

Day 1

World Wide Web, since 1989

Lecturer: Msc. Minh Tan Le

Agenda

- I. Introduction
- II. The beginning of WWW
- III. How to build our own website?
- IV. Course details & preparations

I. Introduction

- Minh Tan Le
- Lecturer of FIT's Artificial Intelligence
- Subjects:
 - ✓ Nhập môn lập trình
 - ✓ Nhập môn lập trình Python
 - ✓ Toán RR & lý thuyết đồ thị
 - ✓ Cấu trúc DL & giải thuật
 - ✓ Trí tuệ nhân tạo
 - ✓ Lập trình web
 - ✓ Máy học
 - ✓ Lập trình di động
 - ✓ Nhập môn KHDL
 - ✓ Tính toán song song
 - ✓ Học tăng cường
 - ✓ Tương tác DL trực quan
 - ✓ Ứng dụng Big Data theo thời gian thực



Our ultimate goals

- Build their own static websites.
- Build dynamic websites.
- Build modern websites.
- Design & describe a website project logically.
- Deployment.



hcmute.fit

car.hcmute.fit



english.hcmute.fit

game.hcmute.fit



shop.hcmute.fit



Benefits of **hcmute.fit**

- Easier sharing
- Project impression
- CV enclosure

Mid-report: 10' Presentation

- Simple project description (**put everything in slides**)
 - Real-world examine.
 - What is your goals?
 - Target visitors/audience: Who, and which countries?
 - What are the features?
 - Mockup drawings or prototypes ([link](#))
 - Output: At most 1 A4 paper (drawings not included) & Slides
 - Score: *2

Lab exercise: Oral test

- Create a static website as required
- Preparation: HTML, CSS, JS, Angular
- Duration: A full-day class
- Place: In class
- Work as individual
- Score * 2
- Output: Source codes + deployed web

Final: 20' oral test

- Outputs:
 - Final report: At most 70 A4 pages
 - Source code
 - Product on *.hcmute.fit domains
 - Slides/Notes (optional)

Mid Rubric

	Max score	Group/Ind
Reasonability	5	Group
Real-world examine	3	Group
UI Design	2	Group
Total:	10	Group

Final Rubric

	Max score	Group/Ind
Report : Amount of research, Design, Format, style of writing, typos, grammar errors.	3	Group
Source codes: Design pattern, code cleanness, configurations, solutions.	3	Group
Deployed product: Front-end, usability.	2	Group
Oral: Each member answers a few question.	2	Personal
Total:	10	Personal

Projects

Applications

1. Pet shop (pets/goods/services)
2. Book shop (books/comics/tools)
3. Fashion shop (ordering)
4. Restaurant (menu, booking,...)
5. Video site (Youtube/Tiktok)
6. Form building site (quiz, form,...)
7. E-learning site (Moodle, Coursera)
8. News sum-up (GG News, Baomoi)
9. ~~Youth of FIT (preserved)~~

Front-end

1. None (multi-page)
2. Angular
3. React
4. Vue.js

Harder – Higher score (+0.5)

One app can be matched with at most 3 front-end techs.

Project code: 1.1, 1.2, 1.3,...
(24 projects).

Back-end (MVC)

- Java: Spring MVC, Spring Boot
- C#: ASP.NET Core
- Python: Flask, Django

Harder – Higher score (+0.5)

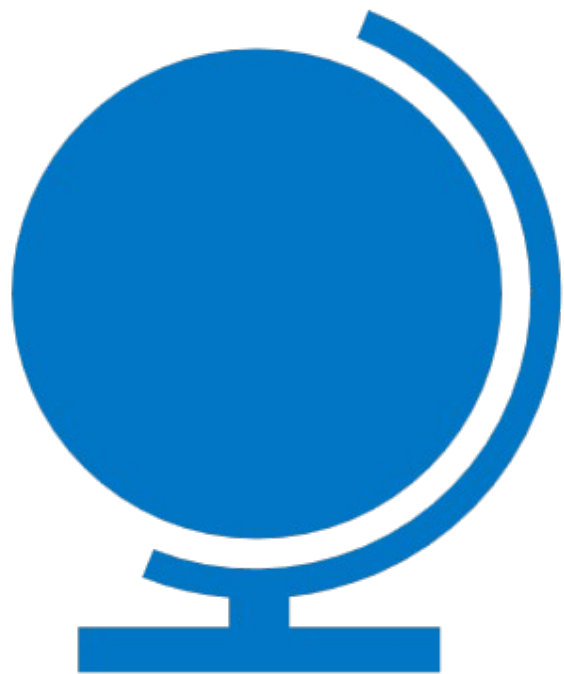
Tips: How to get high score

Report

- Self-writing
- Few typos & grammar errors
- Correct format
- Follow the goal & scope

Product

- Non-required new techs
 - SASS, TypeScript,...
- Self-studied required techs
 - Vue.Js, Blazor,...
- Cleaned codes & structured
- Packed & documented
- Graphic designs
- Creative (but appropriate)



