

**What makes a good user  
interface?**

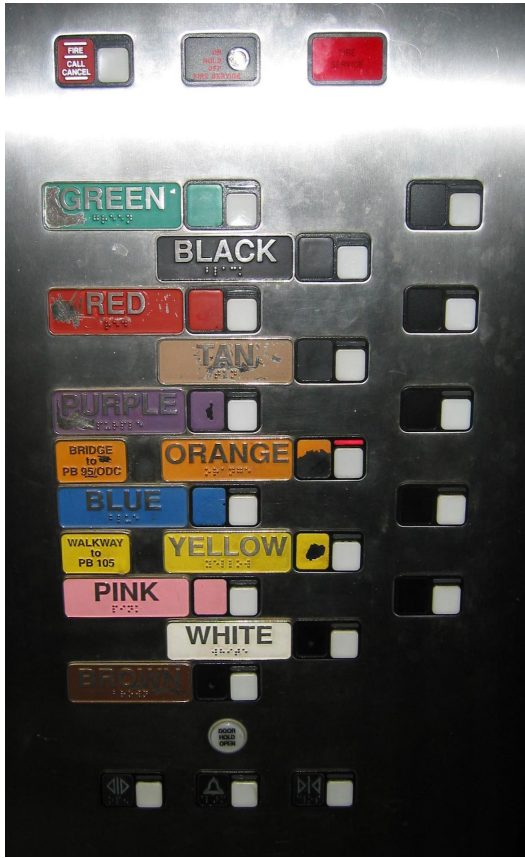
# Usability Defined

- Usability is how well users can use a system
  - How easy it is to accomplish your task
  - Goal - User can easily accomplish what they are using your product to do
- UI != Graphic Design
  - What's with the colors?

# Dimensions

- Dimensions of usability
  - Learnability
  - Efficiency
  - Safety
  
- Other Dimensions
  - Aesthetics: satisfaction, happiness, pleasure
  - Ergonomics: comfort, fatigue

**Learnability**



VS





WARNING  
In case of fire or electrical emergency  
DO NOT USE ELEVATOR. Use designated exits.

B C D E  
A F

IN CASE OF FIRE  
ELEVATORS ARE  
OUT OF SERVICE



USE LIFT



1 2 3  
4 5 6  
7 8 9  
0 -

1  
2  
3



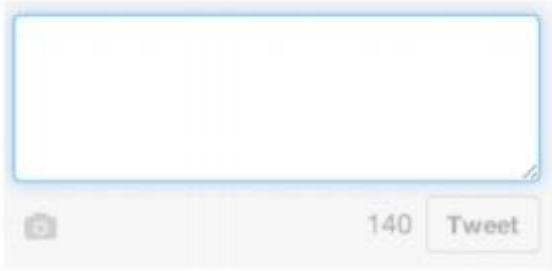
# How Do We Learn

- Learn a new user interface
  - Not by reading a manual
  - Not by taking a class
  - Not by going through help first
- Learn by doing
  - User comes to website with a goal
  - Searches for features to accomplish that goal
  - Search for help only if stuck

# Recognition vs. Recall

- Recognition: remembering with the help of a visible cue
  - “Knowledge in the world”
- Recall: remembering with no help
  - “Knowledge in the head”
  
- Recognition is much easier





**Akeem** @akeemprogress · 8h

Have a wonderful deliberation at your [#MITGSL](#) event in SA. @bamtayo

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**Adetayo Bamiduro** @bamtayo · 12h

Meeting up with the MIT Global Startup Labs South Africa team tonight! [#MIT](#) [#MITGSL](#) We are building world class Techpreneurs!

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**Jen Liu** @jenkliu · 13h

Red Bull, red eye and runtimes: when MIT's 24 hour hackathon came to town [htxt.co.za/2014/07/15/red...](http://htxt.co.za/2014/07/15/red...) via @htxtafrica @mitgsl [#mitgsl](#)

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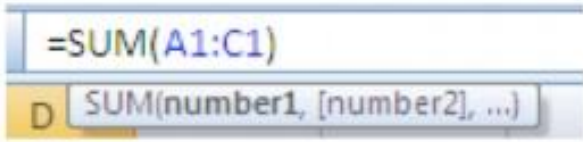
**Jen Liu** @jenkliu · Jul 12

[@mitgsl](#) teams staying strong past the hackathon halfway point! T-9 hours until demos! [#mitgsl](#) [pic.twitter.com/24PRMTSVJ5](https://pic.twitter.com/24PRMTSVJ5)

View photo

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What is knowledge in the head vs. knowledge in the world?



