Advanced Web Design Studio

No screens



Prof. Lydia Chilton COMS 6998 7 September 2018



COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

Staff

- Prof. Lydia Chilton
 - Office hours: Tuesday 4-5
- TAs:
 - Katy Gero
 - Savvas Petridis
- Course website:
 - http://www.columbia.edu/~lc3251/courses/fall18/

Advanced Web Design Studio

No screens



Prof. Lydia ChiltonCOMS 69987 September 2018



COLUMBIA UNIVERSITY

User Interface Design

COMS 4170 · Spring 2018

Home Syllabus Assignments -

Part 1 Build websites that suit the needs and abilities of users.Part 2 When the needs and abilities of users are uncertain, design systems

You already know <u>front-end</u> web dev: HTML, JavaScript, Bootstrap, jQuery

And design: Iterative design, critique

Columbia University Advanced Web Design Studio COMS 6998 · Fall 2018

Goals

1. Master front-end and back-end technologies for making interactive websites.

- 2. Discover specific user needs by developing a low-level, mechanical model of human behavior.
- 3. Practice iterative design to meet specific user needs.

INSTRUCTOR	TAS
Prof. Lydia Chilton	Katy Gero
	Savvas Petridis
Please contact staff through Plazza only	OH: TBA, CS OH room

You will learn <u>back-end</u> web dev:

- Server-side programming (Flask),
- Databases (Sqlite, SQLAlchemy)
- Real-time Communication (Socket.IO)

And practice web design by:

- Rebuilding IMDB.com
- Rebuilding twitter
- Pursuing your own project

Advanced Web Design Studio

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COLUMBIA UNIVERSITY

What is a **studio** class?







Not a studio class



Why we do teach some topics in a studio?



Architecture

What are other topic we learn through applying skills and receiving feedback?

What are other topic we learn through apply techniques and receiving feedback?



Cooking

Sports

Languages

In this class, the staff will set high-level goals.

We will support you in achieving them by:

- 1) setting deadlines
- 2) providing feedback
- 3) creating a supportive environment of peers

In-class participation 20%

Weekly turn-ins

60%

In-class participation

20% Attendance is mandatory. Any absence, excused or otherwise, must be made up. It is the student's job to coordinate make up sessions within 6 days of the absence.

Weekly turn-ins

60%

- 20% Attendance is mandatory. Any absense, excused or otherwise, must be made up. It is the students job to coordinate make up sessions within 6 days of the absence.
- Weekly turn-ins60%Every week student will write up their goals for
the week, how they iterated toward the goals,
and a report of their progress on each goal.
There are 13 weeks of class and 12 turn-ins. Each
turn-in is worth 5% of your final grade.

In-class participation

- 20% Attendance is mandatory. Any absense, excused or otherwise, must be made up. It is the students job to coordinate make up sessions within 6 days of the absence.
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the week, how they iterated toward the goals,
and a report of their progress on each goal.
There are 13 weeks of class and 12 turn-ins. Each
turn-in is worth 5% of your final grade.

Final Project

In-class participation

20% The final project may be done individually or in groups of 2.

Objectives

1. Master front-end and back-end technologies for making interactive websites.

2. Discover specific user needs by developing a low-level, mechanical model of human behavior.

3. Practice iterative design to meet specific user needs.

User Interface Design Review

Prof. Lydia Chilton COMS 4170



Users interact with a system to accomplish a goal

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Google Maps



Buy a book

Get to events on time

Get to a place 21

User goals must be concrete.

Grand but not actionable

"combat social inequality"

"bring the world closer together"

"scale and democratize education"

User goals must be concrete.

Grand but not actionable

Humble but actionable

"combat social inequality"

"bring the world closer together"

"scale and democratize education"

"let Harvard students see what dorm their friends are in"

"register 100 voters in Selma, Alabama"

"teach my 12-year old cousin Nadia how to multiply fractions"

User Interfaces should be designed to help users accomplish a goal.

Guide users' attention

Last 1 resolution's party. The second secon

Provide clear actions and feedback.



Allow users to navigate through the system in ways that follow from their goal.



See all 4 images

Even the smartest among us can feel inept as we fail to figure out which light switch or oven burner to turn on, or whether to push, pull, or slide a door. The fault, argues this ingenious-even liberating-book, lies not in ourselves, but in • Read more Design is hard because it requires synthesizing many elements that are dependent on each other.



We use iteration to minimize risk by prototyping the riskiest elements first.





Idea Resources Design Technical Design Idea Design

User Interface Design

COMS 4170 · Spring 2018

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Advanced Web Design Studio

Home Syllabus

dz Columbia University

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You will learn <u>back-end</u> web dev by:

- Rebuilding IMDB.com
- Rebuilding twitter
- Pursuing your own project

Rebuilding IMDB.com

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Our Helpful Hack	s to Get You Through	TIFF Back in th	e Day: Actors' Early	Roles	+ Operation Finale \$6.0M	Get Tickets		
	2018		.,,		See more box office results »			

How to have the best time at TIFF »



Remember Users interact with a system to accomplish a goal

Buy a book

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Get to events on time



Get directions



What is the single concrete user goal that best defines IMDB?







Who is that actor?????



Videos





Help

f 🖌 🖸

Find out how the Toronto International F Festival has become a predictor of Best Picture at the Academy Awards over the years.

/atch now »

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Notice: The way we discover user needs is to observe their actions mechanically

I went to see "Crazy Rich Asians"



I saw and actor I didn't recognize Who was really good and had an awesome accent







From a concrete instance, it is the designers job to abstract the general need appropriately.

