


COMP3322B Modern Technologies on World Wide Web

Lab 1: HTML and CSS

Overview

In this lab exercise, we will create a web page for our course in pure HTML and CSS. After finishing this lab, we will have a page that looks like the following:

**COMP3322B**
Modern Technologies
on World Wide Web

HomeLabsAssignmentsTeaching StaffStart Zoom

Course Objectives

- Provide students with basic technologies of the Internet
Selected topics: Internet protocol stack, IP, client-server model, etc.
- ...
- ...

Course Schedule

	Lecture Topic	Material
1	Course overview	Course_Info.pdf
2	Internet basics	Internet_Basics.pdf

Schedule a consultation

Name:

Date:

submit

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Note: Due to compatibility of difference browsers, the same CSS code may lead to different display; we will check the assignment in the Chrome browser. Therefore, you are recommended to use the Chrome browser to develop/test your page as well.

Lab Exercise

Part 1. Preparation

Step 1. Download the template code from Moodle

Download the code template "**lab1_materials.zip**" from HKU Moodle, and extract it to a folder. In this folder, you will find files structured like the following:

```

/
├─ assets
│   ├── images
│   │   └─ logo.png
│   └─ stylesheets
│       ├── main.css
│       └─ basics.css
└─ index.html

```

"**index.html**" and "**main.css**" are the main files we will be working on. "**basics.css**" provides the styles for many basic elements that we will NOT modify, and is imported in "**main.css**". We will also add "**logo.png**" into our page later.

Part 2. Build the HTML page

Step 2. Create section headings

If we open "**index.html**" now, we'll see a page like this:

```

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Schedule a consultation

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```

This page currently shows the main page heading, the nav bar and the three sections in which we will add more contents later. Currently all texts are of the same size. We will now set the section headings properly. Your tasks are:

- Change the main page heading ("COMP3322B Modern Technologies on World Wide Web") to use **<h1>** instead of **<p>**. (Don't modify the **<header>** container and the contents of **<nav>**).
- Similarly, change the three section headings ("Course Objectives", "Course Schedule", "Schedule a consultation") to use **<h2>** instead of **<p>** without modifying the containing **<div>**.

Step 3. Insert the logo image

Now, within the **<header>** section and before the main page heading, we insert the logo image ("assets/images/logo.png") with **width=128** and **height=128** using the **** tag (https://www.w3schools.com/tags/tag_img.asp). We'll see a blank space appearing above the main page heading. This is because the PNG image has a white color (same as our background). Proceed if you see something like this:

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Course Objectives

Course Schedule

Schedule a consultation

Name: Date:
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Step 4. Fill in the "Course Objectives" using unordered lists

Now we will add contents to the "Course Objectives" section. Under the "Course Objectives" heading (within the **<div>** container), we add an **unordered list with two items** (https://www.w3schools.com/html/html_lists.asp).

The first item will contain **two lines**:

1. The first line will show the text: "Provide students with basic technologies of the Internet"
2. The second line will show the text: "Selected topics: Internet protocol stack, IP, client-server model, etc."

Hint: to create two lines, use line break (https://www.w3schools.com/tags/tag_br.asp).

After that, make "Selected topics:" bold by wrapping it with **** tag (https://www.w3schools.com/tags/tag_strong.asp).

The second item will also contain two lines, with plain "..." as content of each line. The section will look like this after this step:

Course Objectives

- Provide students with basic technologies of the Internet
Selected topics: Internet protocol stack, IP, client-server model, etc.
- ...
- ...

Step 5. Create the table in “Course Schedule”.

Now we add our course schedule to the page. Under the “Course Schedule” heading, we add a `<table>` with three rows and three columns (https://www.w3schools.com/html/html_tables.asp).

The heading of the table will be as follows:

1. In the first column, we leave the heading **empty**.
2. In the second column, we write “**Lecture Topic**”.
3. In the third column, we write “**Material**”.

The contents of the table will be:

1	Course overview	(empty)
2	Internet basics	(empty)

After this step, the section will look like:

Course Schedule

	Lecture Topic	Material
1	Course overview	
2	Internet basics	

Step 6. Add links to the “Material” column

Now we add links to the material column of the table.

The first row will contain a link (https://www.w3schools.com/html/html_links.asp) to the course overview pdf file (**URL:**

https://moodle.hku.hk/pluginfile.php/3348829/course/section/921126/1_CourseInfo_COMP3322B_s2022.pdf). The link should **show as “Course_Info.pdf”** on the webpage.

The second row will contain a link to our first lecture slides (**URL:**

https://moodle.hku.hk/pluginfile.php/3348829/course/section/921126/2_InternetBasics_COMP3322B_s2022.pdf). The link should **show as “Internet_Basics.pdf”** on the webpage.

Now the section should look like:

Course Schedule

	Lecture Topic	Material
1	Course overview	Course_Info.pdf
2	Internet basics	Internet_Basics.pdf

Step 7. Fill in the “Schedule a consultation” section

In this section we build a form on the webpage where students can book consultations. In the provided HTML template, we’ll see the basic structure of a form:

```
<div id="consultation">
  <p>Schedule a consultation</p>
  <form action="reg_consult" autocomplete="on">
    Name:
    <!-- add a text input here -->

    Date:
    <!-- add a date input here -->

    <!-- add a submit button here -->

  </form>
</div>
```

Now the form only contains the texts before input fields. We will add the three actual input elements (https://www.w3schools.com/tags/tag_input.asp):

1. Corresponding to the first line of text “Name:”, we add an **<input>** tag with **type “text”**, **id “reg_name”** and **name “reg_name”**.
2. Corresponding to the second line of text “Date:”, we add an **<input>** tag with **type “date”**, **id “reg_date”** and **name “reg_date”**.
3. At last, we add a submit button: **<input>** tag with **type “submit”** and **value “submit”** (this changes the text displayed on the button).

Now this webpage will look like:

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Course Objectives

- Provide students with basic technologies of the Internet
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Course Schedule

Lecture Topic	Material
1 Course overview	Course_Info.pdf
2 Internet basics	Internet_Basics.pdf

Schedule a consultation

Name: Date:

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Congratulations! By now we have finished all HTML elements of the page. We will then make the page look fancier by adding a stylesheet.

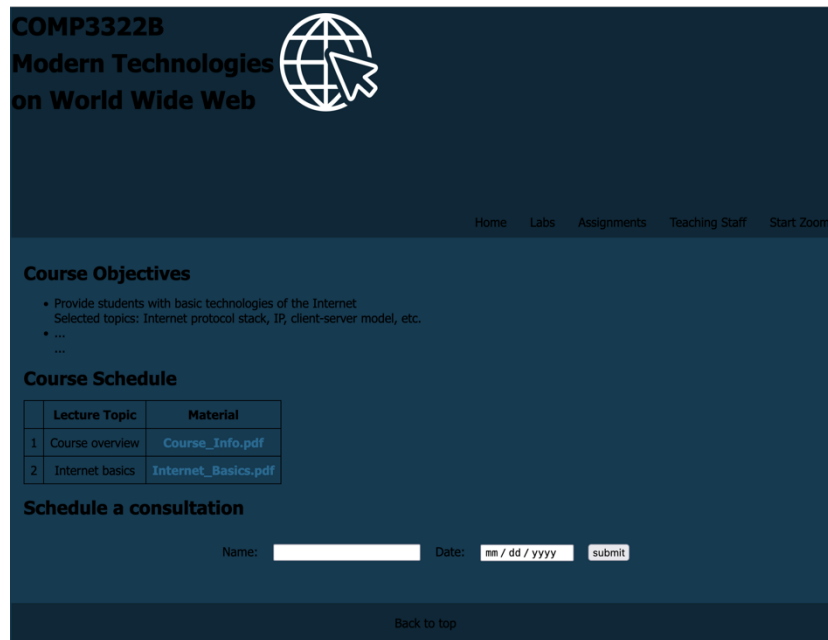
Part 3. Add CSS styles

Step 8. Link the HTML page with the stylesheet

Now we will link our HTML page with the provided CSS template file. This is done by adding

