



香港中文大學
The Chinese University of Hong Kong

CSCI2720/ESTR2106 BUILDING WEB APPLICATIONS

An Introduction

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LET'S READ THE COURSE OUTLINE!

QUESTION:

HOW DO CSCI2720 AND ESTR2106 DIFFER?

- ESTR2106 is the ELITE version of CSCI2720
 - See: <https://www.erg.cuhk.edu.hk/erg/Elite>
- ESTR2106 = CSCI2720 + extra work
 - 1 extra lecture session every week
 - Extra materials and topics to learn, and to use in assignments/project
 - A different set of midterm exam
 - A challenge for those who aims to be a versatile full-stack developer
- Requirements: Engineering students with CGPA ≥ 3.3

QUESTION:

WHY IS THIS A 2000-LEVEL COURSE?

1. In Dept of CSE, we generally aim more for theories and sciences of computing
2. This course of “Building Web Applications” is more on practical side and **lots of hands-on** experience
3. Crazy workload?
We try to cover **basics of everything** so you can start more smoothly towards different directions in webdev
4. Note: this course is NOT a pre-requisite for CSCI3100!

HOW TO LEARN WELL IN THIS COURSE?



Explore and practise

Try and run the code: All of them!



Attend lectures and labs

Don't lose track. Follow tight!



Feedback and discuss

Slack channel
Weekly labs



DRAW YOUR OWN STUDY NOTES

Figure out how thoughts
and ideas **connect** with
each other



ASK QUESTIONS!

Yet, you need to formulate a possible answer first. This process is how you *actually think*.



COURSE ASSESSMENT

- Assignments 30%
 - Midterm Exam 40%
 - Project 30%
 - Groups of 5-6 students
 - *There is no Final Exam!*
- Note: A pass in the Midterm Exam is required for passing the course

QUESTION: WHAT BROWSER SHOULD I USE?

- Any *modern browser* on your laptop or tablet is fine
 - Your phone works great yet it's not the easiest platform for coding
- For consistency, assignments and project will be graded on almost-latest version of Google Chrome



QUESTION:

WHAT EDITOR SHOULD I USE?

- Preferably a ***text-based editor***, since you need to exactly understand the programming code of multiple languages
 - Graphical editors may generate code that you cannot understand
 - Code linting is fine, yet just remind yourself not to get too dependent...
- Try online IDEs which will render right in the page
 - *e.g., codepen.io, jsfiddle.net*

ACADEMIC HONESTY

- What do you want to achieve, and why are you here?
- Read: <https://www.cuhk.edu.hk/policy/academichonesty>
 - Plagiarism will be seriously penalized



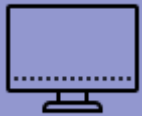
ARE YOU READY TO TAKE
THE CHALLENGE AND
START?

WHAT IS A WEB APPLICATION?

- A **software** application often handled by the browser
- **Accessed via web** over an intranet or the Internet
- **Client-server** based
- Dynamic websites? Beyond Web 2.0?

“Full-stack Development”

WEB TECHNOLOGIES



Web clients

Browser Engines

WebKit
Blink
Gecko
EdgeHTML

Client-side Rendering

HTML
CSS
JavaScript
Ajax/Fetch
Frameworksss...



