Lab 1
A Basic Static Page

CSCI2720 Building Web Applications

Agenda

- A good text editor
- A no-frill HTML5 file
- Basic styling with CSS3
- Bootstrap
  - Basic components
  - Special nav, table, lists
  - Float and flex
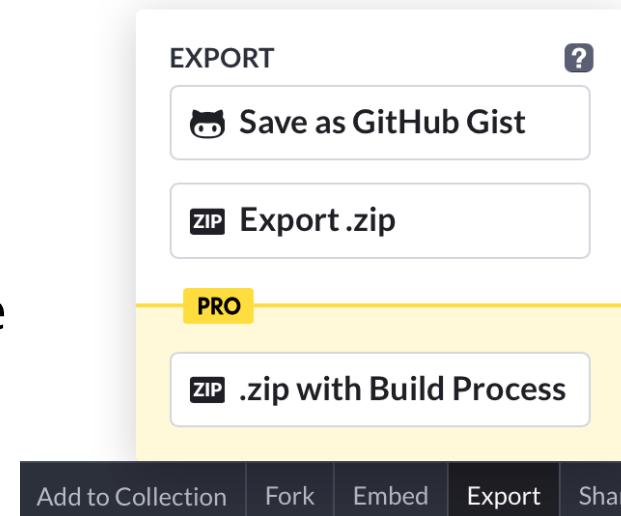 - Responsive columns
- Responsive web design

A good text editor

- Too many to choose from!
- Check:
  - Syntax highlighting?
  - Tooltips?
  - Version control?
- Pick for yourself
  - *E.g. Vim, NotePad++, Atom, …*
  - You cannot install without admin rights in CSE computers
    - Get **Portable Version** of NotePad++ or Sublime Text etc.

May I use Codepen?

- Codepen.io is a useful platform for coding and testing

- We won't forbid you to be lazy and use this instead of a proper text editor (like a developer…)

- To get the HTML/CSS files, save your pen and you can see "Export" at the bottom to download *as .zip*
  - The files are inside the "dist" folder in the zip file

A no-frill HTML5 file

- Create an HTML file to describe yourself, using...
  - Heading
  - Paragraph
  - List
  - Table
  - Image
  - Flexbox / Grid
  - *Others (e.g.* `<time>`, `©`, *...)*

For example…

I'm Chuck-jee Chau

Computer Science & Engineering

- About
- Courses
- Links
- Response Web

About Me

Hi there! I'm a lecturer in the Department of Computer Science and Engineering, CUHK. A few (?!) years ago, I was graduated from here as well! It's very nice to meet you all.

My hobbies

Piano
Computer Music
Web Design?!
Hiking

My Courses

Course code	Contents
CSCI2720	Building Web Apps
ENGG1000	IT Foundation
ENGG1110	Problem Solving with Programming

Interesting Links

- Blackboard
- CSE Dept
- CUHK

This website was built on 2018-09-13. © Chuck-jee Chau

Heading 1

Heading 4

List: Links to anchors

Image/Picture

Paragraph

Flexbox

Table

Links

Check out my sample page:
http://www.cse.cuhk.edu.hk/~chuckjee/2720lab1/index-nocss.html
View the source code, but don't just copy!

HTML5 semantics

- Use semantic elements
  - **`<article>`**
  - **`<header>`**
  - **`<main>`**
  - **`<nav>`**
  - **`<section>`**
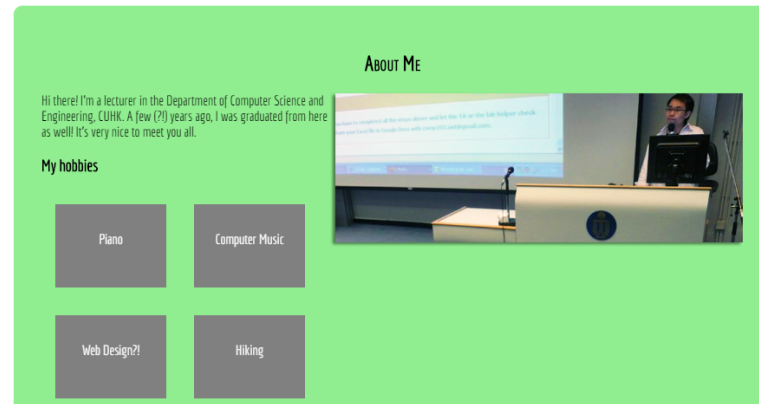 - **`<footer>`**

