

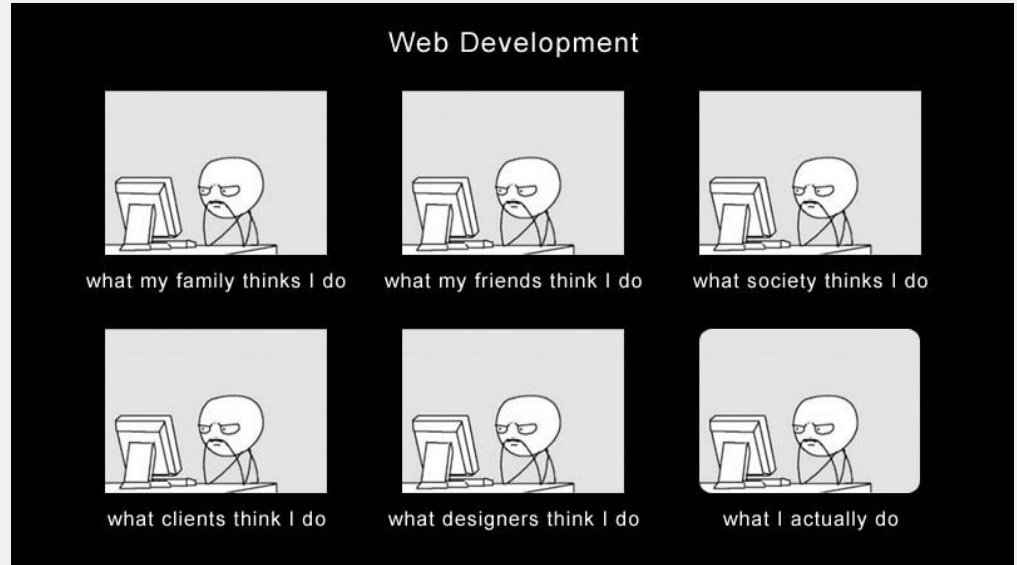


LAB #4

**Adv. CiC
Spring 2026**

Agenda

1. Housekeeping
2. Internet Architecture
3. Web Development
4. APIs
5. Lab 4 Exercise



Housekeeping

Due this past week

- Reading 4
- Lab 3

*Let me know if any questions about **proposal feedback**.*

Upcoming

1. Project pt. 2 - **2/19 @ 3pm**
2. Reading 5 - **2/19 @ 3pm**
3. Lab 4 - **2/20 @ 1pm**

Additional Resources

- Online tools
 - Google, ChatGPT, etc.
 - ***Make sure to review AI policy!***
- **ED!!!**
- Office hours
 - 1 hr/week set time
 - Appts by email

programmers looking
at programming memes



Kyle 🌱 @KylePlantEmoji · 23 godz.
Me: I'm so sorry, my dog ate my homework

Comp Sci Professor: your dog ate your coding assignment?

Me:

Prof:

Me: it took him a couple bytes

💬 255 ↺ 18,7K ❤️ 146K ➦

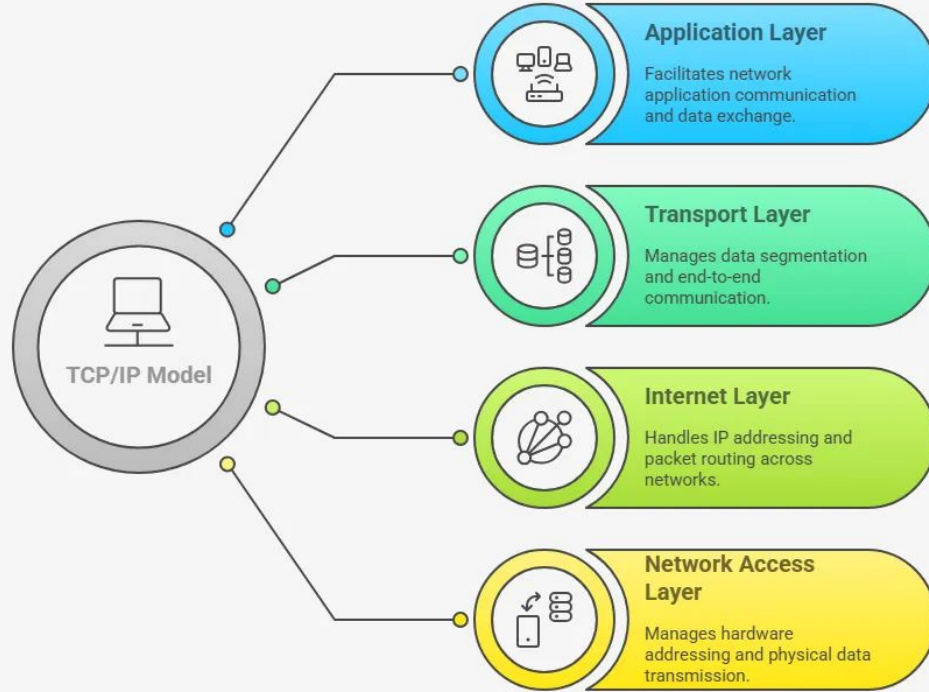
Questions
(on Lectures, Labs, or Readings)?

