

# Introduction

CSCI 1300 / 0130

User Interfaces and User Experience

Jeff Huang

Brown University



Welcome!

You are already experts at using interfaces

You have opinions about interfaces you have used before

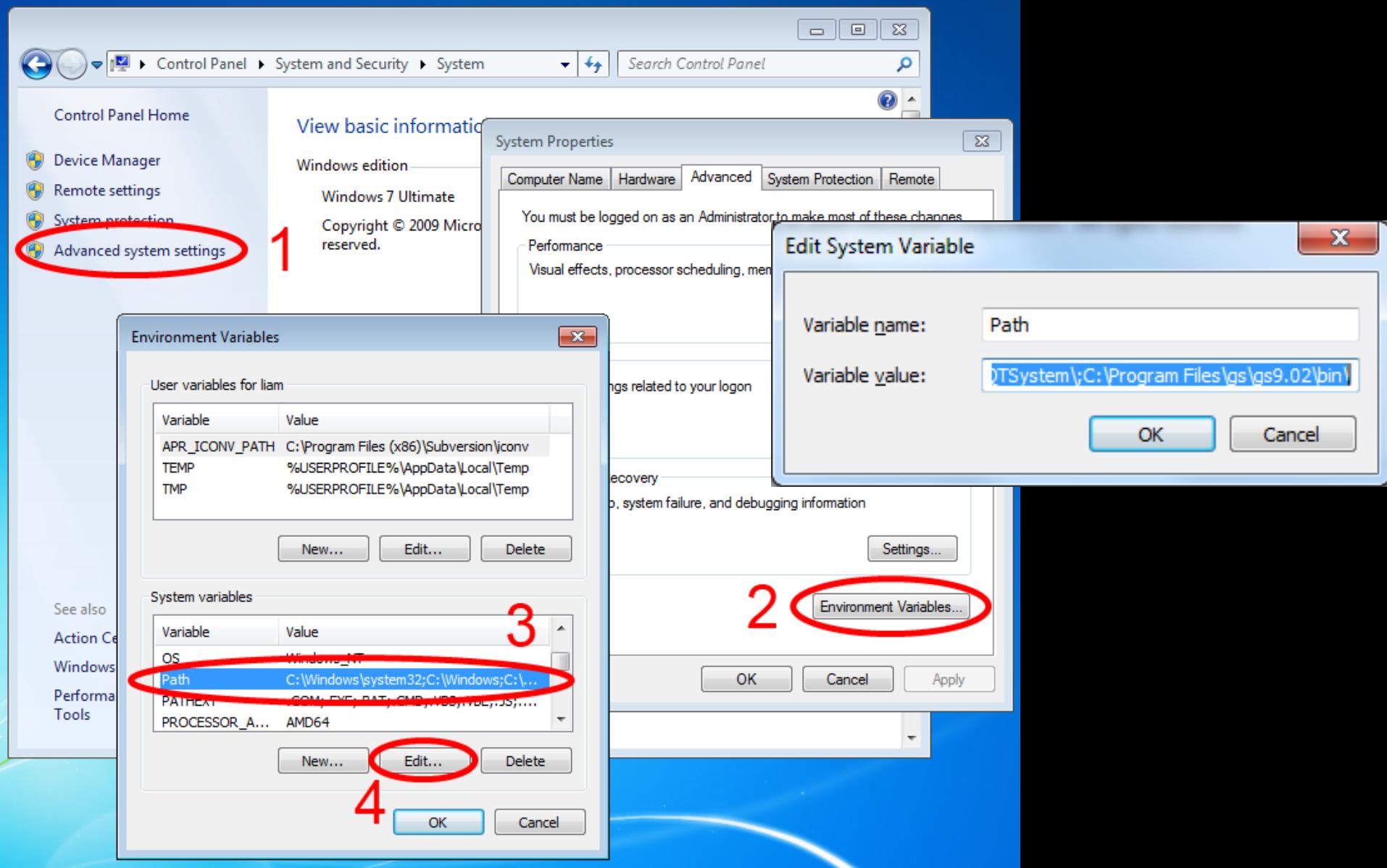
Based on experiences with good and bad interfaces



FURNACE



EMERGENCY





Yahoo! JAPAN

www.yahoo.co.jp

ホームページに設定する

オフィス版

Yahoo! BB

ヤフオク!

My Yahoo!

YAHOO! JAPAN

ツールバー ショッピング きっず

カテゴリ一覧 サイトの登録 無料ID活用

ウェブ 画像 動画 辞書 知恵袋 地図 リアルタイム 一覧

検索

予告「3.11、検索は応援になる。」 3年越しで実現、東北のうまいもの限定セット 忙しいママをお助け、定期宅配が3,500円分お得

ピックアップ

スポーツ NEW!  
プロ野球「一球速報」、オープン戦でも提供開始

主なサービス 一覧

ショッピング  
ヤフオク!  
LOHACO  
旅行、ホテル予約  
ニュース  
天気  
スポーツ NEW!  
ファイナンス  
テレビ  
GyaO!  
ゲーム  
Y!モバゲー  
地図  
路線  
食べログ  
求人、アルバイト  
不動産  
自動車  
掲示板  
ブログ  
美容、ダイエット

ニュース 経済 エンタメ スポーツ その他

10時49分更新

1月経常赤字 単月の過去最大 NEW!  
GDP 年0.7%増に下方修正 NEW!  
マレーシア機不明 破片発見か  
北 正恩氏妹の動静を初報道  
「空飛ぶじゅうたん」実現は NEW!  
マー君 リチャードギア知らず  
「バカ」発言 松山の在り方は NEW!  
軽部アナ 佐藤河内氏は虚像

官兵衛にゆかり  
3月10日9時24分配信  
産経新聞

最近の話題 記事一覧

話題なう 恋届 メリットある? | キムタク 黄金伝説に

明日で震災から3年 数量限定  
復活した東北の味覚大集合

無印良品の寝具や、アクタスのインテリアで新生活を  
飲料やスナック菓子・日用品など、大特価セール中

テーブルに春を呼び込む  
“菜の花”レシピ

この季節だけのお楽しみ。あざやかな緑色や、ほのかな苦みが魅力の“菜の花”レシピで、春の訪れを感じませんか?

ナツツの香ばしさが美味

FMV FUJITSU

特設サイトでSH90のユーザーの声公開中!!

詳しくはこちら

スタート MADE IN JAPAN 長時間 バッテリ 充実の 振動性

仕事 さくら、遊び とことん。 Windows 8

ログイン

IDでもっと便利に[ 新規取得 ] ログイン履歴 登録情報

メール - メールアドレスを取得

2014年3月10日(月)

今日の天気 (東京) 明日の天気 (東京)  
30% | 9°C/4°C 10% | 11°C/2°C

雨雲レーダー 港区

カレンダー 今日の運勢 牡羊座 93点

緊急地震速報や避難情報が受け取れる 防災速報

ポイントを確認 スタークラブ

ログインしてFacebookの新着を確認

提供:Yahoo! JAPAN

# Can user interface be objectively good or bad?



Can one interface  
be better or worse  
than another?

