

CS 498RK

FALL 2017

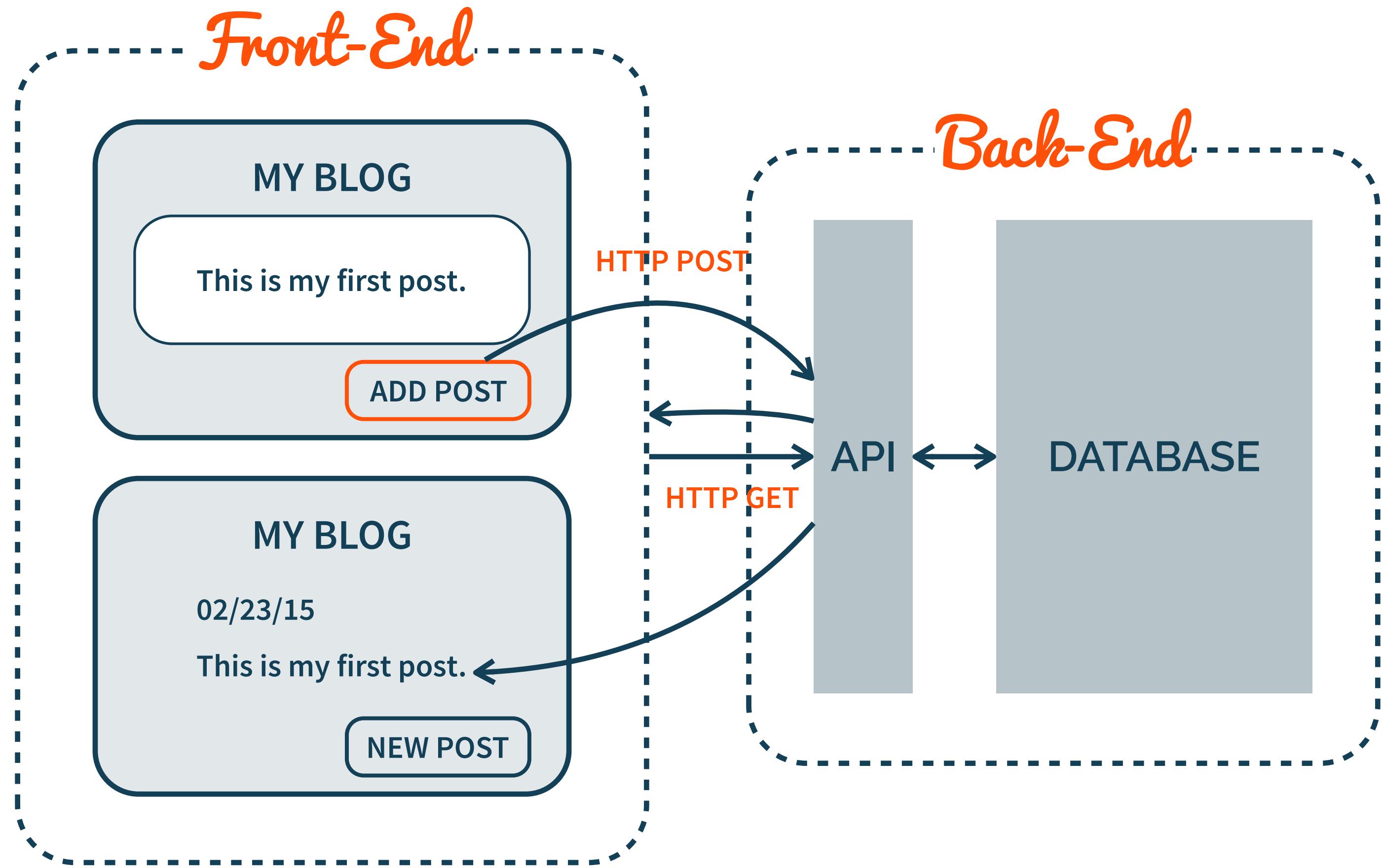
COURSE OVERVIEW

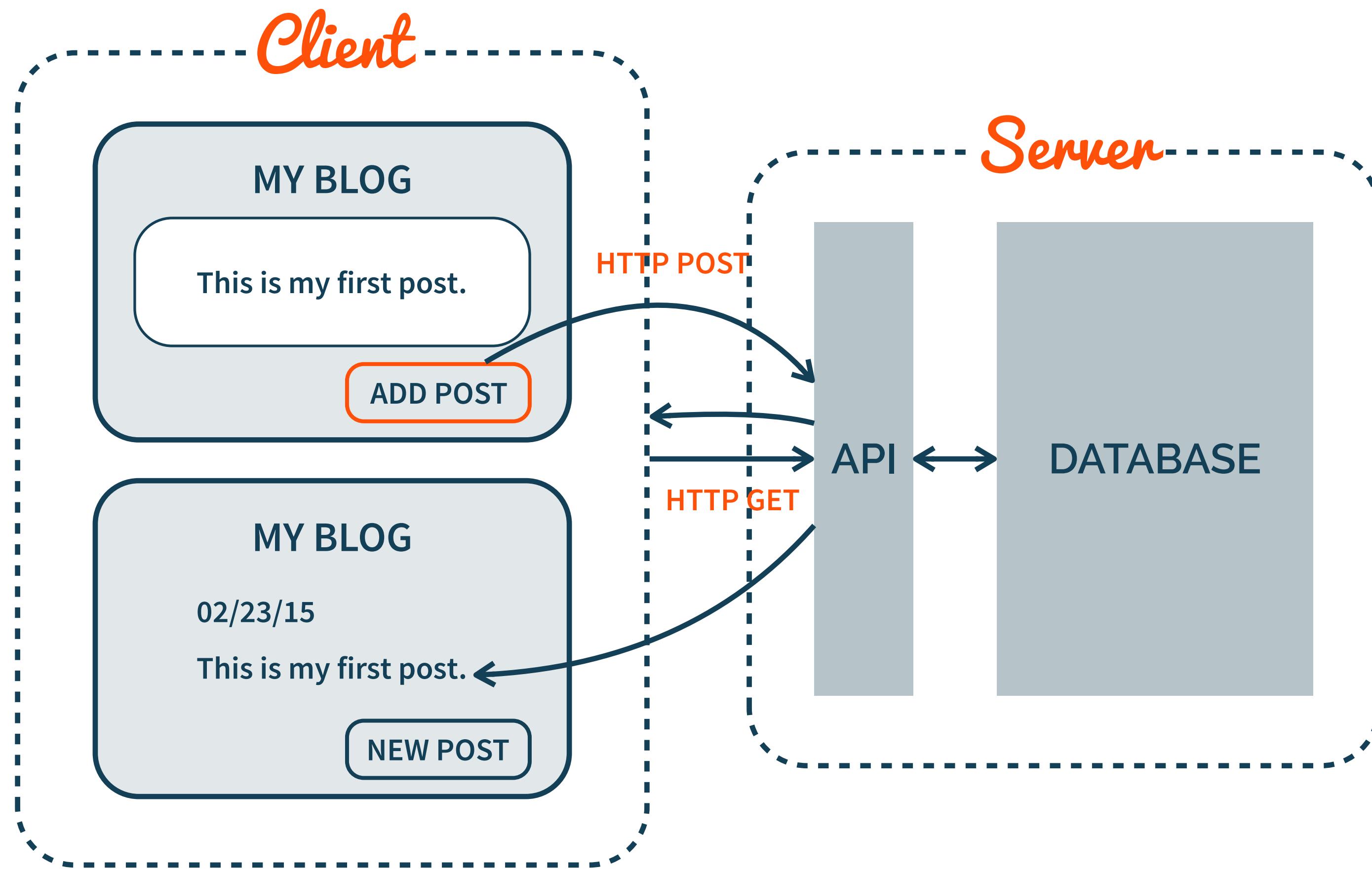
WEB SKILL SETS

Front end

Back end

Design





Client

HTML
CSS
CSS preprocessors
Semantic UI

Javascript
React
React Native

REST
HTTP
AJAX

RESTful APIs
Data Binding
Sockets

Server

SQL vs NoSQL
MySQL, Mongo

Event-Driven
Programming
Node.js, Express

The NERD Stack 😎

Node

Express

React

(any) Database

HTML

Most web pages are written in HTML

Content is embedded in a set of nested HTML tags

Layout engine parses HTML into a Document Object Model

Web browsers use DOM to render pages

```
<!DOCTYPE html>
<html>
  <head>
    <title>Photo Gallery</title>
  </head>

  <body>
    <div class="photo">
      <h3>My first photo</h3>
      
    </div>
    ...
  </body>
</html>
```