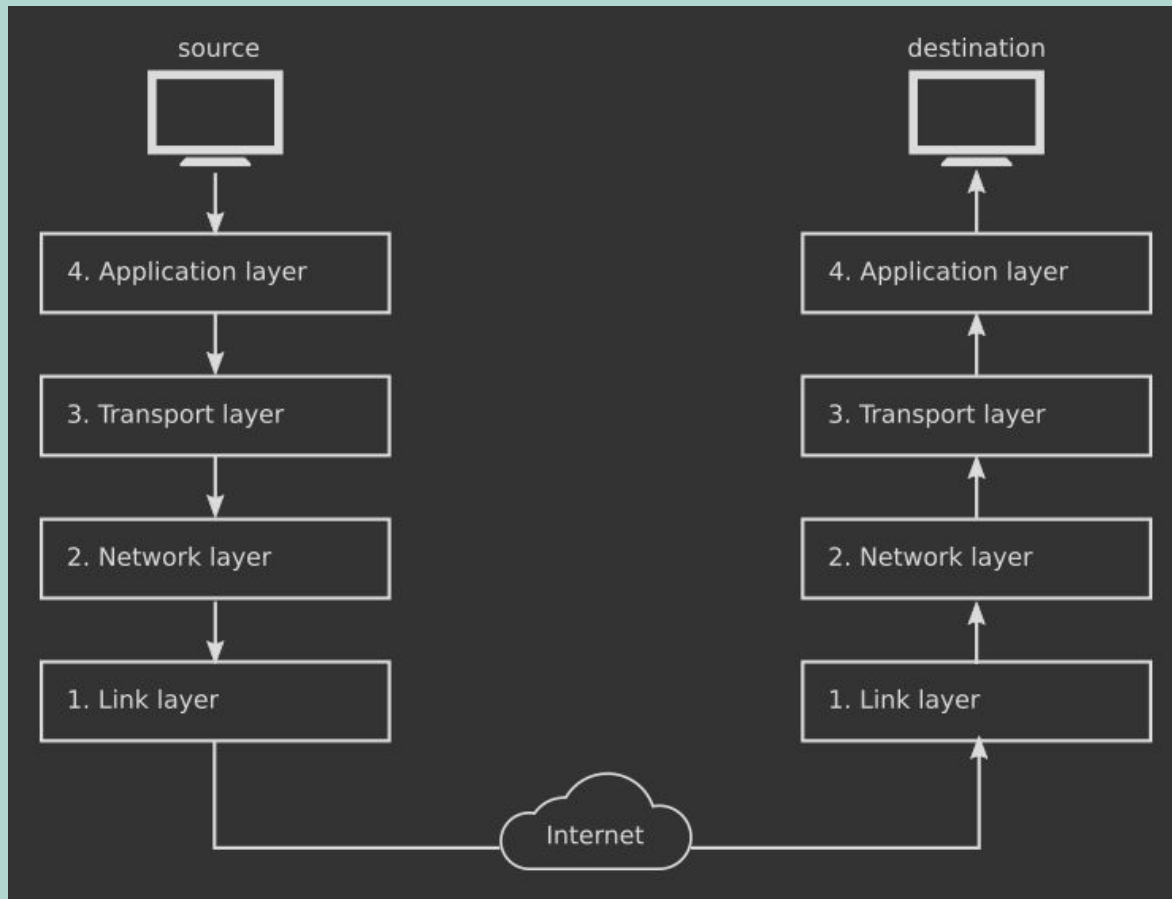
The background is a solid dark olive green. It is decorated with several geometric elements: a light blue rounded rectangle in the top left, a yellow rounded rectangle in the top center, a light green rounded rectangle in the top right, a light blue rounded rectangle in the bottom right, a yellow rounded rectangle in the bottom left, and three white-outlined rounded rectangles scattered in the center and bottom. In the center of the image is a large, light green rounded rectangle containing the text 'Internet Architecture' in a bold, dark blue font.

