

Design Journal

Tuesday, April 25, 2017 12:59 AM

UI DESIGN
&
IMPLEMENTATION

DESIGN
JOURNAL

ZHANG ZHEXIAN
1001214

UI Design

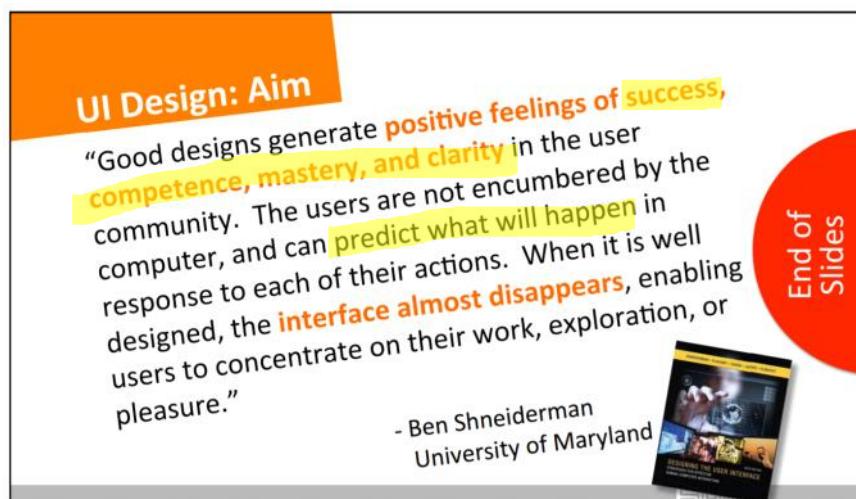
Saturday, April 15, 2017 10:11 AM

U I D E S I G N

Why UI design matters? (Part I)

Saturday, April 15, 2017 10:13 AM

SUTD Course Slides:



MIT Research Paper:

The Why UI: Using Goal Networks to Improve User Interfaces

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ABSTRACT

People interact with interfaces to accomplish goals, and knowledge about human goals can be useful for building intelligent user interfaces. We suggest that modeling high, *human-level* goals like "repair my credit score", is especially useful for coordinating workflows between interfaces, automated planning, and building introspective applications.

We analyzed data from 43Things.com, a website where users share and discuss goals and plans in natural language, and constructed a goal network that relates *what* goals people have with *how* people solve them. We then label goals with specific details, such as *where* the goal typically is met and *how long* it takes to achieve, facilitating plan and goal recognition. Lastly, we demonstrate a simple application of goal networks, deploying it in a mobile, location-aware to-do list application, ToDoGo, which uses goal networks to help users plan where and when to accomplish their desired goals.

Author Keywords

Learning Goal Networks, Plan Recognition, To-Do Lists

Goals are desired world states and people can describe them in natural language: "[I want to] click the 'okay' button", "start the movie", and "entertain my date". As you can see, goals can span different temporal granularities and their English descriptions can abstract away many important details: of those three descriptions, each contained roughly the same number of words. A goal library is required to map between the *interface-level* goals, about clicking buttons and performing actions in the interface, to the *human-level* goals, the kind that people regularly communicate with each other.

To date, work on modeling user goals has either involved costly knowledge engineering efforts to manually encode the plan knowledge, or automated efforts which learn single plans at a time from user behaviors. Here, we investigate a third option: processing a natural language plan corpus, constructed by a community of people. This approach has the potential of acquiring broad coverage of "human level" goals automatically, through the automated construction of a machine interpretable goal network. In this paper, we explain our approach for deriving a goal network from text and

(<http://web.media.mit.edu/~ieber/Publications/Why-UI.pdf>)

Why UI design matters? (Part II)

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Commercial Website:



By Adam Landrum | Jul 29, 2014

When most people think about design, their minds automatically go to the artistic elements of design — things like shape, color, and balance. But the beauty of great design goes much deeper than simple appearance. Good design increases the amount of trust a visitor has in your website and therefore in your business. Bad design sends them bouncing away in search of something more reliable. In fact, the design of your website impacts every single moment a user spends on a page. It can be the difference between a great user experience and a lousy one. Ultimately, it can drive or lose conversions.

(<https://www.upandup.agency/creative-design/importance-of-good-ui-ux>)

What is a "good" UI? (Part I)

Saturday, April 15, 2017 10:25 AM

"Good" UI is a UI suitable for its **intended target users** trying to do a **specific task** in a **specific environment**

-- *"Jack of all trades is the master of none"*

User classification & context diversity: a good UI for me might not be a good UI for you

User difference

- Learning style
- Personality traits
- Motor skill
- Memory
- Preference
- Past experience
- Culture
- Language

User competency

Computer skill & general OS knowledge

- Window swapping, moving, scrolling, click vs. double-click, swiping, back home, short-cut keys, etc.

Knowledge on the software/app in concern

- Menu structure, where to find what, within-page searching, etc... i.e. how to use the app

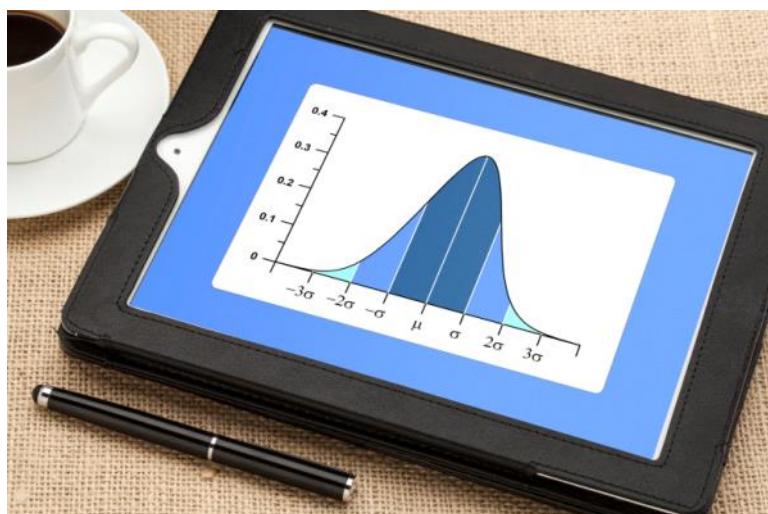
Knowledge on the task (= domain knowledge)

- Terminology

Most users are neither beginners nor experts

As is the case over the general population for age distribution, IQ distribution or a number of other different population distributions, according to Alan Cooper and Robert Reimann (authors of the famous book About Face which has heavily inspired parts of this article as well), the experience level of people performing a specific UI activity tends to follow the Gauss classic statistical bell curve.

From <<http://www.uxpassion.com/blog/user-interface-design-beginners-intermediates-experts/>>



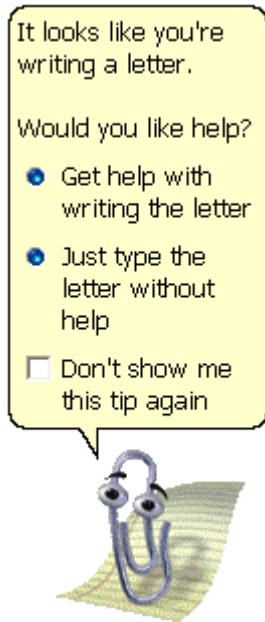
What is a "good" UI? (Part II)

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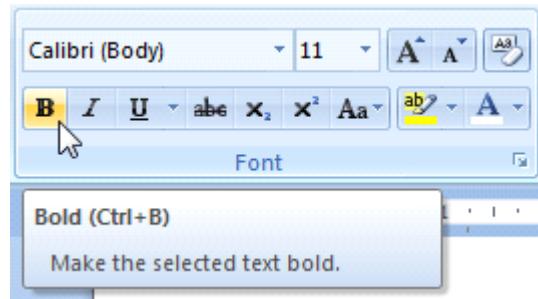
Design for everyone, optimize for intermediates

Example of Designs for different users:

Beginner:



Intermediate:



Expert:

A screenshot of a Windows PowerShell window titled "Windows PowerShell". The command "System_State" was run, resulting in an error: "The term 'System_State' is not recognized as a cmdlet, function, operable program, or script file. Try again." The command "ls" was then run, listing files in the current directory. The output shows a table of files with columns: Mode, LastWriteTime, Length, and Name. The files listed include ".ocean", "Contacts", "Desktop", "Documents", "Downloads", "Favorites", "Links", "Livestation", "Music", "Pictures", "Saved_Games", "Searches", "Tracing", "Videos", "recently-used.xbel", "Computer_Shortcut.link", "danske2.txt", "Font.24", "GG2", "temp.dat", "initdebug.info", "lunolevac.txt", "lhc.txt", "scigrou_output.txt", and "temp.dat".

Mode	LastWriteTime	Length	Name
-d----	16.3.2869	18:09	.ocean
-d-r	12.1.2869	19:12	Contacts
-d-r	12.9.2869	28:17	Desktop
-d-r	14.4.2869	8:09	Documents
-d-r	12.9.2869	3:07	Downloads
-d-r	6.9.2869	13:38	Favorites
-d-r	27.4.2869	15:13	Links
-d-r	8.5.2869	19:59	Livestation
-d-r	24.8.2869	8:27	Music
-d-r	24.8.2869	16:02	Pictures
-d-r	28.12.2868	22:52	Saved_Games
-d-r	21.12.2868	1:52	Searches
-d-r	12.9.2869	16:38	Tracing
-d-r	29.5.2869	19:15	Videos
-a----	16.5.2869	13:27	recently-used.xbel
-a----	14.7.2867	19:53	Computer_Shortcut.link
-a----	11.18.2868	20:37	5199 danske2.txt
-a----	31.7.2867	2:33	286 Font.24
-a----	31.7.2867	2:16	1293 GG2
-a----	31.7.2867	2:01	1255 GOG
-a----	19.3.2868	23:28	@ initdebug.info
-a----	4.8.2867	4:17	24 lunolevac.txt
-a----	10.9.2868	14:44	11287 lhc.txt
-a----	31.7.2867	2:33	7383 scigrou_output.txt
-a----	16.3.2869	18:12	@ temp.dat

Design Principles (Part I)

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Graphic Design Tips:

- Use quiet background, so that what you want to emphasize can be emphasized
- Sharpen the information

Guideline 1: Consistency

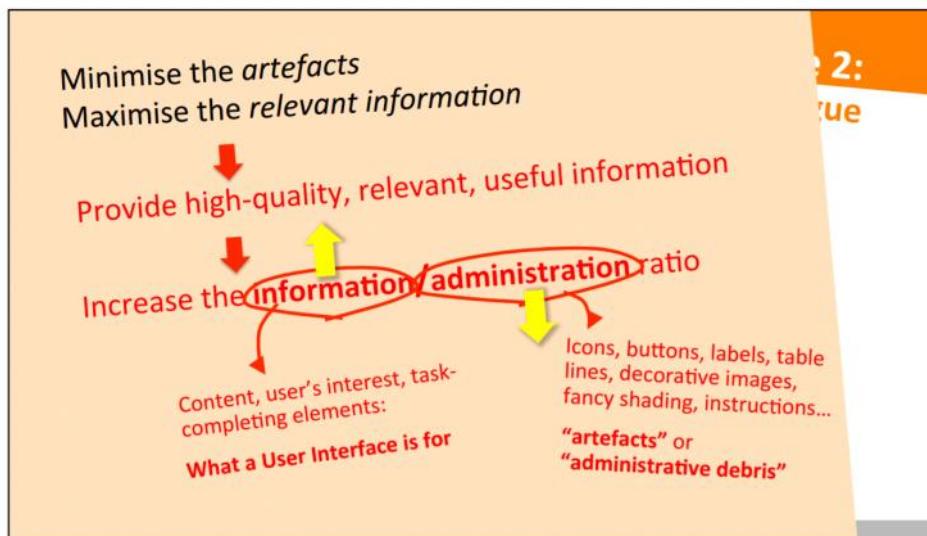
What

- Font (type, size, color, capitalization, spacing, decoration)
- Layout
- Color
- Icon
- Animation effect
- Resolution
- Tone of voice

Where

- Within a page
- Across multiple pages

Guideline 2: Simplicity



Techniques:

- Reduction
- Double duty
- Grouping
- Color coding (note that color perception is subjective)
- Layout: sequence of action, alignment, symmetry
- Emphasis

Guideline 3: Speak the user's language

Use metaphor from user's point of view

Design Principles (Part II)

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Guideline 4: Provide informative feedback

Direct Manipulation

- Immediate and continuous feedback
- Incremental and reversible user action
- No user-driven error

Guideline 5: Reduce user's memory load

Make the possible actions and/or status visible

Recognition rather than recall

Guideline 6: Provide short-cuts for frequent use

- Accelerators (ctrl-c/ctrl-v,...)
- Default values / template
- Action history
- Recently-opened

Accessibility

- Visual impairments
- Hearing impairments
- Motor impairments
- Cognitive impairments

Universal Design (for everyone, though not optimized for everyone)

- Equitable use
- Flexibility in use
- Simple & intuitive
- Perceivable information
- Tolerance for error
- Low physical effort
- Size and space for approach and use



Design Principles (Part III)

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Guideline 7: Prevent user-driven errors

Affordance: cue or clue that suggests an interaction possibility

- Skeuomorphism:
- When object design values aesthetics more than mimicking the real world:



Author/Copyright holder: GraphBerry. Copyright terms and licence: CC BY-SA 3.0

Direct manipulation: leave no room for user error

The slide illustrates two examples of direct manipulation design principles:

- Floor Plan Light Switch:** A physical switch panel with multiple buttons, labeled "FLOOR PLAN LIGHT SWITCH". Arrows point from the "Mapping" and "Visibility" sections of the "Design Principles" list to this image.
- Faucet Light:** A close-up of a faucet handle with a small circular light indicator above it, labeled "Faucet Light". Arrows point from the "Affordance" and "Consistency" sections of the "Design Principles" list to this image.

