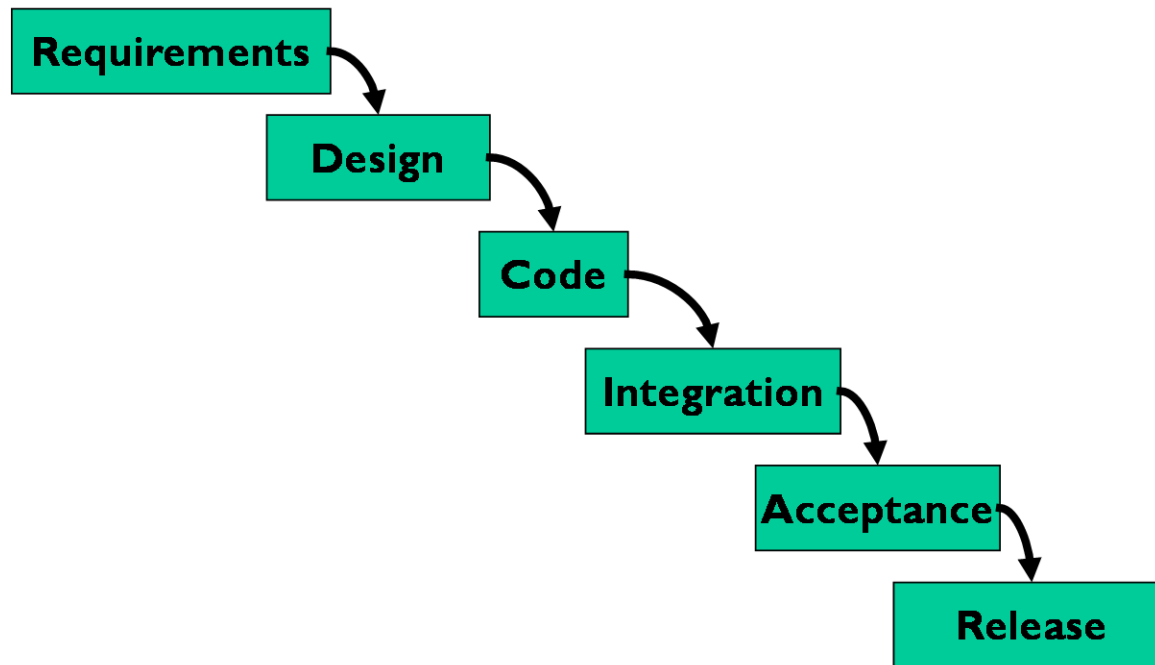


The HCI Development Process

Tony Scarlatos

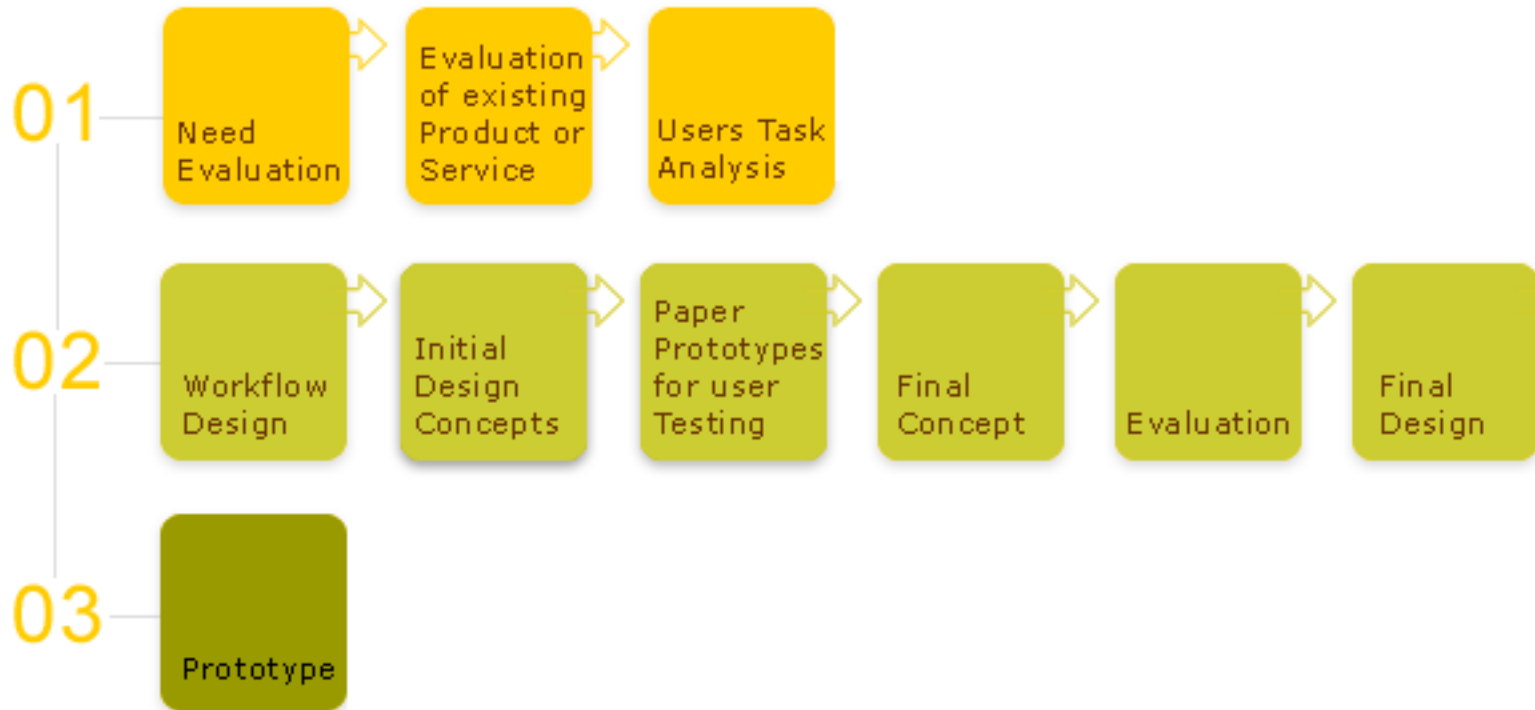
SW Engineering Waterfall Model

Traditional Software Engineering Process: Waterfall Model



HCI Linear Development Process

DESIGN PROCESS



Linear Development Process

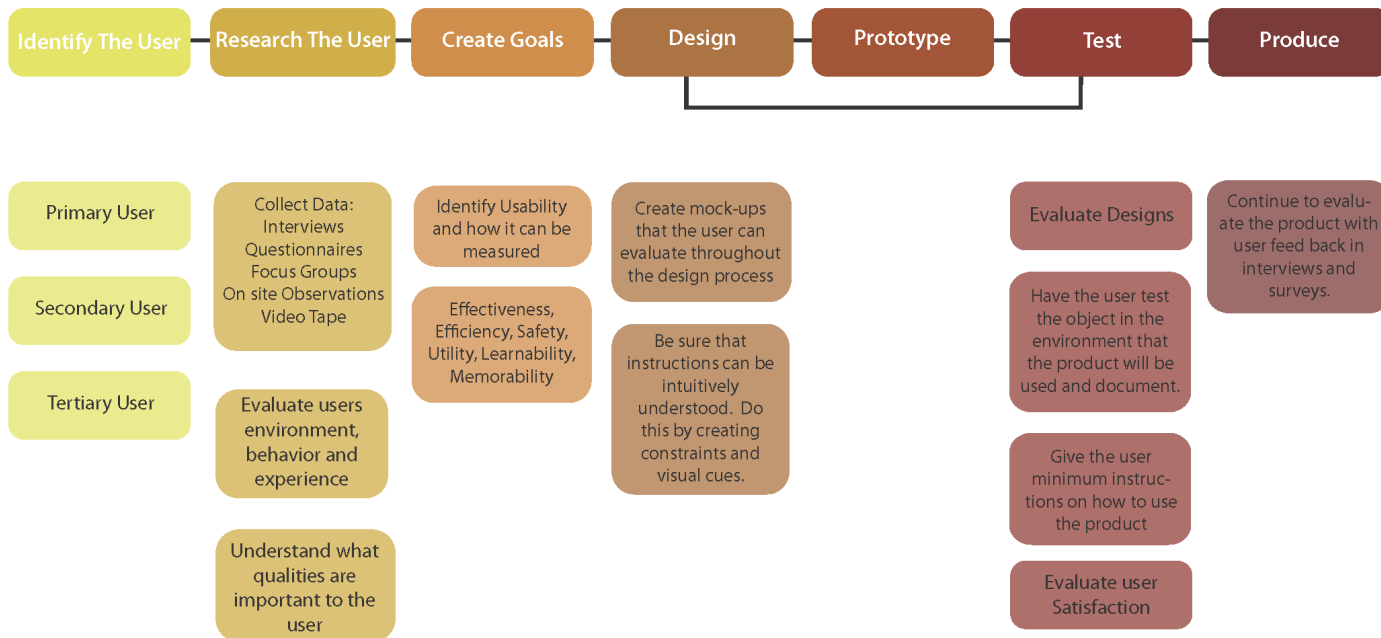


Linear Development Process

7 Phases of User-Centered Design

When the user becomes the Co-Designer

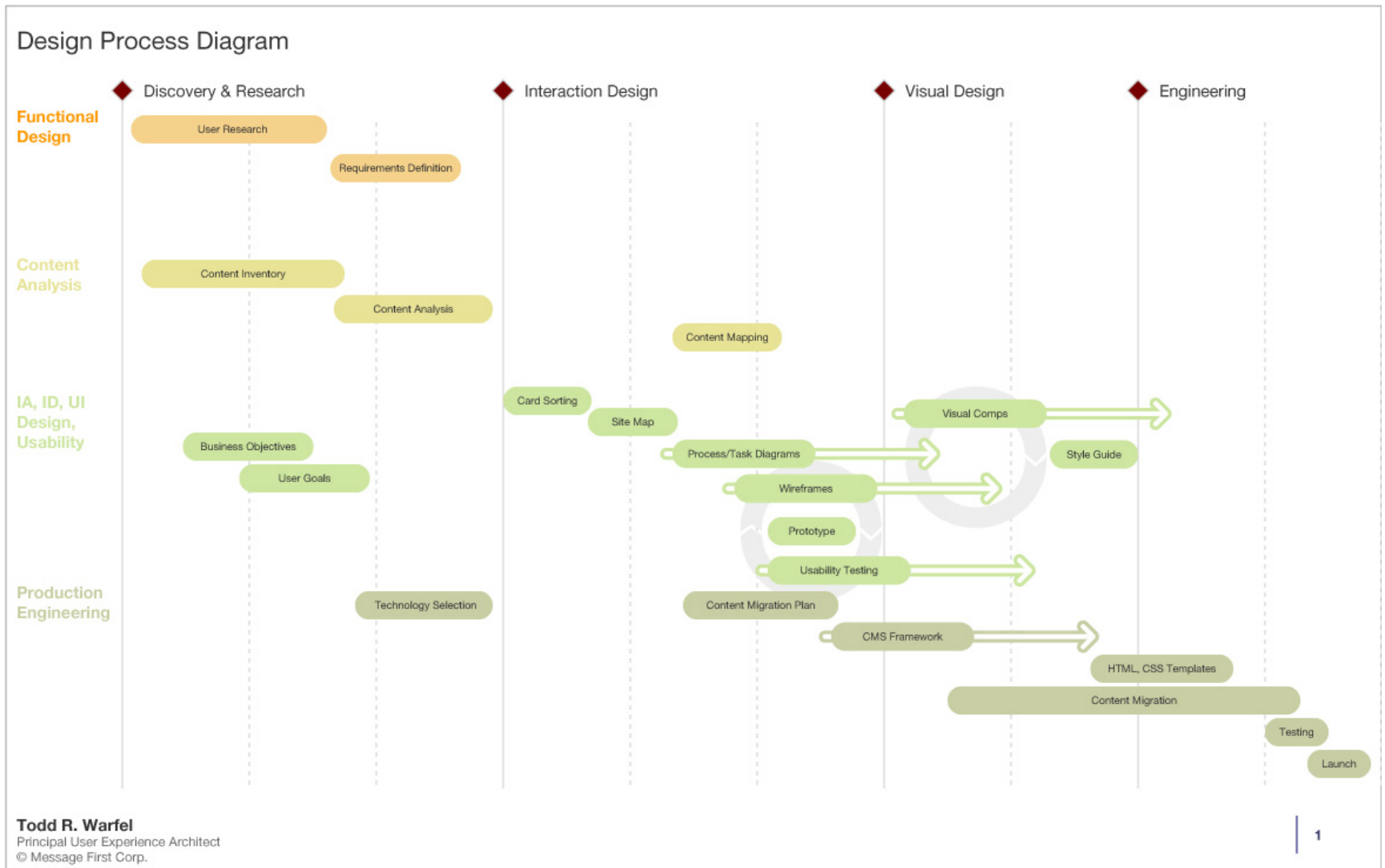
Britt Wilcox
Kyun Hur
Mary Elizabeth Miller



Works Cited:

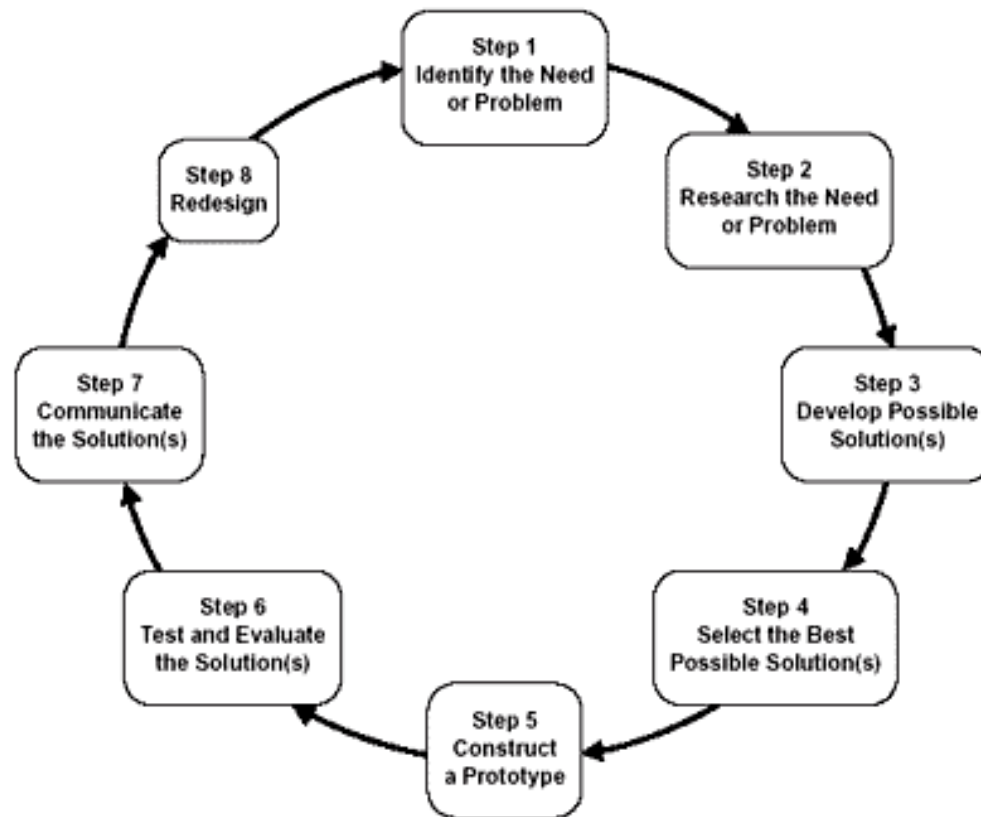
Sanders, Elizabeth B. "From User-Centered to Participatory Design Approaches." In Design and the Social Science. Rpt. in Taylor & Francis Limited, 2002
User-Centered Design 1 Abras, C., Maloney-Krichmar, D., Preece, J., (2004) User-Centered Design. In Bainbridge, W. *Encyclopedia of Human-Computer Interaction*. Thousand Oaks: Sage Publications.
"User-Centered Design", Wikipedia.org, 10 Jan. 2010. Web, 16 Jan. 2010

Linear Development Process (Gantt chart)