Internet Architecture

What is the Internet?

system of interconnected computers and networks that communicate using shared protocols to exchange information around the world





How TCP/IP Works

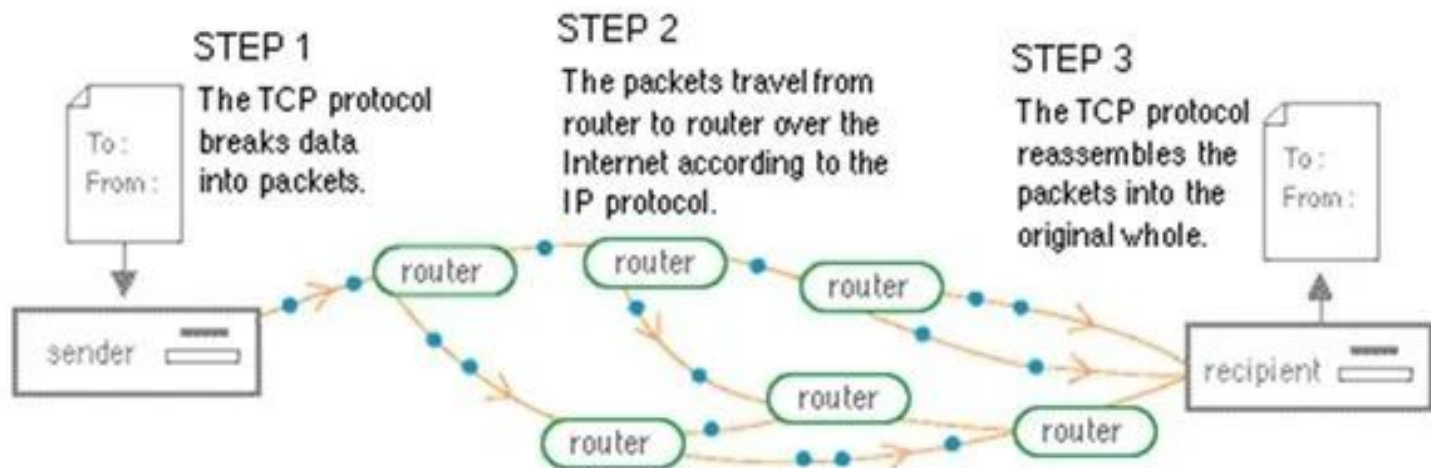


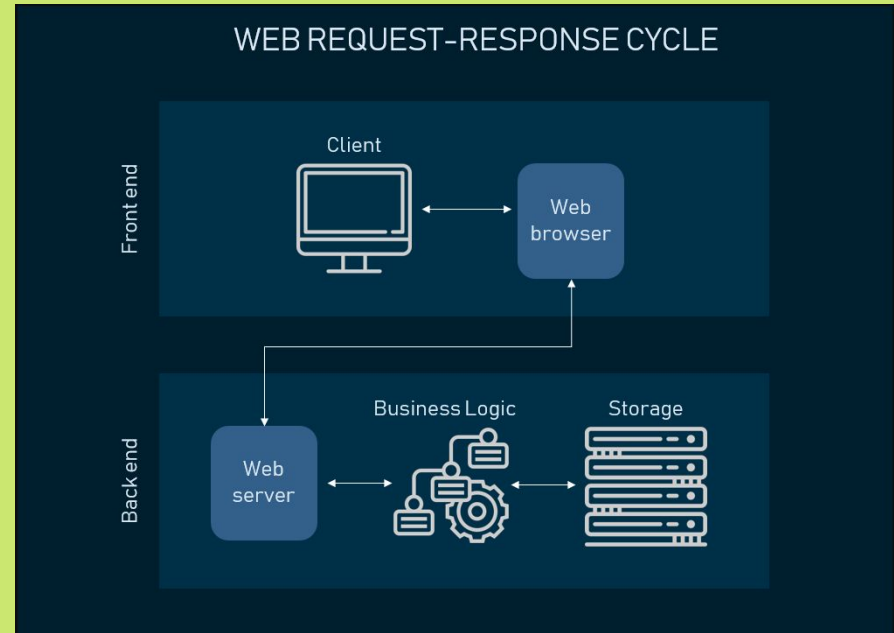
Figure 2. How data travels over the Net.