Basic styling with CSS3

- Now, style your page!
  - Start from something simple and easy…
    - Internal vs. external?

```css
p {
    color: grey;
    padding: 5px;
}
```

- Try to do these:
  - Wide header and sections
  - Header background image
  - Nav horizontal link items
  - Web Font
    - e.g. *https://fonts.google.com*

- *No idea? See: https://www.w3schools.com/css*

For example...

Check out my sample page (both html and css):
http://www.cse.cuhk.edu.hk/~chuckjee/2720lab1/index.html
View the source code, but don't just copy!

By now, you should already have…

Header/sections/footer	Navbar	Lists
Image/Picture	Paragraph	Table
CSS Styles	Web font	

Adding Bootstrap for CSS

- You don't need to remove the current CSS styles
  - Of course, you may use Bootstrap to replace them
- Now add this to the **<head>** section of the HTML file

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta1/dist/css/bootstrap.min.css" rel="stylesheet"
integrity="sha384-
giJF6kkoqNQ00vy+HMDP7azOuL0xtbfIcaT9wjKHr8RbDVddVHyTfAAsrekw
KmP1" crossorigin="anonymous">
```

- *https://getbootstrap.com/docs/5.0/getting-started/introduction*

If you are not able to copy the text, use *Chrome* to open this PDF!

Basic components

- Bootstrap applies all styles using **class**
- Try and apply some of these classes to your header/nav/section/footer/...
  - *Text/background color:* `text-dark` / `text-secondary` / `bg-primary` / `bg-info` / ...
  - *Margin/padding:* `m-2` / `ml-3` / `p-2` / `py-5` / ...
  - *Text alignment/decoration:* `text-center` / `text-right` / `font-italic` / ...
    - *https://www.w3schools.com/bootstrap4/bootstrap_utilities.asp*

Special components

- *Navbar*

```
<nav class="navbar navbar-expand">
  <ul class="navbar-nav">
    <li class="nav-item"><a ... class="nav-link">...</a></li>
    <li class="nav-item"><a ... class="nav-link">...</a></li>
  </ul>
</nav>
```

- You can always add more styling classes
  - *https://getbootstrap.com/docs/5.0/components/navbar*

- *Table*

```
<table class="table">
  <thead><tr>
      <th scope="col">...</th>
      <th scope="col">...</th>
    </tr></thead>
  <tr>
    ...
  </tr>
</table>
```

- Add more styles!
  - *https://getbootstrap.com/docs/5.0/content/tables*

- *List*
  - *https://getbootstrap.com/docs/5.0/components/list-group*

Float and flex

- Your image may originally be floating using CSS

    `<img style="`**`float:right`**`">`

- You can do the same using Bootstrap classes

    `<img class="`**`float-right`**`">`

- *https://getbootstrap.com/docs/5.0/utilities/float*

- Similar, the **`d-flex`** class represents **`display:flex`** in CSS

- *https://getbootstrap.com/docs/5.0/utilities/flex*

- For **consistency** and **convenience**
    - *Everything about styling is applied with classes*

Responsive columns

- In Bootstrap, a container is always divided into **12 columns**

- This can be done by introducing a **container** div, and apply the **col-*** class to the contents

```
<div class="container">
<div class="row">
  <section ... class="col-3"></section>
  <section ... class="col-6"></section>
  <section ... class="col-3"></section>
</div>
</div>
```

- *https://getbootstrap.com/docs/5.0/layout/grid*

Responsive columns

- You can then adjust the proportion for the columns depending on screen width, e.g.
  - Phone in portrait: stacked up *(no columns, auto!)*
  - Phone in landscpae: **4+4+4**
  - Tablet: **3+6+3**
  - Very large screen: **2+8+2**