Design Principles

- Affordance
- Consistency
- Constraints
- Feedback
- **Mapping**
- Visibility

*Intuitive
Easy to use
User-friendly*

Design Principles

- Affordance
- Consistency
- Constraints
- Feedback
- **Mapping**
- Visibility

*Making more visible:
• Functions
• Current state
Better access
Feeling of control
Less surprise*

Four things to remember

- Be self-explanatory
- Be specific
- Be constructive
- Be polite

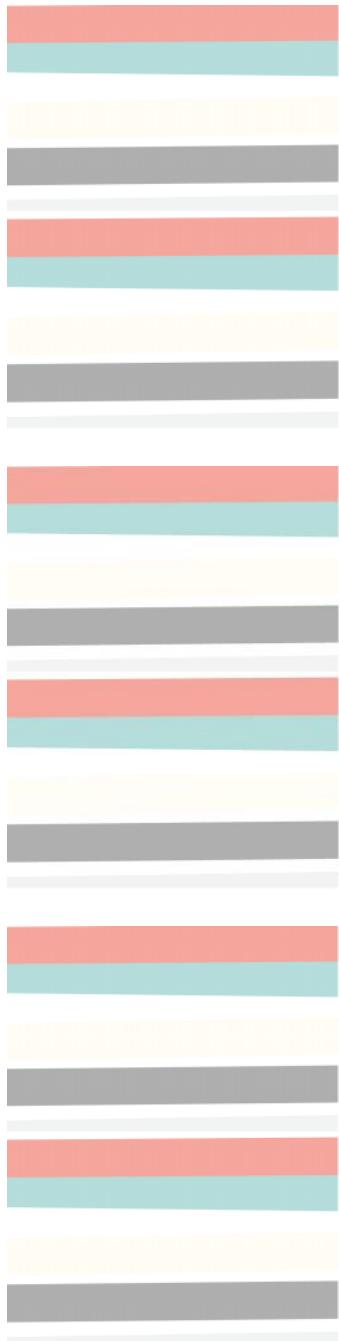
Guideline 9: Provide easy reversal of action

- Relieves user's anxiety
- Encourages to explore new features, to seek alternatives

UX Design

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UX DESIGN



What is user experience

Saturday, April 15, 2017 4:50 PM

Don Norman: The term "UX"

(Example with Apple computers) *UX is all the experience users have with the product, from the moment they see it in the store, to the process of getting it home and installing it, even the experience of talking about it with others.*

Personal experience

Airline online check-in -- Convenient, good UX design

- However:

If the counter does not allow online-checked in customers to check in faster, instead requiring them to spend the same amount of time queueing in the physical bag-drop queue

- Result:

Overall user experience is not improved, but suffered

This is a better UX solution (special check-in path for online checked-in passengers):



(Image source: <https://www.jal.co.jp/en/inter/boarding/quic/>)

UX components

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Content

What is the key story in the experience? This guides the selection and format of information.

Feature Sets and Services

What does the experience let you do? Experiences may provide access to products or services. Increasingly, digital experiences serve as the product itself. The website or mobile app is the main vehicle for conducting business, generating revenue, and communicating the brand's story.

Look and Feel

What is the face of the experience? The look and feel of the digital and non-digital brand artifacts add (or detract) from our overall impression of the experience. People like beautiful things (as long as they're still useful).

Technology

What technology and devices make the experience possible? Understanding the opportunities and constraints of both software and hardware and front- and back-end technologies, is necessary for designing a holistic user experience. Technology works best when it's a part of the design process rather than a rigid business requirement or an after-thought.

Operations

What systems underpin the experience? These systems are comprised of people, processes, laws, regulations, and logistics. Without well-planned operational support, a great experience is hard to maintain over time.

Case study: angry bird (Part I)

Saturday, April 15, 2017 4:52 PM

Why Angry Birds is so successful and popular -- a cognitive teardown of the user experience – MauroNewMedia

Simple yet engaging interaction concept:

Simplification means once users have a relatively brief period of experience with the software, their mental model of how the interface behaves is well formed and fully embedded. This is known technically as schema formation. In truly great user interfaces, this critical bit of skill acquisition takes place during a specific use cycle known as the First User Experience or FUE.

However, the challenge is to create a desire by users to continue interaction with a system over time, what we call user “engagement”. What makes a user interface engaging is adding more detail to the user’s mental model at just the right time.

Cleverly managed response time:

A universal law of user interface design is “the faster the response time, the better”. The surprising point that is often misunderstood is that not every aspect of the user interface needs to be or should be as fast as possible.

Instead they programmed the flight of the angry flock to be leisure pace as they arc across the sky heading for the pigs’ glass houses. This slowed response time, combined with a carefully crafted trajectory trace (the flight path of the bird), solves one huge problem for all user interfaces – error correction.

Short-term memory (SM) management:

Poor user interface design impacts the demand placed on SM. As a general rule, anything that is engaging, such as conversation, noise, motion, or worst of all, a combination of all three, is likely to totally erase SM.

To one’s surprise, one can use the degradation of short-term memory to actually improve game play engagement.

Mystery:

At its most basic level, experiencing mystery in what we interact with makes you ask the question, “Why did they do that?”. What we mean here is, “Why did they do that? – A good thing, not “What were they thinking? – A bad thing. If you think carefully about the experiences you have in the ebb and flow of life, you realize that the most compelling are those that force you to think long and hard about why a given thing is the way it is.

Case study: angry bird (Part II)

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How things sound:

Employing the power of audio stimuli including structured music often adds a critical level of engagement for users of all forms of technology.

Angry Birds serves to enhance the user's experience by mapping tightly to the user's simple mental model of conflict between the angry birds and the loathsome pigs. This concept, known in film production as "action syncing", provides enhanced levels of the feedback for users at just the right time.

How things look:

In most user experience design solutions, visual design (how things look) is technically a hygiene factor. You get serious negative points if it is missing, but minimal positive lift beyond first impression, if a user interface has great visual design.

The ultimate question is how much visual design is enough? Even more important than good or bad visual design is appropriate visual design.

Measuring that which some say cannot be measured:

The actual dimensions of appropriate and winning visual design vary widely, depending on the application but in game design two factors reign supreme. First, the visual design must be memorable and second, it must convey the desired attributes of the game play model.

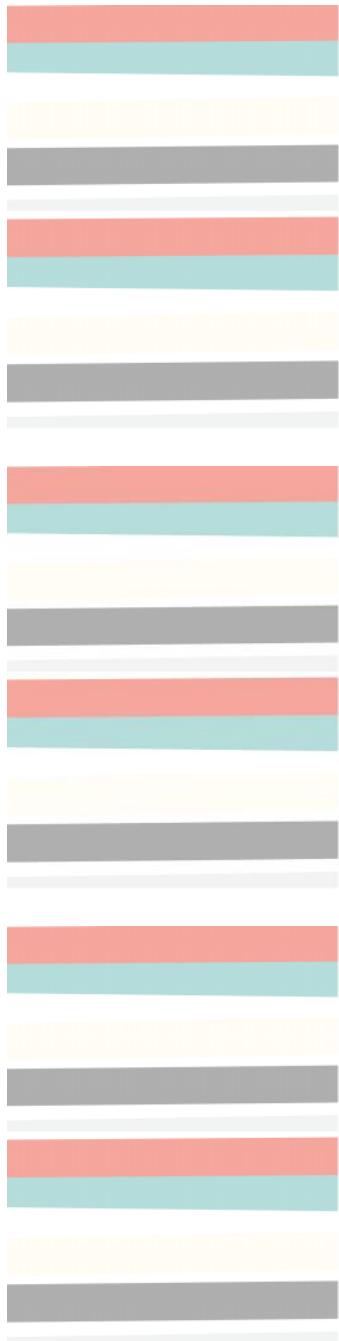


(Image source: <http://www.rovio.com/games/angry-birds>)

Design Practice

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DESIGN PRACTICE



In-class practice

Saturday, April 15, 2017 5:38 PM

Application Design

- YouTube (more clean and well-organized layout)
- Google search result layout (unused space in the right)
- Web browser (resolve commonly-faced issues)
- Email attachment (how to resolve forgetting to attach error)
- TV channel predicting (smart TV for household)
- Currency converter (Simple yet more customizable)
- Virtual calculator button design (affordance button design)

Physical Design

- Lift control (prevent error of pressing the wrong floor; button mapping)
- TV remote (distinguish and group buttons based on frequency of use)

Design Evaluation

- Heuristic inspection of Google drive (the bad and the improvements)

Open in new tab (Part I)

Saturday, April 15, 2017 5:39 PM

This is a real experience I encountered while studying UI/UX design:

1. I opened the webpage suggested by Professor Hyowon on UX toolbox.

The screenshot shows a webpage titled "UX Tools". The main content area is divided into three sections: "UI editor and prototypers", "Customer Journey Map Tools", and "Mock-up prototypers".

- UI editor and prototypers:**
 - Prototyping Tools Compare //RTFM//
 - Axure
 - Lucid Chart
 - Noodl
 - Balsamiq. Rapid, effective and fun...
 - Briefs
 - Fluid UI
 - HotGloo
- Customer Journey Map Tools:**
 - UXPressia Customer journey mapping
 - Flying Logic
 - Create a new Customer Journey Canvas
 - Customer Journey Management Platform
 - smaply
 - Experience mapping tools.
 - Custellence
 - Customer and User Experience Software
- Mock-up prototypers:**
 - Unsplash High-Resolution Photos
 - 9,000+ Free Stock Photos
 - Free stock photos
 - Free Stock Images & Videos ~...
 - splashbase

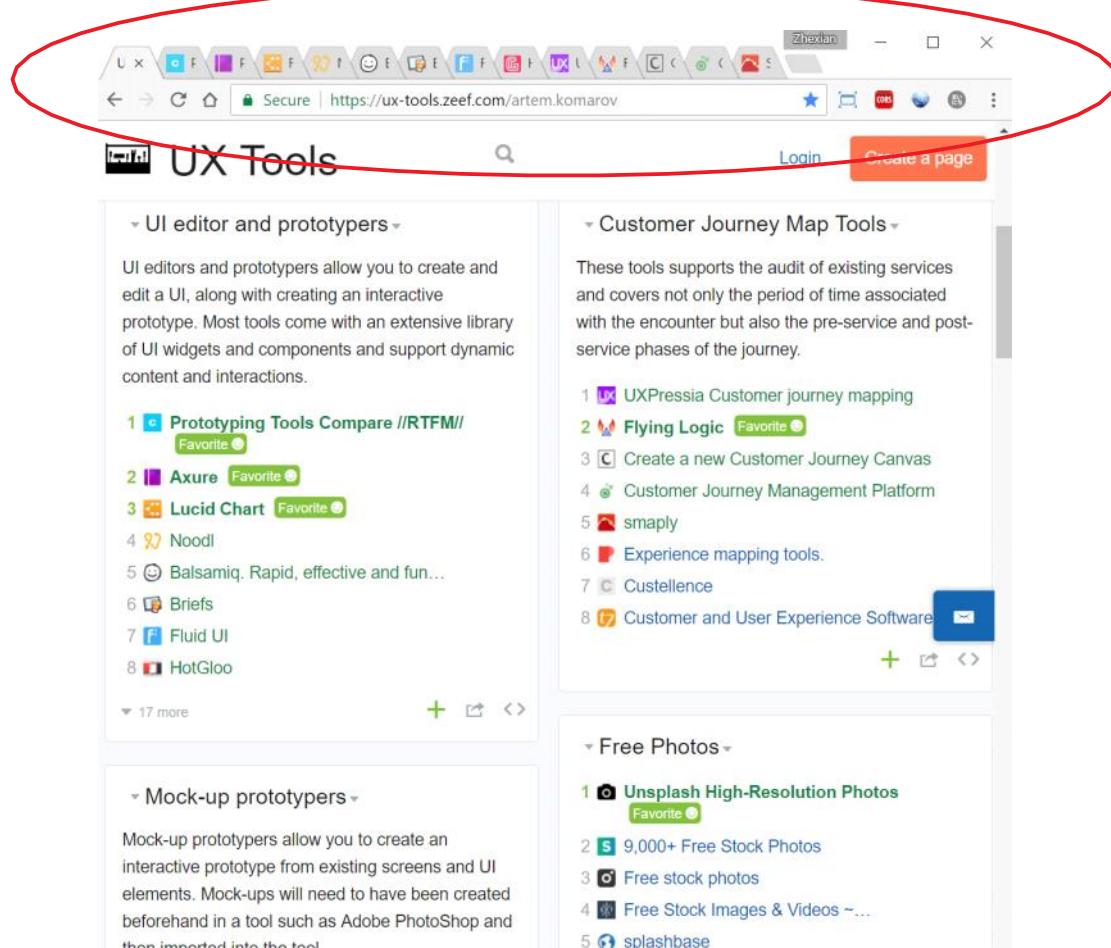
2. However, I did wish to open all the hyperlinks to check the tools one by one. Sadly there was no way to open the links together. I had to manually click each link.