CSS

Language for specifying presentation

Selectors map styles to markup

Describe how to render

Separation of content from presentation



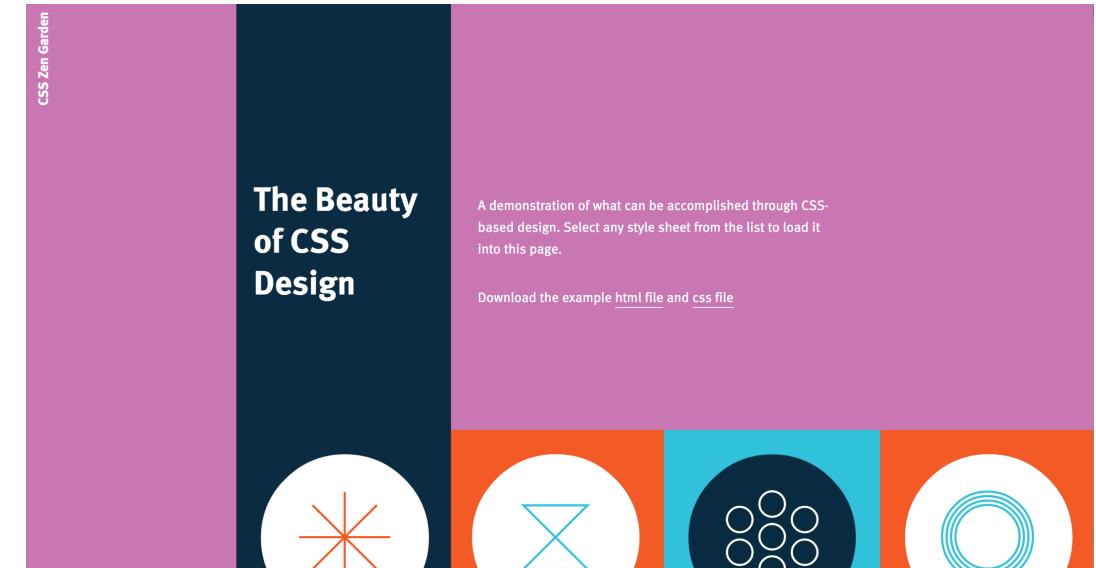
A demonstration of what can be accomplished through CSS-based design.
Select any style sheet from the list to load it into this page.

Download the example [HTML FILE](#) and [CSS FILE](#)

THE ROAD TO ENLIGHTENMENT

Littering a dark and dreary road lay the past relics of browser-specific tags,
incompatible DOMs, broken CSS support, and abandoned browsers.

We must clear the mind of the past. Web enlightenment has been achieved



csszengarden.com

JAVASCRIPT

front-end interactions

dynamic content

server-side programming (node.js)

object-oriented, imperative, functional

JAVASCRIPT IS WEIRD

```
[10, 20, 9, 8, 30].sort()
```

JAVASCRIPT IS WEIRD

[10, 20, 30, 8, 9]

DATA BINDING

HTTP: request-response protocol

AJAX: send and receive data
without reloading page

JSON: data exchange format

DATABASES

SQL (MySQL)

NoSQL (MongoDB)

Graph (Neo4j)