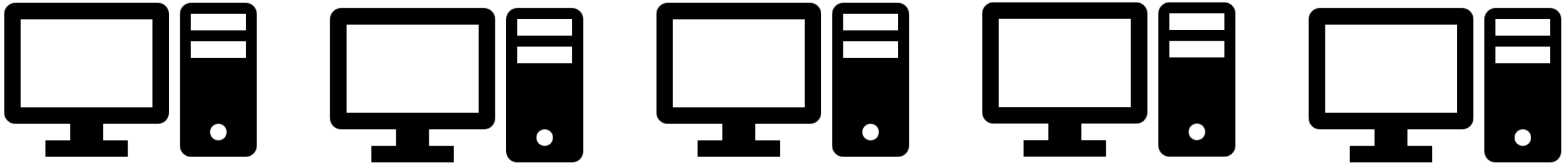
The beginning WWW

Chapter1: 1989 problem



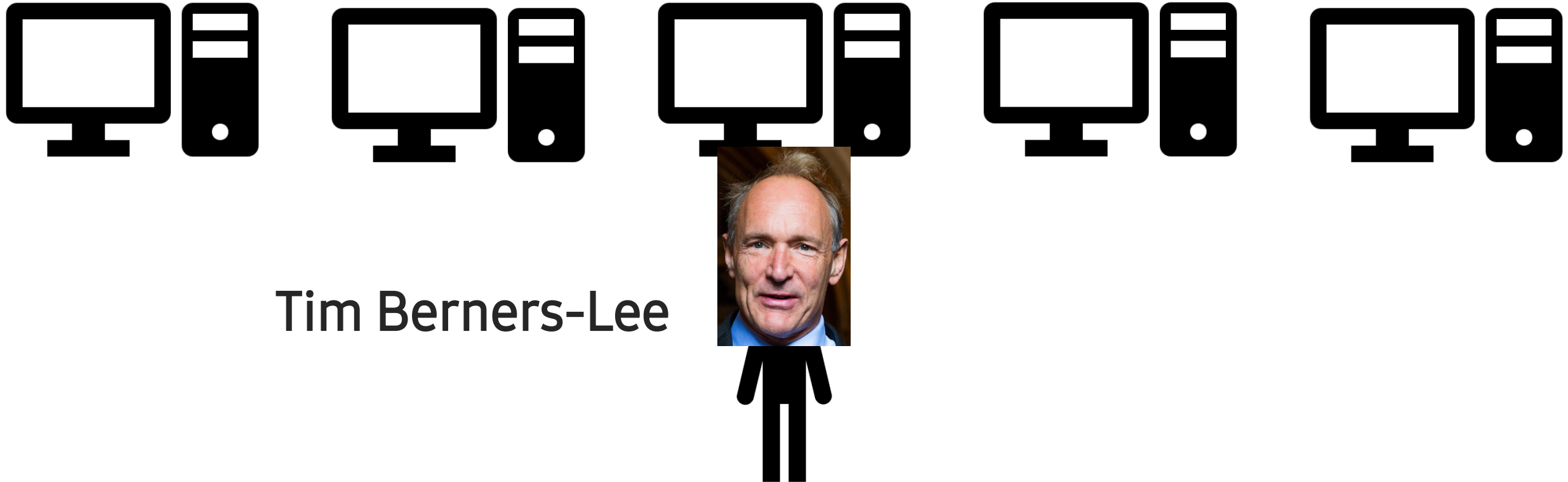
1989

II. The beginning of WWW



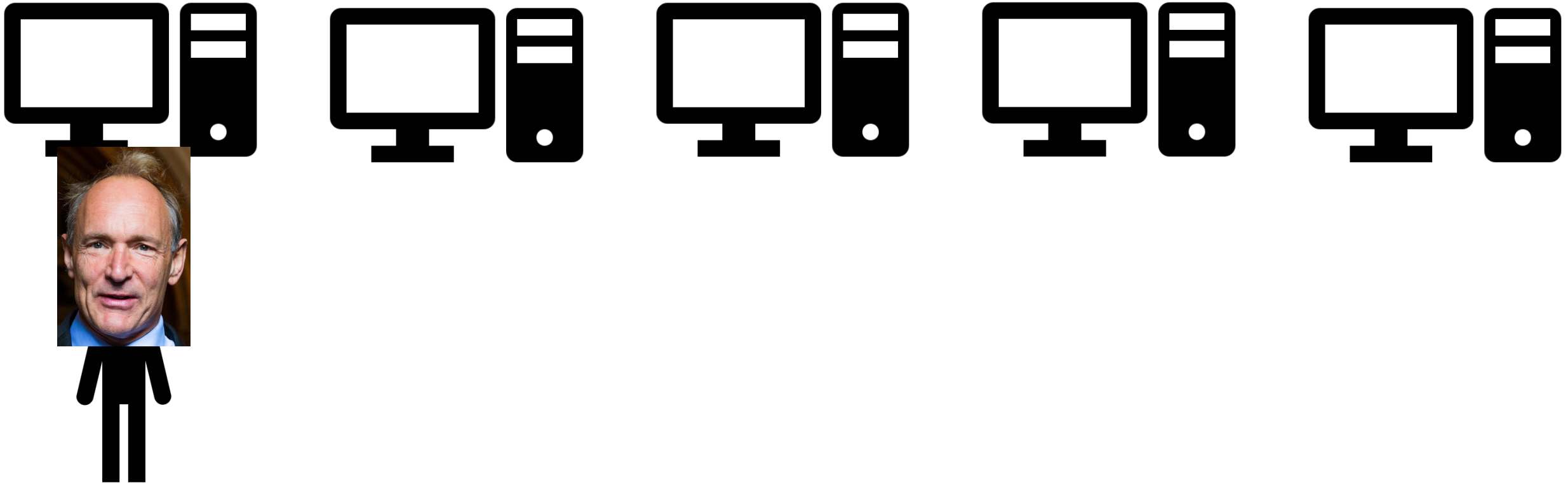
1989

II. The beginning of WWW

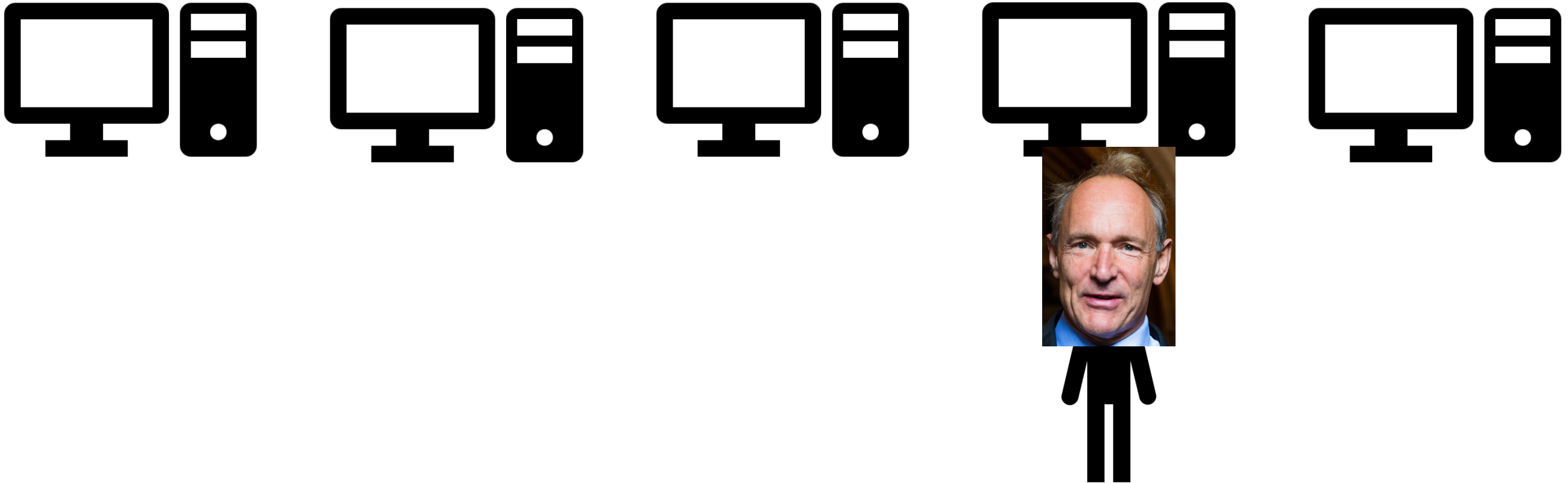


Tim Berners-Lee