# YES

*If we had every intended user use the interface,  
we could measure how many were confused,  
how many mistakes they made, how long it  
took, how satisfied they were*

# Good user interface design is not just about looks

It's easy to complain that something looks bad

But is it easy to use?

That is the 311,294,070,513 dollar question  
(according to Jakob Nielsen)

# CS 1300 Staff



Jeff (instructor)



Hannah (HTA)



Kat (HTA)



Jing (Grad TA)



Alainey (TA)



Marshall (TA)



Tanya (RISD TA)



Jessie (TA)



Maggie (TA)



Esther (TA)



Valerie (TA)



Iris (TA)

## What CS 1300 is *not* all about

Programming user interfaces

Graphic design or aesthetics

We spend only a small part of the course talking about these

## What CS 1300 is about

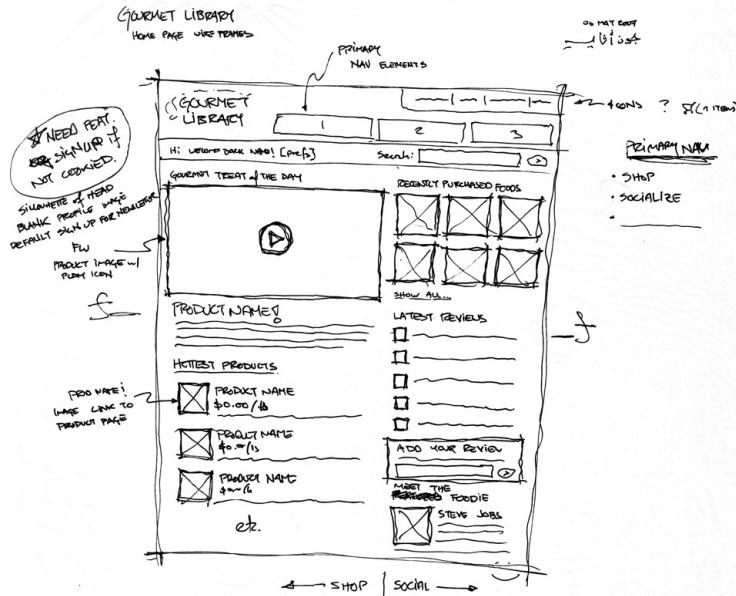
Fundamental principles of what makes a good interface

How to better understand how people interact with an interface

What goes into planning and prototyping an interface

How do you determine whether an interface is good

# What you will get out of this course



Think about things from a user perspective (someone who is not you)  
Practice designing, prototyping, and evaluating interfaces  
You will see interfaces from a different perspective after this course

# Preview

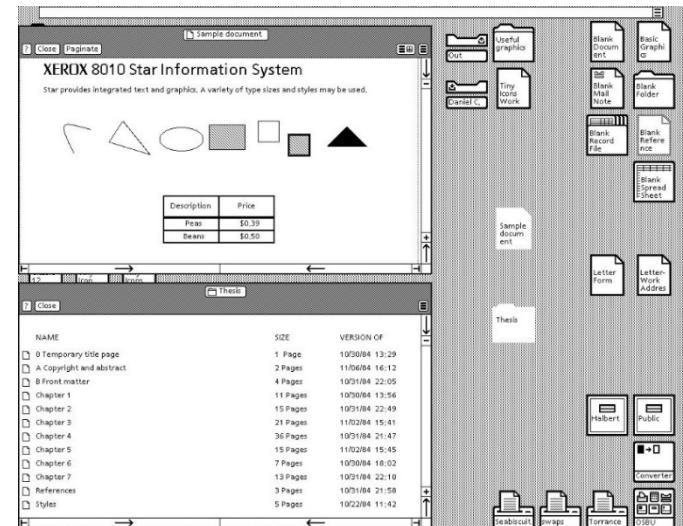
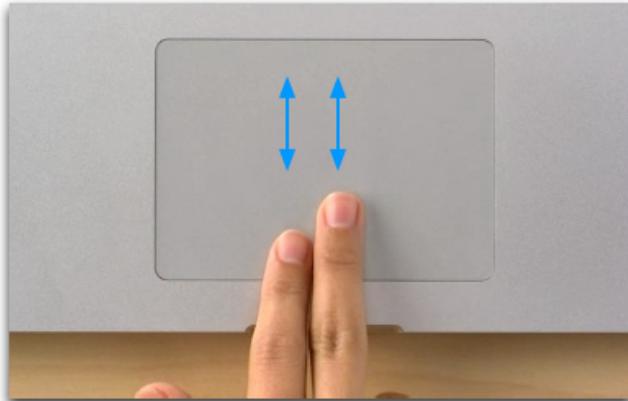


## 1

# Interface Basics

Interfaces come from a history of design decisions

We take basic interfaces for granted, but they are more sophisticated at second glance



## 2

## Understanding Users

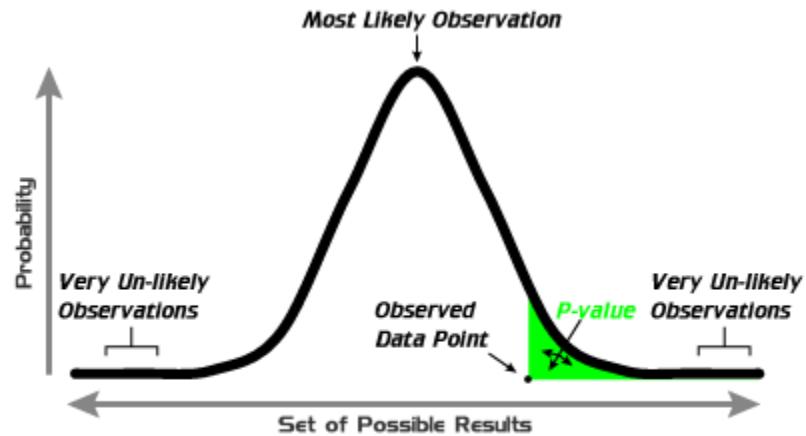
How do you know what users want?