```
<link rel="stylesheet" href="assets/stylesheet/main.css">
```

after **<title>** in the HTML file's **<head>** element. After adding this line, the page will look very broken:



It's our job to fix this page and make it look better.

Step 9. Modify text and background color

Opening the **"main.css"** file, we can see an import rule. The import rule imports the content of **"basics.css"** file into **"main.css"**. Please **DO NOT MODIFY** the import rule or the **"basics.css"** file; otherwise at the end the resulting webpage will look different. Instead, we will build our new styling rules in **"main.css"**.

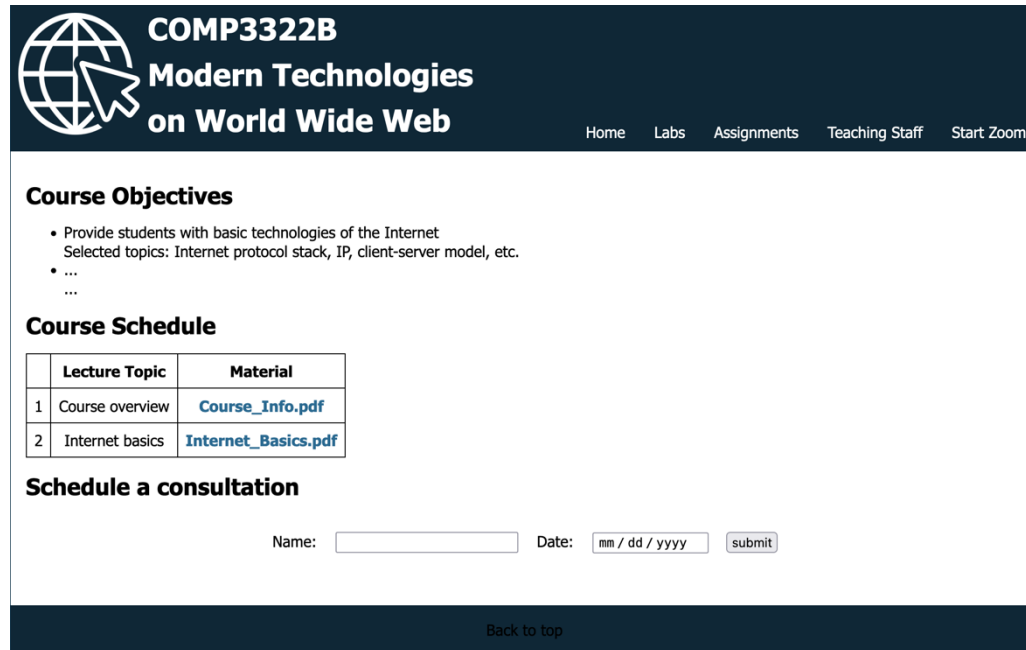
The first thing to do is to change the text and background color so the contents are easier to read. We do this in two steps:

1. We can see an empty selector specifying the elements in **<header>** section and the **<nav>** section. Add rules in the selector to change the **text color** in the **<header>** and **<nav>** sections to **white (#FFFFFF)**. (https://www.w3schools.com/css/css_text.asp)
2. There is also an empty selector that selects a class named **"contents"**. If we look at the HTML file, we will see this class is specified on the **<section>** container that holds most of the contents we added in Part 2. Add rules in this selector to change the **background color** to **white (#FFFFFF)**.

Step 10. Make the image float to left

Now the logo image is also in the wrong place. We want it to appear in front of the page header. Similar to Step 9, we can see an empty selector selecting the logo image. Add rules in the selector to make the image **float to the left** (https://www.w3schools.com/cssref/pr_class_float.asp)

Now the page will look like:

**Step 11.** Select the h2 headings and change their alignment

The section headers are now floating to the left. In this step, our task is to write a selector to select the `<h2>` headings in the container of “**contents**” class and **center** them (https://www.w3schools.com/cssref/pr_text_text-align.ASP).

Step 12. Centering the table

In this step we center the table in the “Course Schedule” section. This should be done by adding the class “**center**” to the table in the HTML file and write rules in “**main.css**” for this class. Hint: set the value of **margin** (see lecture notes on CSS, page 31).

Step 13. Change the style of the submit button

In this step, we write an attribute selector to select the submit button using its “**type**” attribute and add the following rules for it:

```
background-color: #2b6a92;
border: none;
color: #FFFFFF;
padding: 1em;
```

(Refer to lecture notes on CSS, page 13)

Step 14. Add shadow for the submit button when mouse is hovering over it

We use the “**pseudo-class**” selector to add a shadow effect when mouse is **hovering** over the submit button (refer to lecture notes on CSS, page 15 and https://www.w3schools.com/cssref/selector_hover.asp). The shadow effect should be specified using:


```
box-shadow: 0 0 0.8em 0.1em grey;
```

(see https://www.w3schools.com/cssref/css3_pr_box-shadow.asp for the box-shadow property).

After this step, the form should look like this when mouse is over the button (mouse is not shown in the screenshot):

Schedule a consultation

Name:

Date: 

Now you have finished the entire lab! The resulting web page should look like the screenshot on the first page of this document.

Submission:

Please finish this lab exercise before **23:59 Wednesday Feb. 9th, 2022**. Please compress the entire project folder (i.e., the folder containing your **index.html** and the entire **assets** folder with **main.css** modified) into a .zip file and submit it on Moodle.

- (1) Login Moodle.
- (2) Find “Labs” section and click “Lab 1”.
- (3) Click “Add submission”, browse your .zip file and save it. Done.
- (4) You will receive an automatic confirmation email, if the submission was successful.
- (5) You can “Edit submission” to your already submitted file, but ONLY before the deadline.