Chapter 11: Design, Prototyping, and Construction

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Intro HCI
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Prototyping
Prototyping

What?

http://www.flickr.com/photos/gingerbeard_man/4815524503/

Why?
Communication device

http://www.bigshinyrobot.com/reviews/archives/25540

Explore design ideas

http://woldfitness.com/page/28/
http://starwars.wikia.com/wiki/All_Terrain_Tactical_Enforcer_%28cargo_transport%29,
http://starwars.wikia.com/wiki/All_Terrain_Scout_Transport,
http://starwars.wikia.com/wiki/All_Terrain_Personal_Transport
Design reflection

Technical feasibility


Why?

http://animationresources.org/?p=757/
Clarify vague requirements

User testing and evaluation

Initial Conceptual Model (Wireframe)

Metaphor creation

- Functional requirements
- Important tasks
- Generate metaphor
  - Users’ descriptions
  - Application domain

https://en.wikipedia.org/wiki/Mario
Metaphor evaluation

- Structure
- Relevant
- Easy to represent
- Understandable
- Extensible

https://en.wikipedia.org/wiki/Mario

Interaction type

- Instructing
- Conversing
- Manipulating
- Exploring

https://en.wikipedia.org/wiki/Mario
Interface type

- Command-based
- GUI
- Multimedia
- Virtual reality
- Info visualization
- Web
- Consumer elec./app.
- Mobile
- Speech
- Pen
- Touch
- Gesture
- Haptic
- Multimodal
- Shareable
- Tangible
- Mixed reality
- Wearable
- Robotic
- Brain-computer

Functions and data

- Task allocation
- Function relations
- Data implications
Conceptual Model

Plus scenario


Minus scenario

Compromises

Breath vs. depth

Compromises

Low fidelity vs. high fidelity


Compromises

Evolution vs. throwaway

Things to think about

Appearance

Data


Functionality

Spatial structure


Material

Resolution


Scope

Types of Prototypes: Low-fidelity prototypes

Storyboarding

Take pictures of food.

http://starwars.wikia.com/wiki/Stormtrooper
Low-fidelity Prototypes

Storyboarding

Automated program identifies foods.

http://starwars.wikia.com/wiki/Stormtrooper

Storyboarding

Confirm foods.
Storyboarding

Request sent to server.


Storyboarding

Results sent back from server.

Storyboarding: Sketching

1. Drive car to gas pump
2. Take nozzle from pump...
3. ...and put it into the car's gas tank
4. Squeeze trigger on the nozzle until tank is full
5. Replace nozzle when tank is full
6. Pay cashier

http://www.bigshinyrobot.com/reviews/archives/25540

Index cards

http://www.id-book.com
Index cards


Wizard of Oz

http://dailycapitalist.com/2012/07/06/no-jobs-the-result-of-wizard-of-oz-economics/
Types of Prototypes: High-fidelity prototypes

Support for design
Design Patterns

Open source software/hardware
Tools and Environments

**W3C® Markup Validation Service**
Check the markup (HTML, XHTML, ...) of Web documents

http://validator.w3.org/

**Microsoft Visual Studio 2010 Premium**