Internet

World Wide Web

HTTP
URL
Security layers



Web server



Files



Database

Server-side Programs

Perl
PHP
ASP
JSP
Node.js

Server Data

Plain files
JSON/XML
DBMS

BASIC ELEMENTS OF A WEB APPLICATION

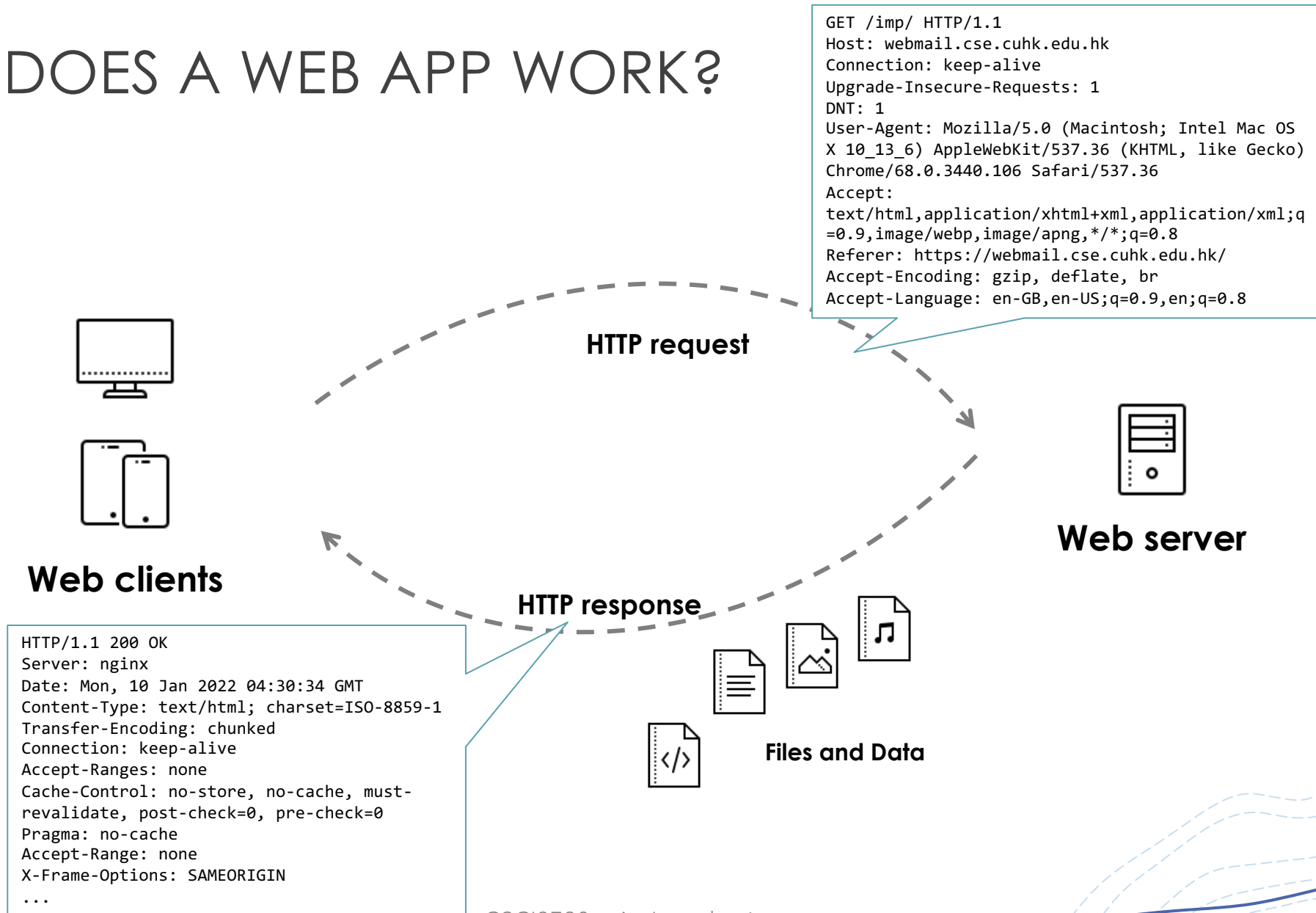
Client-side

- HTML: *Hypertext Markup Language*
 - Basic mark up of web contents
- CSS: *Cascading Style Sheet*
 - Formatting and styling of contents
- JavaScript
 - Generating dynamic contents