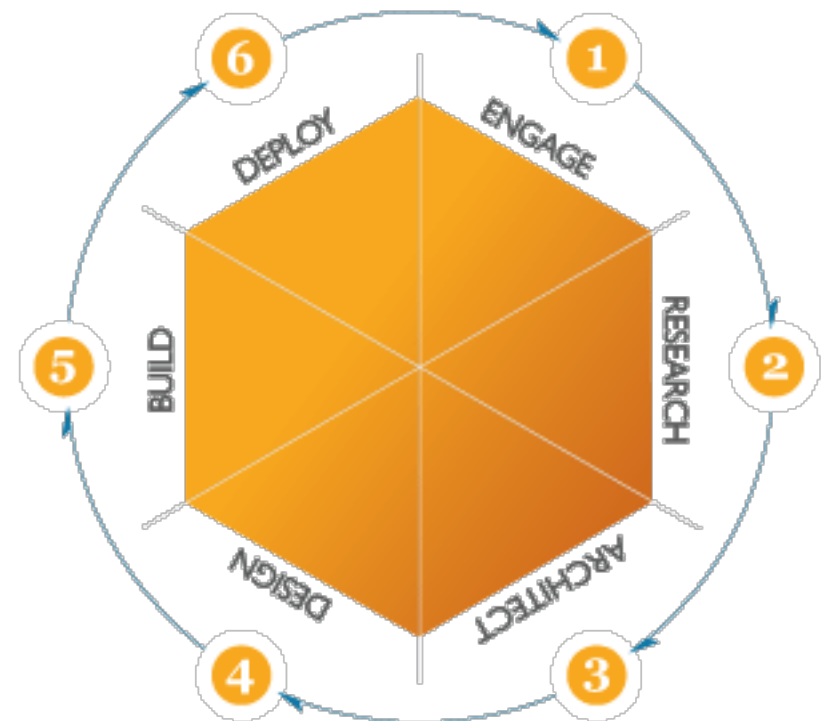


HCI Iterative Design Process

Figure 1
Steps of the Engineering Design Process



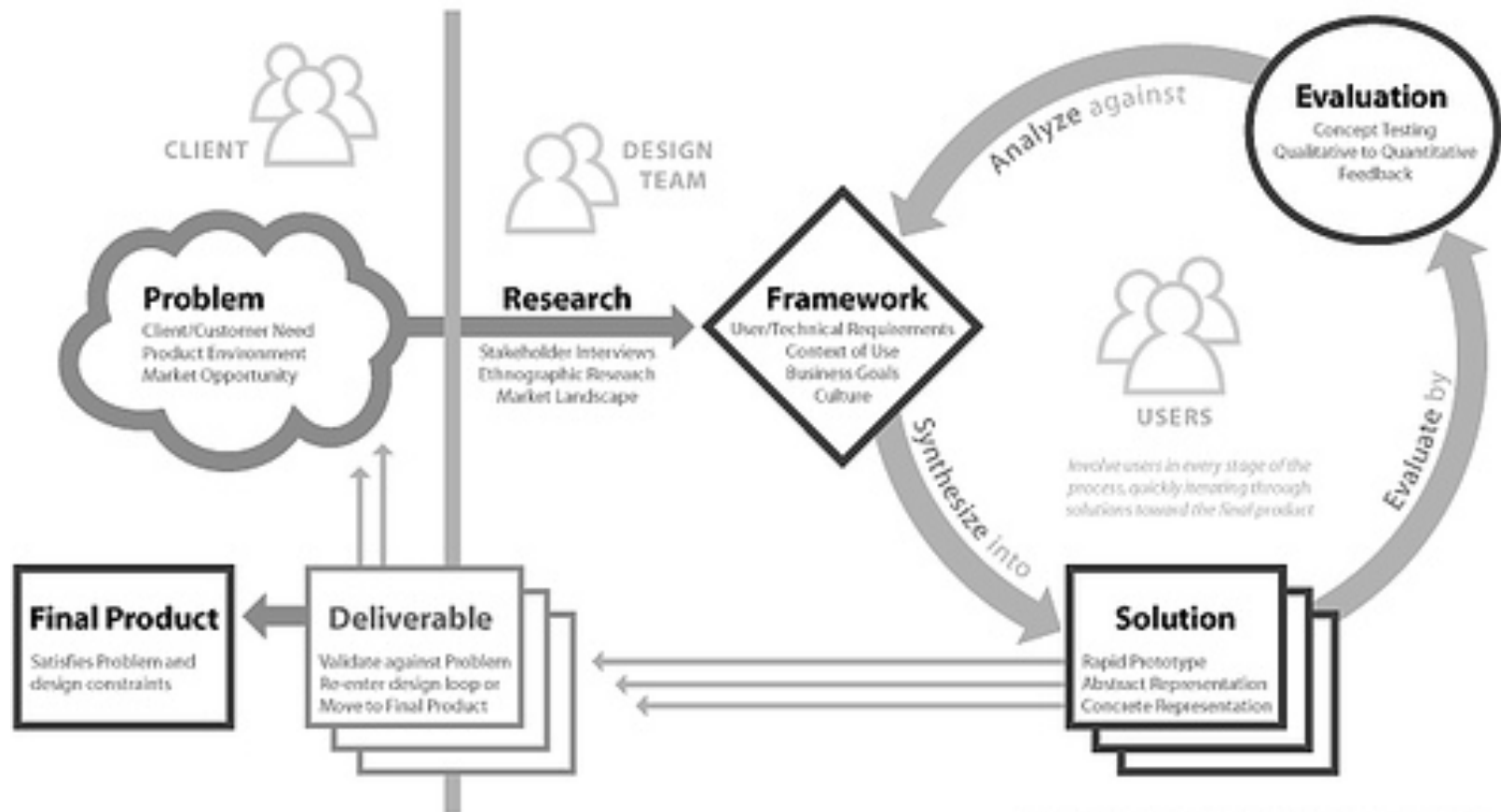
Iterative Design Process



6 Steps of the Design & Development Process

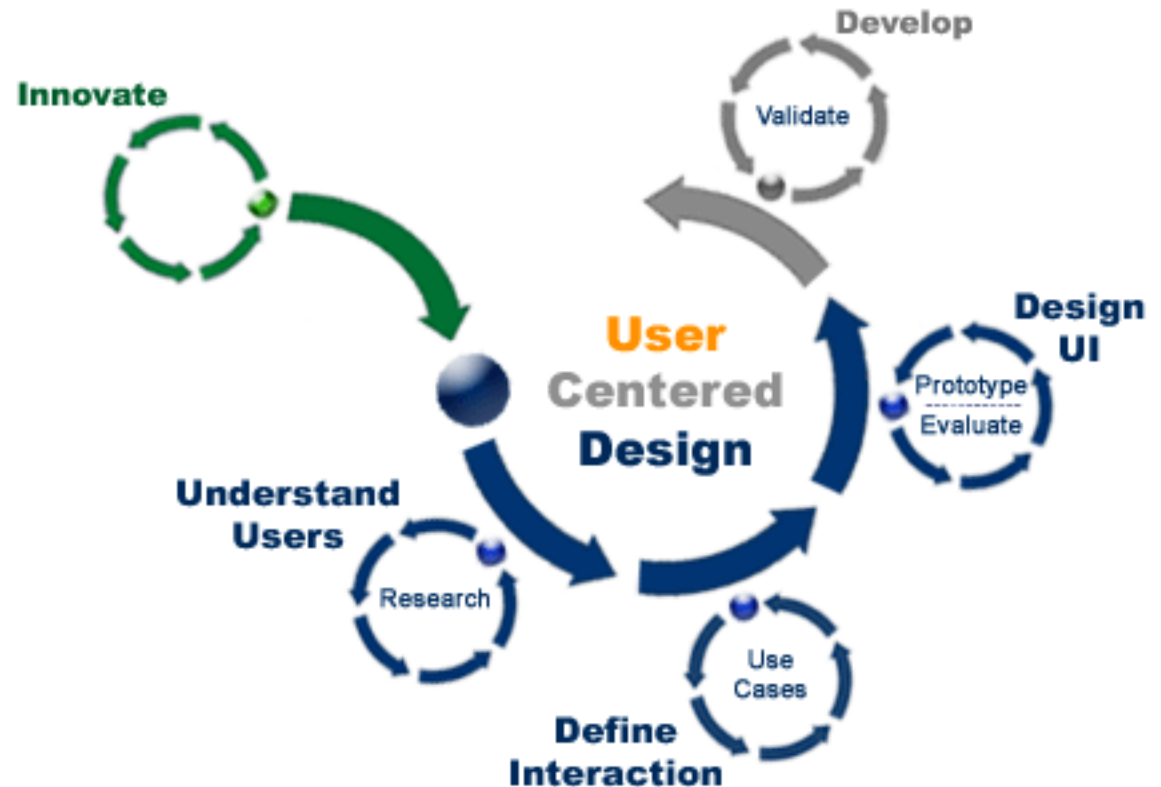
ID Design Process

Interaction Design Process



Eight Steps of HCI Development

1. Design Brief
2. Research
3. Framework
4. Interface Design
5. Prototype
6. Implement
7. Evaluate
8. Revise



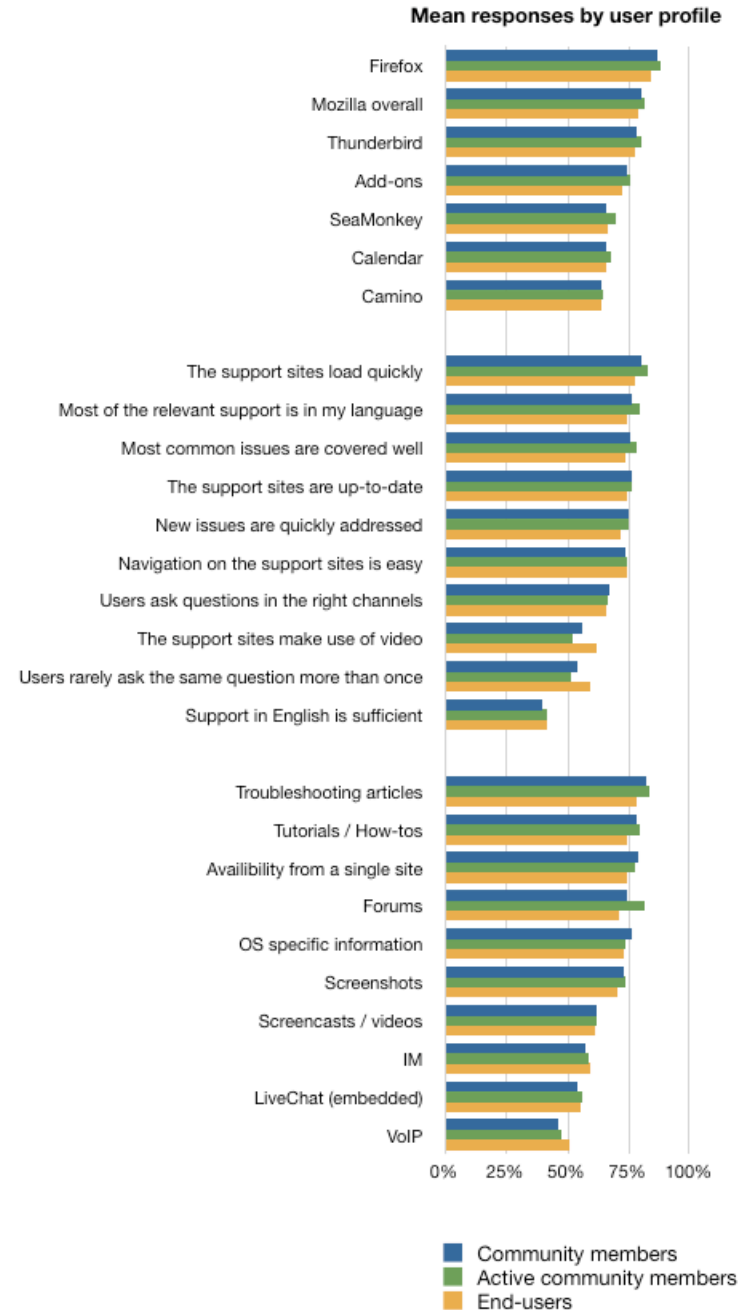
Design Brief

- Sometimes referred to as a Scope Of Work (SOW).
- Identifies the problem to be solved or the goal to be obtained.
- Identifies the stakeholders.
- May propose possible solutions or avenues for exploration.

brief overview	<p>I'm an IT Test Analyst by trade and I have a real passion for technology, testing, usability, breaking stuff and of course, social media.</p> <p>I love using and integrating new and existing technologies.. and really appreciate when I come across clear and helpful solutions to any issues I'm facing.</p> <p>My blog, The Social Media Guide, was borne out of a desire to help others who face similar problems with social media.</p> <p>I try to provide clear solutions so that anyone can follow and understand.</p> <p>To take things to the next level.. I need a logo!!</p>
brand name	<p>http://thesocialmediaguide.com.au</p>
target audience	<p>All users of social media.. from newbies to advanced.. from young to old.. male or female.. from all countries.. and definitely mainstream.</p> <p>Anyone who has an interest in, and uses, social media and social networking platforms including Facebook, Twitter, YouTube, Google, WordPress, Blogging, StumbleUpon, Delicious, etc.</p> <p>My blog focuses on "helping people connect", using social media.</p> <p>The Social Media Guide provides clear and very easy to understand guides / instructions / 'how-to's' / setup procedures, etc, on all things social media.</p> <p>If there are common problems that people are facing with social media, eg "How do I do this in Facebook", or "How do I this using Twitter".. then The Social Media Guide is the place to go to find these answers.</p>
requirements	<p>I am after a logo that possibly makes use of the double-meaning of - "The Social Media Guide".</p> <p>1st meaning: The Social Media Guide, as in "guide book". 2nd meaning: The Social Media Guide, as in "I'm the guide.. I'm the authority on social media who shows the way by leading and advising"</p> <p>I may change the background of my blog from dark to light, so the logo mustn't be limited to my blog's background shading.</p> <p>I also plan to use this logo on my Facebook page, Twitter background, eBook, business cards, favicon, etc.</p> <p>New, modern, fresh, social, sharing, helping people to connect..</p> <p>Not futuristic.</p> <p>The words "The Social Media Guide" don't necessarily have to be in the logo.</p>