Numbers show “what” and “when”, but only users can tell you “why”



2

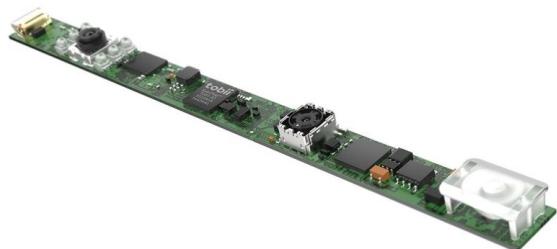
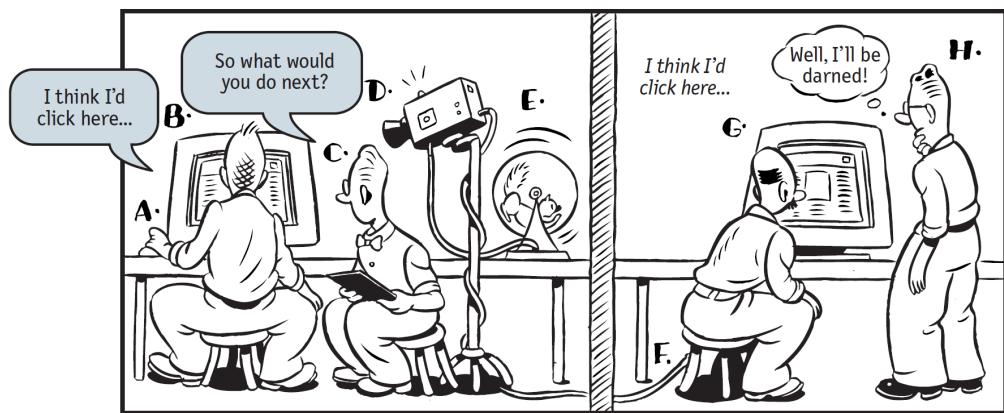
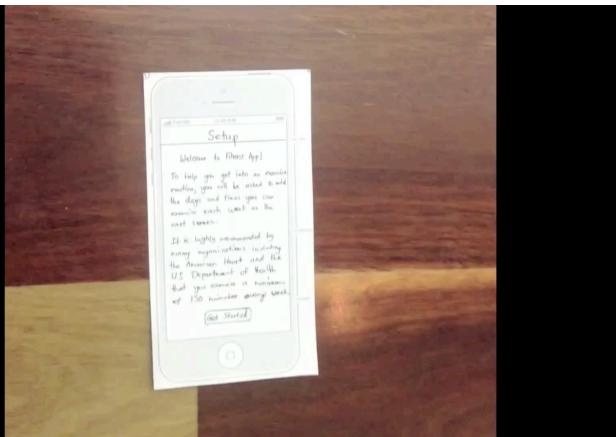
## Understanding Users



## 3

# Usability Evaluation

People have different needs: novices value learnability, experts value efficiency, casual users value memorability