The screenshot shows the same "UX Tools" webpage as above, but with a red circle highlighting a context menu that has appeared over a link in the "UI editor and prototypers" section. The menu options include "Open link in new tab", "Open link in new window", "Open link in incognito window", "Save link as...", "Copy link address", "AdBlock", and "User-Agent Switcher for Google Chrome".

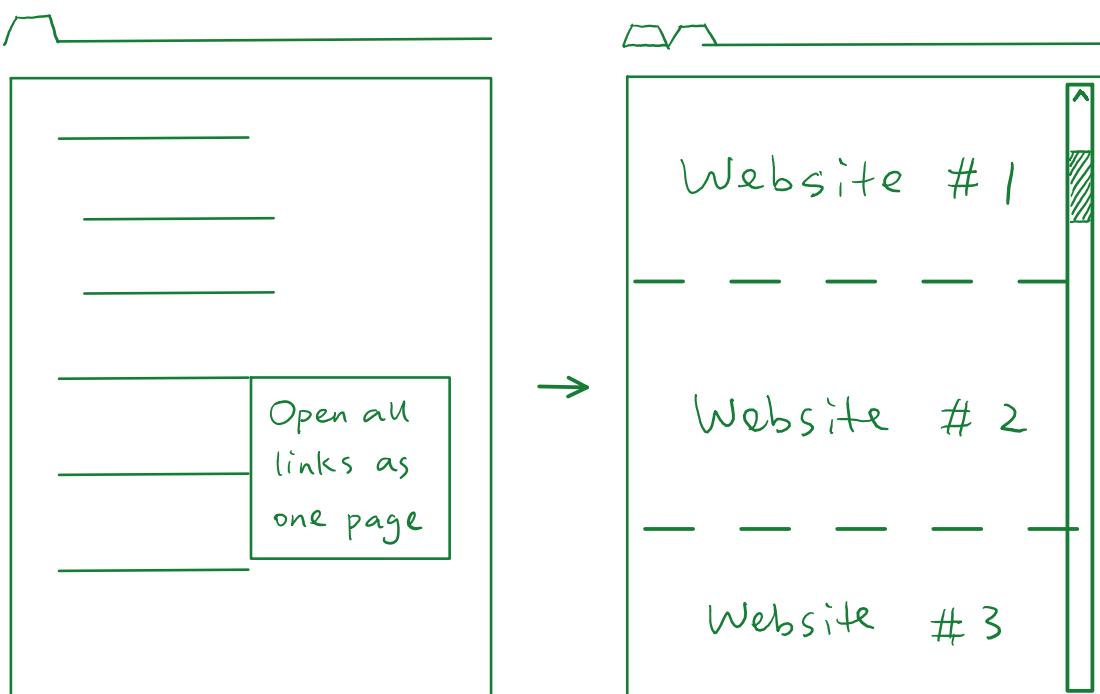
Open in new tab (Part II)

Monday, April 24, 2017 4:41 PM

3. Even when I open all the tabs manually, it is troublesome to close the tab and switch to a new tab.



4. Suggested UI/UX design for this use case: **Open all new tabs at once & as a continuous page**



Mobile responsive website (Part I)

Saturday, April 15, 2017 5:53 PM

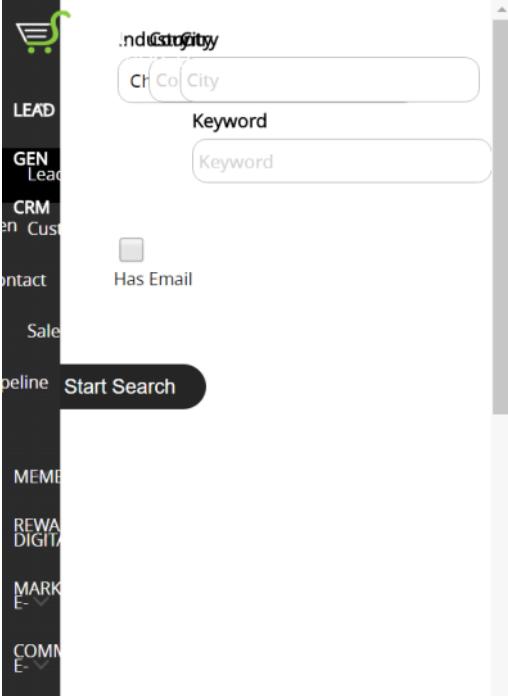
This is where I put my knowledge of UI/UX design into practice for real, for-profit company. It is my part-time job, re-designing the mobile version for their key product:

1. Sales Leads Generating Engine
2. Customer Relations Management (CRM)

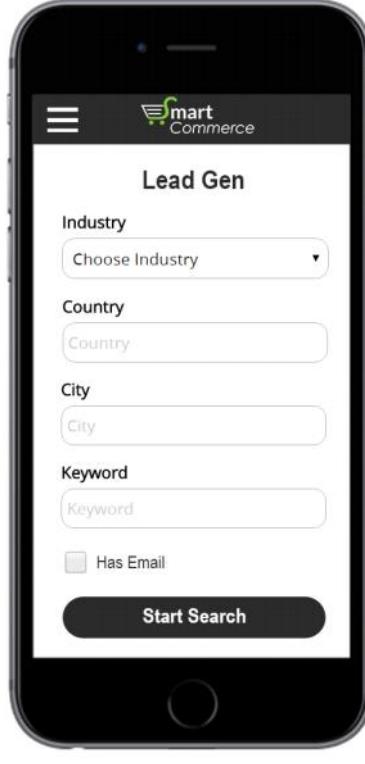
Their existing website is not mobile-optimized:

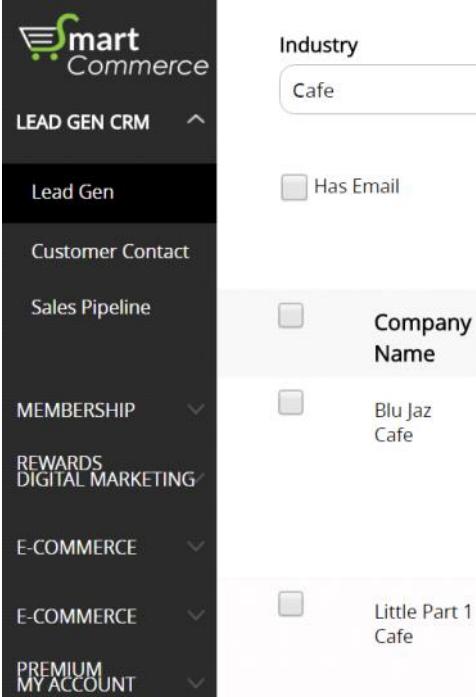
Sales Leads Generating Engine

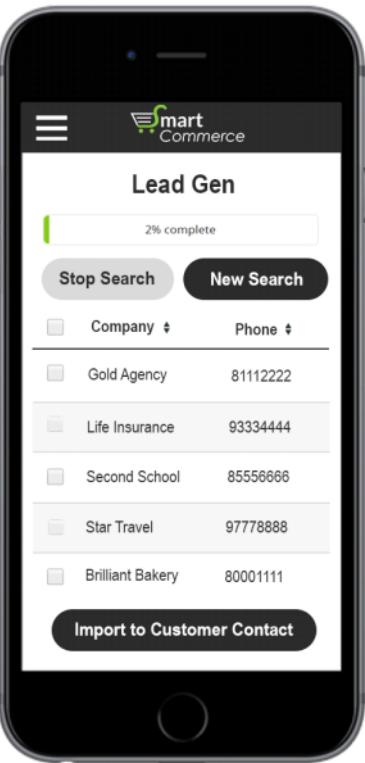
Before



After





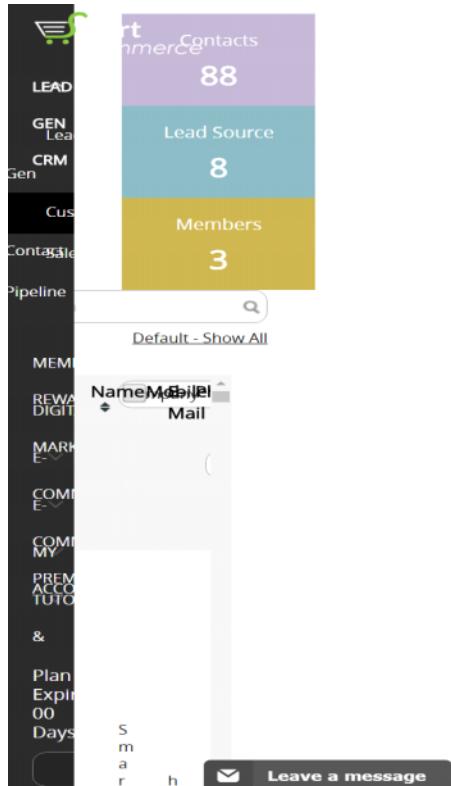


Mobile responsive website (Part II)

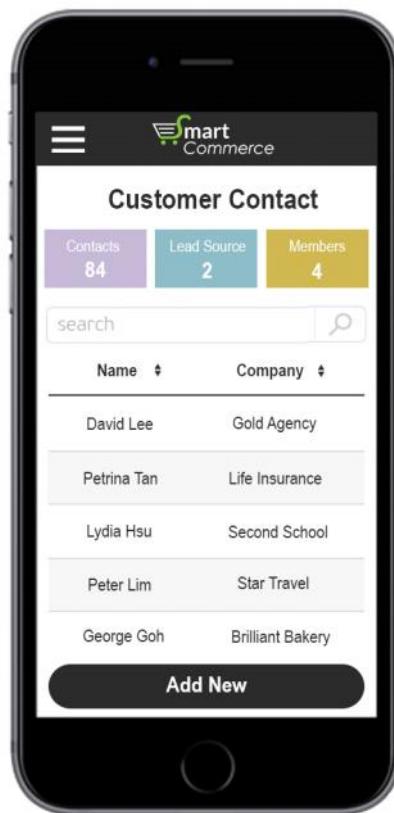
Monday, April 24, 2017 5:10 PM

Customer Relations Management (CRM)

Before

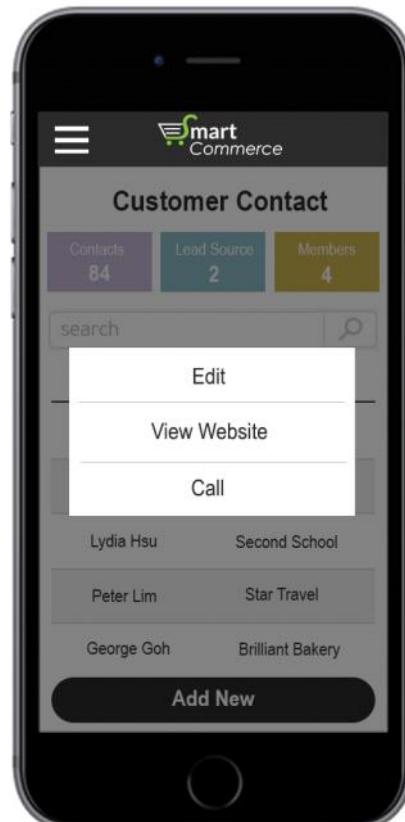


After



Some takeaways:

- When design a website, always consider how it will look on mobile phone -- it is troublesome to fix the mobile responsiveness after a website is fully-developed;
- For some application that is mainly used on-the-go, it may be useful to develop the mobile version before developing the desktop one;
- Mobile application need to be even more concise and intuitive, at the same time easy to read and use;
- Be consistent in color code and widget style with the main desktop site, so the mobile version does not look too foreign.



Design Evaluation

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DESIGN EVALUATION

Why & What to evaluate?