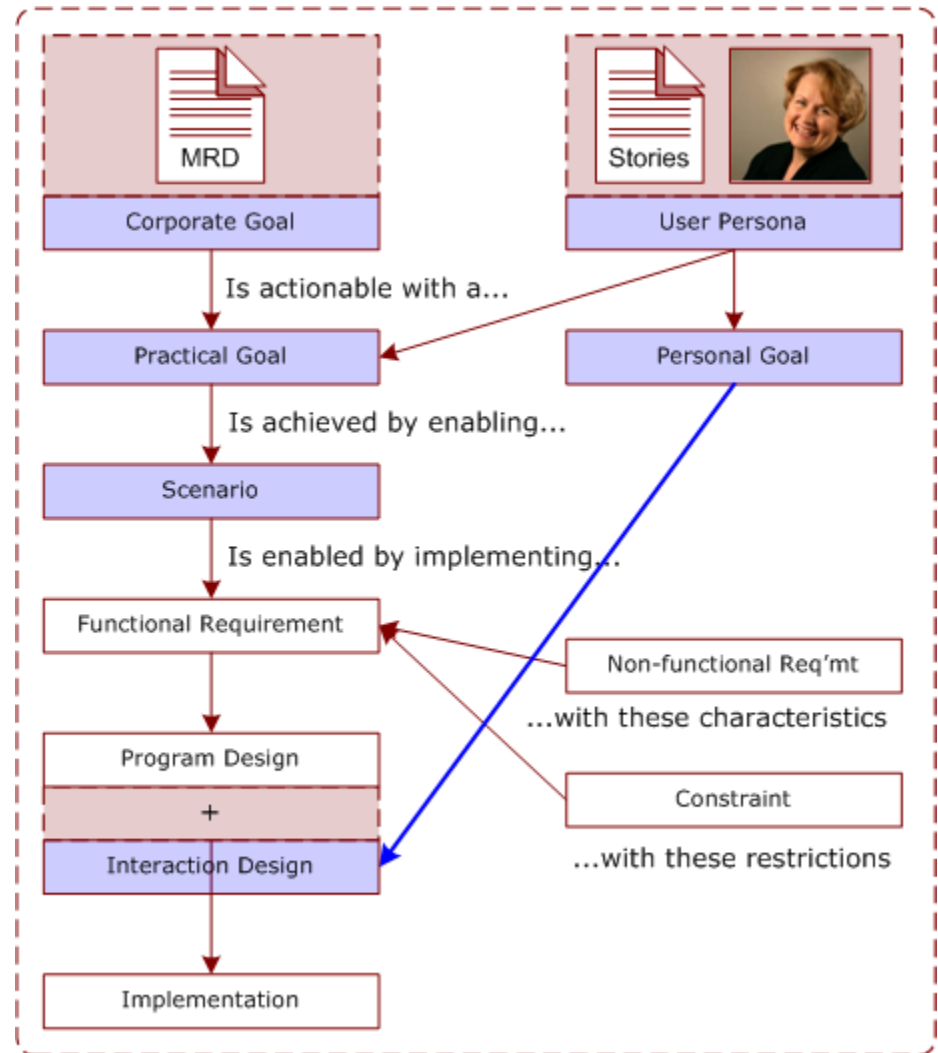
Research

- Surveys of end-users.
- Interviews with end-users.
- Observation of end-users as they perform tasks and interact in their environment.
- Compilation and analysis of data.



The Framework – Visualizing Research

- Personas
- Scenarios
- Mood Boards
- Task Analysis



Personas

Confident learner



Picture credits –
[Nerdcoregirl](#), [Flickr CC](#)
<http://www.flickr.com/photos/nerdcoregirl/>

Samantha Bell

“I’d love to keep in contact with my friends”

Sam is about to go abroad for her gap year, so her parents decided to get her a new camera, to make sure she’s able to record everything she gets up to.

She likes the camera as it looks so modern, and it’s able to do so much more than a lot of her friends’ cameras.

She loves being in contact with people all the time, and finds it’s a great way to kill time like when waiting for the bus. She uses a lot of the more advanced features – panoramic shots, online upload and .

When she encounters a problem she ignores it most of the time - she’s not sure if she even got a manual with the camera. When she has trouble she can’t ignore she speaks to her friends, or goes into a camera store – she wants to be talked through the problem.

First time user

Female, 27 year old, single
Student

Sam prefers to learn how to things by trying things out by herself. She isn’t worried about ‘breaking’ anything. If she does need help she would prefer to not to refer to a manual but “do it herself”.

Needs

In order of preference:

1. To share pictures with her parents
2. To share her pictures with her friends
3. To share her pictures with people she meets whilst travelling

Ideal features

- Ability to take pictures
- Ability to upload images to personal site using 3G/Wifi
- Allowing others to access her pictures remotely
- Long battery life
- Ability to name and add comments to uploaded images
- Ability to create several albums, and upload pictures to each

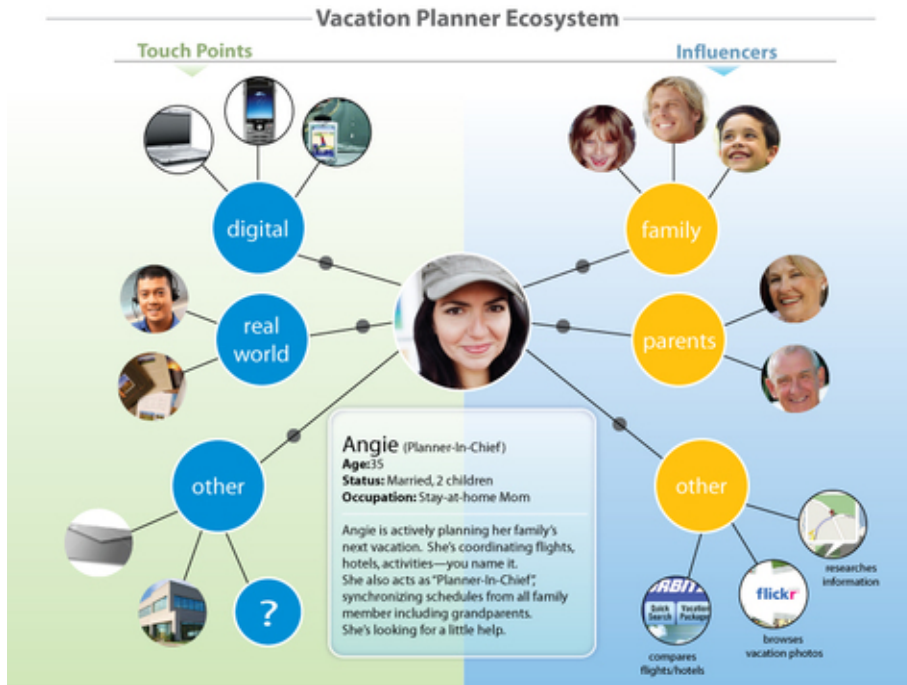
Frustrations

- Lack of wireless/3G access
- Slow uploads
- Low battery life
- Need to be plugged in to upload images
- Slow shutter speed
- Want to be able to name/add comments to uploaded images
- Getting online is confusing
- Creating new albums