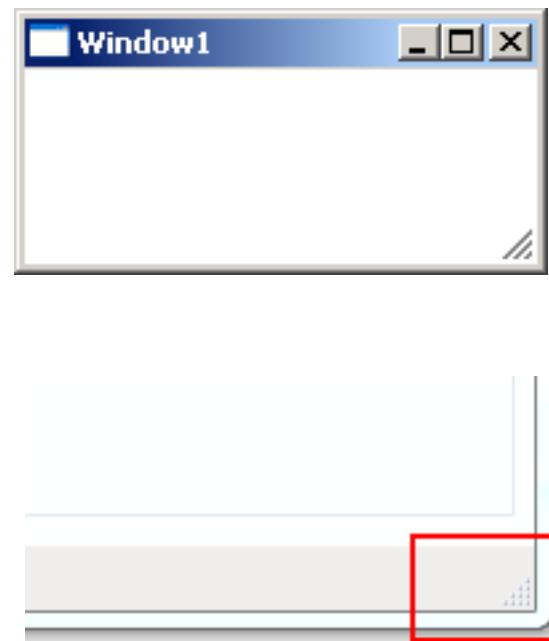
## 4

# User-Centered Design

Design process considering user needs and abilities

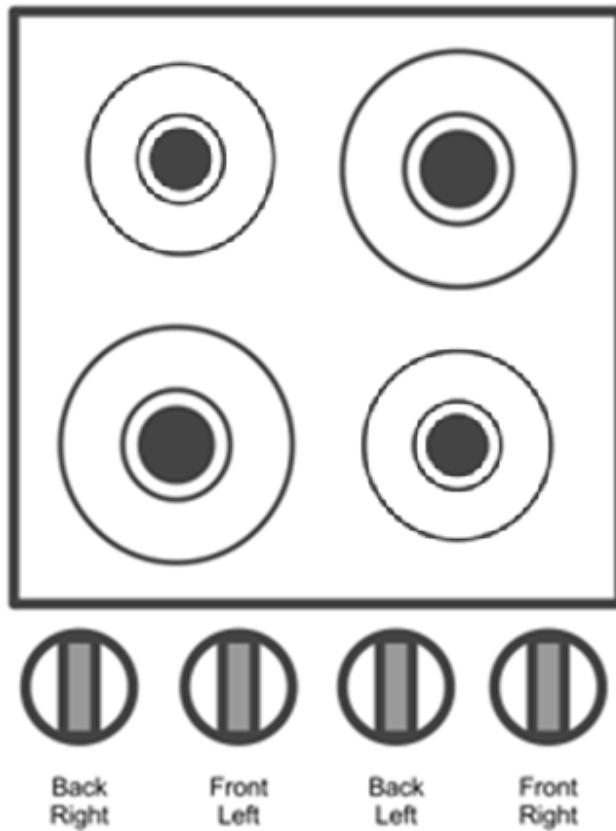
Personas

Affordances



## 4

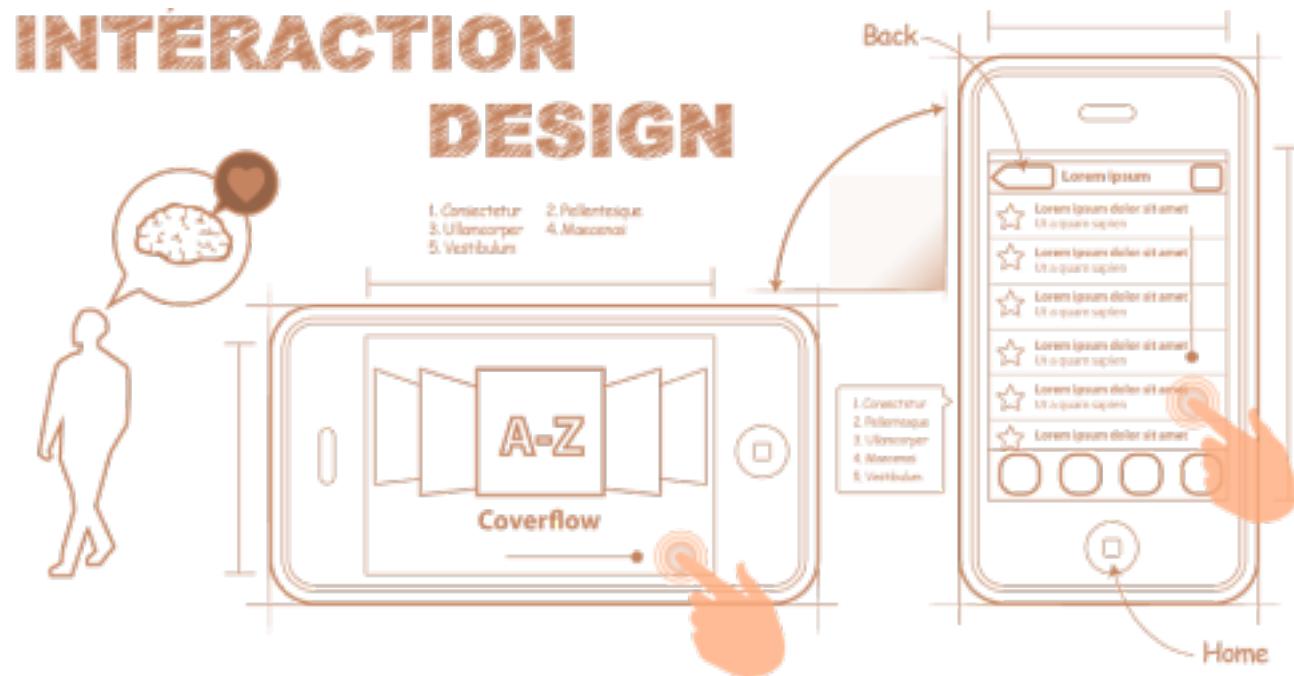
# User-Centered Design



# 5 Interaction Design

# Designing *interactive* interfaces

# Interaction, Navigation, Storyboarding



## 5

# Interaction Design

The screenshot shows a registration form for Mint.com. At the top, there are 'Signup' and 'Login' buttons. Below them, a heading says 'create a new account' with a padlock icon and the text 'GET ORGANIZED IN < 5 MINUTES!'. The form fields are:

- Your E-Mail: nick@cooper.com (OK)
- Confirm E-Mail: nick@copper.com (X) - Error message: 'Emails do not match!'
- Zip Code: 94115 (OK) - Below it says SAN FRANCISCO, CA.
- Password: (redacted) (OK) - Below it says 'Password strength = Ok.'
- Confirm Password: (redacted) (X) - Error message: 'Your passwords do not match!'

At the bottom left is a checkbox for 'I agree to the Mint.com Terms of Use'. On the right side, there's a vertical column of text under the heading 'Why you'll love Mint:':

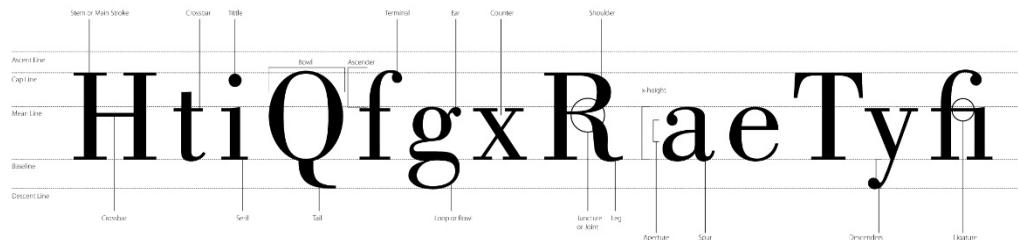
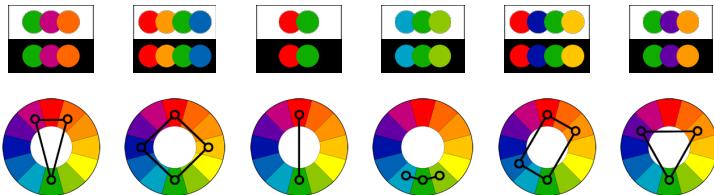
- It takes minutes to setup
- Your accounts are automatically up-to-date
- You can get mobile alerts for bills, fees, budgets, low balances, and more
- We find you ways to save every month
- You'll know where all your money goes!

At the very bottom right is a 'Sign Up' button.

These form fields have been designed to provide both positive and negative feedback when registering.

## 6

# Visual Design



**Style > Color**

**Accent color**

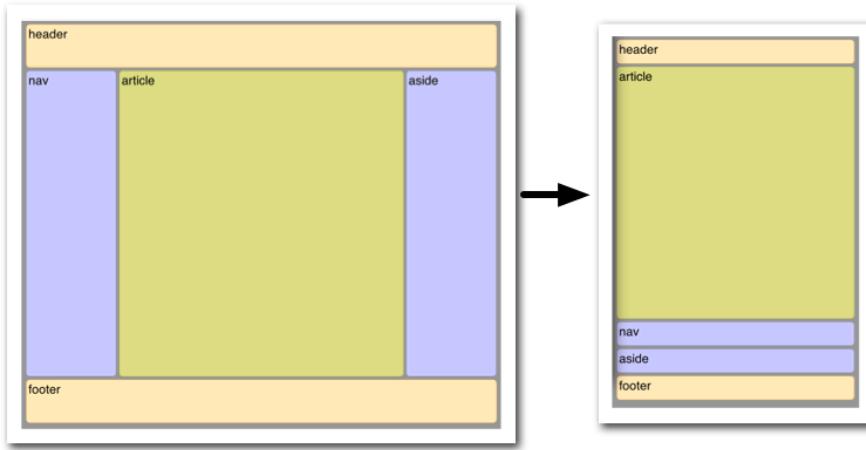
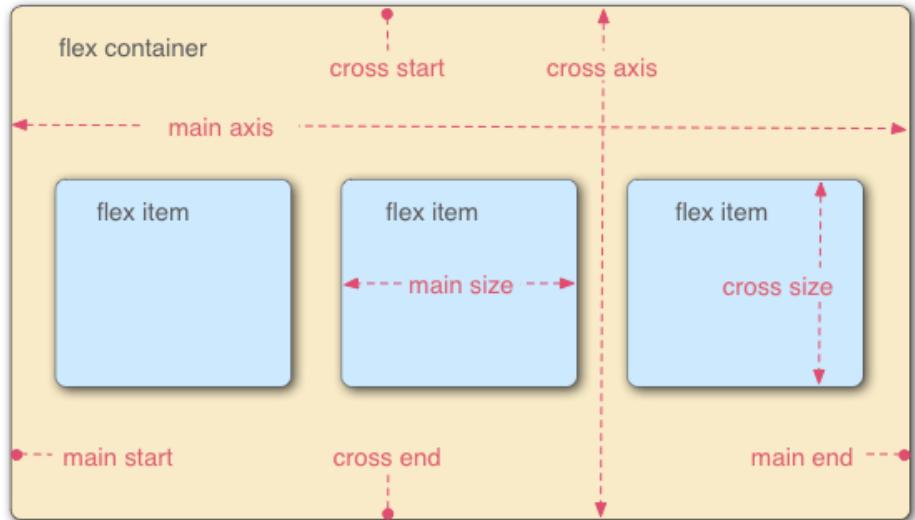
The vibrant accent color are used for your primary action buttons as well as components such as switchers or sliders. Left aligned section icons or section titles can also take on the accent color