Self-disclosure

# Consistency

“Principle of Least Surprise”



- Internal Consistency
- External Consistency
- Metaphor
- Consistent wording

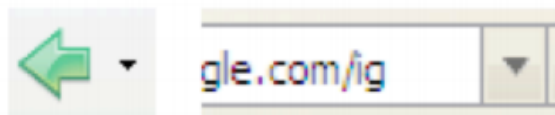


# Affordances

- Buttons & links



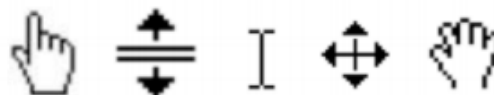
- Drop-down arrows



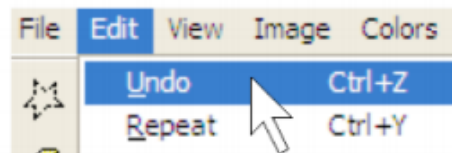
- Texture




- Mouse cursor




- Highlight on mouseover



## Find the Affordances

**SEND**  Send Later   Draft autosaved at 10:53 PM (

From:








To:  









[Add Cc](#) [Add Bcc](#)

Subject:

[Attach a file](#) [Insert: Invitation](#) [Canned responses](#) ▾

Boomerang this message

**B** *I* U T ▾ ↕ T ▾        [Check Spelling](#) ▾

        [Plain Text](#)

[Add Cc](#)



|



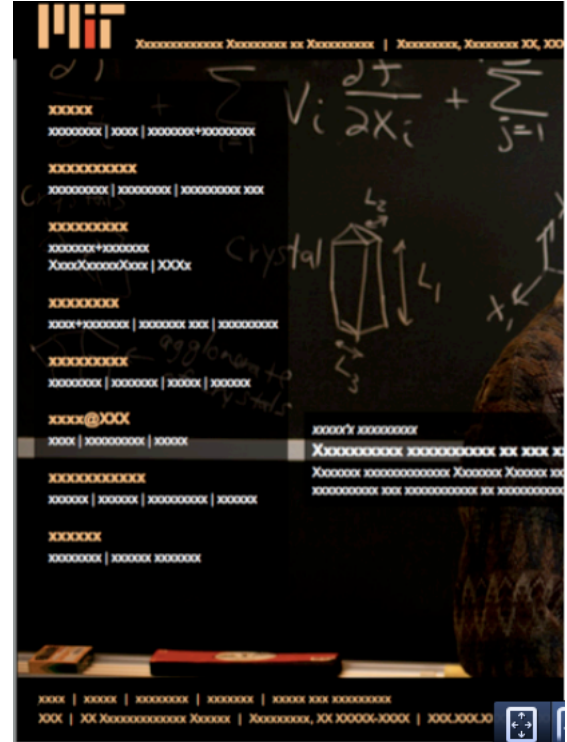
# Playing with Affordances

Use Javascript to obscure text:

<http://tinyurl.com/nhvck4>

Visit several pages

See what is still obvious about the pages



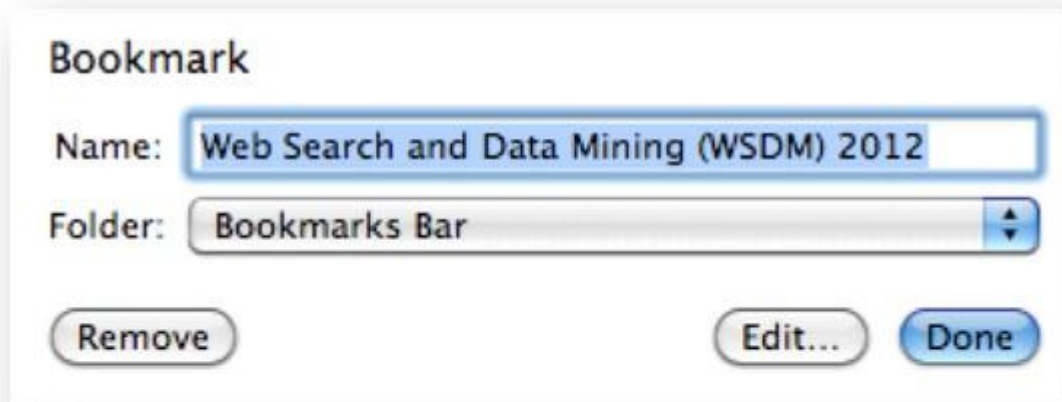
# Information Scent

- A link should “smell” like the content it leads the user to
  - “Click here” tells me nothing!
- Exploration costs
  - Users should be able to figure out what your app or site does at a glance

