

---

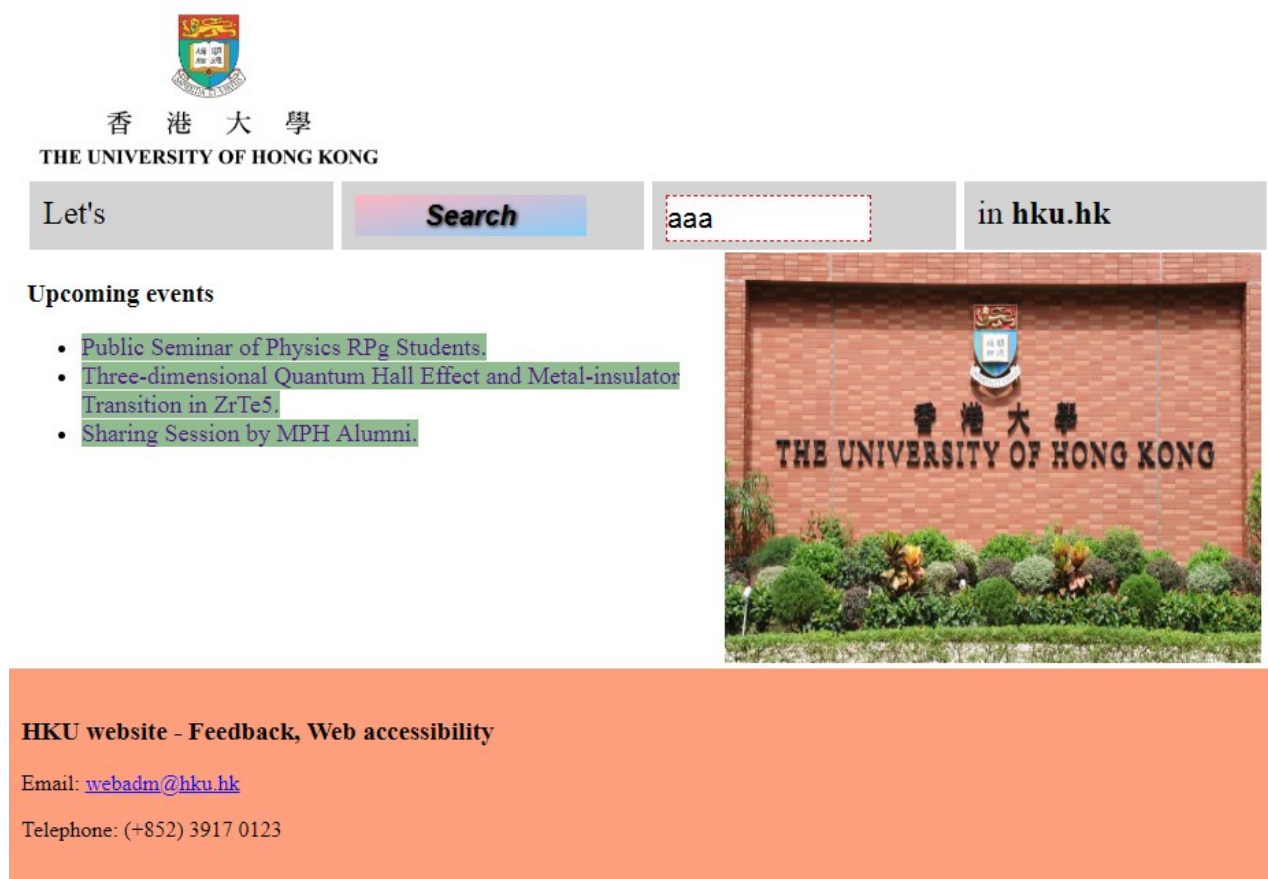
# COMP3322A Modern Technologies on World Wide Web

## Lab1: Fundamentals of Web Pages: HTML and CSS

---

### Overview

In this lab exercise, we will create a web page and format the look of it using features introduced in CSS and Responsive Web Design. After finishing this lab, your page will appear as shown in the following screenshots:



Screenshot 1: when the screen width is larger than 580px



香港大學

THE UNIVERSITY OF HONG KONG

Let's

Search

aaa

in **hku.hk**

#### Upcoming events

- Public Seminar of Physics RPg Students.
- Three-dimensional Quantum Hall Effect and Metal-insulator Transition in ZrTe<sub>5</sub>.
- Sharing Session by MPH Alumni.



HKU website - Feedback, Web accessibility

Email: [webadm@hku.hk](mailto:webadm@hku.hk)

Telephone: (+852) 3917 0123

#### Screenshot 2: when the screen width is no larger than 580px

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

---

## Lab Exercise

[Step1]: Download "**lab1\_materials.zip**" from HKU Moodle, and extract it to a folder named "lab1". In this folder, there are two files **index.html** and **style.css**, which are the template files in which you will add more HTML code and CSS code, respectively. There are two image files you will need for the web page as well.