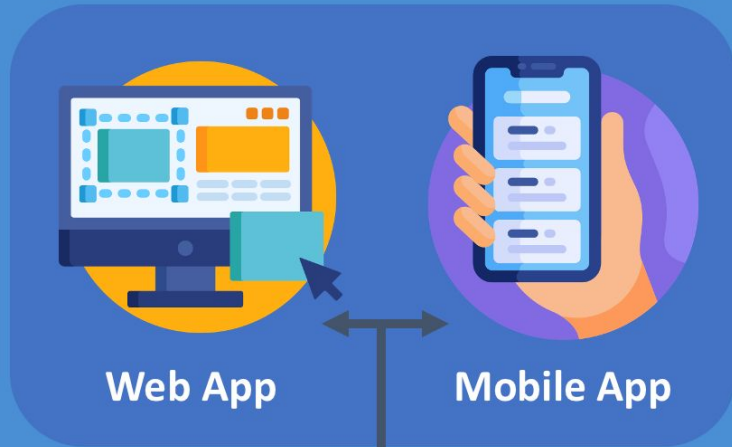
Web Development

Basics of Web Development

- **How the web works:** At its core, the web is just computers sharing data - your browser downloads code and content from a server, then runs and displays it on your device.
- **Frontend development:** The frontend is everything users see and interact with in their browser (layout, design, buttons, animations)
- **Backend development:** The backend runs on servers and handles data, logic, and storage: processing requests, managing databases, and sending information back to the frontend.



FRONT-END



Web App

Mobile App

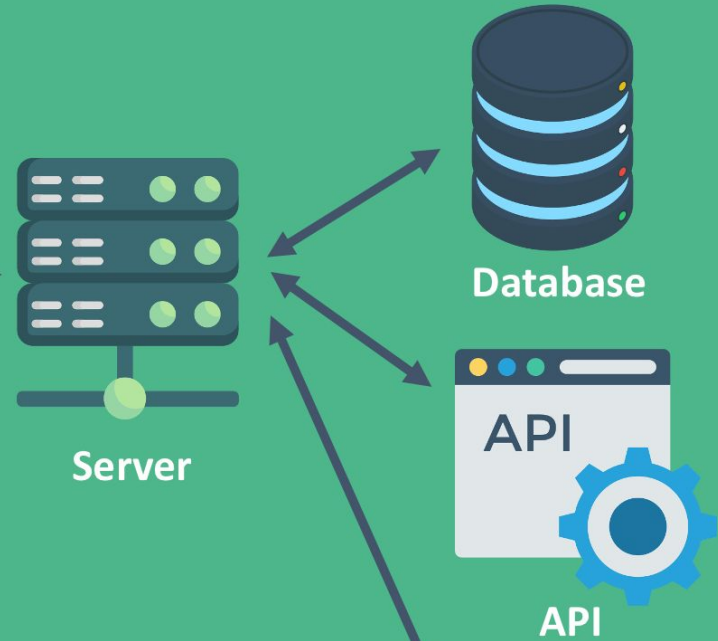
HTML

CSS

JS



BACK-END



Server

Database

API

API



HTML VS CSS

HTML



How are the two different?