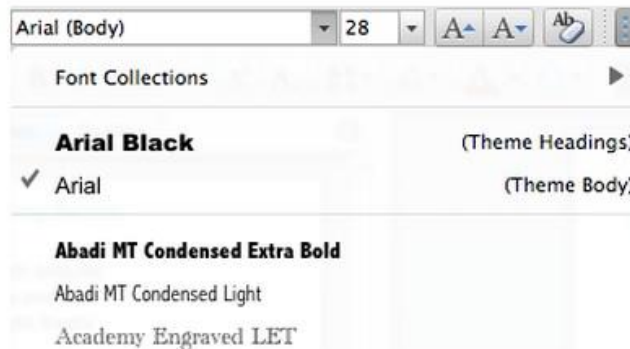
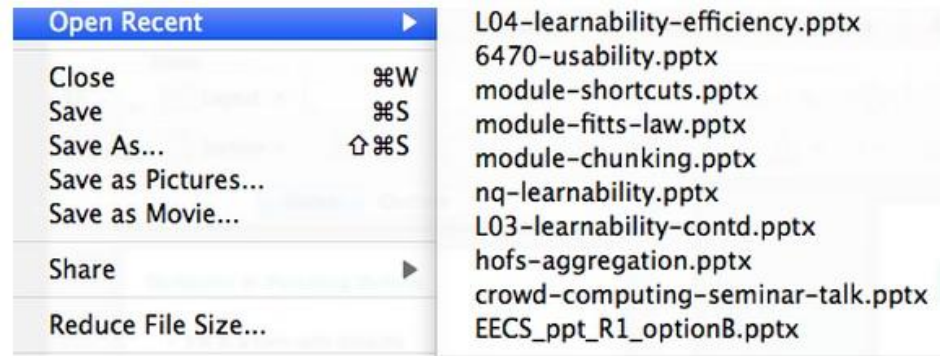
**Efficiency**



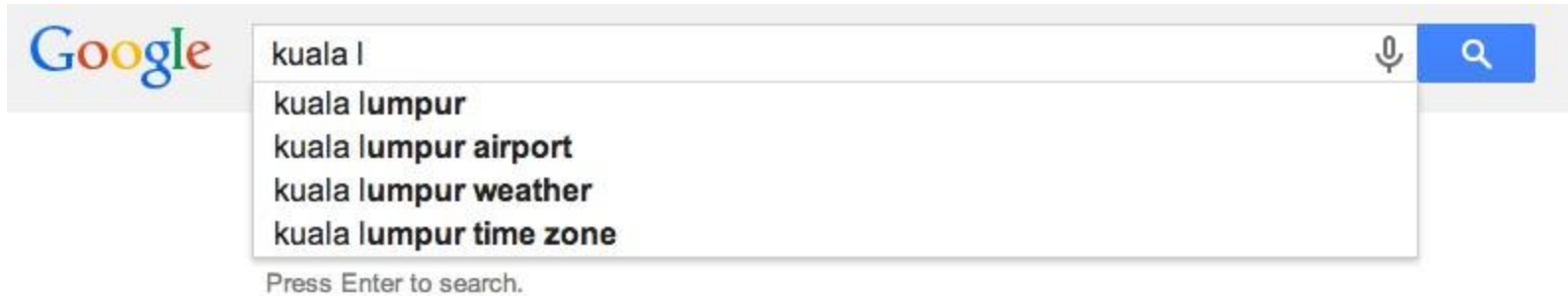
# Fragile Defaults and Pending Delete



# History



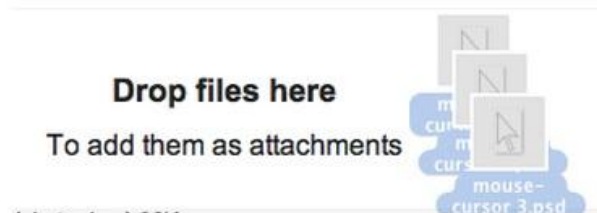
# Autocomplete



# Aggregation



multiple selection for action



multiple drag & drop

**Safety**

# Reasons for Errors

- Slips and lapses
  - Failing to correctly execute a procedure
  - Slip is a failure of execution, lapse is a failure of memory
- Mistakes
  - Using wrong procedure for the goal

# Types of Errors

- Capture
  - Start doing something you do often instead of what you meant to do
- Description
  - Making a mistake because of how similar items are
- Mode Errors
  - States in which different actions have different meanings
    - Caps Lock

**Users are Always Right**



# You Are Not the User

- Most software engineering is about communicating with other programmers ...who are a lot like you
- UI is about communicating with users
  - Users are NOT like you
- The user is ALWAYS right
  - Usability problems are the design's fault

# Don't Expect Users to be Designers

- Telephone handset weight
  - Users said it's fine
  - They really wanted lighter
- # of Google search results
  - Users said 30 results
  - Really wanted 10
- Command abbreviations
  - Users make 2x errors with their own custom abbreviations

# Usability Dimensions Vary In Importance

- Depends on the user
  - Novice users need learnability
  - Experts need efficiency
  - Lots of users in between
- Depends on task
  - Missile launchers need safety
  - Monorail entrances need efficiency

# Websites to compare

AirAsia vs. Hipmunk

What does each do well? What could be improved? Compare them on each of the three dimensions of usability.

Bonus: How does our class website compare? Are there things we could improve?

# Post Break Assignment

- On Monday, you thought of features
- Today, think of specific tasks for your users
  - Think of intuitive ways for users to move through your app
  - Think of the model of your app the user will have
- Tomorrow, paper prototyping and testing