```
<div class="row">
  <section ... class="col-sm-4 col-md-3 col-xl-2"></section>
  <section ... class="col-sm-4 col-md-6 col-xl-8"></section>
  <section ... class="col-sm-4 col-md-3 col-xl-2"></section>
</div>
```

  - *https://getbootstrap.com/docs/5.0/layout/breakpoints*
  - *These **breakpoint** settings can also be applied on many other classes, e.g. p-**sm**-2, float-**md**-left, shadow-**lg***

For example…

Check out my sample page and resize the browser window:
http://www.cse.cuhk.edu.hk/~chuckjee/2720lab1/index2.html
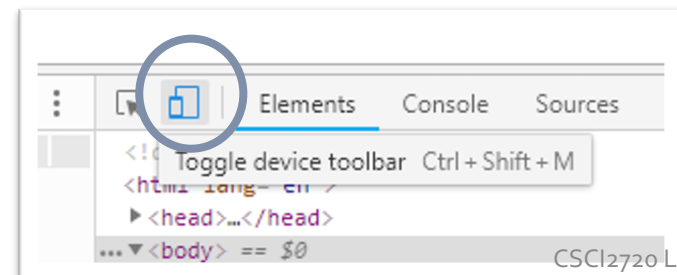*View the source code, but don't just copy!*

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Responsive Web Design

- Then, please implement a few of these RWD elements
  - Choose image based on screen width
  - Different CSS rules with media queries for screen size
  - Auto-fit background image
  - *… and more!*

- *Please describe what you have done in a **separate section***

Testing RWD

- Please use **Google Chrome** for the labs!

- Utilize the **Developer Tools** for details of the source code and various diagnostics

- Preview rendering results on smaller screens:

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Publishing your page

- If you want to share a page with HTML code, you need to host it on a web server, e.g.
  - CSE server (see Appendix)
  - Outside services
    - GitHub Pages
    - AWS: Amazon S3
    - Netlify
    - *and many more possibilities…*
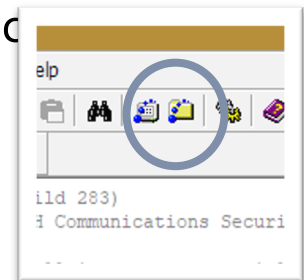
Optional:

Using Netlify

- You may try publishing your *static* personal page using Netlify

1. Open an account at www.netlify.com (*choose the free account!*)

2. Read this if you know GitHub: https://www.netlify.com/blog/2016/10/27/a-step-by-step-guide-deploying-a-static-site-or-single-page-app/

3. If you are not sure about GitHub, simply upload your files to https://app.netlify.com/drop

- You can now access your site using ***https://(sitename).netlify.app***, e.g.
  - https://chuckjee.netlify.app

- Note: We have no affiliation with the company, and this step of publishing is optional for your reference only

Submission

- No submission is needed for labs
- What you have done for this lab will be useful, including:
  - Basic page with Bootstrap
  - Bootstrap margin/padding
  - Responsive columns
- **Please keep your own file safely**
- *P.S. For CSE account issues, please contact admin @SHB1001, or email techteam@cse.cuhk.edu.hk using your @cse or @link account*

Appendix:

Personal accounts

- You may try the CSE account if you are a CS/CE student

- SSH/SFTP to CSE server
  1. SSH Client in lab (S:\SSH3.2.9\SshClient.exe)
  2. Connect to **linux2.cse.cuhk.edu.hk**
     - If outside CUHK network, connec to gw.cse.cuhk.edu.hk, then type **ssh linux2**
  3. New File Transfer Window
- For your own computer:
  - *E.g. MobaXterm, WinSCP, FileZilla, CyberDuck, …*

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Appendix:

Uploading for CSE account

- Your page can be previewed locally by opening in browser

- Try putting it onto the CSE web server!
    1. (Save your own work as index.html)
    2. On server, create a folder `www` under your home
    3. Check properties of `www` to set mode as **711** or **755**
    4. Upload your html file into the `www` folder
    5. Check properties of `index.html` to set mode as **644**
    6. Access it at `http://appsrv.cse.cuhk.edu.hk/~username/index.html`
        - *Of course, type your own **username**!*