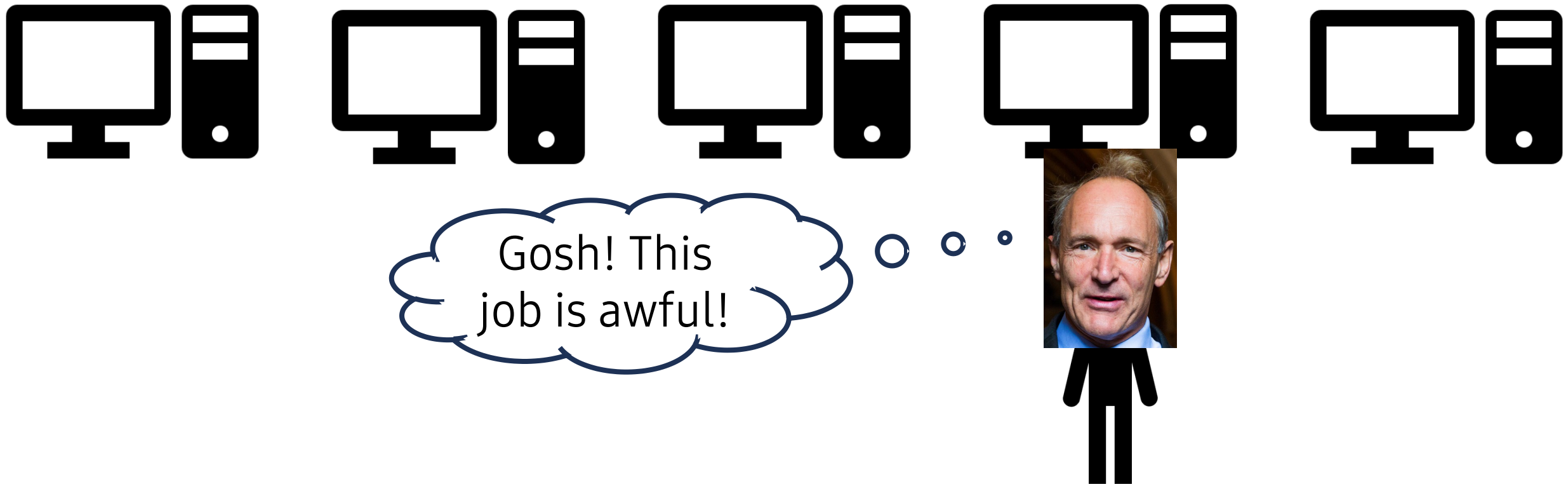
II. The beginning of WWW



II. The beginning of WWW



II. The beginning of WWW



ENQUIRE was born

- We have some **cards**.
- Each card should have links called **relationships**.
- Each relationship is **bi-directed** and connects 2 cards.