**Fallback accent colors**

If your accent color is too light or dark for the background color the general fallback rule is to choose

## 6

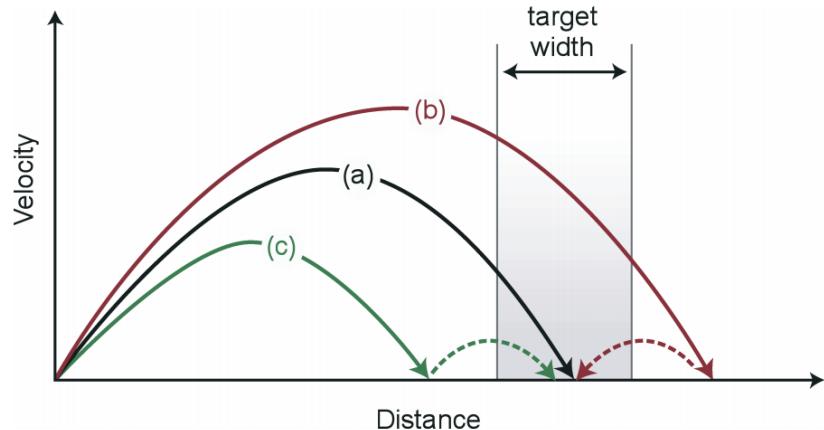
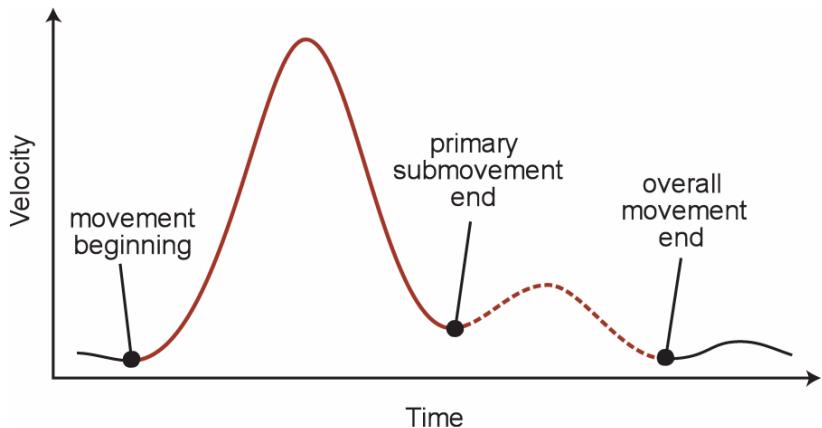
# Visual Design



## 7

# Input Techniques

How we tell the computer what to do

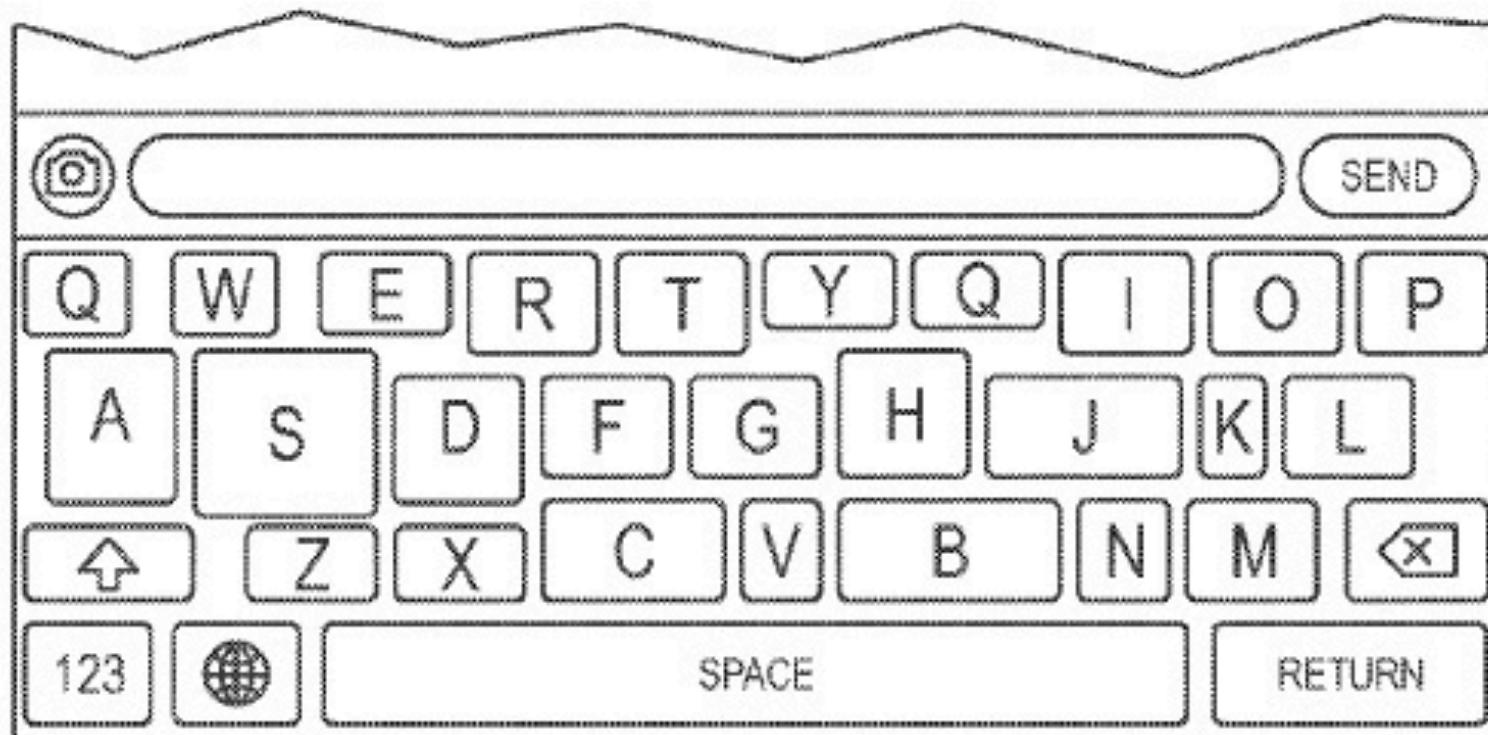


## Riddle

When I move the mouse  $x$  inches to the left,  
the cursor on the screen moves  $y$  pixels;  
how many pixels does the cursor on the screen move  
if I move the mouse  $2x$  to the left?