Saturday, April 15, 2017 2:52 PM

Why evaluation is important for UI/UX design:

- Fix the “usability bugs”
- Justify existing products/services
- Provide better products/services
- Improve understanding of our creation

What to test:

1. UX / IA / Usability Issues

- Task Completion
- Time On Task
- Errors
- Efficiency
- Learnability
- Perceived Severity of Identified Issues

2. Competitive Testing

- Which product do users prefer? Why?
- Which product was easier to use? Why?
- What are some errors my competitor made that I can avoid during product development?
- What are some successful features that my competitor has that I might want to consider for product roadmapping?
- How do users of different demographics (Age, Gender, OS, income, etc) respond to each product? Is one better for my target market?

3. Preference

- Visual design & Branding
- Interaction design
- Copy
- Navigation approaches
- Use of imagery
- Page layout and information hierarchy
- Any other contentious issues at your organization

4. Validation of Fit & Finish

- One to four main user flows (keep this as simple as possible)
- The main conversion point of the system
- Overall opinions of the visual design and interaction design

Other Approaches: Copywriting Validation, Lightweight Multi Platform QA, Persona Info

How to evaluate?

Saturday, April 15, 2017 2:53 PM

Heuristic inspection

1. Clarify who the intended target users are
2. Go through the UI and check whether any design guidelines are violated

Problems of an “expert”

- Has a biased area of expertise/ experience
- Lacks domain knowledge
- Lacks the user’s point of view

Involving the real users necessary

User Testing

Intrusive:

Observation

Think-aloud (an extension of Observation)

Indirect:

Incorporating the logging in the system (e.g. web server log data)
Screen recording (e.g. Camtasia)

Tool for screen recording: auto-generated transcripts with search and navigation features:
<https://www.usertesting.com/blog/2017/03/13/transcripts/>

Eye-tracking (e.g. Tobii)

Self-reporting (Incident diary, voice recorder)

Interview & Questionnaire

User Feedback

- Verbal, informal feedback
- Written, formal feedback (survey)

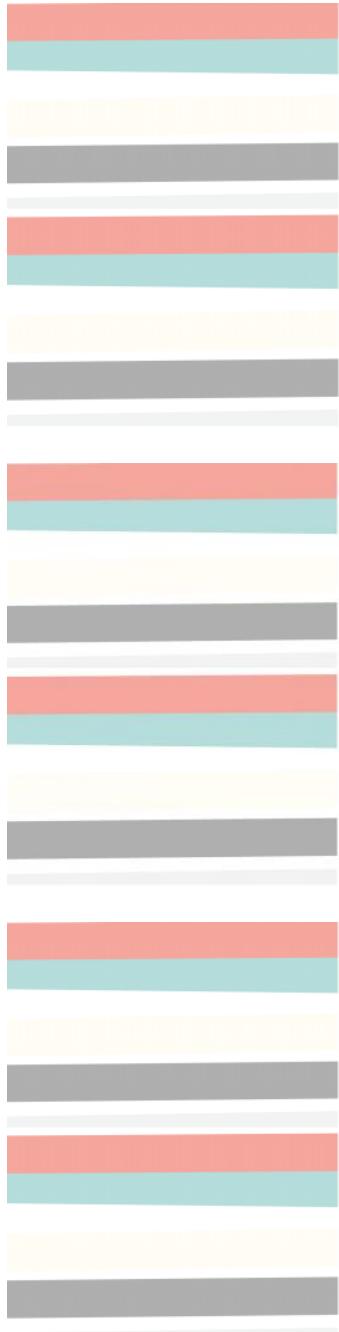
Lab Testing

More structured and formal user testing and/or observation

Project Mockups

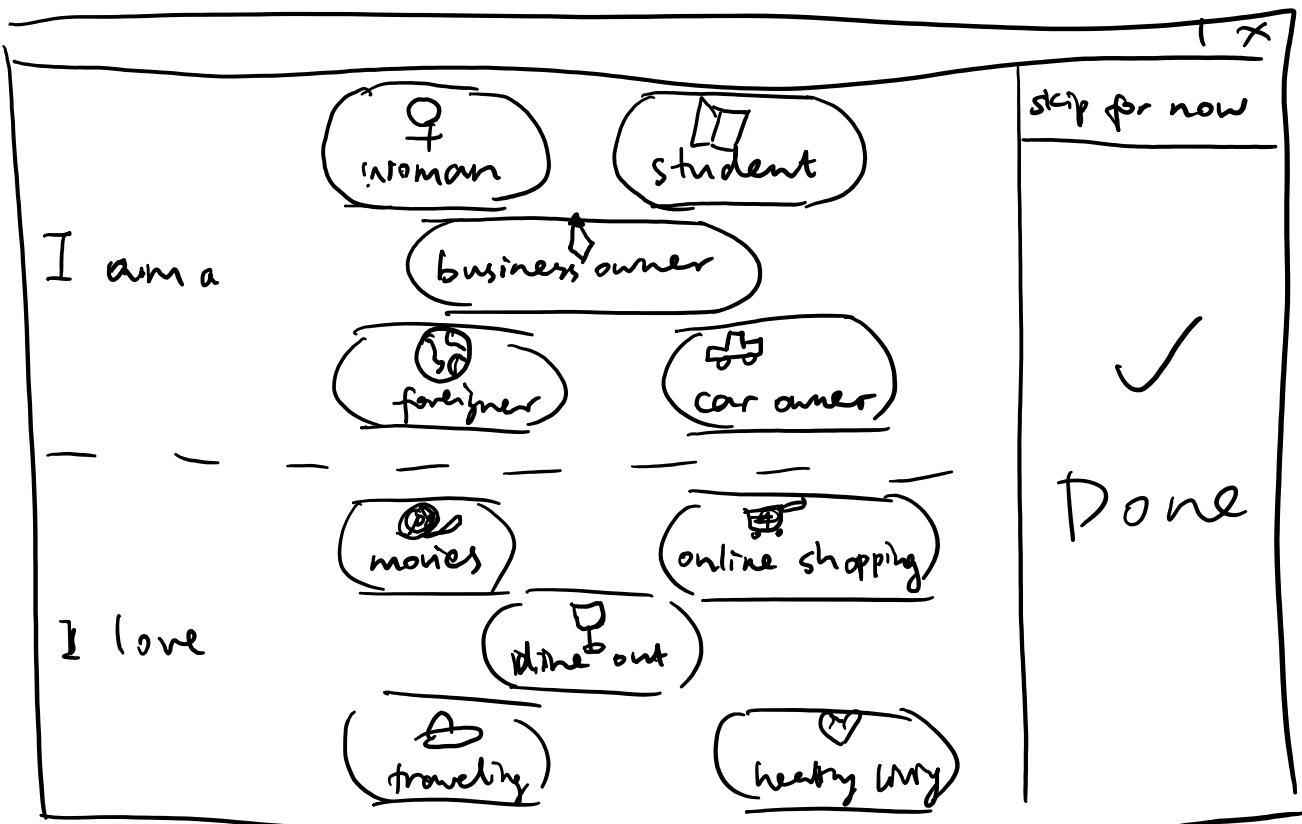
Saturday, April 15, 2017 10:00 AM

PROJECT MOCKUPS



Questionnaire v1

Tuesday, February 28, 2017 5:18 PM



Questionnaire v2

Wednesday, March 1, 2017 1:00 PM

DBS Bank Cards

I am a

Business Owner

Foreigner

Movies

Online Shopping

Dining Out

Travelling

Healthy Living

Done

Skip for now

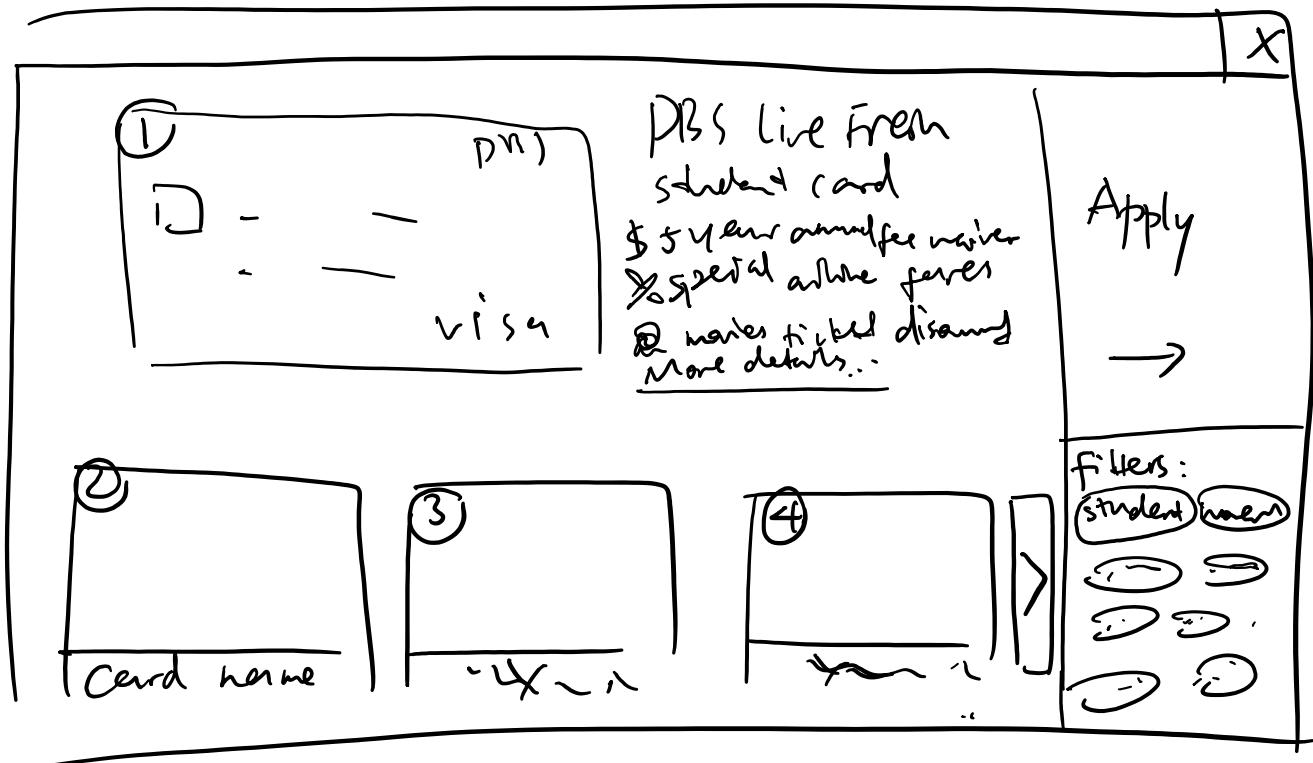
Recommendation v1

Wednesday, March 1, 2017 12:34 PM



Recommendation v2

Wednesday, March 1, 2017 12:12 PM



Recommendation v3

Wednesday, March 1, 2017 1:00 PM

DBS Bank Cards

DBS Live Fresh Student
\$
Card

5 year annual fee waiver

Special airline fares

3

4

Card Name

Card details

Card Name

Card details

More

Card Name

Card details

View all cards

Application Form v1

Wednesday, March 1, 2017 12:51 PM

1 X

1 Personal Details

1 Mask ✓ Name on NRIC ✓ Name on card

Birthday month / /

Foreigner ✓ Country ✓
✓ ✓ ✓

2 Contact

3 Residential & Employment

4 Card options

Application Form v2

Wednesday, March 1, 2017 1:00 PM

DBS Bank Cards

1 Personal Details

Ms. ▼ Name on NRIC/Passport Name on card

Birthday 31/01/1990 Foreigner

December 2009

29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

Afghanistan

Argentina

.. .

2 Contact

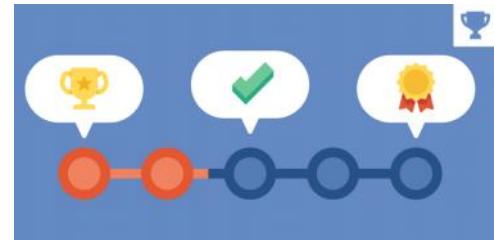
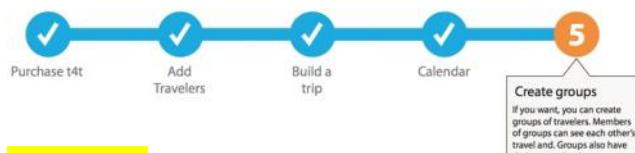
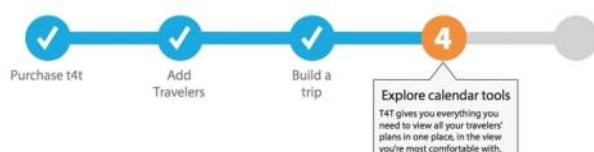
3 Income

4 Card Options

Idea for Progress Bar

Monday, April 24, 2017 5:26 PM

Ideas:



Roadmap With Text Boxes Data Representation



Our Design:



What's special about our design:

- Clear progress bar for each individual section (clarity)
- Iconized title for each section (gamification)
- More distinct color scheme (visual appeal)

Gamification Ideas

Monday, April 24, 2017 5:33 PM

"Gaming is nothing but really effective communication and education"

Common applications:

- Education: code academy; duolingo
- New product: dropbox
- Training: Nike+; Finger (guitar tutorials)
- For complete profile: LinkedIn -- profile strength
- For using functions: restaurant deal comparison

The screenshot shows a LinkedIn profile page for Lauren Bowen. The profile picture is on the left, followed by her name and a brief bio: "Design is my lifelong craft. San Francisco, California | Internet". Below this are sections for Current (LinkedIn, Napkin Sketches), Previous (LinkedIn, Advent Software, Tamale Software), and Education (Georgia Institute of Technology). A blue button says "Improve your profile" and a grey button says "Edit". To the right, it shows "500+ connections". In the top right corner, there's a "PEOPLE YOU MAY KNOW" section with four profile pictures and a "Connect" button. Below that is an "Ads by LinkedIn Members" section with two ads: "Learn to design w/Agile" and "Dreamers, Pirates & You". A red circle highlights the "PROFILE STRENGTH" section at the bottom right, which shows a blue circle with the text "All-Star".