For next week:

Remake the **basic functionality** of IMDB.com

- Must use Flask (web server) back end
- HTML, JavaScript, jQuery, Bootstrap
- Must have multiple pages
- Must serve data from the server
- NO static HTML data to display data
- NO Database
- NO images
- NO graphic design

Creating multiple pages in Flask (web server)

```
39
40
    from flask import render_template, request, jsonify
    from app import app, models, db
41
42
     from app.models import Movie
43
44
     @app.route("/")
    def home():
46
         m = Movie.query.all()
47
         return render_template('home.html', movies=m)
49
     @app.route("/movie/<id>")
50
    def movie(id):
51
         movie_data = Movie.query.get(id)
52
         return render template('movie.html', movie data = movie data)
53
54
     @app.route("/addMovie")
55
    def addMovie():
56
         return render_template('addMovie.html')
57
     @app.route("/saveNewMovie", methods=["POST", "GET"])
58
59
    def save():
         #cur = mysgl.connection.cursor()
60
61
         #how do I get the data from post?
62
         send_back = {"status": "failed"}
         if request.method == 'POST':
63
64
             data = request.args #request.args
65
             data = request.get_json(force=True) #request.args
             newMovie = Movie(title=data["title"], year=data["year"])
67
68
             db.session.add(newMovie)
69
             db.session.commit()
70
71
             send_back["status"] = "success"
72
         return jsonify(send_back)
73
```

To remake the **basic functionality** of IMDB.com What goals should we define?

- High-level user goal:
 - ???
- Low-level dev goals:
 - ?
 - ?
 - ?
 - ?
 - ?
 - ?
 - ?



Possible Goals for remaking IMDB.com

- High-level user goal:
 - Allow a user to look up the main actors in a movie.
- Low-level dev goals:
 - Install Flask get a "hello world" page up and running
 - Make two different webpages
 - Page 1 List all movies
 - Page 2 See the details of one movie
 - When you click on a movie on Page 1, it takes you to that movie page
 - Make a page to create a new movie
 - Make a page to update a movie
 - Make a button to delete a movie

Turn-in a document describing the following:

1. Establish goals.

One high level goal and 7-10 low-level goals that will help you accomplish the high level goal.

2. Iteration.

Report on 3 of the features in your that caused you to iterate on your goals.

- 1. My plan was to <u>x</u>.
- 2. But I ran into problem <u>y</u>.
- 3. And I solved it by doing <u>z</u>.
- z = "I added a new subgoal", "I changed my high level goal", "I removed a subgoal"

3. Report on goal progress.

For each of the goals in part 1. Which items you completed? Show images to document each item. (either of the UI or code)

Be prepared to discuss your progress during studio.

You will be graded on whether or not you did each part.

Summary

User Interface Design

COMS 4170 · Spring 2018

Home Syllabus Assignments -

Part 1 Build websites that suit the needs and abilities of users.Part 2 When the needs and abilities of users are uncertain, design systems

You already know: Front-end web dev, iterative design, critique

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de Columbia University

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You will learn: Back-end web dev

And practice web design by:

- Rebuilding IMDB.com
- Rebuilding twitter
- Pursuing your own project
- Giving and receiving critique

This is a **studio class**. We practice web dev and learn from experience.

Like this:





Not this:

Objective 1. Master front-end and back-end technologies for making interactive websites



22	
40	<pre>from flask import render_template, request, jsonify</pre>
41	from app import app, models, db
42	<pre>from app.models import Movie</pre>
43	
44	<pre>@app.route("/")</pre>
45	<pre>def home():</pre>
46	<pre>m = Movie.query.all()</pre>
47	<pre>return render_template('home.html', movies=m)</pre>
48	
49	<pre>@app.route("/movie/<id>")</id></pre>
50	<pre>def movie(id):</pre>
51	<pre>movie_data = Movie.query.get(id)</pre>
52	<pre>return render_template('movie.html', movie_data = movie_data)</pre>
53	
54	<pre>@app.route("/addMovie")</pre>
55	<pre>def addMovie():</pre>
56	<pre>return render_template('addMovie.html')</pre>
57	
58	<pre>@app.route("/saveNewMovie", methods=["POST", "GET"])</pre>
59	def save():
60	<pre>#cur = mysql.connection.cursor()</pre>
61	<pre>#how do I get the data from post?</pre>
62	<pre>send_back = {"status": "failed"}</pre>
63	<pre>if request.method == 'POST':</pre>
64	<pre>data = request.args #request.args</pre>
65	<pre>data = request.get_json(force=True) #request.args</pre>
66	
67	<pre>newMovie = Movie(title=data["title"], year=data["year"])</pre>
68	db.session.add(newMovie)
69	db.session.commit()
70	
71	<pre>send_back["status"] = "success"</pre>
72	return jsonify(send_back)
73	

Objective 2. Discover specific user needs by developing a lowlevel, mechanical model of human behavior.

I went to see "Crazy Rich Asians"



I saw and actor I didn't recognize Who was really good and had an awesome accent.







From a concrete instance, it is the designer's job to abstract the general need appropriately.

Objective 3. Practice Iterative design.

Idea:

Help NBA fans recognize the the pick-androll during games.



Idea Resources Design Technical Design Idea Design



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Turn in by 2pm Friday:

1. Establish goals.

One high level goal and 7-10 low-level goals that will help you accomplish the high level goal.

2. Iteration.

Report on 3 of the features in your that caused you to iterate on your goals.

- 1. My plan was to <u>x</u>.
- 2. But I ran into problem <u>y</u>.
- 3. And I solved it by doing <u>z</u>.
- z = "I added a new sub-goal", "I changed my high level goal", "I removed a sub-goal"

3. Report on goal progress.

For each of the goals in part 1. Which items you completed? Show images to document each item. (either of the UI or code)

Be prepared to discuss your progress during studio.

You will be graded on whether or not you did each part.

Late work cannot be accepted. Turn in whatever you have by 2pm to get credit.