APIS AND SERVER LOGIC

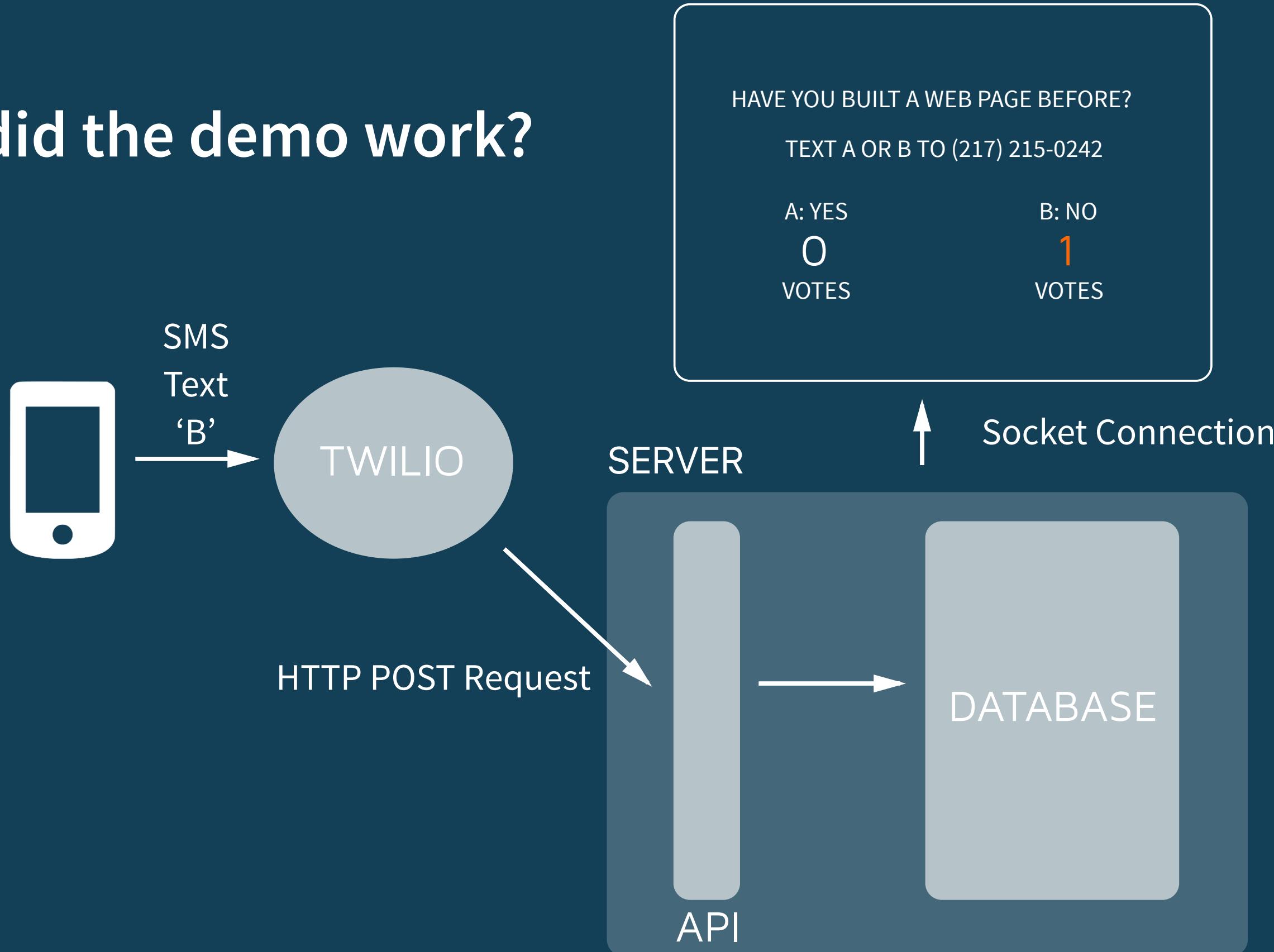
HTTP requests: GET, POST, DELETE

Designing a RESTful API

Node.js and Express

Web Sockets

How did the demo work?



WILL THIS COURSE BE OUTDATED NEXT YEAR?

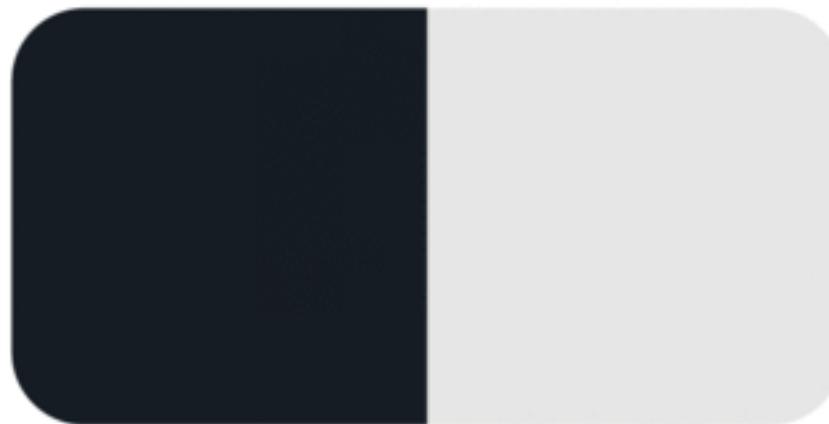
Focus on concepts not just specific technologies