Key attributes



Personas

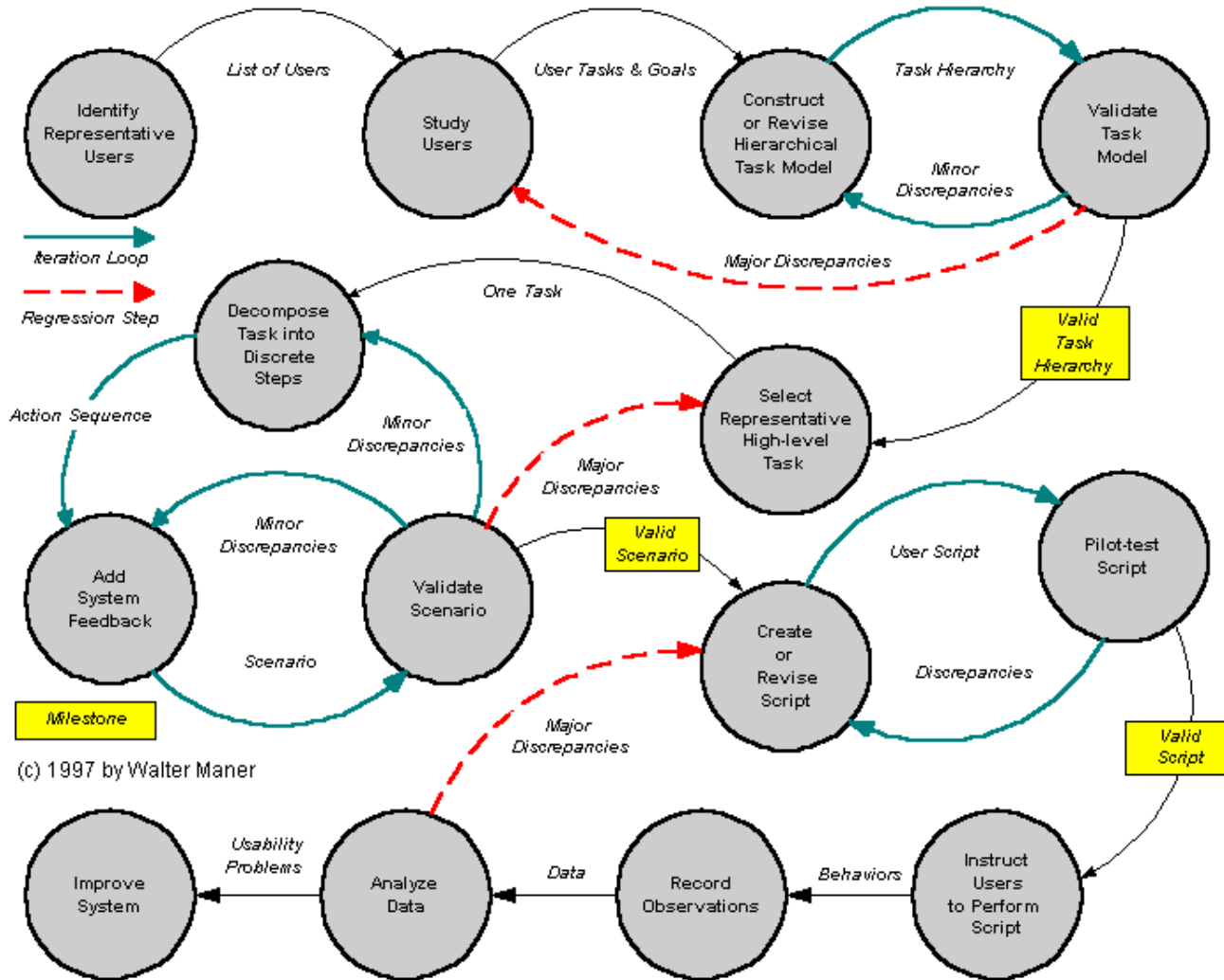


Kivio Users

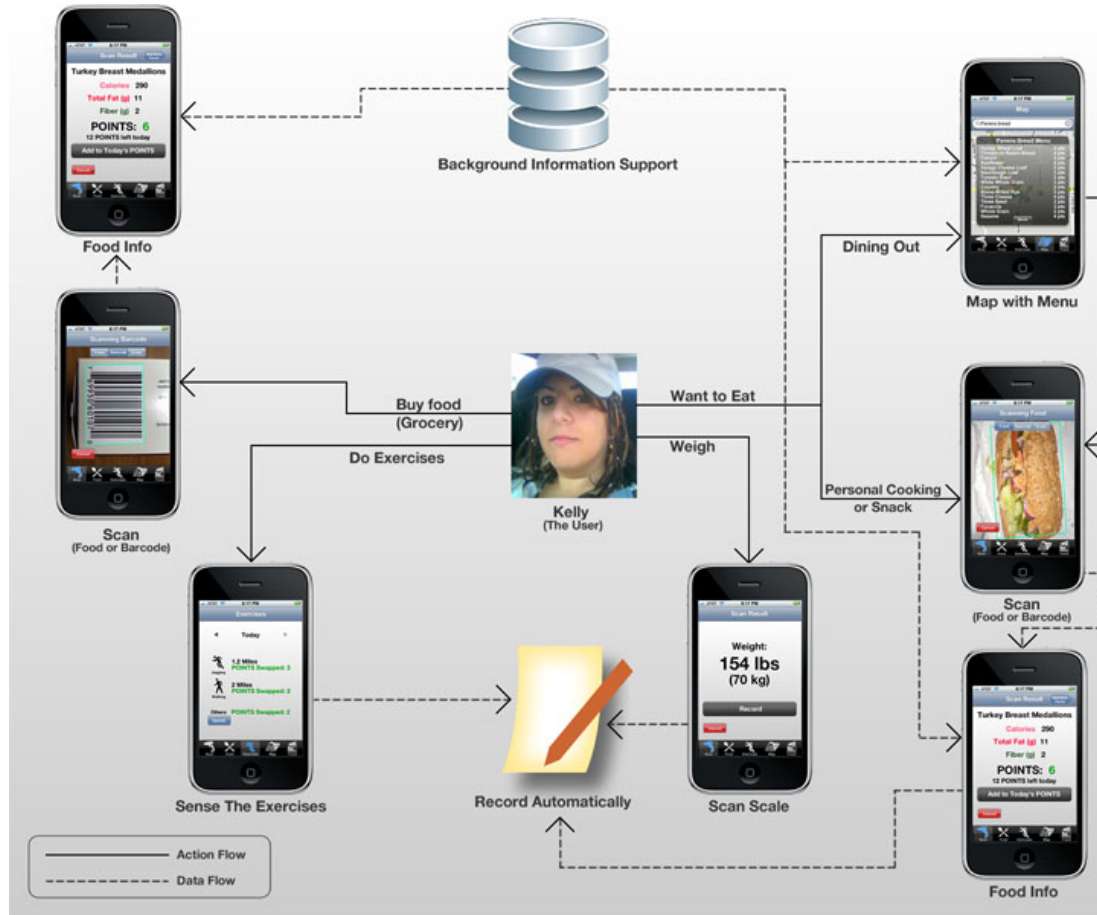
	The researcher	The Sysadmin	The OSS developer	The CS student
Name	Alexander Weiß	Donald M. Berry	Kristian Larsson	Eric Neville
Age	30	30	26	24
Location	Germany	US	Sweden	France
Social Life	Alexander lives with his girl-friend in a flat in Hamburg.	Donald lives with his wife and 1-year old daughter in a house in Portland.	Kristian shares an apartment with two friends in Stockholm. His girl-friend lives in Uppsala. They see each other every weekend.	Eric lives with his parents in a small city close to Lyon. He visits the university there. Often, he stays at his friend's apartment for playing PC games and programming.
Work Life	He works at centre for environmental systems research and designs plans for replacable energies in a EU-funded project.	He is a lead system administrator in a huge network solutions company in Portland.	A software developer with a dayjob in a medium-sized software company. Works on KDE in his spare time.	He is a student of computer science. Besides university, he performs small programming jobs for people in his neighbourhood.
Computer Experience	All are highly experienced with computers.			
Time at a computer per week	26-50 hours per week	35-50+ hours per week	30-50+ hours per week	25-45 hours per week
Computer tasks	Office tasks and Field-dependent. Also educational and recreational. No development.	Development and network administration. Does not use PC for office tasks, educational, and even recreational.	Mostly development and recreational. Also network administration and office.	Mostly development. Also educational, recreational, and network administration. Does not use for office work.
Relation to OSS.	He is not passionate about OSS.	He is a convinced user of OSS.	He is involved with OSS development.	He is a convinced user of OSS.
Requirements wrt diagramming	office requirements	highest claims	easy-going	eager beaver
Frequency of drawing diagrams	Each 2 nd month	Twice per month	Once a month	Each 2 nd month
Diagram main type	Flowcharts. Also visualising thoughts. No technical ones.	All, except sitemap	Visualising thoughts	Diagrams mostly UML
Size and complexity	15-20 elements, 2-3 levels, 3-7 shapes	15-30 elements, 2-5 levels, 4-9 shapes	15-20 elements, 2-3 levels, 3-7 shapes	15-20 elements, 2-3 levels, 3-7 shapes
Diagram purpose and context.	For non-IT job.	Diagrams are for the IT-Job, never for himself.	Diagrams are mostly for himself but, also for formally presenting.	For formally presenting in university. Not for himself, as work input or for any jobs
Current diagramming	Power Point or OOo.	Visio.	Pen and Paper.	Dia, Umbrello.

Scenarios

SCENARIO METHODOLOGY



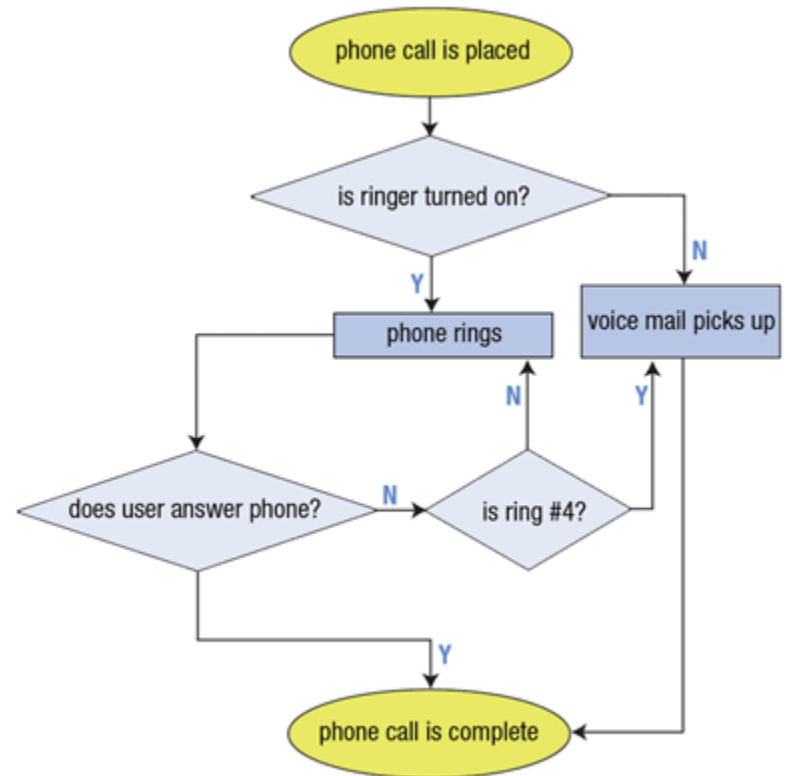
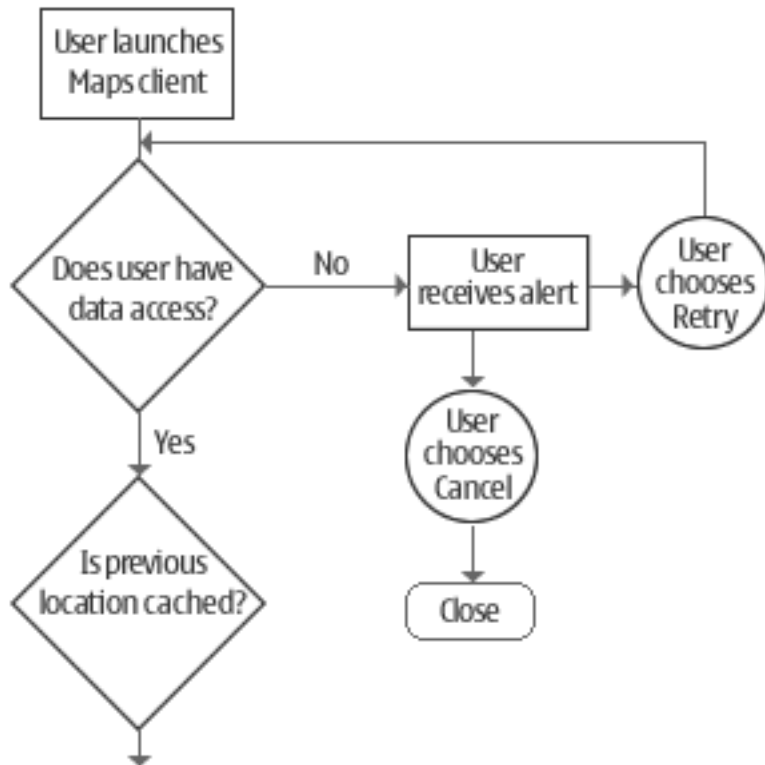
Scenarios