### *Part 1: Build the HTML page*

[Step2 (Page Title)]: In **index.html**, set the title of the page to "**HKU Search**".

[Step3 (Logo)]: At the top of the page, there is a division **<div>** with the id of "logo". Make the division clickable, and link back to **index.html** when clicked (using the **<a>** element).

[Step 4 (Search fields)]: In the division **<div>** with id "searchArea" underneath the logo, use the **<form>** element to create a form. Inside the **<form>** element, use **<table>**, **<tr>**, **<td>** to create a 1x4 table (one row and four columns), as shown in the above screenshot. The first cell in the table shows "Let's". The second cell contains a search button implemented using an **<input>** element with type="submit" and value="Search" (the text displayed on the button). The third cell includes an input textbox, where the search string is to be entered; set the "name" attribute of the input textbox to "q". The fourth cell contains "in **<b>cs.hku.hk</b>**" (cs.hku.hk will be in bold font) and an **<input>** element with the input type of "hidden" (refer to [http://www.w3schools.com/tags/att\\_input\\_type.asp](http://www.w3schools.com/tags/att_input_type.asp)); set the "name" attribute of the hidden input field to "as\_sitesearch" and the "value" attribute to "cs.hku.hk", which provides the search domain parameter to Google server. (You can learn more about Google search parameters at <https://moz.com/ugc/the-ultimate-guide-to-the-google-search-parameters>).

Set the "**method**" attribute of the form (the HTTP request method) to "**get**", and "**action**" attribute of the form to "<https://www.google.com/search>" (where the form data will be sent for processing when the search button is clicked). Then after you type the search string and click the search button, an HTTP request carrying the URL [https://www.google.com/search?q=yoursearchstring&as\\_sitesearch=hku.hk&...](https://www.google.com/search?q=yoursearchstring&as_sitesearch=hku.hk&...) (additional parameters might be appended by your browser) will be sent to the Google server, and a Google result page corresponding to your input and search domain parameter will appear.

---

[Step5 (Events)]: Underneath the search table, there is a division **<div>** with class "events". In this division, please first use **<h3>** to create a header with content “Upcoming events”, then use **<ul>**, **<li>**, and **<a>** elements to implement an event list, including three list items as follows. All three list items should be hypertexts. The mapping between list items and links is as follows:

List Item	Hyperlink
Public Seminar of Physics RPg Students.	<a href="http://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&amp;UEID=67201">http://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&amp;UEID=67201</a>
Three-dimensional Quantum Hall Effect and Metal-insulator Transition in ZrTe5.	<a href="http://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&amp;UEID=67198">http://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&amp;UEID=67198</a>
Sharing Session by MPH Alumni.	<a href="http://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&amp;UEID=66860">http://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&amp;UEID=66860</a>

[Step 6 (Image)]: Underneath the event list, add an element **<img>** with class “image”, and set its “src” attribute value to “HKU.jpg”.

[Step 7 (Contact Information)]: At the bottom of the page, there is a **<div>** with id "footer". In this division, add a **<h3>** element containing "HKU website - Feedback, Web accessibility", and two **<p>** elements to show the following two lines of contact information.

Email: <a href="mailto:webadm@hku.hk">webadm@hku.hk</a>
Telephone: (+852) 3917 0123

In addition, make the Email address a hyperlink (using the **<a>** element) and when you click the email address, a mail client should be invoked (Hint: use "mailto:" in the href attribute of the **<a>** element; see [https://www.w3schools.com/tags/att\\_a\\_href.asp](https://www.w3schools.com/tags/att_a_href.asp)).

Your page will look as follows after you have done the above steps:



Let's  
Search

in hku.hk

Upcoming events

- Public Seminar of Physics BSc Students
- Three-dimensional Quantum Hall Effect and Metal-insulator Transition in  $\text{ZrTe}_5$
- Summer Session for NPH Alumni



HKU website - Feedback, Web accessibility

Email: [webadm@hku.hk](mailto:webadm@hku.hk)

Telephone: (+852) 3917 0123

## Part 2: Improve the page appearance using CSS styling

[Step 8 (linking to css file)]: Add the following in the **<head>** element in **index.html**, such that the html page will be styled by the styling rules in **style.css**.

```
<link rel="stylesheet" type="text/css" href="style.css">
```

[Step 9 (logo)]: Set **logo.jpg** (the HKU logo image) as the background of the "logo" division on the web page (Hint: use "background-image" [http://www.w3schools.com/cssref/pr\\_background-image.asp](http://www.w3schools.com/cssref/pr_background-image.asp) and other relevant background properties to achieve the look as in the final page screenshot). Set the width of the "logo" division to 100%, height to 130px. Position the image to the left of the page with a 20px margin (Hint: set "margin-left" of the division to 20px).