The screenshot shows the Restaurant.com homepage. At the top, it says "RESTAURANT.COM BEST DEAL. EVERY MEAL.". On the right, it shows user information: "ily alvarez | My Account | Log Out" and "JessicaP 1,342 pts Order by phone 1.888.745.6991". Below this is a banner for "SHOP AT OUR PARTICIPATING BUSINESSES and get \$25 in Restaurant.com certificates FREE!". A red circle highlights a badge in the bottom right corner of the page.

This screenshot is a larger view of the Restaurant.com homepage. It features a banner for "Make Dining Plans Today! Save on over 50,000 Restaurant Deals Nationwide". Below this is a search bar with fields for "Where are you?" (Mountain View, CA) and "What are you hungry for? (optional)". A red circle highlights the badge area in the bottom right, which includes a green circular icon with a person icon, the text "Creation Station +100 pts", and the message "Thanks for joining Restaurant.com. You have already earned one of your first badges! Now great dining deals are at your fingertips". A "View Profile!" button is also visible.

Gamification in Project (Part I)

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Applying Gamification in Bank Card Application

Mobile phone (contact info); Passport (personal info); bank card (card info)

The image displays three mobile application screens. The first screen shows a contact form with fields for Name, phone number, Phone Number, email, and Email. The second screen shows a passport image with fields for Preferred Name on Card, Preferred Credit Limit (\$500), Gender (Female), and Date of Birth. The third screen shows a bank card with a logo, card number (1234 5678 9876 5432), expiration date (MONT/Year), and a placeholder for Preferred Name on Card.

Post card (residential info)

The image shows a post card-themed form for residential information. It includes fields for Residential Country (Singapore), Residential City (Singapore), Residential Address, Type of Residence (HDB/Condo/Landed, etc.), Residential Status (Owned/Rented/Parent's), and Number of Years at Residence (6 Years). A 'Save & Next' button is at the bottom right.

Name card (employment info)

The image shows a name card-themed form for employment information. It includes fields for Occupation, Length of Current Employment, Job Industry, Company Name, and a 'Save & Next' button. Contact details (123, Street name, State name, ZIP code 123456, Tel: 123 123 123, Fax: 456 456 456) and company details (Mail: info@company.com, Web: yoursitename.com) are also present.

Gamification in Project (Part II)

Monday, April 24, 2017 5:39 PM

Graduation certificate (education info)



Polaroid family photo (family info)

Marital Status
Single/Married/Divorced, etc

Number of Dependents
e.g. 2

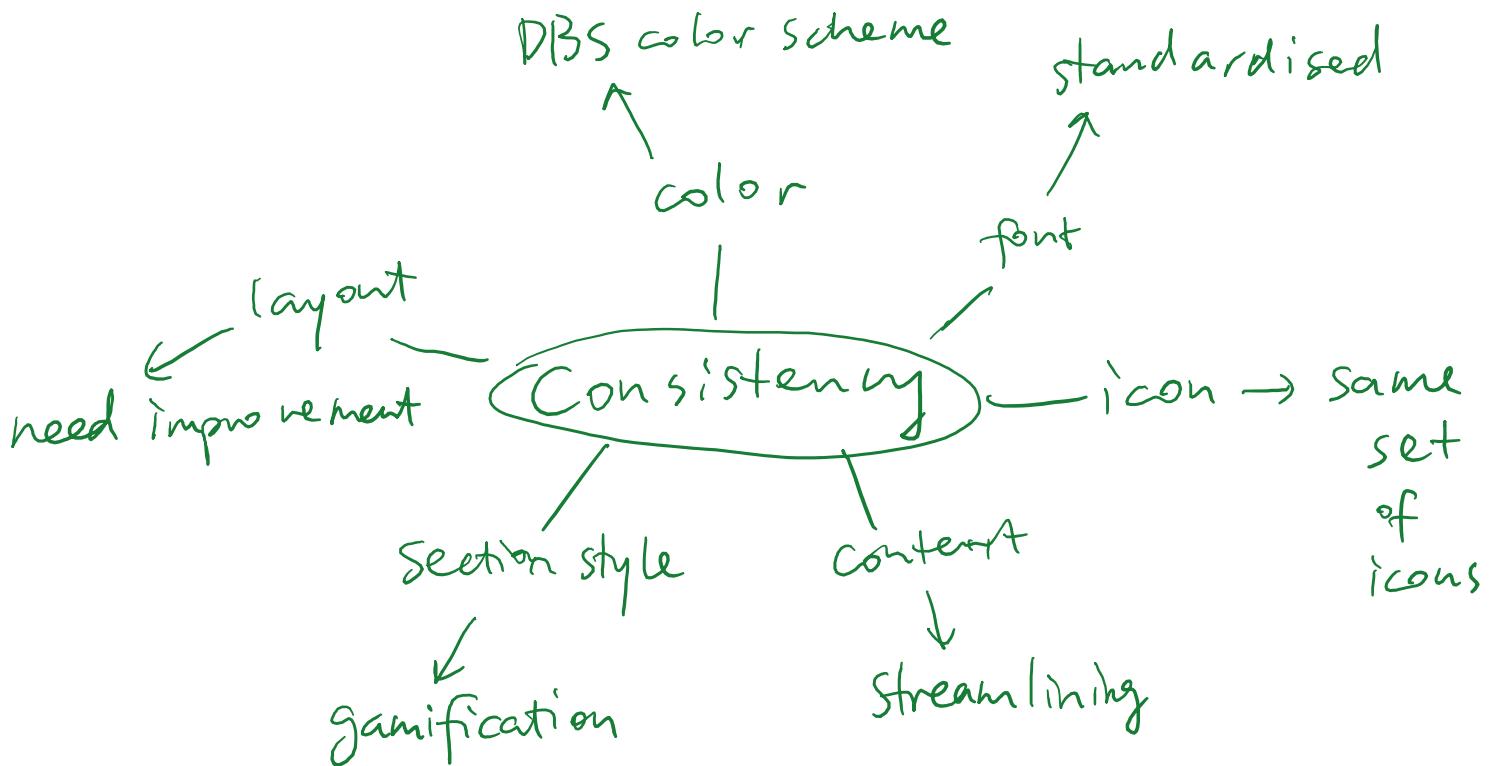
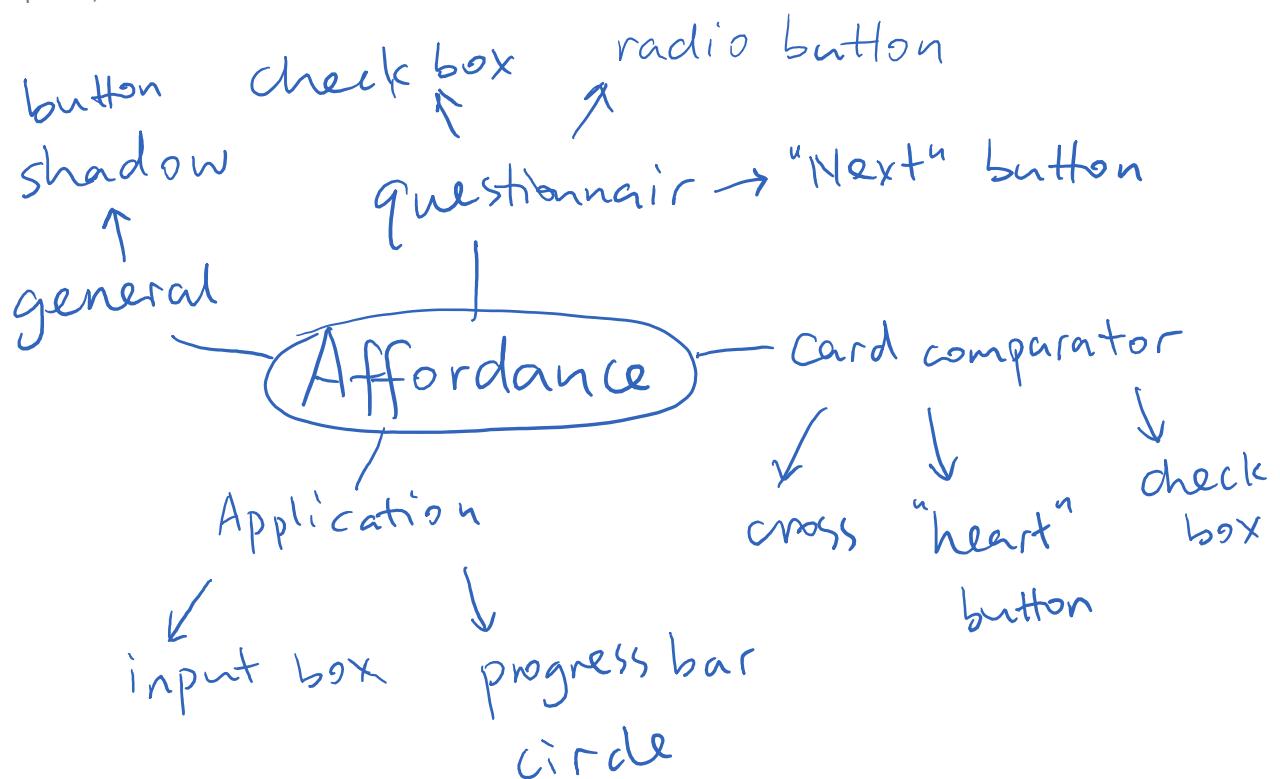
Project Reflection