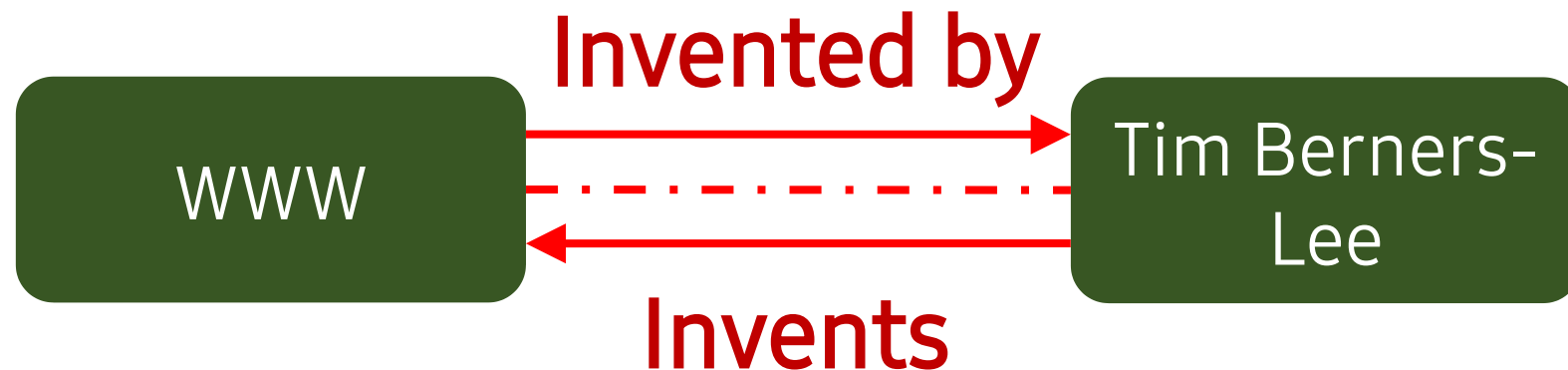
Title



Content

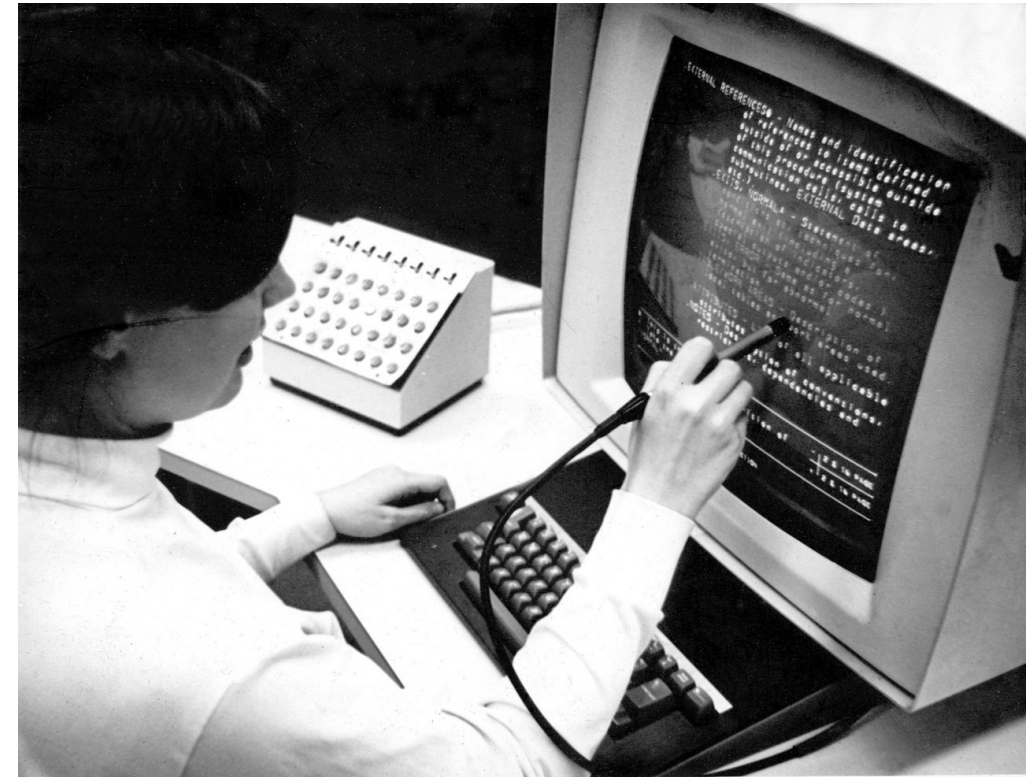
ENQUIRE was born

- We have some **cards**.
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Hypertext

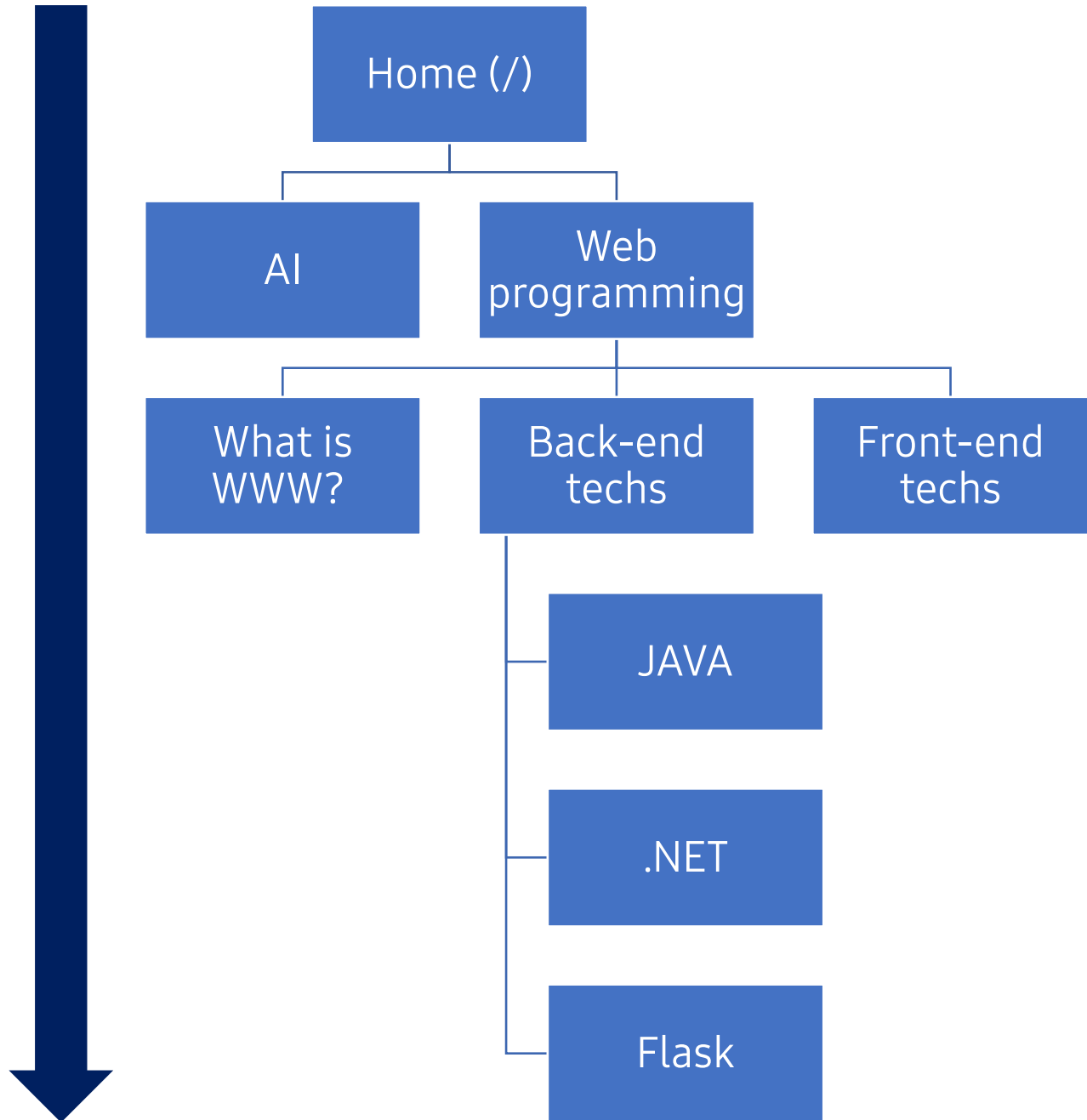
- The inspiration: 1941
- Hypothetical machine: 1945
- IBM 2250 graphics display unit: 1964
- Definition: E-text with hyperlink