Mood Board

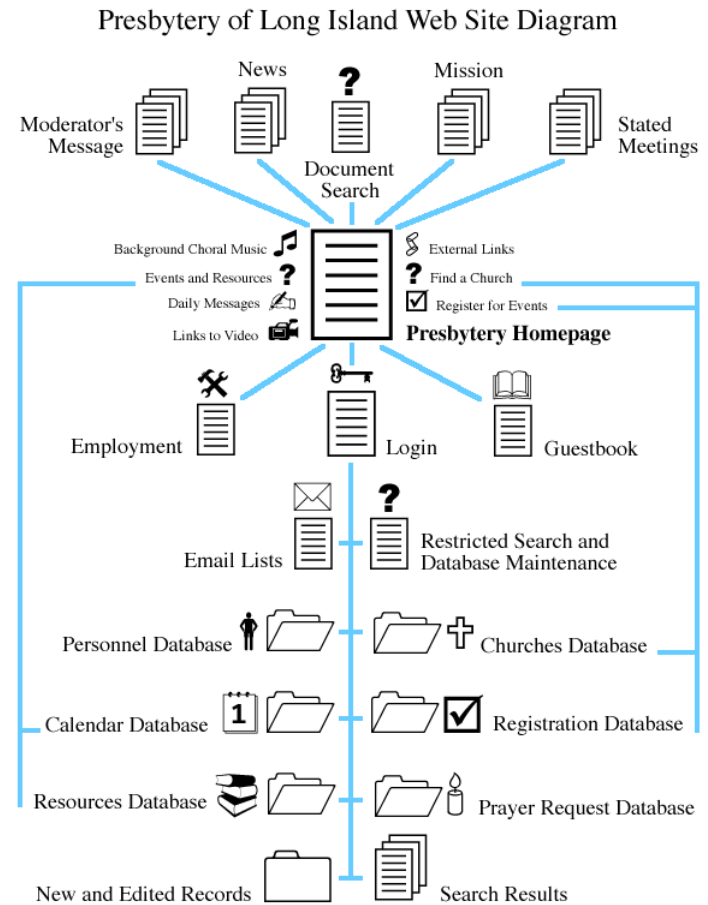


Task Analysis



Interface and Interaction Design

- GUI design
 - Sketches and Wireframes
 - Screen Layout
 - Icons, buttons, controls, widgets
- Interaction Design
 - Software Flowchart



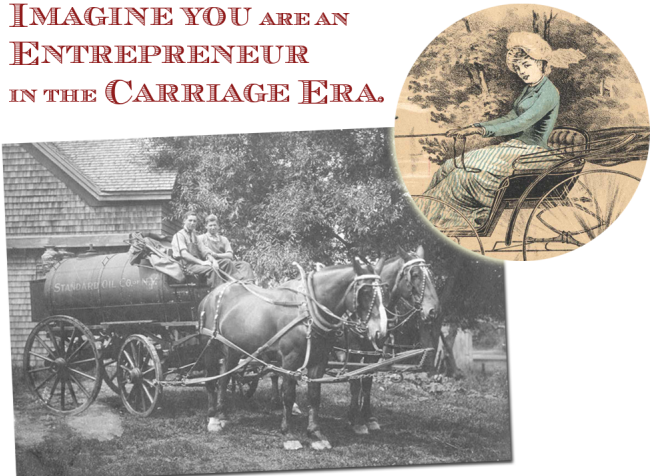
Interface Design: Sketches & Wireframes



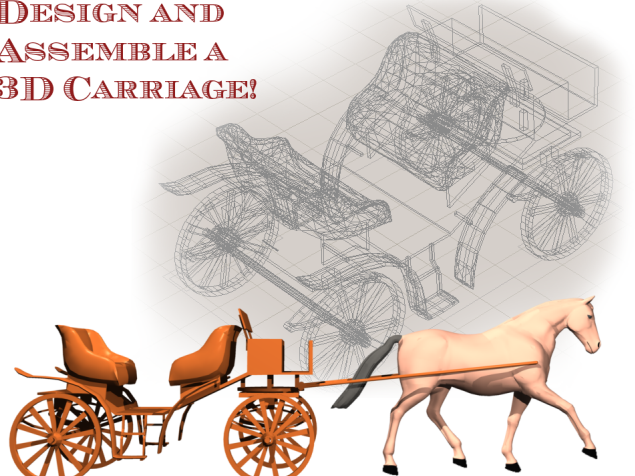
- 1 For Q1 release, music search only
- 2 Related artists determined by user purchasing data mining
- 3 Album art to be approved by legal

Interface Design: Storyboarding

IMAGINE YOU ARE AN
ENTREPRENEUR
IN THE CARRIAGE ERA.



DESIGN AND
ASSEMBLE A
3D CARRIAGE!



CREATE YOUR
OWN POSTER!



SO GET READY
TO CREATE
YOUR FORTUNE!



Interface Design: Prototyping



Interface Design: Production

CREATE YOUR OWN


GARRIAGE

GAME

Created by the Long Island Museum
of American Art, History & Carriages

Touch the Screen  To Start the Game

CHOOSE A VEHICLE TO BUILD



THE HAY WAGON




THE PARK DRAG


THE ROCKAWAY

THE CUTTER

THE CUTTER

Made for speed in the snow, *cutters* are light, fast, and flashy, with thin metal runners and ironwork scrolls. Leather snowguards block the flying chunks of snow and ice that the horses kick up in speedy runs over country paths.



Let's Start Building! 

THE CUTTER.