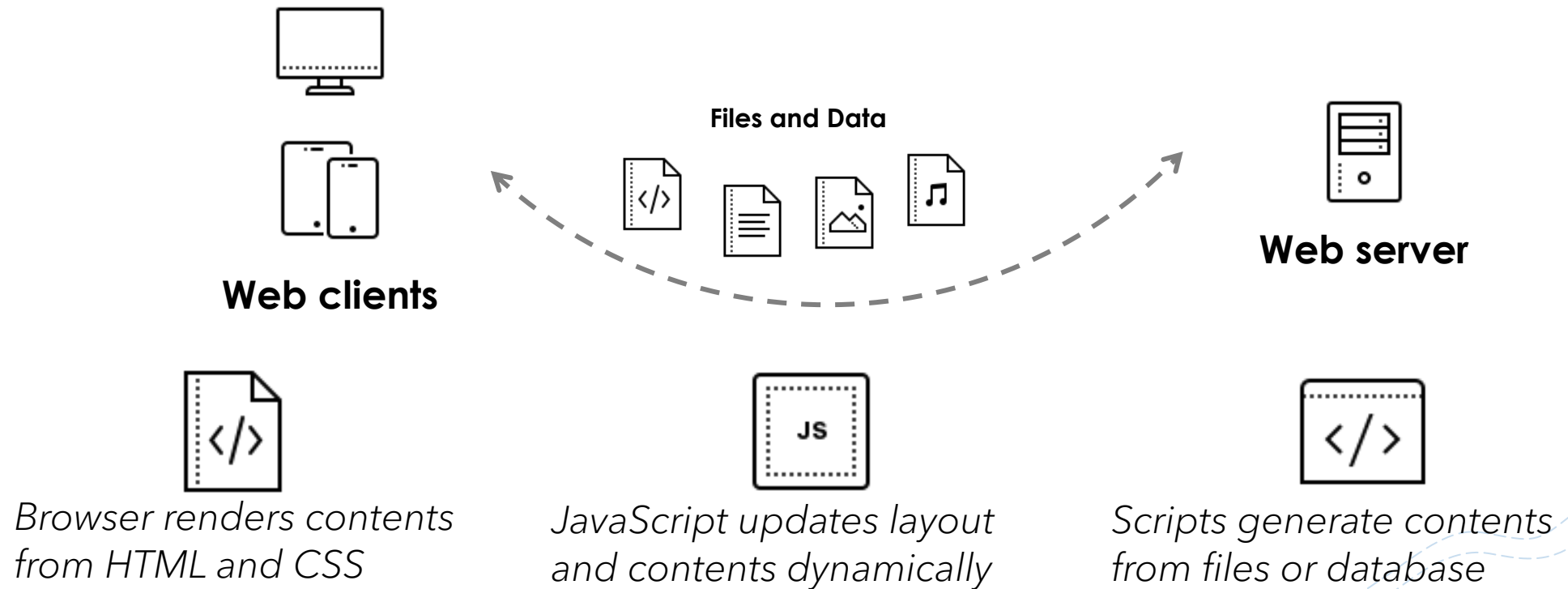
Server-side

- Web server
 - Delivering contents upon request
- Scripts (e.g. php, Node.js)
 - Programs for preparing contents
- HTTP (*Hypertext Transmission Protocol*)
 - Communication between server and client

HOW DOES A WEB APP WORK?

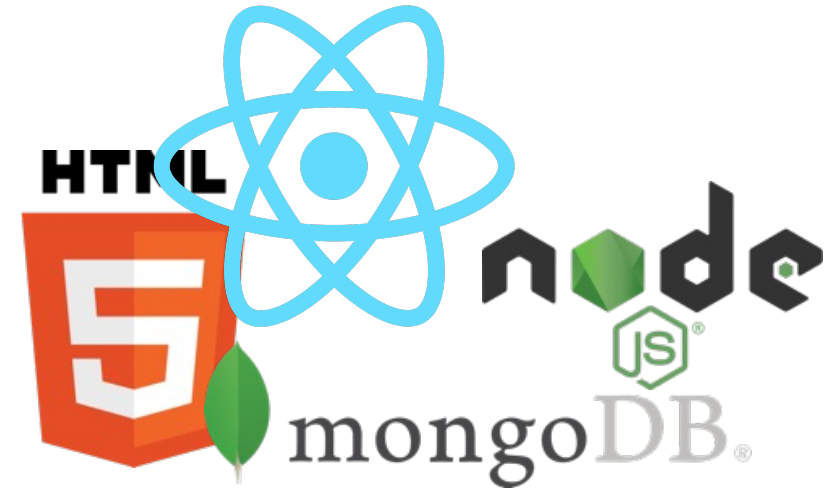


HOW DOES A WEB APP WORK?



HOW TO LEARN EFFECTIVELY?