IBM 2250 in 1969

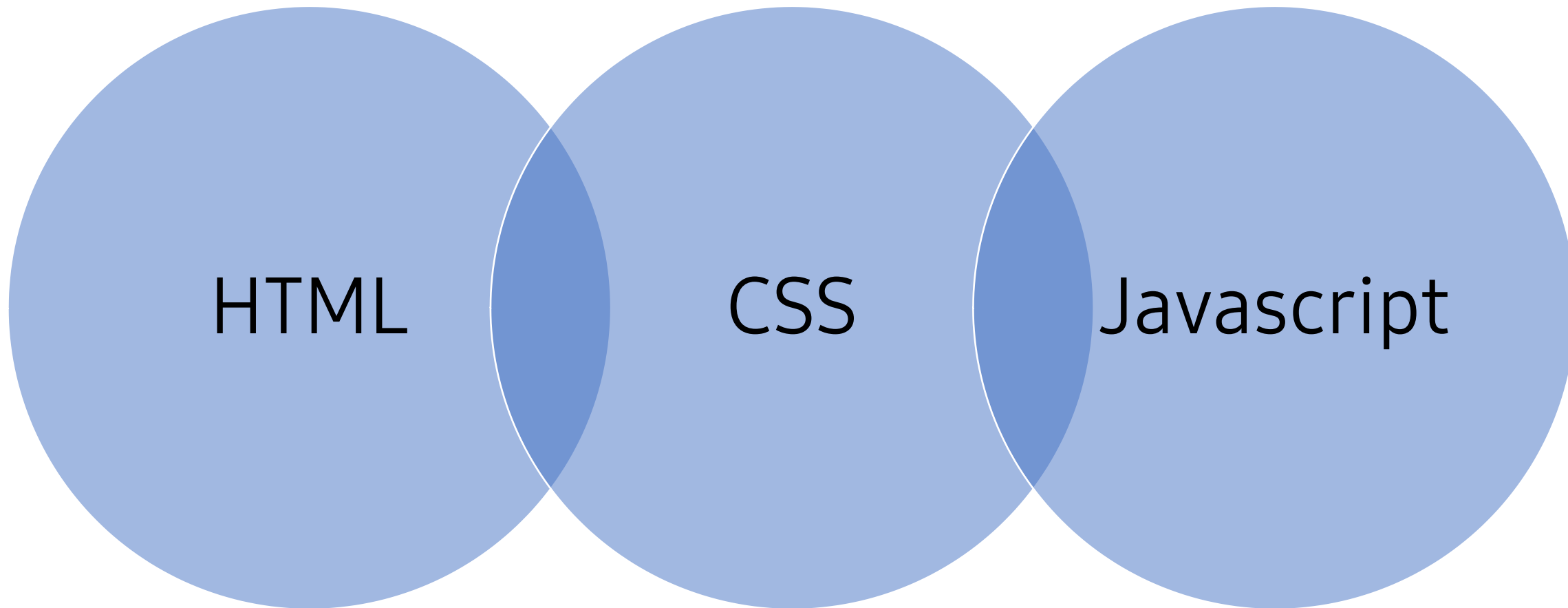
Website tree

Timelines



To create hypertext

- You need to learn a markup language
 - HTML
 - XHTML
- But that's not enough, you must learn ... and ...



Content

Style

Logic

HTML

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
  <head>
```

```
    <meta charset="UTF-8">
```

```
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
    <title>Document</title>
```

```
    ...
```

```
  </head>
```

```
  <body>
```

```
    ...
```

```
  </body>
```

```
</html>
```

HTML

Document
type

Document

Head

Body

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
  <head>
```

```
    <meta charset="UTF-8">
```

```
    <meta name="viewport" content="width=device-width...>
```

```
    <title>Document</title>
```

```
    ...
```

```
  </head>
```

```
  <body>
```

```
    ...
```