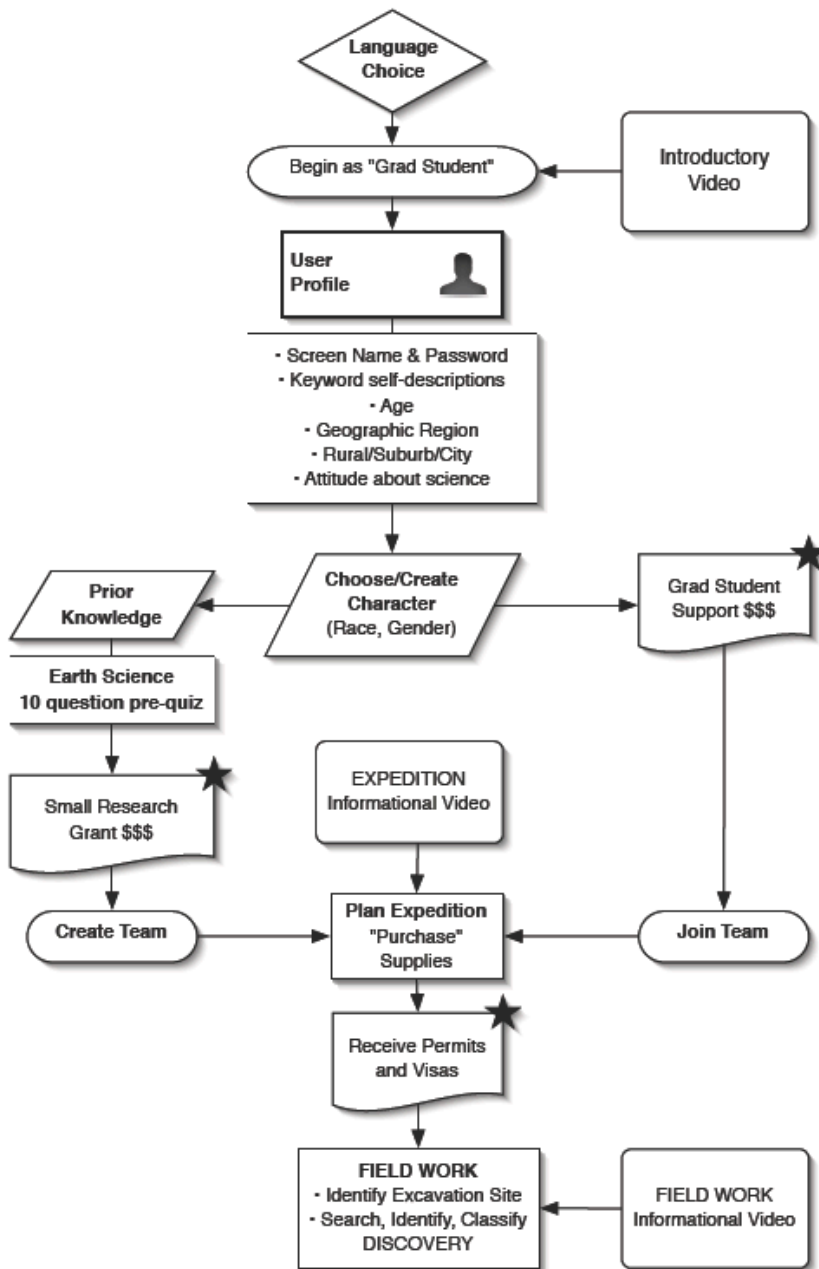


 Replay

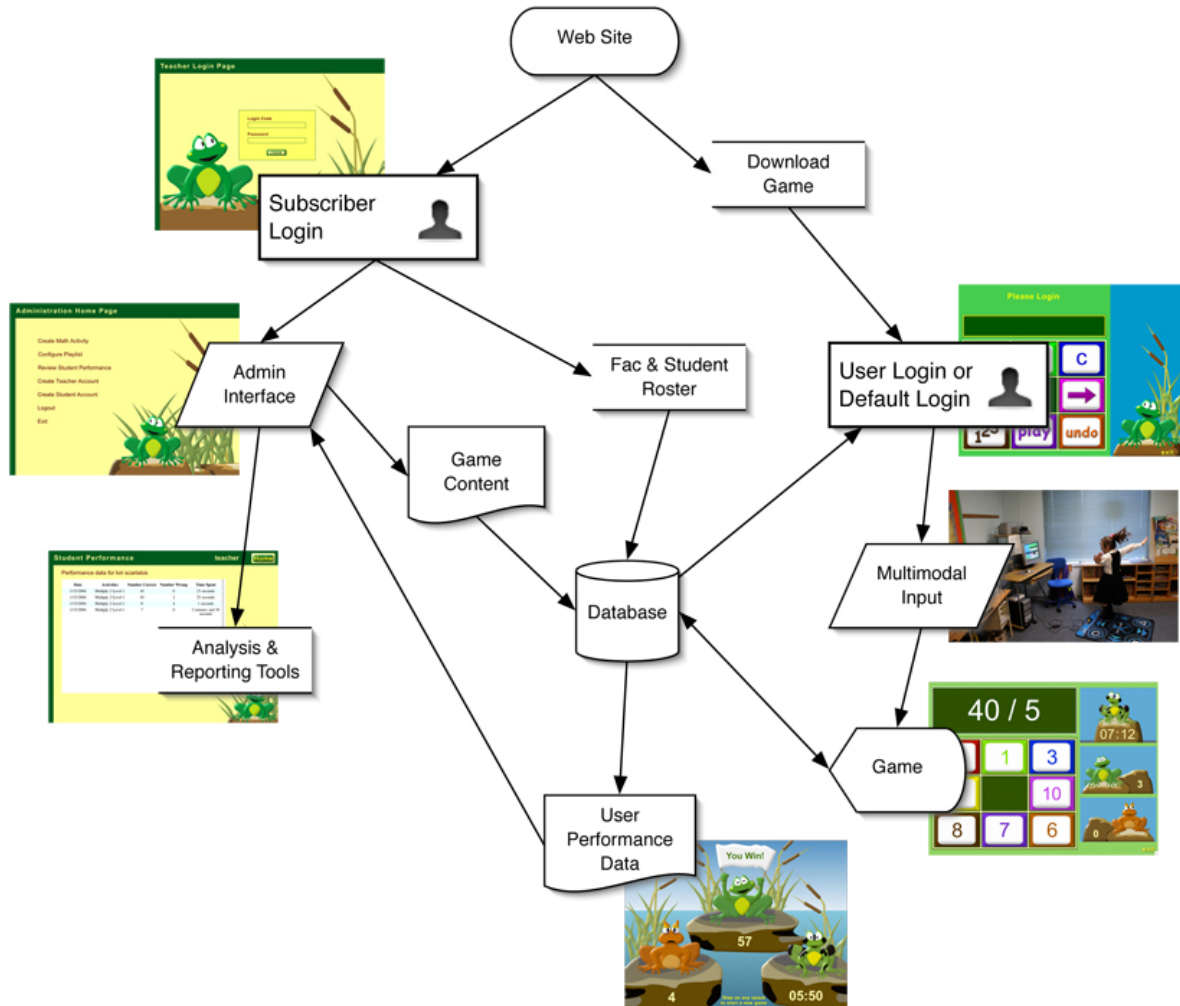
Build Another Carriage 

Interaction Design

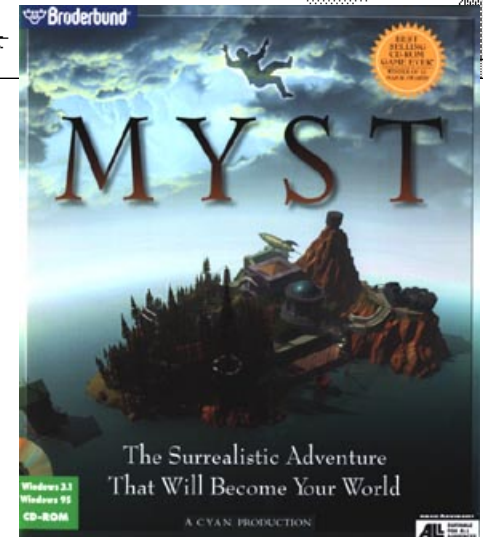
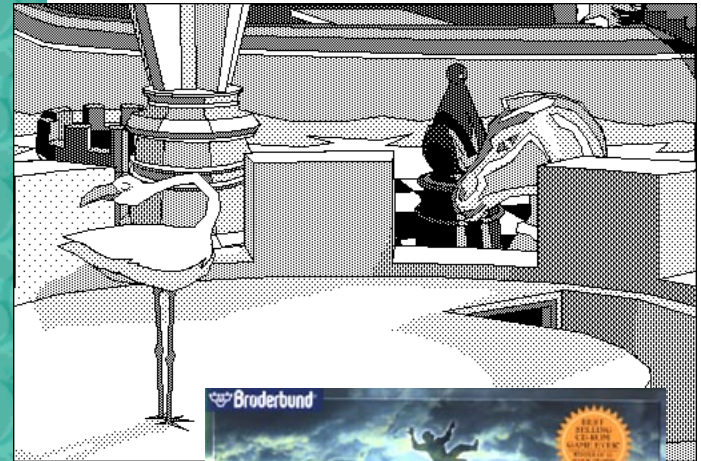
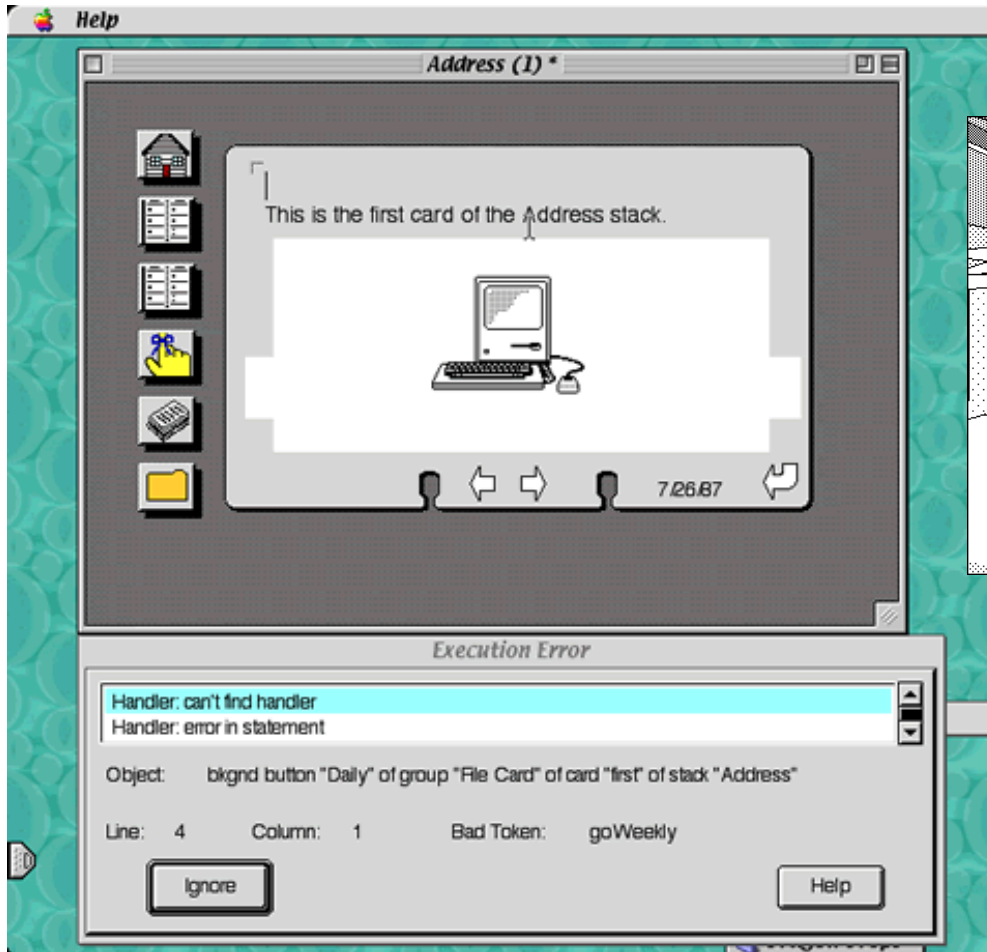
Flow line diagrams serve to establish the stages of an application, or the levels