.keynotopia.com



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

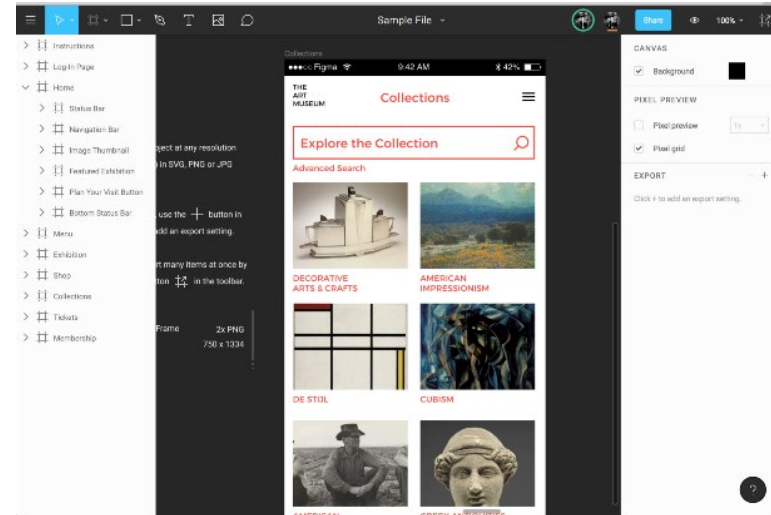
www.marvelapp.com



Figma

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

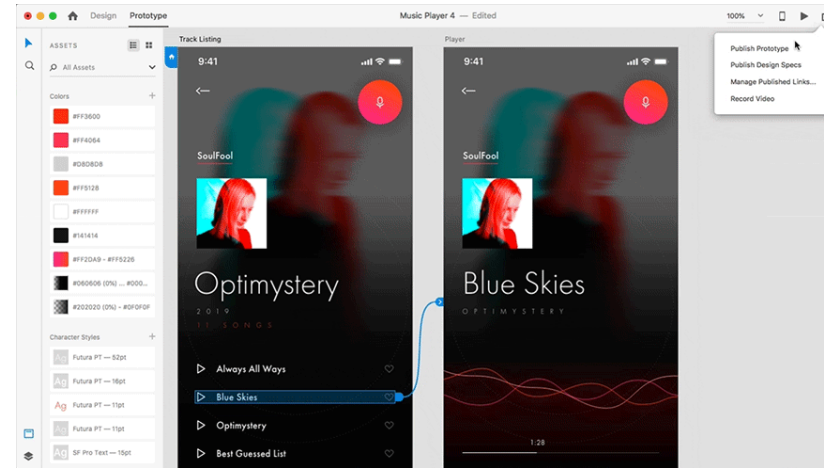
www.figma.com



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/>

<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>