## 7

# Input Techniques



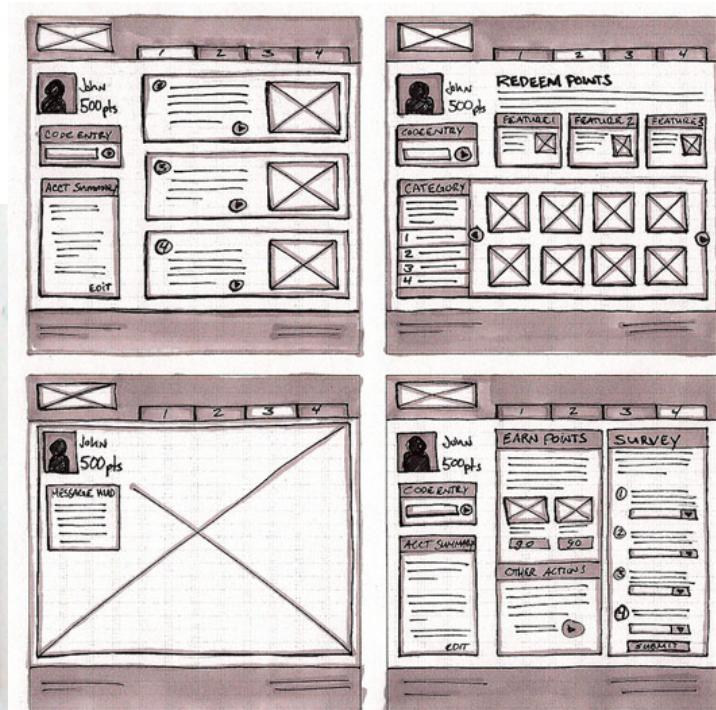
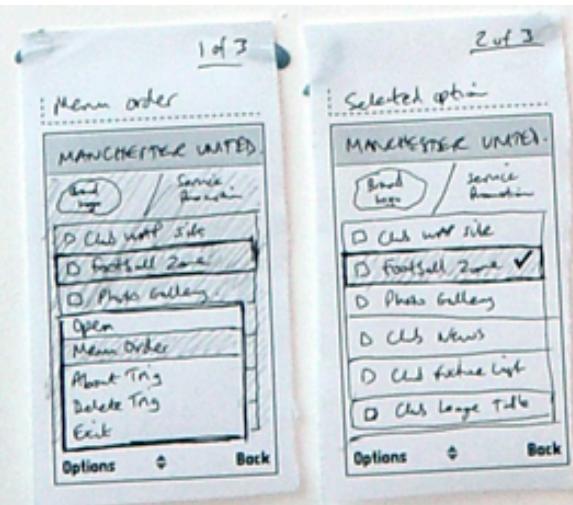
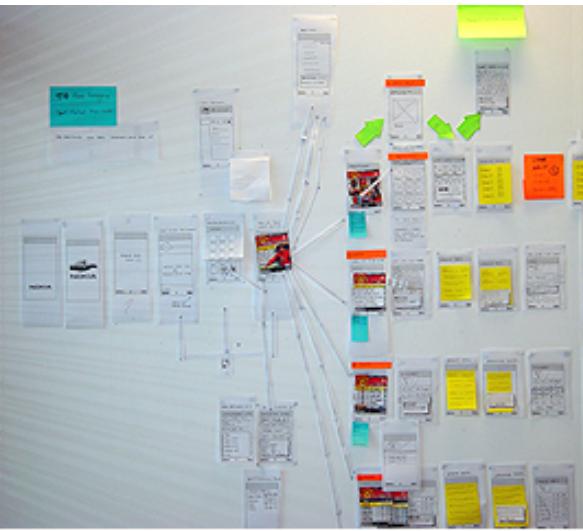
## 8