of a game. They help to define the “repertoire of functionality” that the interface needs to support.



Information Architecture

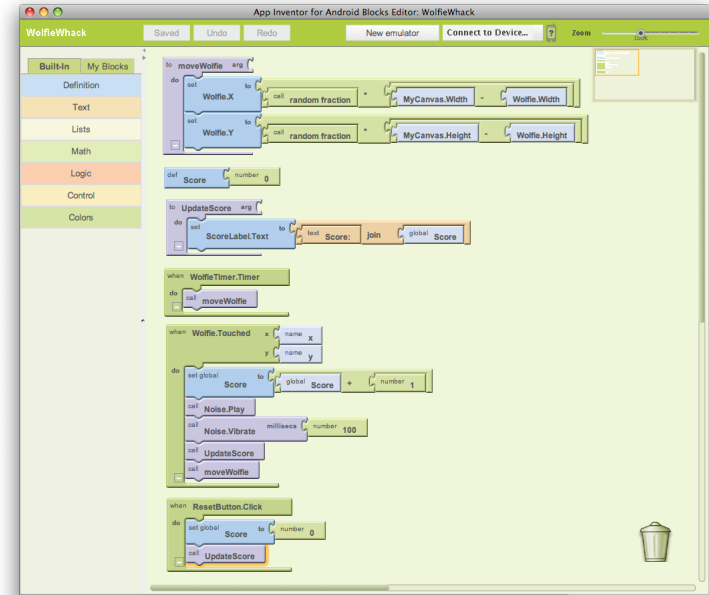
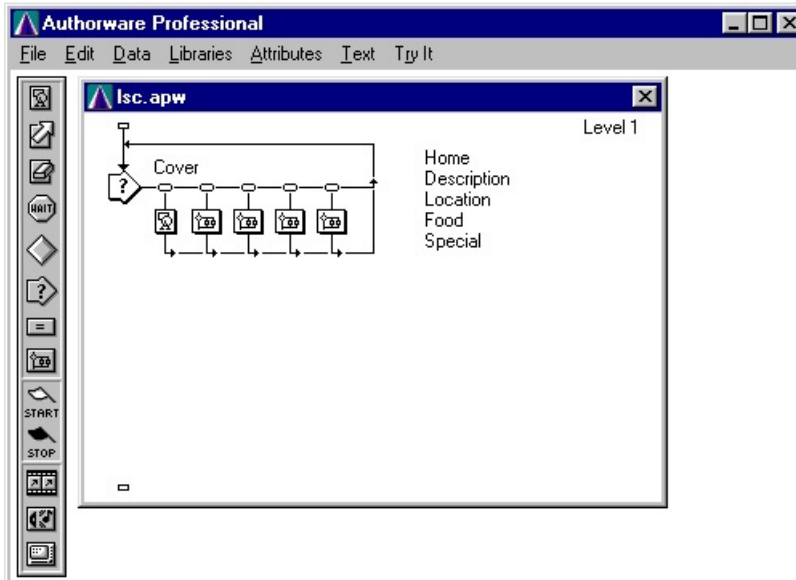


Rapid Prototyping Tools: Card-Based

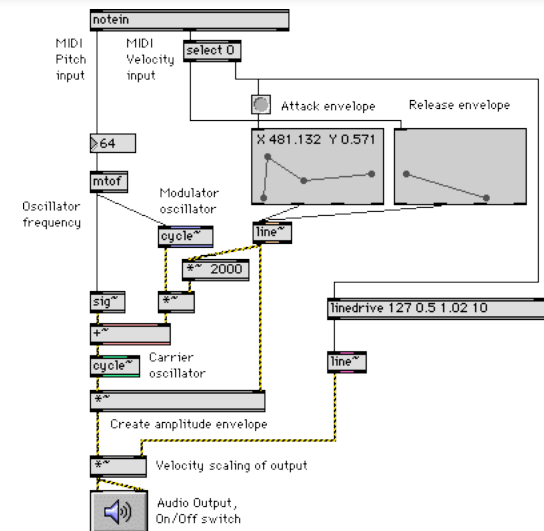


Hypercard was one of the first “authoring” tools.