- Make good use of...
 - *Google*
 - *Stack Overflow*
 - **Lots** of online tutorials and examples!
- Have fun with new technologies ***every day!***

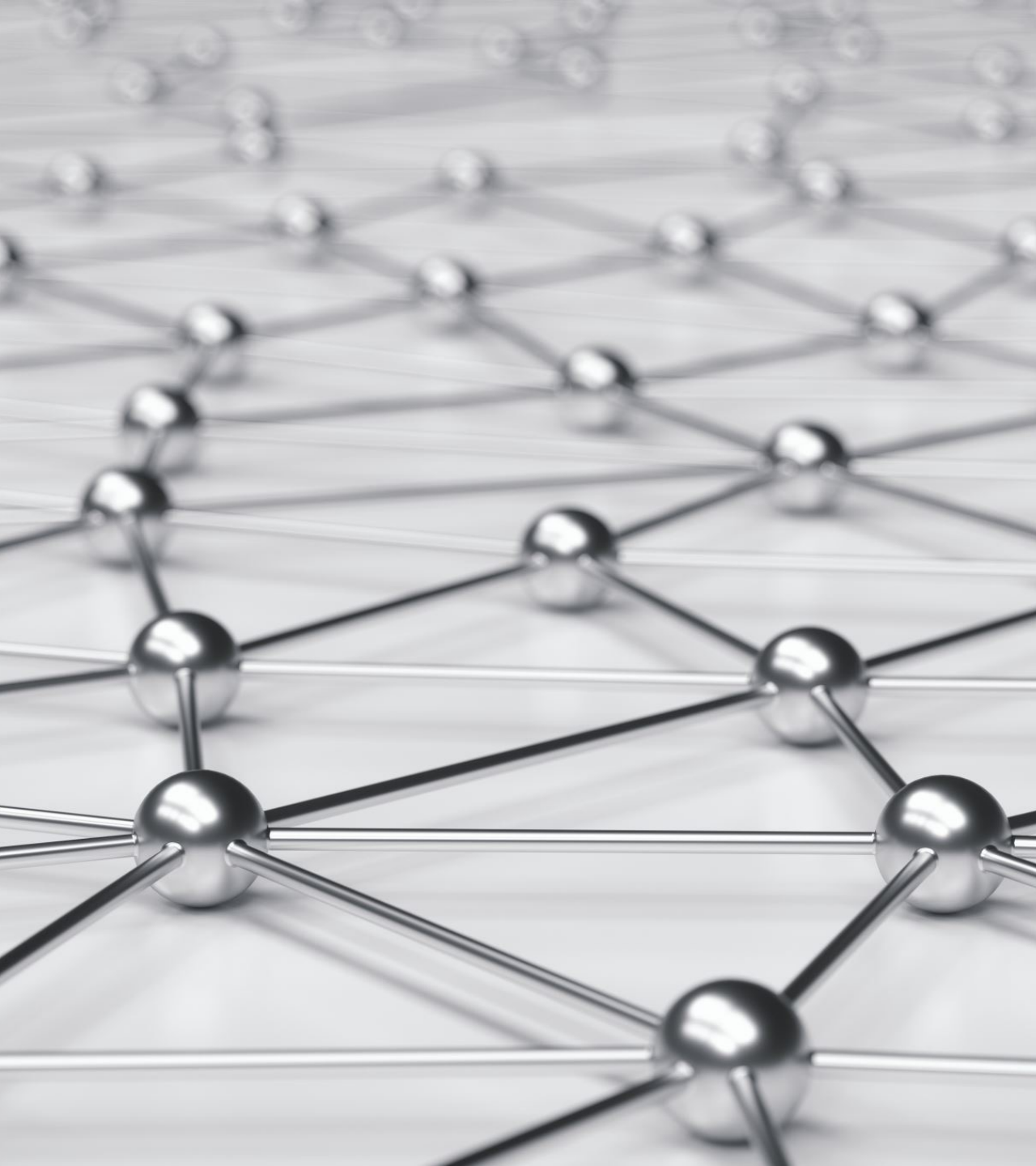




W3C Standards: Web Design and Applications

<https://www.w3.org/standards/webdesign/>

READ FURTHER...



“For the things we have to learn before we can do them, we learn by doing them.”

— Aristotle, *The Nicomachean Ethics*