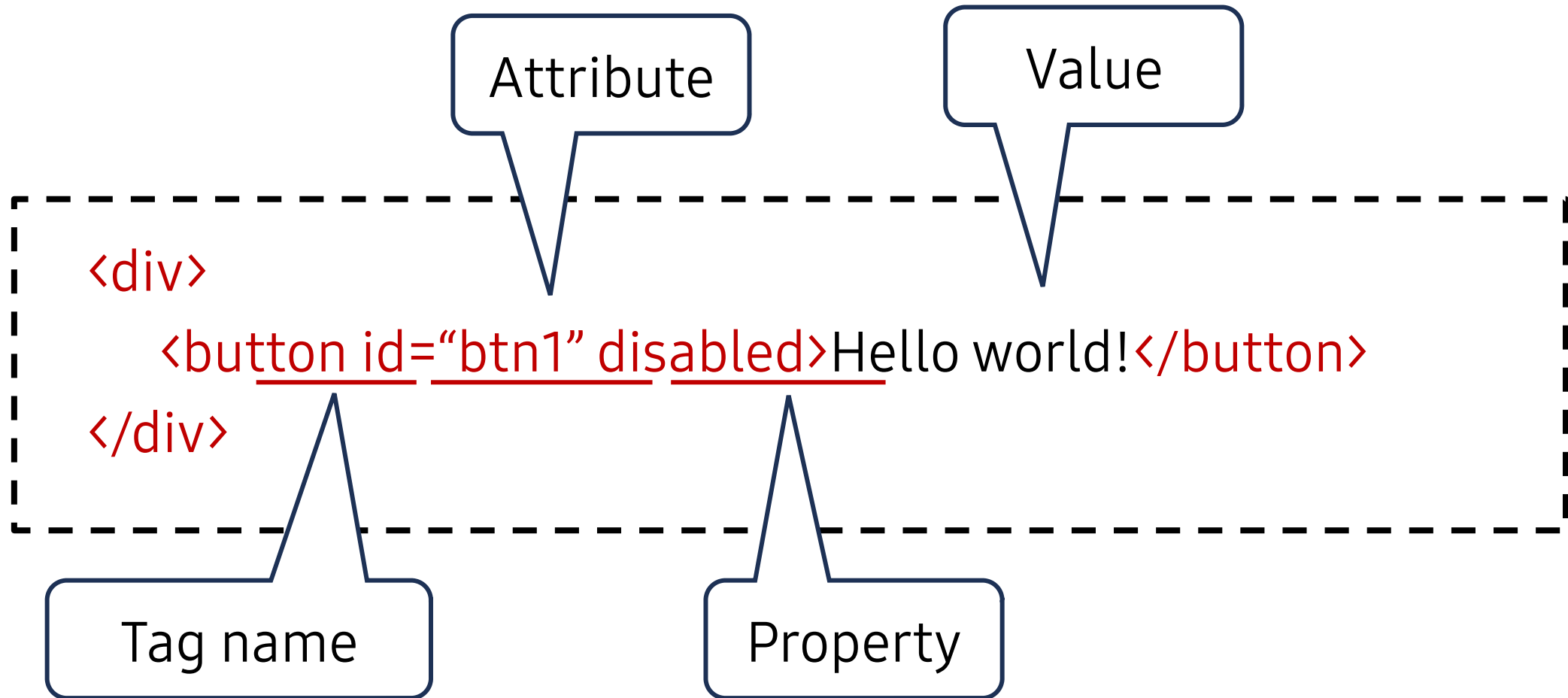
```
  </body>
```

```
</html>
```

HTML tag

```
<div>  
  <button id="btn1" disabled>Hello world!</button>  
</div>
```

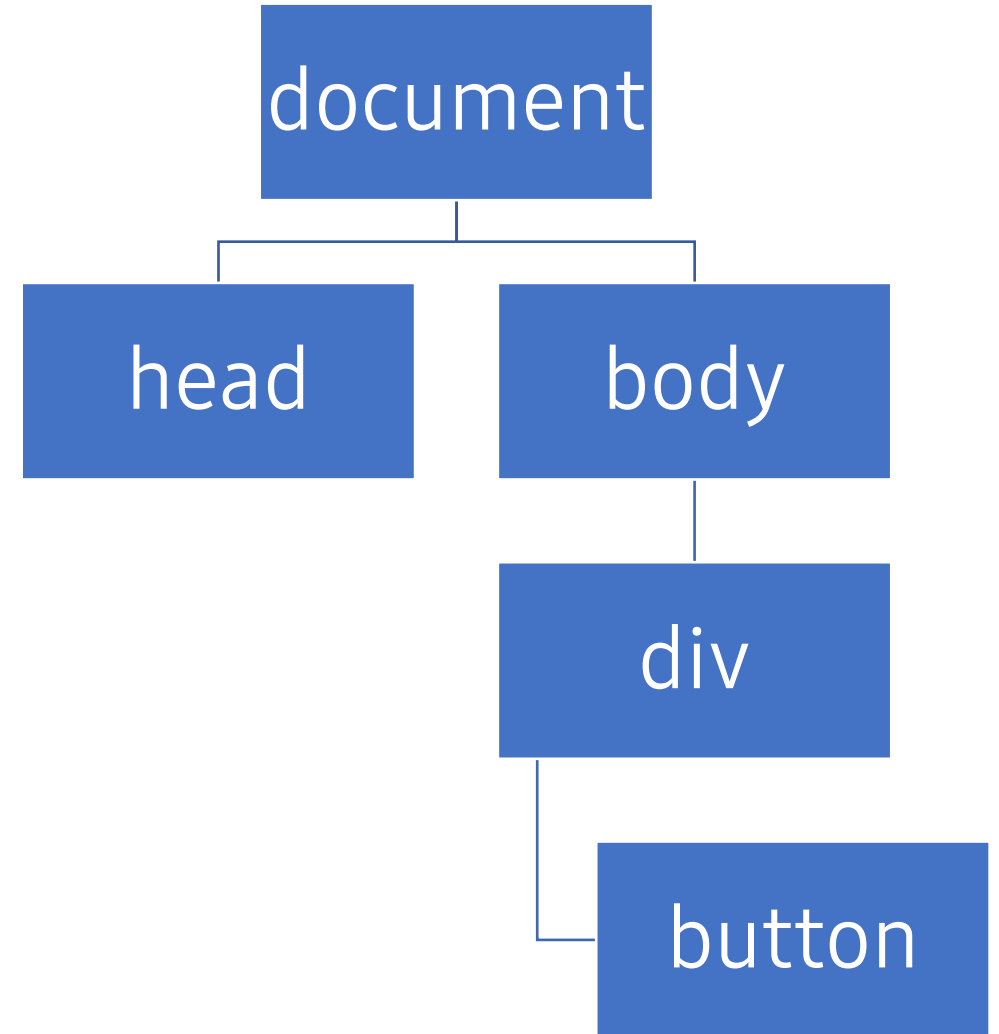
HTML tag



HTML tag

Type	Name	Example
#1	General	<code><button>Hello</button></code>
#2	Self-closing/void	<code></code> <code></code>
#3	Empty	<code>
</code> <code>
</code>

Document Object Model (DOM)



CSS

Cascading Style Sheets

```
<div>
```

```
  <button id="btn1" disabled>Hello world!</button>
```

