CSCI2720/ESTR2106 ASSIGNMENT 1: **BOOTSTRAP WEB PAGE WITH A WEB FORM**

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SYNOPSIS

You are going to build a web page to introduce yourself, with a basic comment system. This page should be well-decorated and responsive. There are also some special features.

BASIC CONTENTS (10%)

(Done in Lab 1) The contents should be about yourself. You are not required to put in completely factual contents, but at least your name and department should be correct.

These HTML elements ***must be*** included in your HTML5 file:

- Heading
- Paragraph
- List
- Table
- Image / Picture

These HTML5 semantic elements ***must be*** used appropriately:

- `<header>`
- `<main>`
- `<nav>`
- `<section>`
- `<footer>`

STYLING (15%)

(Tried in Lab 1) Using Bootstrap and/or CSS, apply at least these to your page:

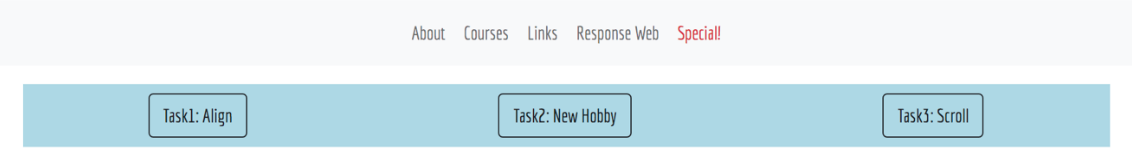
- There should be at least one ***obvious*** example using Bootstrap column layout
- Header background image
- Horizontal link items in navbar
- Sections with background color
- Web font ***and*** icons

DYNAMIC CONTENTS (35%)

Implement these items using JavaScript in one ***external JS file***.

0. ***"Special" link in navbar***

   Include an extra "Special" link to hide or show an extra bar of buttons for 3 Tasks, with their features described below. The extra bar should be hidden by default. There is no other style requirements for this bar. Here is *an example*:

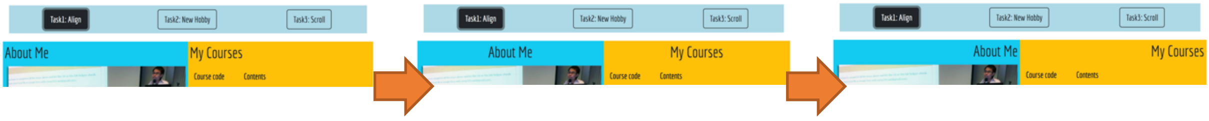


1. ***Task 1: Align***

   When this button is clicked, all the section headings should change the alignment once. Further clicks will change the alignment in this sequence:

   Left >> *Center* >> *Right* >> *Left* >> …

   It is illustrated like this,



   Note: the classes in Bootstrap is **`.text-start`**, **`.text-center`**, and **`.text-end`**

2. ***Task 2: New Hobby***

   When this button is clicked, a dialog box (using **`prompt()`**) asks the user to enter a new hobby. If the user entered something, a new item should be added to the group of "hobbies" in your page. If nothing is entered, no new item should be created.

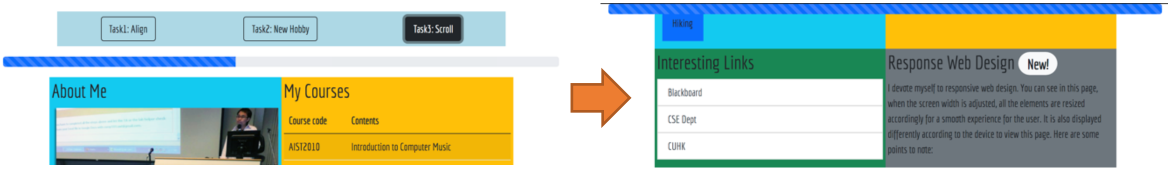
   Hobby here is only an example. You can use this button to create items for any list/table/… groups in your page. Adjust the text appropriately.

3. ***Task 3: Scroll***

   When this button is clicked, a Bootstrap progress bar (https://getbootstrap.com/docs/5.2/components/progress) is shown or hidden below the button bar. If it is shown, when the user scrolls the page, the progress bar adjusts according to the scroll position, i.e., 0% at the top and 100% at the bottom. The progress bar should be applied a **`.sticky-top`** class, so that it remains visible on the screen when the page is scrolled.

You may find these helpful: **`window.scrollY`**, **`document.body.clientHeight`**, **`window.innerHeight`**

Here is an example:



I devote myself to responsive web design. You can see in this page, when the screen width is adjusted, all the elements are resized accordingly for a smooth experience for the user. It is also displayed differently according to the device to view this page. Here are some points to note:

You may choose to use Bootstrap classes or CSS styles for all styling tasks in this section.