# Prototyping

Iterative design, low and high-fidelity prototypes

Paper prototypes are more malleable

Labs to try different prototyping tools



# 8

# Prototyping

## *Crits*

Your Mockup on screen for 10 minutes

Feedback about your prototype from your group

**Not a traditional design critique**

Critiques before (optional) author explanation

Anyone can be called on for their critique



# Interfaces for People

Interfaces that account for the emotions, social nature, and abilities of people

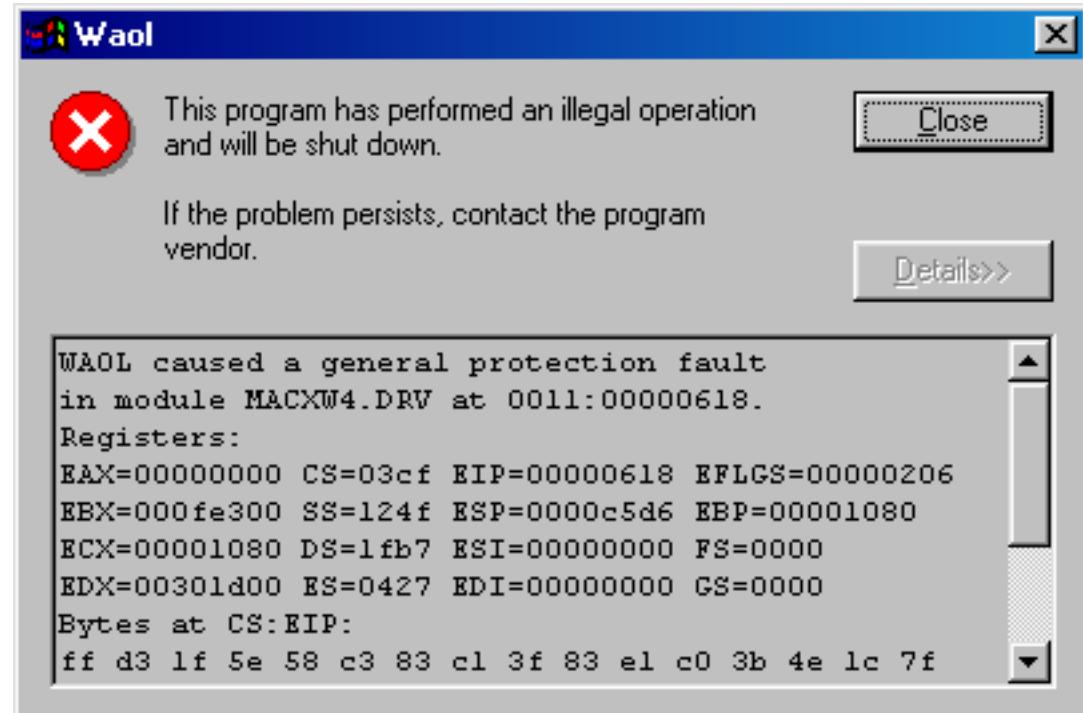
Emotional design

Identity

Persuasive interfaces

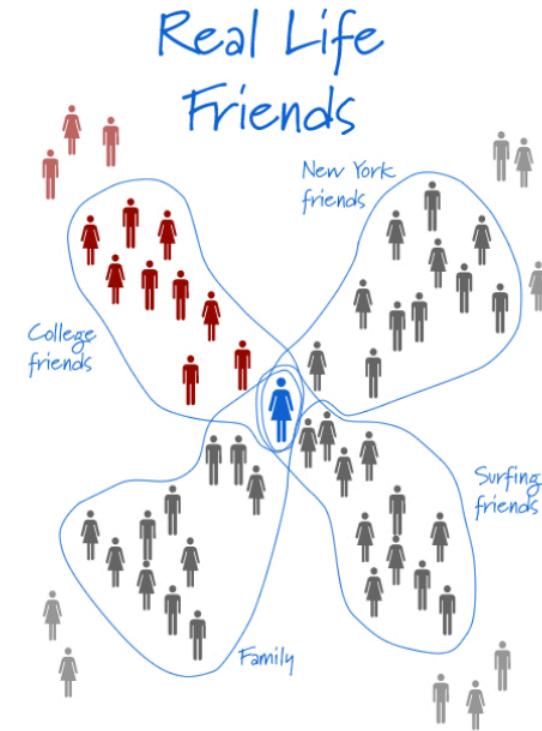
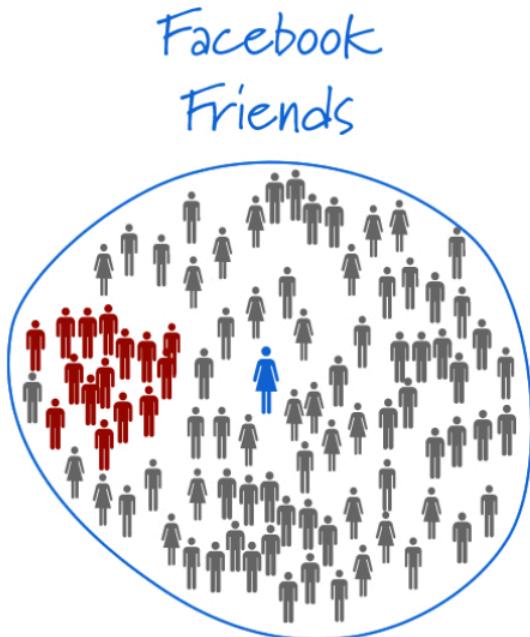
Errors and mistakes

Accessibility



## 9

# Interfaces for People



# Syllabus

## CS 1300: Designing, Developing and Evaluating User Interfaces

Fall 2015

This course will cover concepts in human-computer interaction that focus on designing user interfaces. Topics include understanding when to use different interfaces, modeling and representing user interaction, principles of user experience design, eliciting requirements and feedback from users, methods for designing and prototyping interfaces, and user interface evaluation. Classroom time will be spent on lectures and hands-on activities, and students will complete assignments and readings outside the classroom. There will be ten weekly assignments and readings will be from a variety of sources that will be posted during the semester.

Students interested in learning the process behind building a user interface and gaining hands-on experience designing a user interface should take this course. Programming or web development experience is useful for some assignments, but alternate assignments will be available for those without programming experience. Nearly all course information will be available on the class website. The course is expected to require 8-10 hours / week of work outside class.

### Course Time and Location

Location: 85 Waterman St Room 130 (Carmichael Auditorium)  
Time: 6:40pm on Tuesdays and Thursdays

### Instructor

[Jeff Huang](#), 407 CIT, [jeh@cs.brown.edu](mailto:jeh@cs.brown.edu)  
Office hours: Friday 1pm

### Teaching Assistants

April Tran (Head TA)  
Giselle Lillie (Head TA)  
Arielle Chapin  
Felipe Gomes  
Johnathan Bul  
Marlina Morshed  
Sachin Pendre  
Sharon Li  
Tatyana Bharatova  
Nedyanya Daskalova (Graduate TA)

TA Office Hours: by appointment only until the first assignment is released

Email [cs1300ta@cs.brown.edu](mailto:cs1300ta@cs.brown.edu) to reach all the TAs (most questions should be directed here).  
Email [cs1300taas@cs.brown.edu](mailto:cs1300taas@cs.brown.edu) to reach the Head TAs, Graduate TA, and Jeff (e.g. questions about your grade, make up work). Email Jeff for sensitive issues (e.g. feedback about course, disagreement with a TA).

### Schedule

Day	Lecture	Assignments	due	Readings	due
Sep 10	Introduction			Norman - Design	Sep 16
Sep 15	History	Journal	Nov 25	Buxton - Input	Sep 21
Sep 17	GUI				
Sep 22	Input	Input	Sep 30	Dillman - Questions	Sep 28
Sep 24	Natural				
Sep 29	Understanding	Personas	Oct 7	Cooper - Personas	Oct 5
Oct 1	Analysis				
Oct 6	Models			Rogers - Evaluation	Oct 12
Oct 8	Affordances	Evaluation	Oct 14		
Oct 13	Usability			Cooper - Undo Save	Oct 19
Oct 15	Studies	PROJECT	Dec 3		

Oct 20	Interaction	Sitemap	Oct 26	Vignelli - Canon	Oct 26
Oct 22	Navigation	Redesign	Nov 2		
Oct 27	Visual			Buxton - Sketching	Nov 2
Oct 29	Layout	Sketching (bring to class)	Nov 5		
		Prototyping	Nov 11		
Nov 3	Sketching			Goffman and Eggers	Nov 9
Nov 5	Prototyping				
Nov 10	Social				
Nov 12	Crits	Development or Responsive	Nov 23	Kramer and Adams	Nov 18
Nov 17	Crits				
Nov 19	Emotion	Deception	Nov 30		
Nov 24	HCI (supplementary)				
Nov 26	Thanksgiving (holiday)				
Dec 1	Accessibility				
Dec 3	Project Presentation				
Dec 8	Project Presentation				
Dec 10	Project Presentation				

### Grading

- 50% Assignments
- 20% Project
- 10% Design labs
- 10% Reading comments
- 10% Participation

Assignments are graded by undergraduate TAs. If you feel an assignment was graded unfairly, please bring your original assignment to the office hours of the Graduate TA and explain why you think your assignment deserved a better grade. The Graduate TA will make a determination about whether your score will be changed within a week.

Slides will be posted just before class starts but may be available on Canvas beforehand. Readings and assignments will be posted one week in advance with the due date for reading comments or assignment in parentheses (submit everything to Canvas).