Sunday, April 23, 2017 12:28 PM

PROJECT REFLECTION

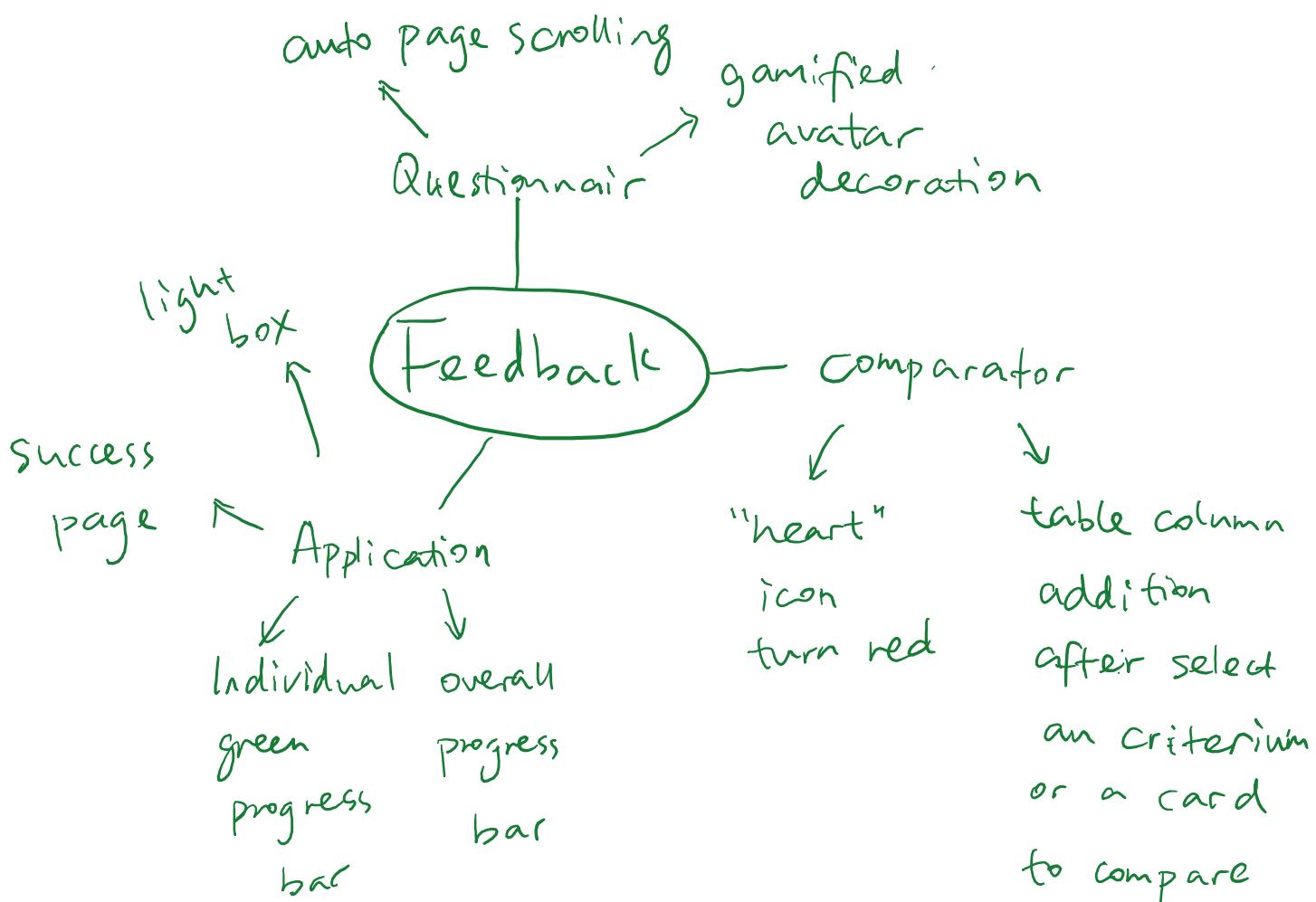
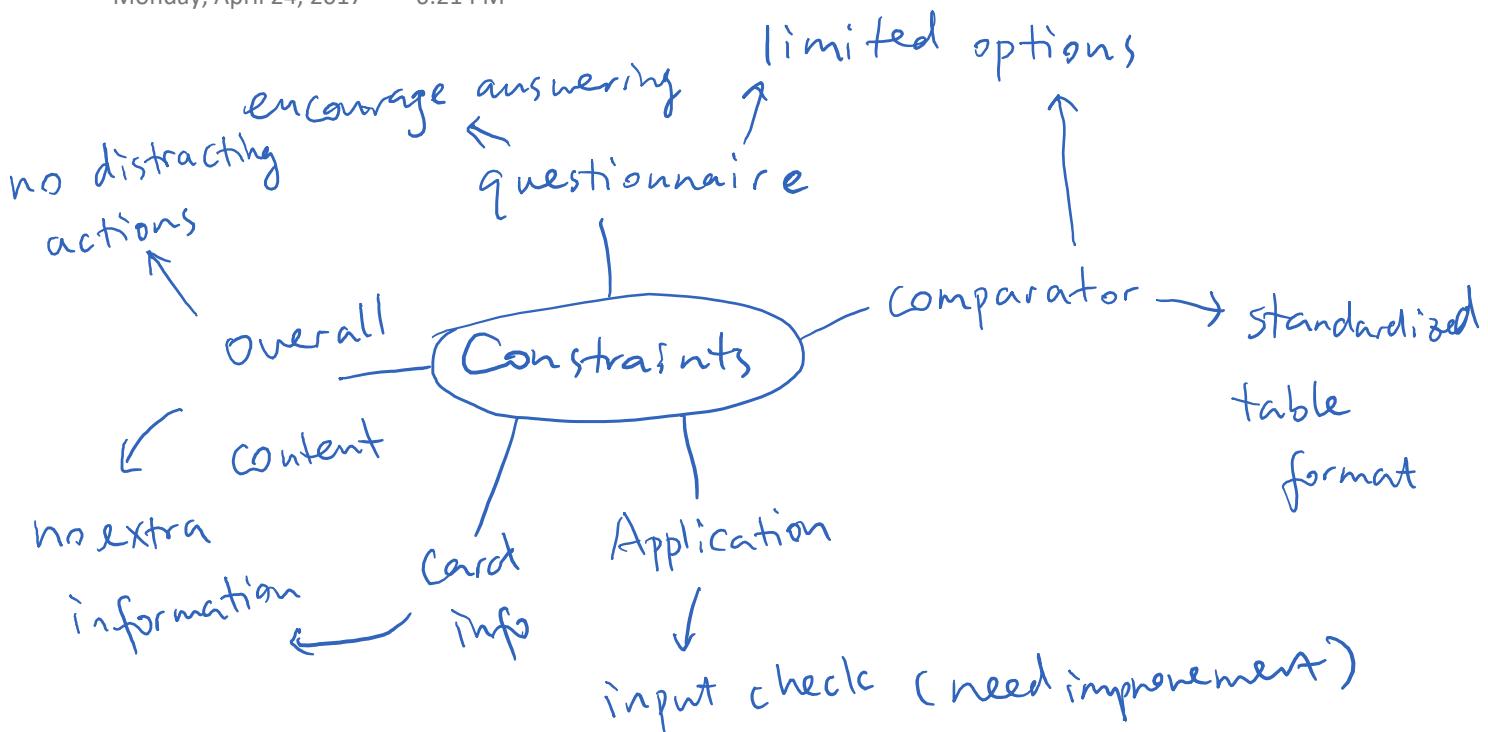
Design Principles in Project (Part I)

Monday, April 24, 2017 6:10 PM



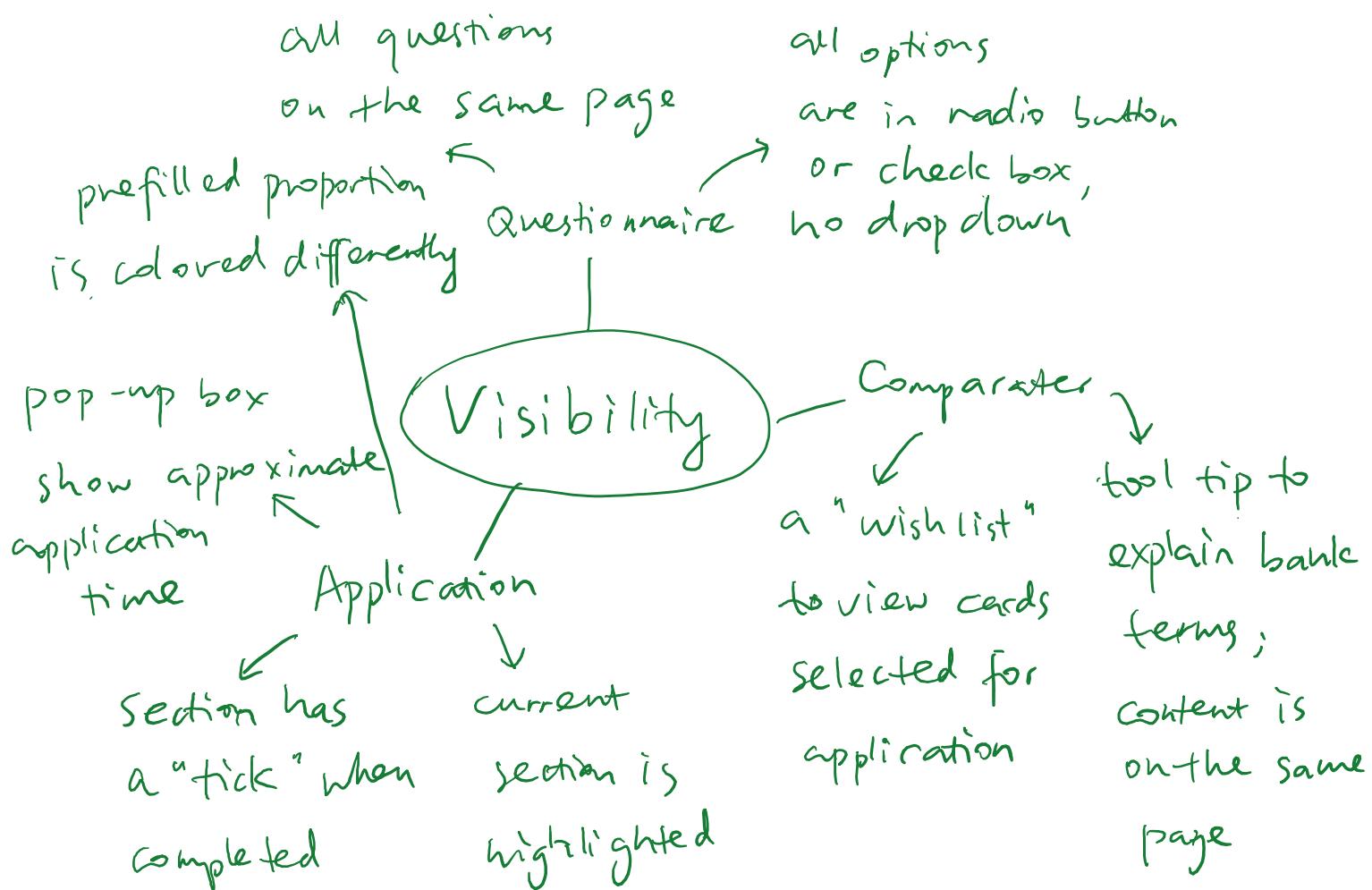
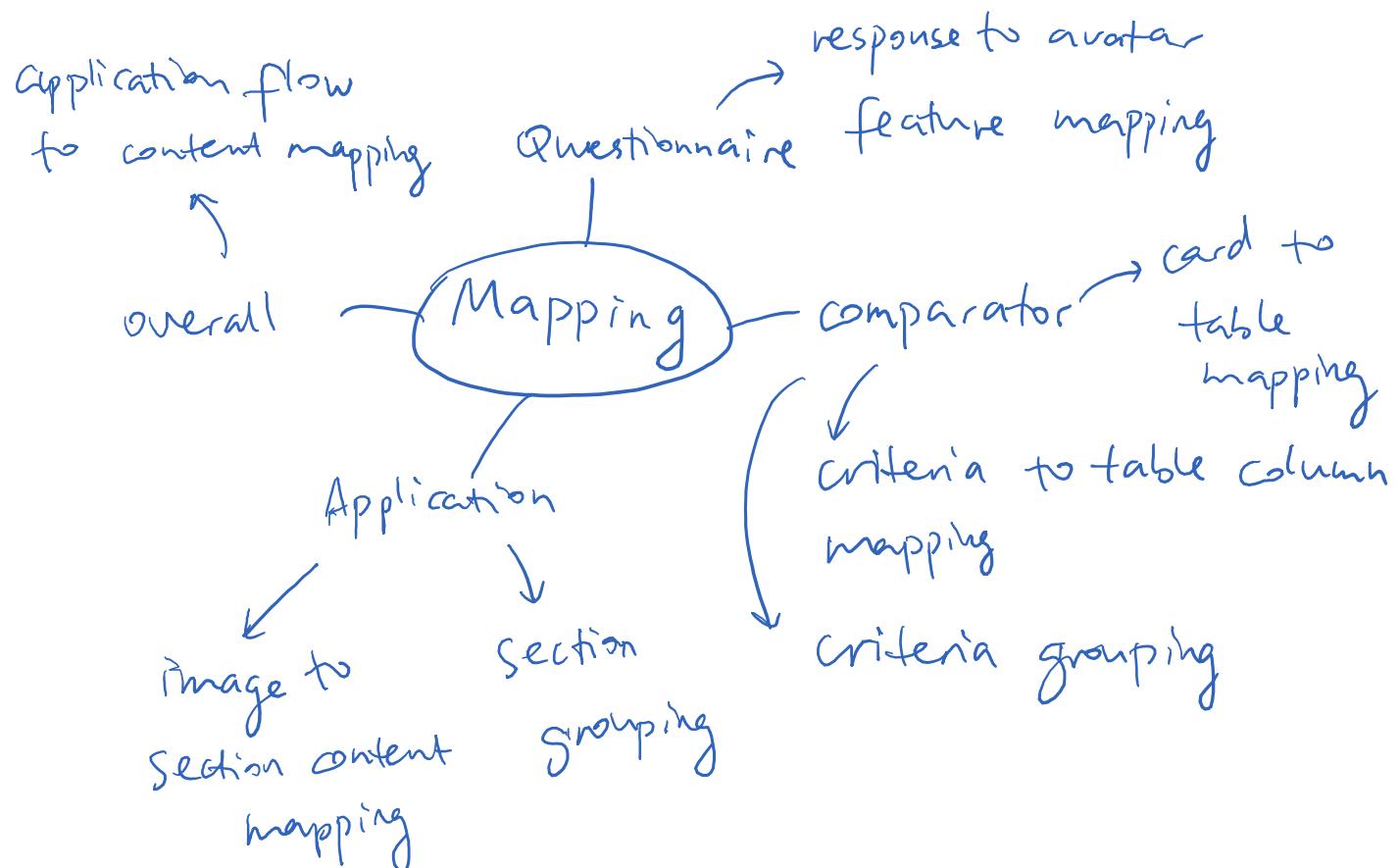
Design Principles in Project (Part II)