ACCEPTING COMMENTS (15%)

(Done in Lab 3) You could use materials from this file:

[*http://www.cse.cuhk.edu.hk/~chuckjee/2720lab3/index.html*](http://www.cse.cuhk.edu.hk/~chuckjee/2720lab3/index.html)

Add the web form into your web page to collect the following information from user:

- Email address
- Comment
- Color: *Red/Green/Yellow/Blue*

You are recommended to use **`input`** boxes for the shorter text for email address, a **`textarea`** for the comment paragraph, and a group of **`radio`** buttons for the color. You may also decide your own implementation achieving similar user experience.

There should be an **Add comment** button which adds the comment to the bottom of all comments. After the new comment appears, the form should become blank again.

It is okay for your page to come with default comments included, and a comment data file.

FORM VALIDATION (10%)

When the user choose **Add comment**, there could be issues, in particular:

- Incorrect email format (not *x@y*)
- Empty comment/ email

Both situations above should avoid the form submission. Implementation is flexible.

For example, at the beginning when *processing the form*, you may check the **`validity`** property of **`#new-email`** and **`#new-comment`**. If it is not valid, apply **`.classList.add("is-invalid")`** to the box and **`return`** (end the function prematurely). Otherwise, use **`.classList.remove("is-invalid")`** to clear the error highlight.

See more at: https://www.w3schools.com/js/js_validation_api.asp

LOADING AND SAVING COMMENTS (5%)

(*Done in Lab 3*) There should be a **Save file** button to save the comments to a file. This can be done using JS Fetch, with ***Web Server for Chrome***. Your comment file can be in text or json.

After saving, when the page is reloaded, all the comments (*except the default comments*) should disappear. But you should be able to see the contents in the generated file in the web server directory, which will further be loaded using Fetch with a **Load file** button.

*Note: Always use a **relative path** since your files will be tested on a different platform.*

AUTO SAVE AND LOAD (10%)

To relieve users from using a save button, you will further simplify the program flow by:

- Loading the comments from the save file *when page is loaded*, and
- Saving the comments whenever a *new comment is added to the page*

After this, you can remove the **Load** and **Save** buttons *and still get the 5% from that part*. The requirements here override that of the previous part on ***Loading and Saving Comments***.

CHALLENGE REQUIREMENTS (20%)

ESTR2106 students: This part is compulsory! This assignment has a full score at 120%.

CSCI2720 students: If you finish this part correctly, a 0.5% bonus will be given to the "Assignment" course assessment, which could go beyond its original 30% of assessments.

A separate paragraph in the page should describe briefly the work here, with ~100 words.

1. Implement ***dark mode*** vs. ***light mode***, determined by the `prefers-color-scheme` setting at the browser. If you are customizing Bootstrap stylesheets with Sass, submit the

compiled `.css` file as well, and link appropriately in your HTML file. The Bootstrap Sass files should also be submitted. The styles of two modes must be visibly different.

2. The JavaScript file in the part "*Dynamic Contents*" above should be written with TypeScript instead, with ALL type annotations. Submit the `.ts` and compiled `.js` files.

- *Additional files for submission*: (1 `.scss` file), 1 `.css` file, Bootstrap folder, 1 `.ts` file

FEATURES AND FRAMEWORKS

You are welcome to implement extra styles and features at your own ability. For Bootstrap, please use the current CDN versions:

- Bootstrap (5.2 or later)
  `https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/css/bootstrap.min.css`

*You may also use **Google Font**, **Bootstrap Icons**, or **Font Awesome**.*

NO extra plugins, libraries (e.g., jQuery) or frameworks other than those mentioned above.

SUBMISSION

We will only visit your web page submission using ***Google Chrome*** (almost-latest versions) with extension ***Web Server for Chrome***. Please utilize the ***Developer Tools*** for debugging.

Plagiarism is heavily penalized. NEVER share your code other than those given in labs. Please read this article carefully: [*http://www.cuhk.edu.hk/policy/academichonesty*](http://www.cuhk.edu.hk/policy/academichonesty)

Include your full name and student ID in ***all code files*** using comments, together with the required ***code header for honesty declaration***. Check that the file names and formats are correct. Zip all your files and submit it on the course site on Blackboard, and name it as `(SID)_asg1.zip`, e.g., *`1155000001_asg1.zip`*. ***Only these files should be included:***

- 1 `.html` file
- Optional `.css` file
- 1 `.js` file
- Image files / comment data file

REFERENCE POINTS

Bootstrap: [*https://getbootstrap.com/docs/5.2*](https://getbootstrap.com/docs/5.2)

Google Font: [*https://fonts.google.com*](https://fonts.google.com)