### Design Labs

TAs will lead multiple design labs during the semester outside of the course lecture hours where students can gain experience with a specific interaction design tool or skill. They will be in a tutorial + exercise format, and take place in a computer lab. Design labs will be held at various times and days of week, and students should attend two.

### Late Policy

Reading comments are due at 11:55pm on the due date listed in the schedule to give a chance for others to read your comment before the next class. No late reading comments will be accepted. Assignments will have 20/100 points deducted from the grade for every week late (rounded up), so an assignment turned in 8 days late will have 40/100 points off.

Each student gets 3 late days that can be used to compensate for an assignment turned in one week late, missed in-class participation, or for a missed reading comment. These will be automatically applied at the end of the course. Note that each late day reimburses 1% of the total course grade. There are no benefits to having extra late days when the semester ends. Any further accommodation requires a note from the Dean of the College sent to the Head TA contact email.

### Collaboration Policy

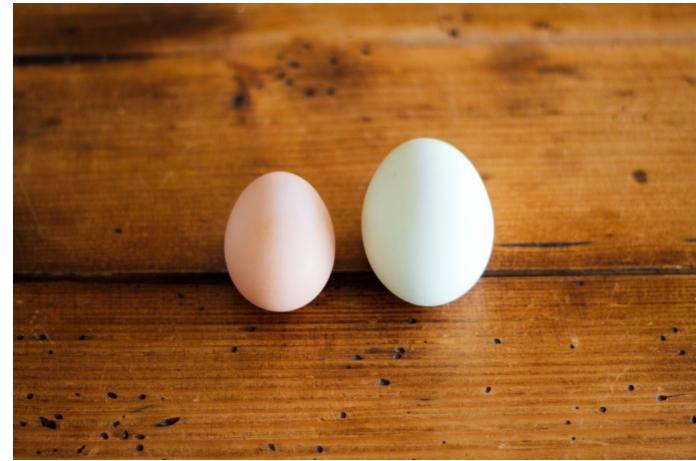
The Collaboration Policy explains the policies around working with other students or using outside-class resources for your assignment. It can be [viewed in Canvas](#) and is marked as an assignment worth 0 points. Your work will not be graded until you have agreed to the collaboration policy by submitting that assignment.

### Topics

The schedule emphasizes user-related topics in the first half of the course, then design topics in the second half of the course.

# 0130 vs 1300

You can switch between the two during shopping period (email HTAs)  
1300 provides CS 1000-level credit



Programming experience, some stats background is helpful for 1300  
About half the assignments will be different in some way  
Students in 0130 can do assignments from 1300

# Hours

## Class

Tuesday and Thursday 1:00 - 2:20pm

## Office hours

TAs: First week is sometimes “gear up”, second week is Q&A style

Jeff: Tuesday 2:30 - 4:00pm (come by at least once!)

## Labs

Dates posted to course website

Typically Mon 7-9PM, Wed 7-9PM, or Fri 4-6PM.

# Who to contact with question/concerns?

All TAs: uiuxtas@lists.cs.brown.edu

General questions

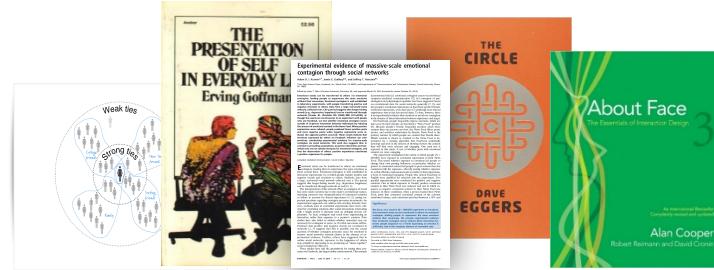
Head TAs: uiuxhtas@lists.cs.brown.edu

Specific questions about you

Jeff: jeff\_huang@brown.edu

Complaints, feedback

# Readings



Write up to 200 words reading responses to 7 readings (all pdfs)

In response to some prompts (detailed instructions in Gradescope)

Particularly insightful reading comments can earn extra credit

# Assignments

6 assignments throughout the semester, one every 2 weeks

Everyday UI

Personas & Storyboarding

A/B Testing

Redesign

Input or Development

Iterative Design

Each assignment can be a portfolio piece

It stands on its own: introduces the reader to what you're doing, why, and the process

It makes sense and is interesting on its own, contributing something new to the world

# Embracing Subjectivity

Part objective grading, "did you do this and that"

Part subjective assessment based on the TA's judgment of quality

Subjective, but as consistent as possible



# Labs

TAs will share a tool they are excited about  
Labs: tutorial + exercise in a small lab with the TAs  
You pick four! UI Camp counts as two or three  
Schedule will be posted on the website soon

# Participation

Mostly in-class activities, some on your own  
Gain half a point per activity, up to 5 points



# UI Camp

Optional workshop to learn the basics of several UI design tools  
(Balsamiq, Sketch, Adobe XD, InVision, and Framer)

Meet some other UI/UX students and TAs and work in small groups

Get some labs done early, which can be useful for assignments later

Choose either Saturday or Sunday

Bring a laptop if you have one

Snacks are provided, sponsored by Balsamiq

Signup: <https://goo.gl/forms/0aU9KxQei4W9fZEi2>  
(link also on the course website)

# Interacting Outside the Class

Visitors who will share what they do, what they think about the field, how they make design decisions, how they got to where they are

Short talks in class and roundtables

Portfolio Reviewers for the final project

# Resources

## **Course website**

Course website schedule updated regularly with links to readings, lectures, and assignments

Main source for course info/deadlines

<https://cs.brown.edu/courses/csci1300/>

## **Gradescope**

For assignment hand-in and grades, reading responses, slides, and assignment handouts

## **Piazza**

For questions to TAs about assignments and misc

# Policies



Laptops only in the back row

Remember – things are due on Thursday (at 12pm, a little before class)

2 “late passes” that can be used for an extra week on assignments

Late penalties applied at end of semester. Unused late passes provide no other benefit

Discussing assignments is okay, but don’t take things away from it. No sharing of assignment notes except for assignments done in groups.

Sign the collaboration policy (Google Form)

TAs can’t grade your work until you return it signed

# Getting into the class

Aiming for under 100 spots to accommodate some assignments/activities

Apply to the course by 5pm today for equal consideration for open spots; notifications sent out by 7pm, waitlist after that

RISD students bring your forms in on Tuesday

# Reading: Portfolios



Start with other peoples' Portfolios, end with your own Portfolio

# Portfolio 11

Free Portfolio Template

HOMEPAGE    STYLE DEMO    FULL WIDTH    LINK TEXT    LINK TEXT    LINK TEXT

# Assignment: Everyday UI



Next week: History and Affordances