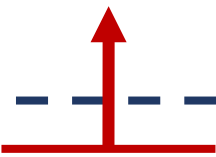
```
</div>
```

CSS

```
<div>  
  <button id="btn1" disabled>...</button>  
</div>
```

Selector

<symbol><value><relationship>...



```
#btn1 {  
  color: red;  
}
```



Style

<Property>: <Value>

3 ways to insert CSS

- Method 1: Reference using `<link>` tag in `<head>`
 - `<link href="*.css" rel="stylesheet">`
- Method 2: CSS in HTML
 - `<style>` tag
- Method 3: Use "style" attribute
 - Example: `<button style="color: red">Hello</button>`
- Method 3: Use Js

Js

JavaScript

Js JavaScript

Created by Brendan Eich in 1995

Make dynamic UI

Similar to Java at the time

Browser needs interpreter to work

File types: *.js, *.map

2 ways to insert Js

- Method 1: Reference using `<script>` tag
 - `<script src="*.js">`
- Method 2: Insert into HTML directly using `<script>` tag
 - `<script>alert('hello')</script>`

Best practice: Add `type="text/javascript"` attribute

Example: `<script type="text/javascript">alert('hello')</script>`

Static website structure

Assets

/ (root)

CSS

*.css

img

*.jpg

*.png

*.svg

js

*.js

*.map

Entry page

index.html

Page

about-us.html

Bootstrap

Bootstrap

- A layout decoration guide to follow
- Auto responsive app
- Some built-in components

Layout

<https://getbootstrap.com/docs/5.3>

Let's get straight to demo!

Demo 1

Tên mình là ...

Các bạn có thể liên hệ qua:

- Facebook: ...
- Zalo: 0123.456...

Form liên hệ

Demo 2

Quần áo

Giày dép

Xin chào đến với shop













Giày thể thao

Giày đá bóng

Giày sandal

Demo 3

GỢI Ý HÔM NAY

 <p>Shopee Plus -5%</p> <p>COMBO 2 CÀ PHÊ HOÀ...</p> <p>Giảm 10%</p> <p>Giảm 5%</p> <p>Ad</p> <p>Mall [MUA 2 GIẢM 10%] COMBO 2 CÀ PHÊ HOÀ...</p> <p>Giảm 10%</p> <p>Giảm 5%</p> <p>Giá 340.100 Đã bán 713</p>	 <p>S.Zone -35%</p> <p>Authorized Store</p> <p>GALAXY WATCH 6</p> <p>Ad</p> <p>Mall Đồng Hồ Thông Minh Samsung Galaxy Watch ...</p> <p>Giá 3.590.000 Đã bán 30</p>	 <p>GEMME -38%</p> <p>Ad</p> <p>Mall Áo jacket kaki big size GEMME MEN, chuẩn for...</p> <p>8% Giảm</p> <p>Giá 365.000 Đã bán 1,5k</p>	 <p>Mall Truyện tranh - Thảm tử Kindaichi - Lễ tập 1 để...</p> <p>Giá 30.000 Đã bán 17</p>	 <p>LOTTE SỮA HỮU AN LỢI KHUẨN HÀ -30% OFF</p> <p>Ad</p> <p>[Độc Quyền] LOTTE SỮA HỮU AN LỢI KHUẨN HÀ...</p> <p>Giá 300.000 Đã bán 2k</p>	 <p>MIGA -50%</p> <p>Ad</p> <p>Bút Gel MIGA Bút Bi Nước Mực Gel Đen Xanh Đỏ K...</p> <p>Giá 1.000 Đã bán 10k</p>
 <p>Khăn Đa Năng Chống Nắng, Chống Bụi, Chơi...</p> <p>Ad</p> <p>Giá 22%</p>	 <p>INUX -16%</p> <p>Ad</p> <p>XỬ LÝ BÓI SHOPEE Máy Phát video Đa Phương Tiện...</p> <p>Giá 16%</p>	 <p>XIO Ultra -16%</p> <p>Ad</p> <p>XIO Ultra Lắp Sim Bảo Hành 6 Tháng Hỗ Trợ Sửa Chữa (Màn Hình Và Pin) Tặng Dây Tụ Chọn</p> <p>Ram 4G + 64Gb</p> <p>Ad</p> <p>Đồng Hồ Thông Minh XIO Ultra 5G, Ram 4gb/64gb,...</p> <p>Giá 16%</p>	 <p>Coca-Cola -11%</p> <p>Ad</p> <p>[QUÀ TẶNG KHÔNG BẮN] Hộp 6 Lon Nước G...</p> <p>Giá 11%</p>	 <p>REDMI WATCH 4 -11%</p> <p>Ad</p> <p>Đồng Hồ Thông Minh Redmi Mi Watch 4</p> <p>Giá 11%</p>	 <p>Giày thể thao nam nữ màu đen Hunter...</p> <p>Ad</p> <p>Yêu thích Giày thể thao nam nữ màu đen Hunter...</p> <p>Giá 45%</p>

Create the grid of commercial product

Notes: Some misinterpreted concepts

- Website: A group of multiple web pages & related content of same domain.
- Web app: Dynamic website or web API.
- Ugly codes make browser slower.

IV. Course details & preparations

Mục tiêu (Goals)	Mô tả (Goal description) <i>(Học phần này trang bị cho sinh viên)</i>	Chuẩn đầu ra CTĐT	Trình độ năng lực
G1	Khả năng phân tích và xây dựng ứng dụng web theo kiến trúc MVC trên nền tảng J2EE framework	ELO02(1.2)	3
G2	Khả năng vận dụng 2 công nghệ web là JSP và Servlet vào phát triển một ứng dụng web theo kiến trúc MVC	ELO04(2.1)	4
G3	Khả năng vận dụng môn học Lập trình web để giải quyết các bài toán thực tế	ELO05(2.2)	4
		ELO15(4.4)	6
		ELO16(4.5)	5

Textbooks

- Joel Murach and Michael Urban, Murach's Java Servlets and JSP, Murach, 3rd Edition, 2014.
- Bryan Basham, Kathy Sierra, Bert Bates, Head First Servlets and JSP, O'Reilly Media, 2nd Edition, 2008.
- Marty Hall, Larry Brown, Core Servlets & JSP, Prentice Hall, Second Edition, 2003.