Understand how trends arose and have changed

~1989: Unix-based web browsers



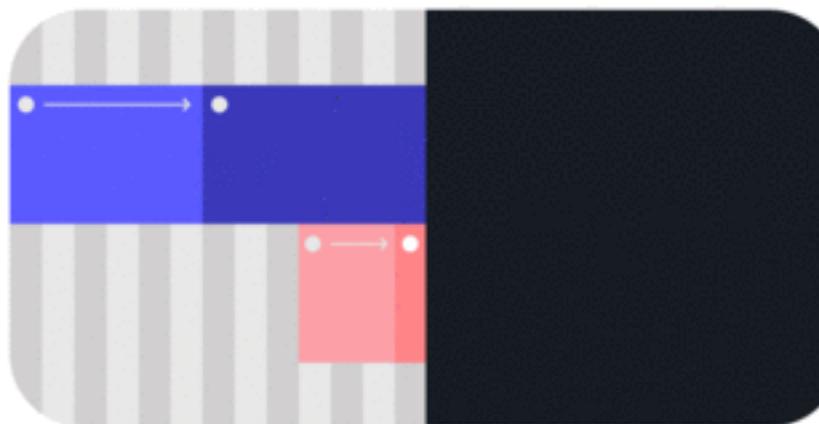
~1995: First graphical Web browsers



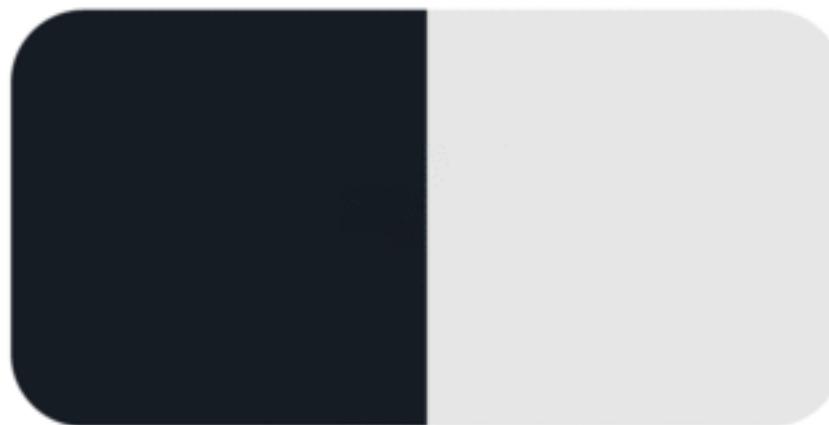
~1995: Javascript & Dynamic Content



~1996: Flash animations



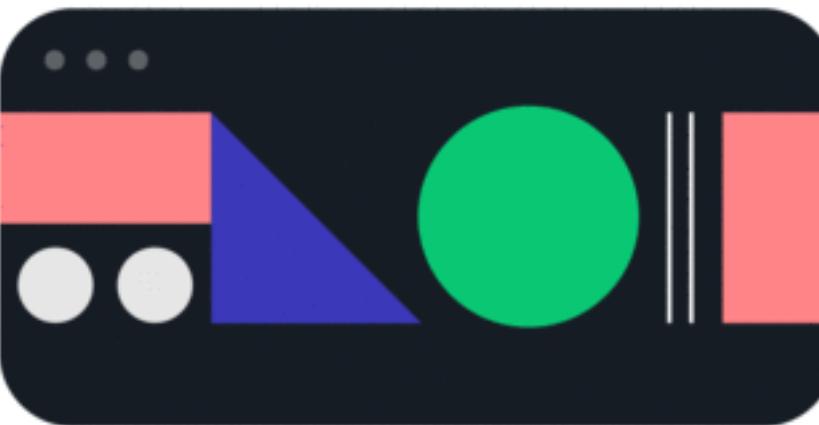
~1998: CSS came on the scene



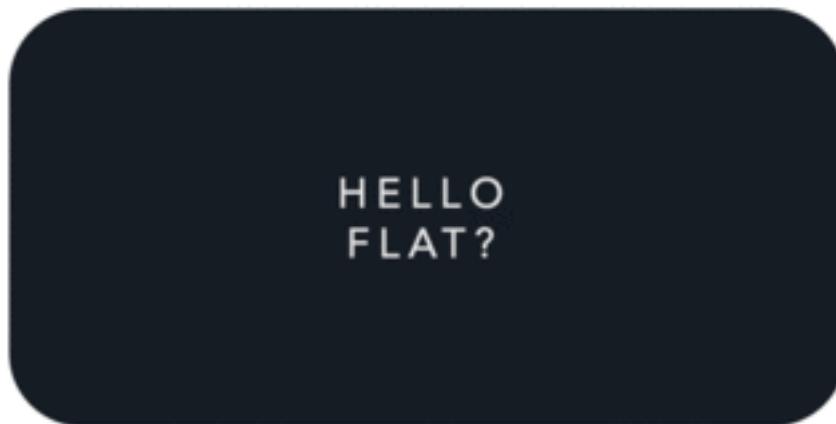
~2007: Grid systems



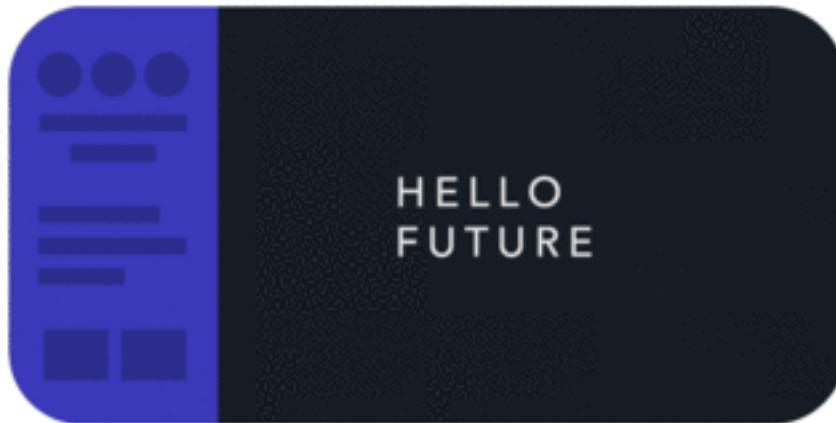
~2010: Responsive design



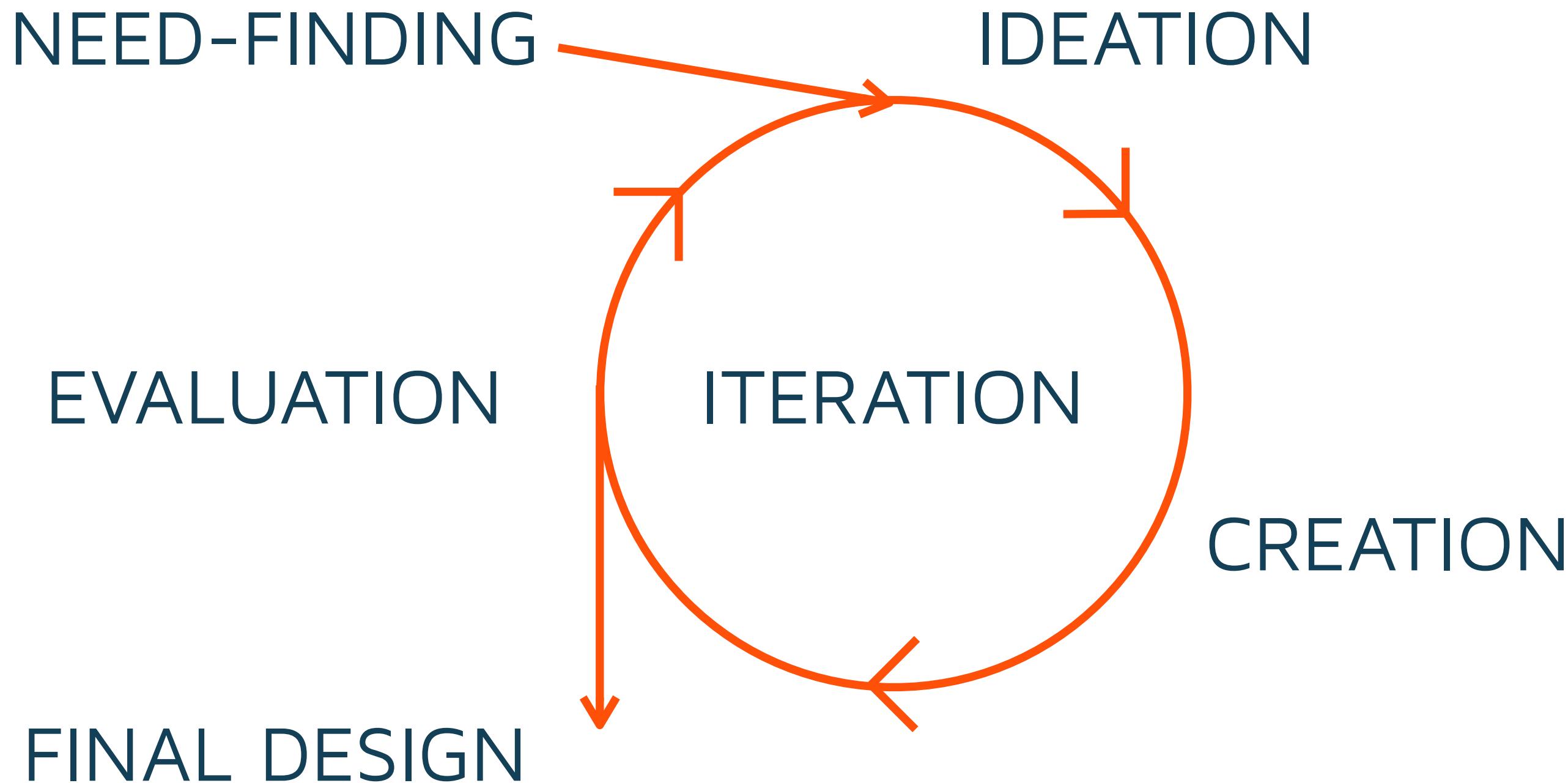
Last few years: Flat design



Future?



DESIGN EMPHASIS



ADMINISTRIVIA

To get on the waitlist, please fill out **survey**

Do not email us directly!

In general, avoid emailing us directly – use **Piazza**