Monday, April 24, 2017 6:21 PM



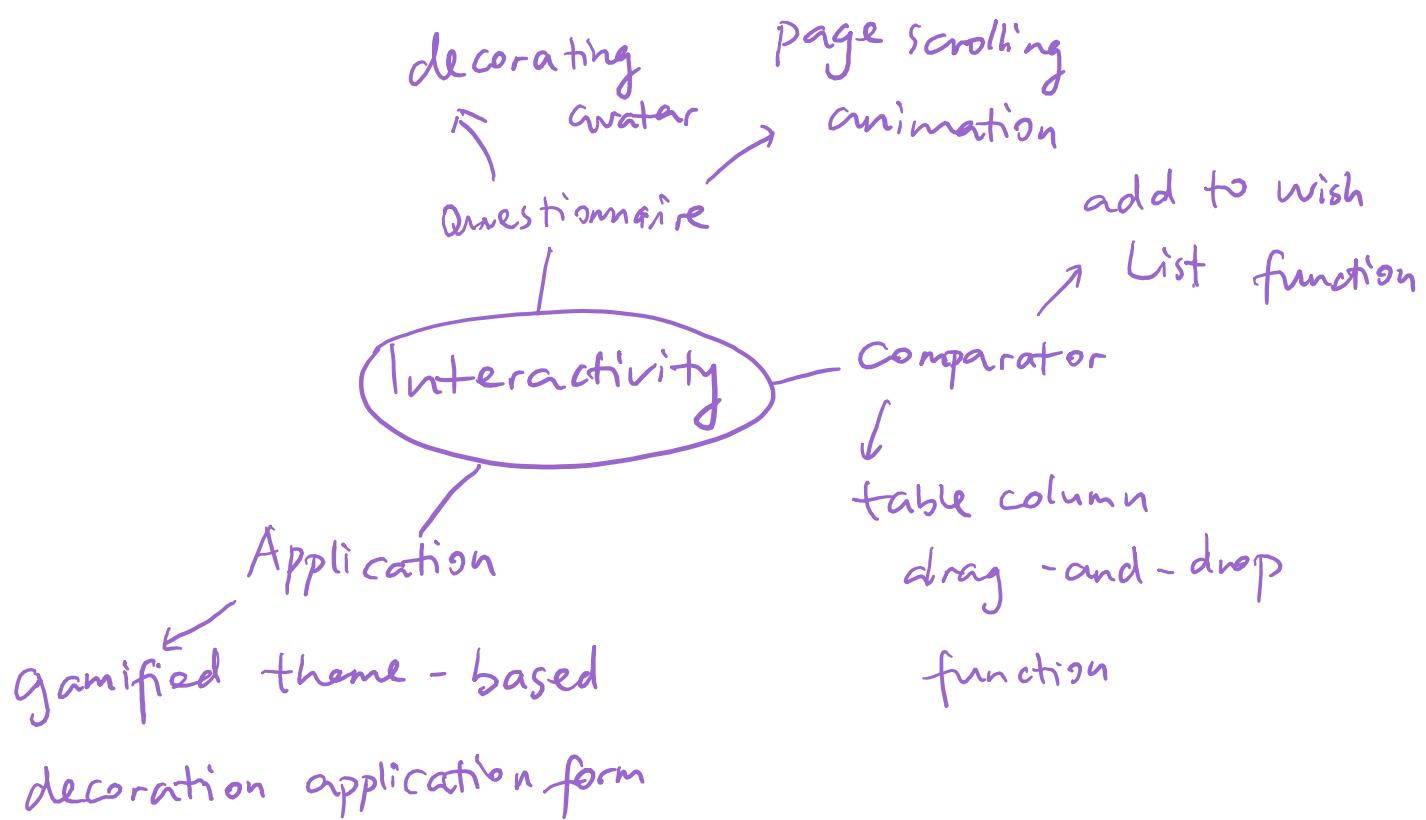
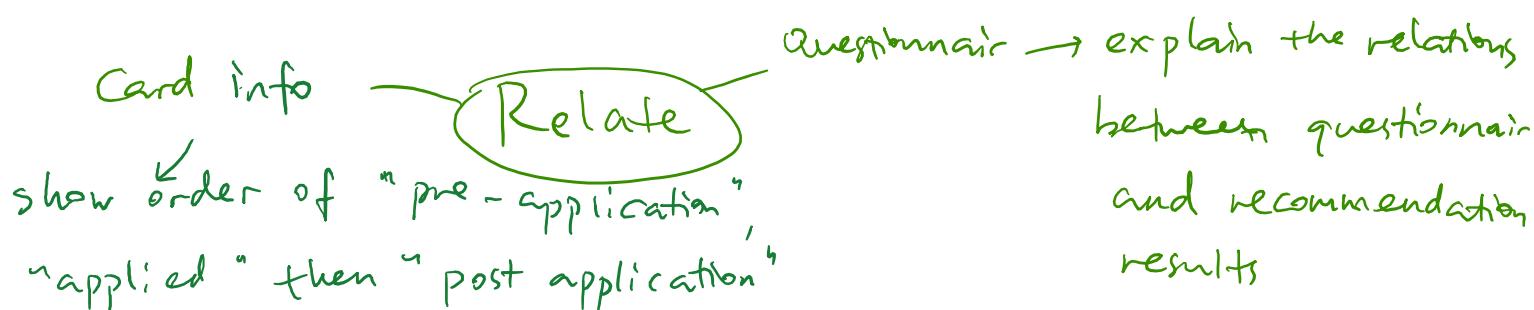
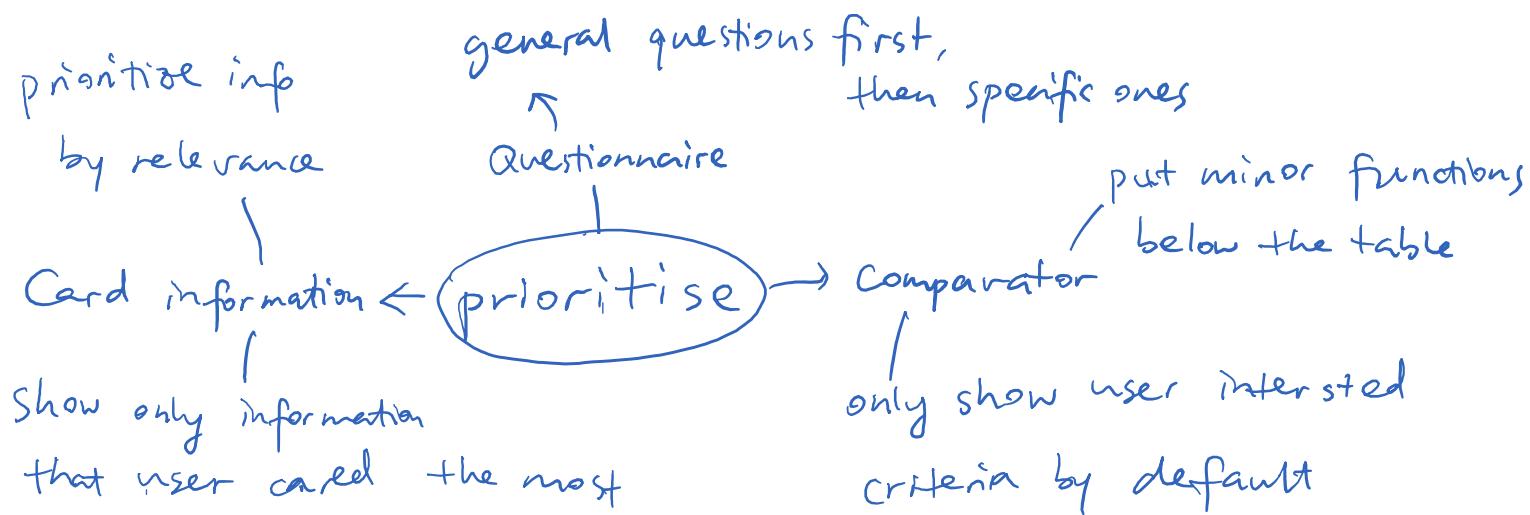
Design Principles in Project (Part III)

Monday, April 24, 2017 9:34 PM



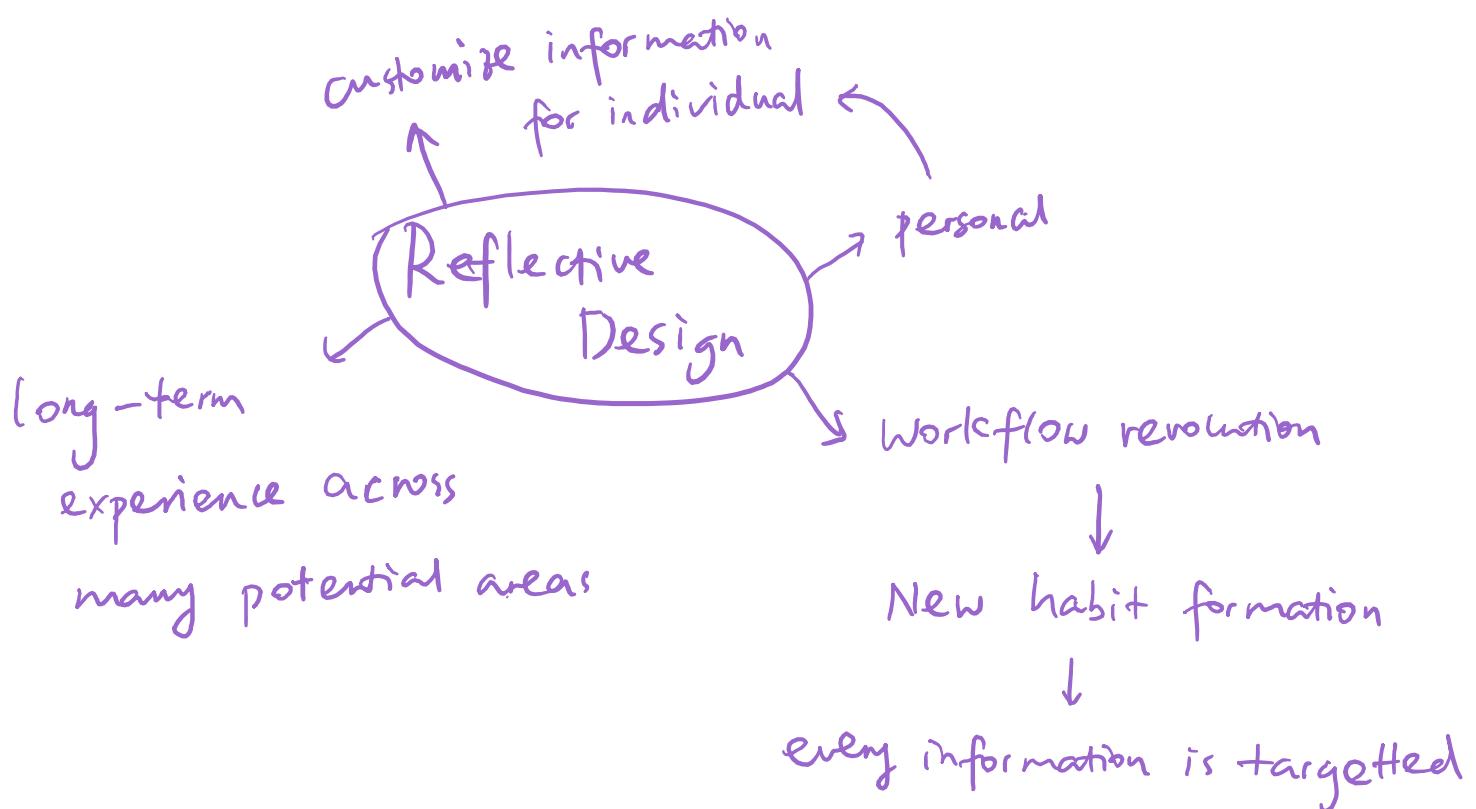
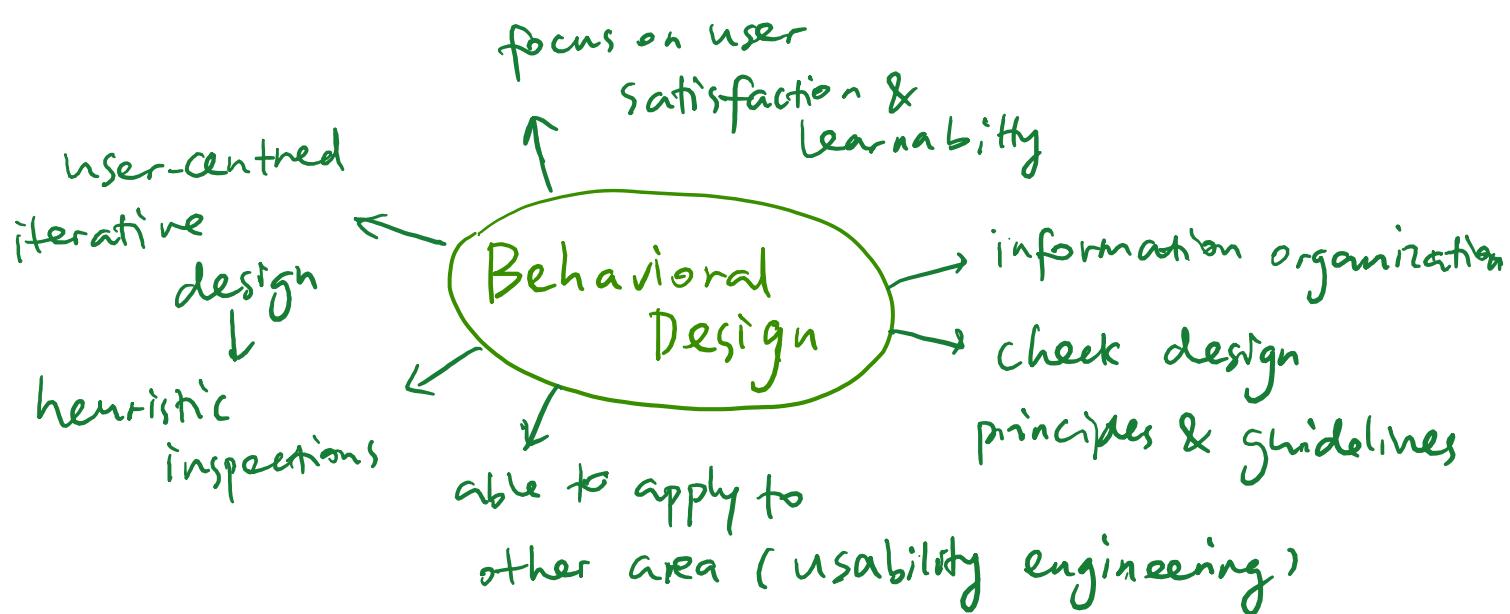
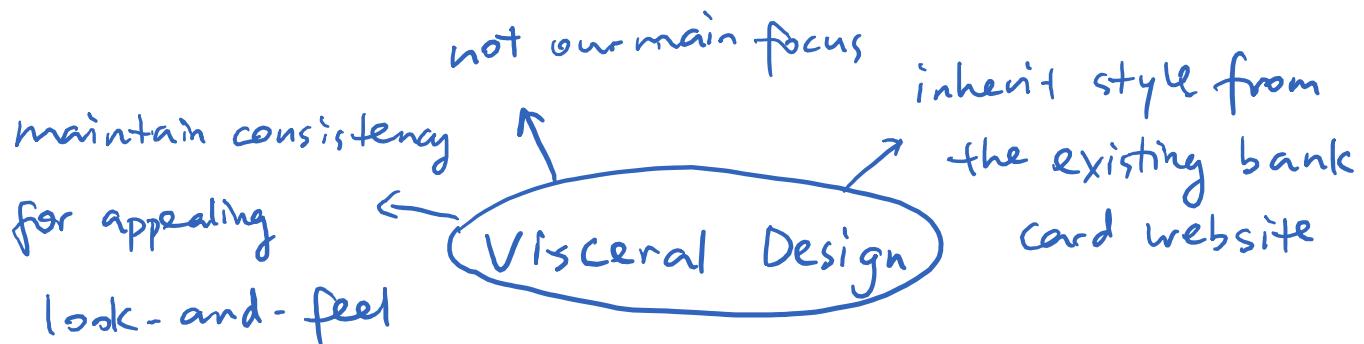
Visualizing Information in Project