CSS



Creates the
content &
structure of
web page

**Complete
Web Page**

Controls the
presentation
& styling of
web page

HyperText Markup
Language

Cascading Style
Sheets



HTML



HTML + CSS



HTML + CSS + JavaScript

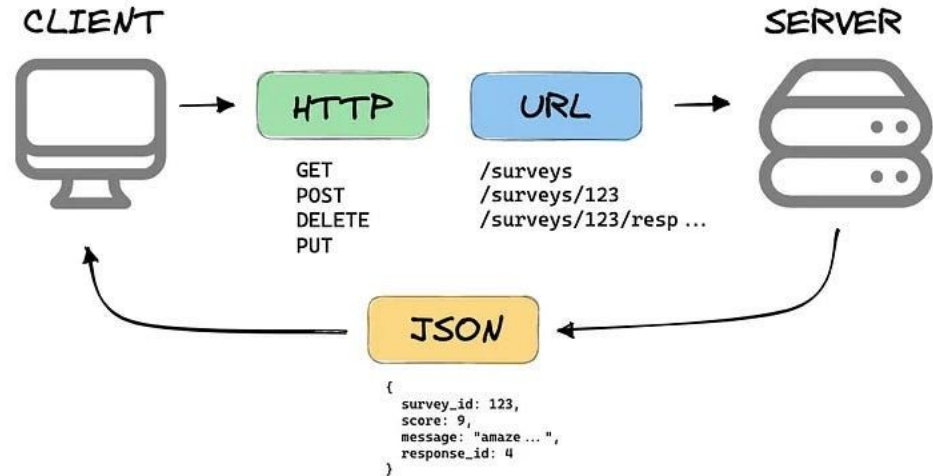
The background is a solid green color. It features several decorative elements: a light blue rounded rectangle in the top left, a yellow rounded rectangle in the top right, a light blue rounded rectangle in the bottom right, and a yellow rounded rectangle in the bottom left. There are also several thin, rounded rectangular outlines in yellow and dark blue scattered across the background.

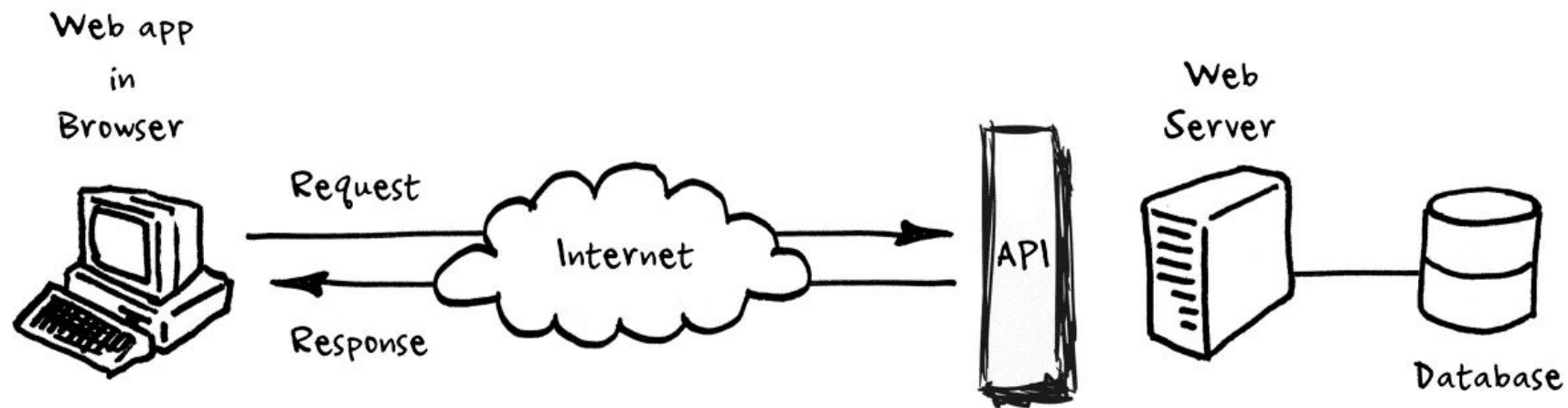
APIs

APIs

- An API is a **way for different software systems to talk to each other** and exchange data in a structured, predictable way
- **Why they matter:** APIs let apps reuse existing services (like maps, payments, or weather data) instead of building everything from scratch
- **Big picture:** They make modern software modular - different teams and systems can work independently but still connect smoothly