[Step 10 (Multi-column search area display)]: Instead of using a table to create the search area, we now use **<div>** elements and CSS3 features to create a similar display. In the **<form>** element, instead of including a **<table>**, we replace it with four **<div>** elements:

- The first **<div>** element has the content of "Let's"

- 
- The second <div> element encloses the “submit” button you have created in Step 4
  - The third <div> element encloses the input textbox you have created in Step 4
  - The fourth <div> element encloses the content and element in the fourth cell that you have created in Step 4

Style the division with id of “searchArea” as follows to create a multi-column view ([http://www.w3schools.com/css/css3\\_multiple\\_columns.asp](http://www.w3schools.com/css/css3_multiple_columns.asp)), which contains the above four child divisions in four columns:

```
#searchArea {  
    column-count: 4;  
}
```

Besides, set the left margin and the right margin of the search area to 20px, respectively.

[Step 11 (Style the columns)]: Associate the four <div> elements in the <form> with the class “col-1”. Add the following styling rules into this class: margin of 2px, background-color of lightgray, float left, width of 100%, height 40px, both padding-left and padding-top of 10px, font-size of x-large.

[Step 12 (Search button)]: Associate the “Search” button with a class "searchButton". Set the height of the search button to 30px and width to 80%, and the font of the text on the search button to bold, italic, 20px with a black color. There is no border for the search button.

Further style the search button as follows:

- (1) the word “Search” should have a black text shadow, with 3px blur-radius, 1px h-shadow and 1px v-shadow (Hint: use text-shadow property at [http://www.w3schools.com/cssref/css3\\_pr\\_text-shadow.asp](http://www.w3schools.com/cssref/css3_pr_text-shadow.asp));
- (2) the button should have a gradient background: a linear gradient from right bottom to left top, where the color goes from "lightskyblue" to "lightpink"; (Hint: Use CSS3 Gradients [https://www.w3schools.com/css/css3\\_gradients.asp](https://www.w3schools.com/css/css3_gradients.asp)).

---

[Step 13 (Search input textbox)]: Associate the search input textbox with a class "searchInput". Set the height of the search input textbox to 30px and width to 70%, border width to 1px, border style of dashed with color "red". The font size of the input text should be 20px.

[Step 14 (Event List)]: In the "events" class, set the float to "left", so that the image can be shown on the right of the event list; then set the margin-left to 20px, display to inline-block and width to 500px.

Set the font size of list entries to 18px.

Remove underline of the hypertexts (Hint: use "text-decoration: none" on the <a> element in the list only). Set the background color of each hyperlink to "darkseagreen", and add a transition effect: when the cursor is moved over each link, the background color of the link changes from "darkseagreen" to "lightgreen" within a duration of 2 seconds. (Hint: Use CSS3 Transitions [https://www.w3schools.com/css/css3\\_transitions.asp](https://www.w3schools.com/css/css3_transitions.asp)).

[Step 15 (Image)]: Set the width of the image to 392px, height 300px, and a left margin of 10px.

[Step 16 (Footer)]: Set the background color of the footer division to "lightsalmon". Set its position property to "static", bottom to 0px, left to 0px, right to 0 px and padding to 1 rem.

Now your web page should show up as the first screenshot in this lab handout.

[Step 17 (Responsive Web Design)] We next implement responsive web design on the web page.

- Add <meta name="viewport" content="width=device-width, initial-scale=1.0"> into <head> element in **index.html**.
- Add CSS code in **style.css** to achieve the following: when the screen width is no larger than 580px:

(1) the event list becomes more compact with smaller font:

---

```
li {  
    margin-right: 0;  
    font-size: 15px;  
    width: 60%;  
}
```

(2) the font size and margin in the footer division become smaller:

```
#footer h3 {  
    font-size: medium;  
    margin-top: 0px;  
}  
  
#footer p {  
    font-size: small;  
    margin-top: 0px;  
    margin-bottom: 0px;  
}
```

(3) The column count in the search area becomes 1, such that the divisions in the search area move to new lines when the screen is small (Screenshot 2).

(4) Width of the divisions in the search area becomes the same and changes with the change of the screen width:

```
.col-1 {  
    width: 90%;  
}
```

(5) The image HKU.jpg scales with the change of the screen width:

```
.image{  
    width: 70%;  
    height: auto;  
}
```

## Submission:

Please finish this lab exercise before **23:59 Wednesday Sep. 18, 2019**.

You should submit the following files:

(1) Index.html



- 
- (2) style.css
  - (3) log.jpg
  - (4) HKU.jpg

Please compress all the above files in a .zip file and submit it on Moodle:

- (1) Login Moodle.
- (2) Find "Labs" in the left column 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.