Head TA

COURSE STAFF



CAs

Sujay



Biplab



Konstantinos



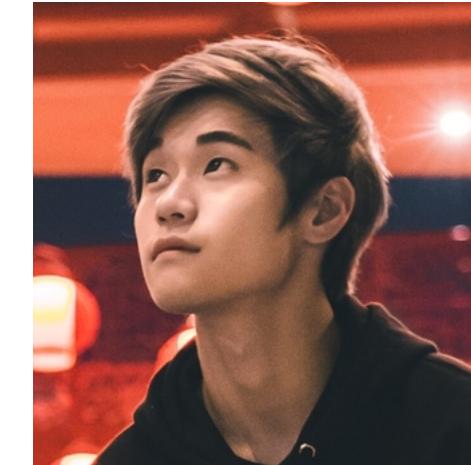
Jinda



Tanvi



James



Simon



Sanchay



Arjun



Goutham

TAs

OFFICE HOURS

Konstantinos Mon 1-2pm, SC 0207

Jinda Tue 2-3pm, SC 0207

Ranjitha Wed 1-2pm, SC 4224

Sujay Thu 11-12pm, SC 0207

Biplab Fri 1-2pm, SC 0207

No office hours this week!

LECTURES & LABS

Lectures cover theory and concepts

Labs walk through concrete code examples

Bring your laptops to labs and follow along

In-class warm-up problems count toward participation

ASSIGNMENTS

4 MPs (50% of grade)

Learn the entire Web stack

Late assignments receive no credit

Three 24-hour late days

50% OF GRADE

FINAL PROJECT

Design and implement original Web app

4-5 person teams

Multiple checkpoints: proposal,
functional prototype

No late days

30% OF GRADE

EXAMS

In-class midterm on Oct 16th

Alternative arrangements must be
made **two-weeks** prior to exam

No final exam

20% OF GRADE

ACADEMIC INTEGRITY

Consult external resources to complete assignments

Clearly cite any contributing source

Failure to cite any contributing source will be
considered **cheating**

Verbatim duplication of any source will always be
considered **plagiarism**

PROFESSIONAL DEVELOPMENT

Corporate Guest Lectures



Granular
BITOVI

🌮 Taco Social (Sep 20)



🏆 Final Project Competition @ Research Park

NEXT CLASS: HTML

courses.engr.illinois.edu/cs498rk1/