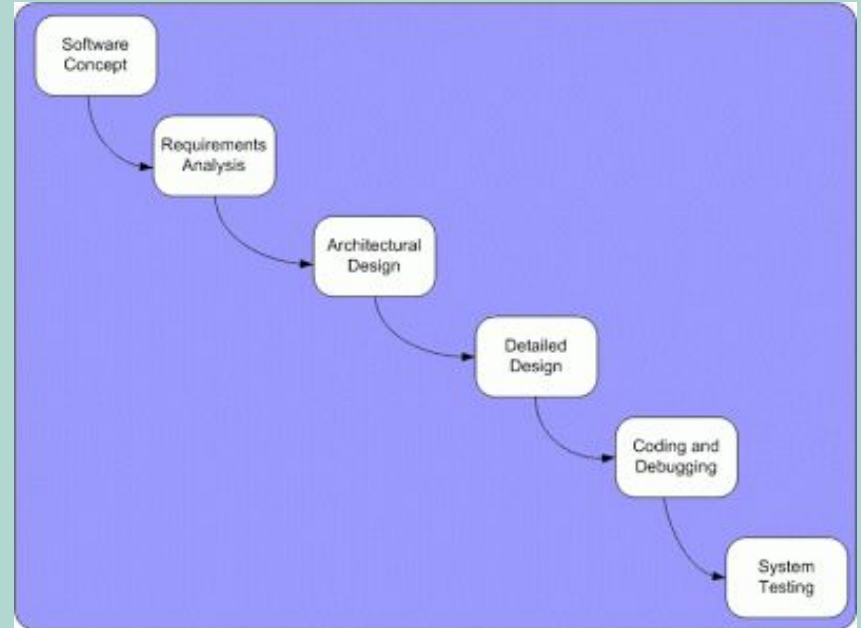
WHAT IS A REST API?





Document-Driven Development

- **Clarity:** Writing docs first forces clarity - you define how something should work before getting lost in implementation details
- **Collaboration:** everyone builds against the same shared expectations, reducing confusion and rework



Q: why does this look a little Waterfall-y?

Today 6:14 AM

dude your job is done for 🤖 I just
made an entire website with
chatGPT

wanna see it?

sure

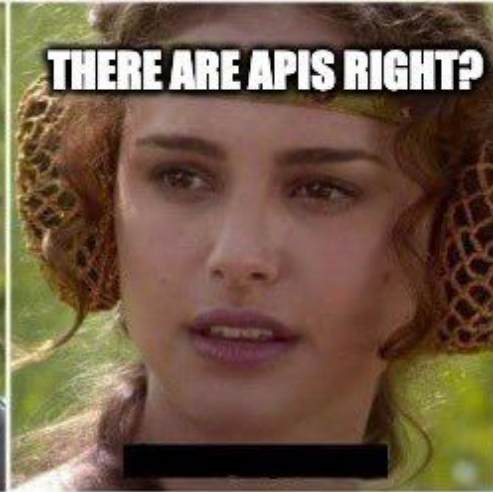
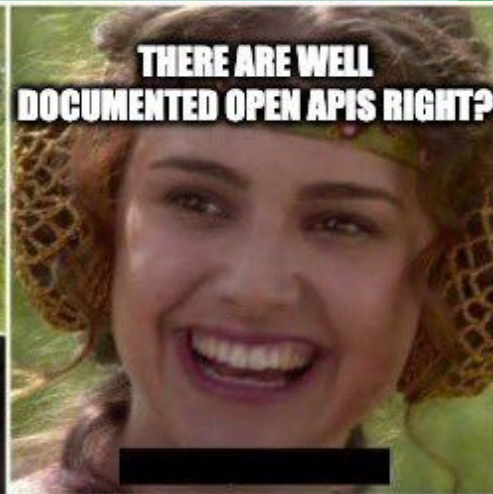
Read 6:16 AM

C:\Users\ben\Downloads\index.html



WEBDEVELOPERS







**EXERCIS
E**

Lfg