Back-end technologies

- PHP
- Java Web (Servlet + JSP, Spring MVC, Sprint Boot)
- .NET (Web Form, MVC)
- Python (Flask, Django, Streamlit)
- Js (NodeJS)
- Serverless

Front-end technologies

- JQuery, Bootstrap,...
- SPA: AJAX/Angular/React
- Web Socket/SignalR
- Chunk processing
- Browser APIs
- Webpack


Database servers

- PostgreSQL
- MySQL

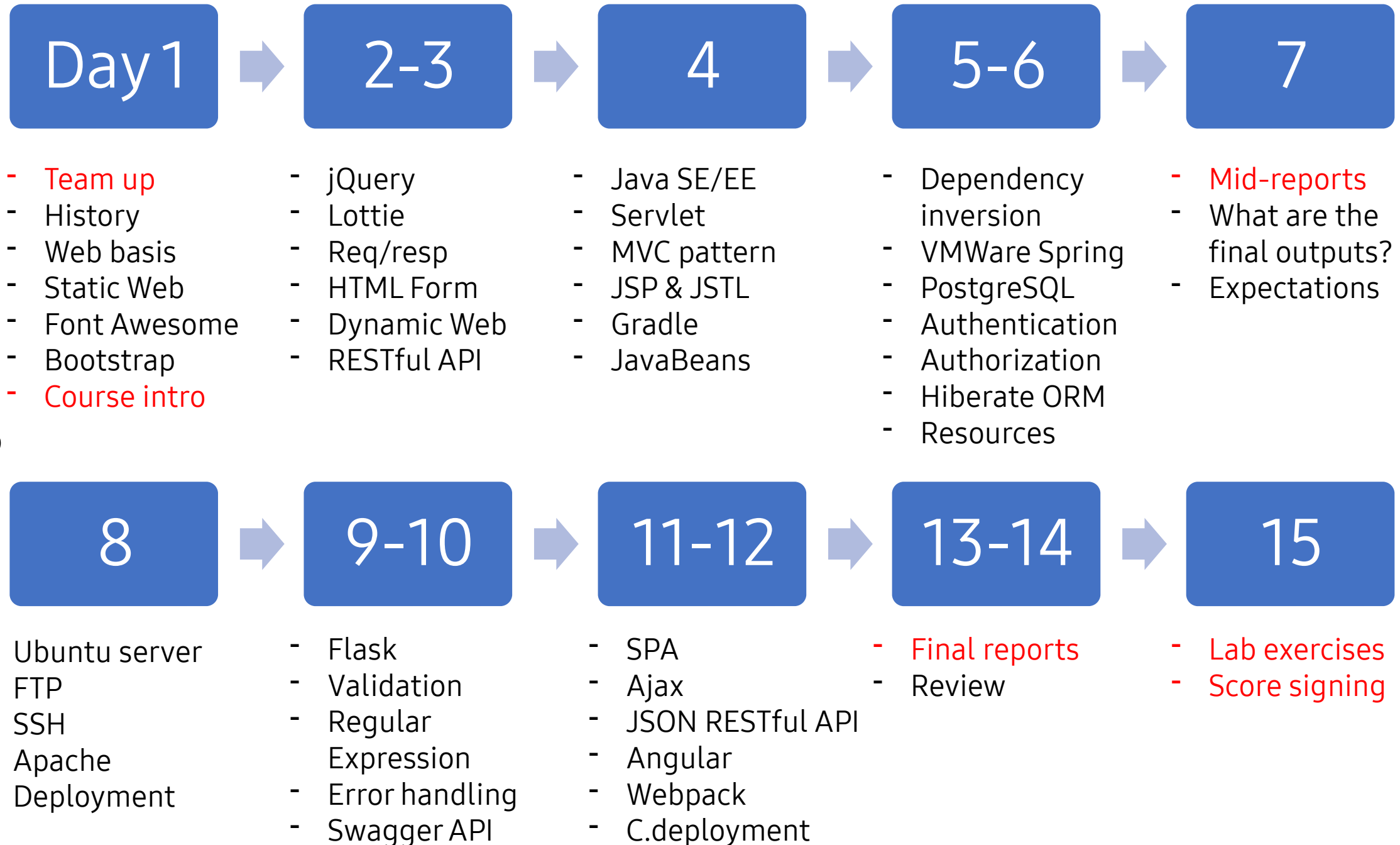
Preparations: Hardware

- Personal laptop
- Charger, electric socket
- Internet

Preparations: Software

- Chocolatey  (highly recommend)
 - Visual Studio Code
 - Postman, Putty, FileZilla
 - Python>=3.10, PostgreSQL>=16
 - Eclipse
 - Gradle
 - NVM (NodeJs Version Manager)
 - PostgreSQL
- Visual Studio Community (for ASP.NET)
- Adobe Illustrator >= 2022
- Adobe After Effect >= 2022
- VMWare Workstation Pro >= 17 + Ubuntu Server >= 20

Our plans



Summary

- Day 1 -> 3: Front-end.
- Day 4 -> 6: Java Web App.
- Day 7, 8: Midterm report.
- Day 9: Deployment.
- Day 10: Data validation, Flask.
- Day 11, 12: Single page application.
- Day 13, 14: Final report.
- Day 15: Lab exercises, score signing.

Exercise

Create a personal website:

1. Home page

- Welcome
- Links to: About me, Contact

2. About me

- Introduce about yourself
- Links to: Home, Contact

3. Contact

- FB, X, LinkedIn,...
- Links to: Home, About me

Homework (**personal**)

Finish your personal website. Tips:

- Add images using ``
- Take care of the layout
- Try some Javascript functions: `setInterval`, `setTimeout`, `alert`, `events`,...

Warning: Don't use template