Monday, April 24, 2017 9:42 PM



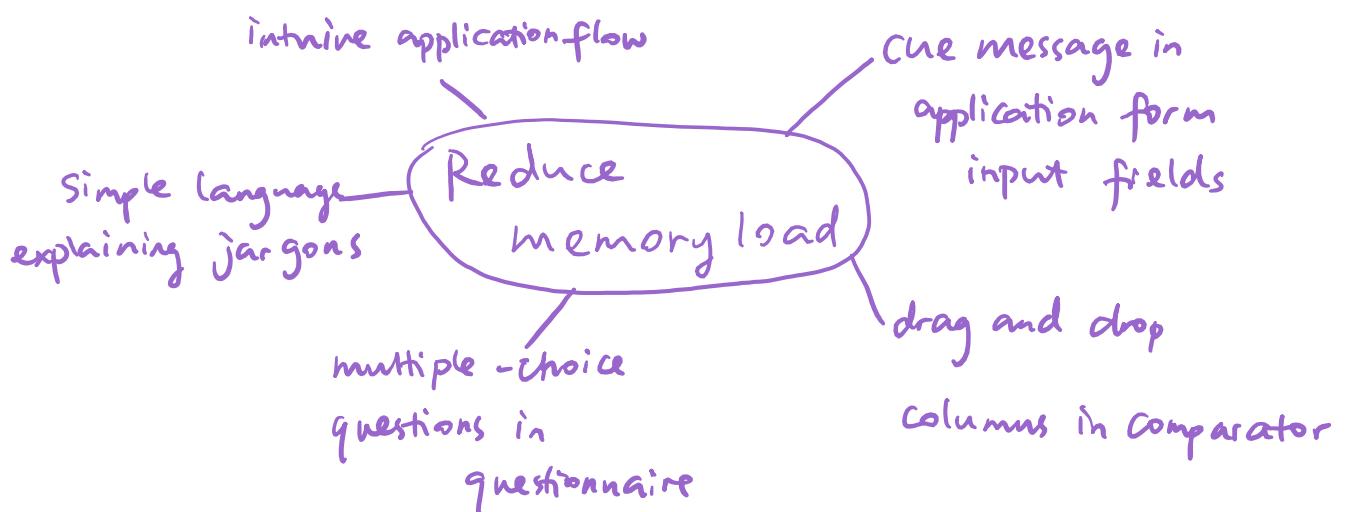
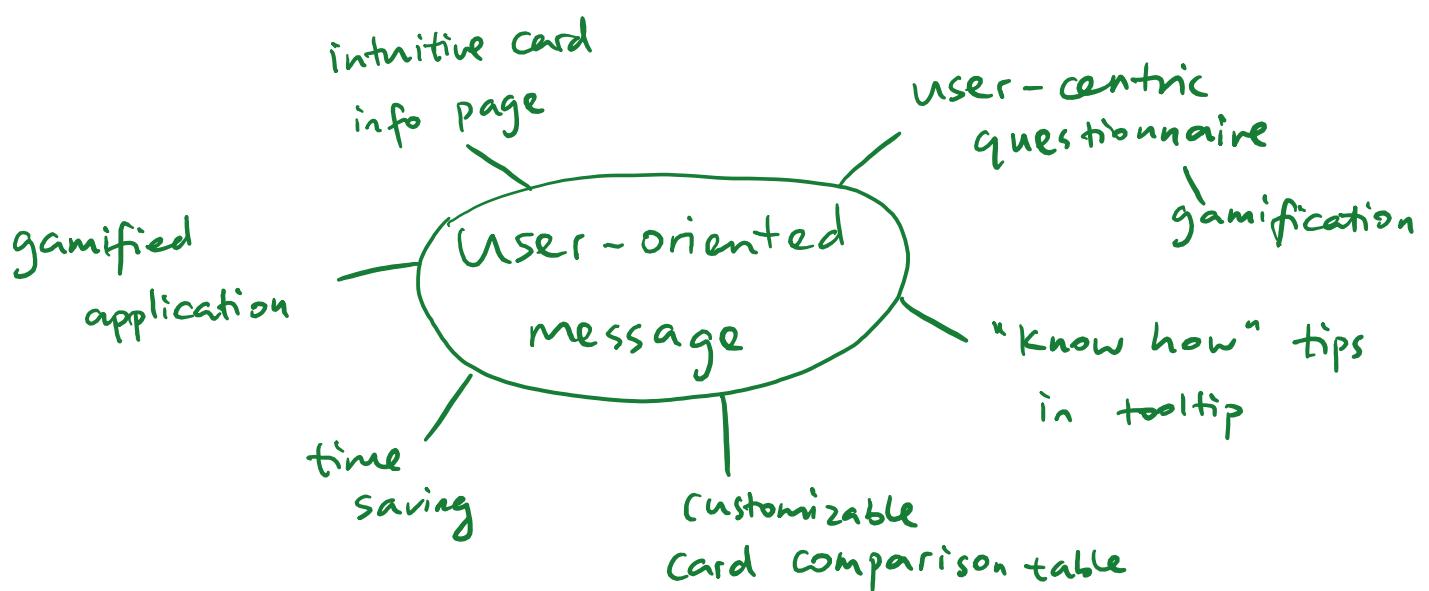
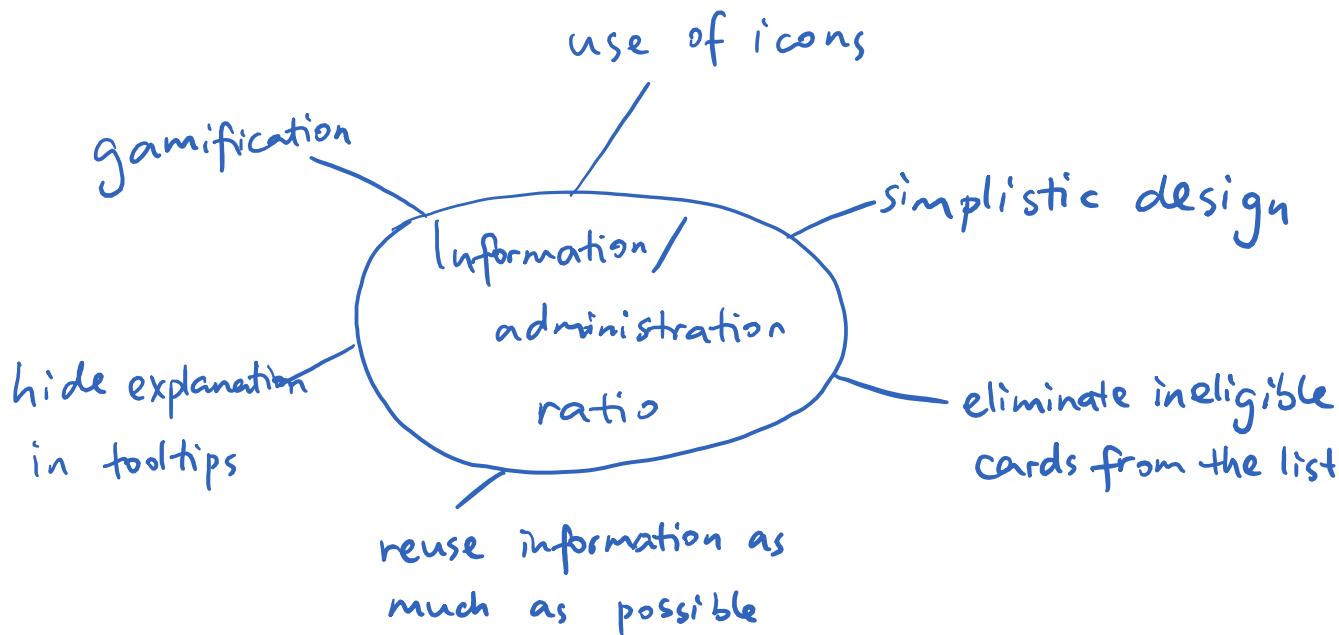
Three Levels of Design in Project

Monday, April 24, 2017 9:52 PM



Design Guidelines in Project (Part I)

Tuesday, April 25, 2017 12:41 AM



Design Guidelines in Project (Part II)

Tuesday, April 25, 2017 12:44 AM



Beyond the Design Principles Taught in Class

Tuesday, April 25, 2017 12:58 AM

The following principles were extracted from Lynda.com course "Universal Principles of Design"

- Flexibility Trade-Offs (Jack of all trade is master of none; do not aim to design for everyone and every use)
 - Feature Creep (a continuous expansion or addition of new product features beyond the original scope; e.g. the Vasa the ship sunk due to too much added canons)
 - Garbage In-Garbage Out (Prevent user-driver errors; constraints)
 - Hick's Law (the time it takes to make a decision increases with the number of options)
 - Performance Load (1. Cognitive, mental effort; 2. kinematic, physical effort)
 - Forgiveness (easy reversal of action)
 - Aesthetics-Usability Effect (form ever follows function; beautiful objects are perceived to be easier to use)
 - Legibility (visual clarity of text)
 - Modularity (develop each component independently)
 - Orientation Sensitivity (e.g. a minimalist user-centric subway map design)
-
- ❖ Context-awareness
 - ❖ Optimizing interaction sequence
 - ❖ Simplifying user input by automatically identifying user information
 - ❖ Personalizing the UI to reduce the interaction burden

The End

Tuesday, April 25, 2017 8:30 PM

**TO BE
CONTINUED**