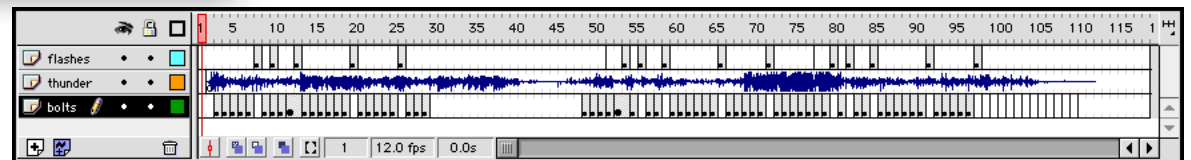
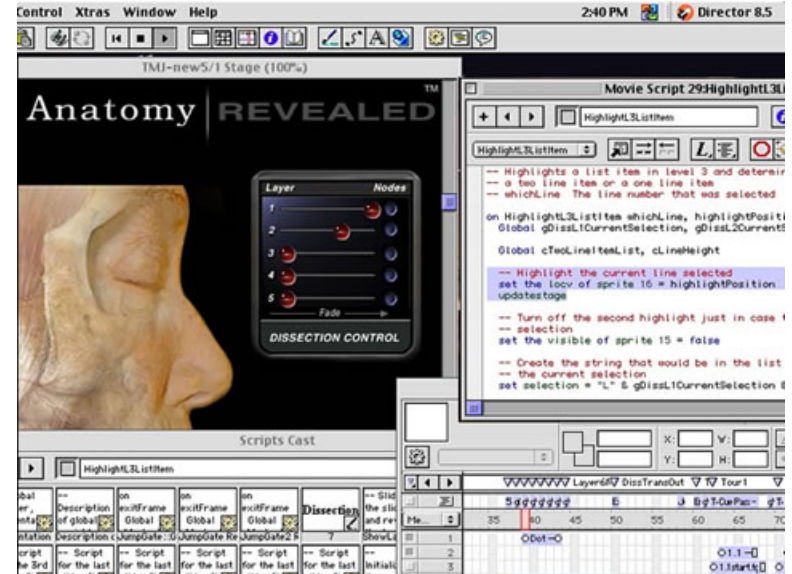
Rapid Prototyping Tools: Icon-Based



Authorware and Max/MSP are examples of Icon-Based authoring tools, and so is AppInventor. Icon-based tools closely resemble flow line diagrams used in interaction design.

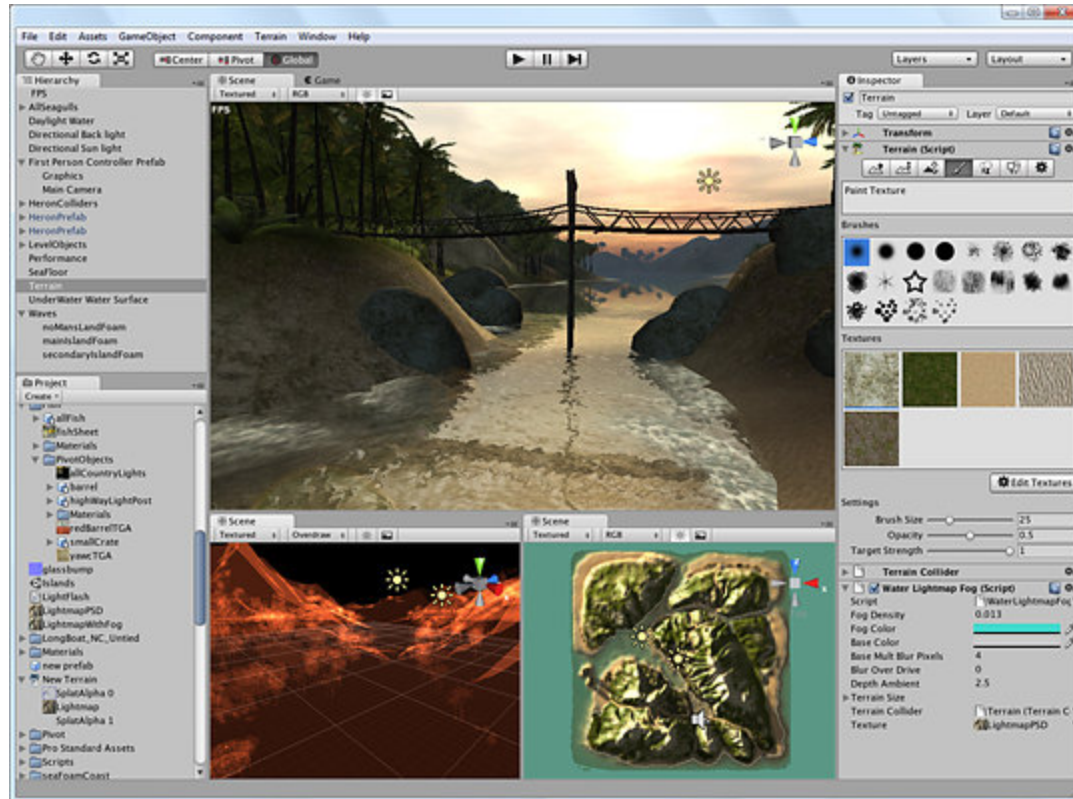


Rapid Prototyping Tools: Timeline-Based



Adobe Director and Flash are examples of Timeline-Based authoring tools. Director was used to prototype Halo 2.

Rapid Prototyping Tools: Real-time interaction

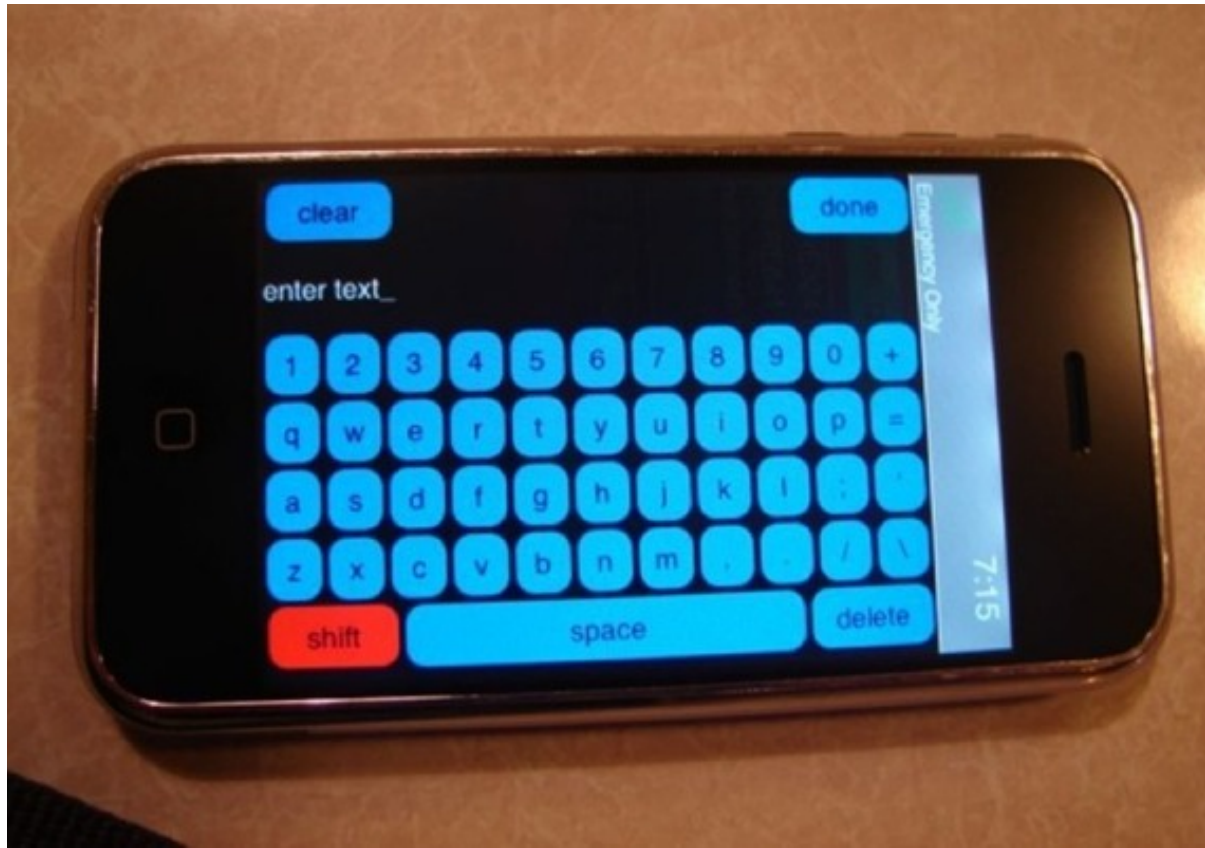


Unity 3D is one of a new class of tools that facilitate development of real-time interactions with 3D environments.

High Fidelity Prototype: Android



High Fidelity Prototype: iPhone



Implementation and Evaluation

