CS2204 Fundamentals of Internet Application Development
Course Work No. 2 (CW2)
Semester A 2023-2024

12% Marks
Due Date: 6th November 2023, 23:59 [Week 10]

Learning Outcomes:

- Design styles and layouts for the web pages of a more realistic, commercial-like website.
- Achieve user requirements by using appropriate CSS styling techniques.
- Able to organize style sheets for better Website styling.
- Produce web pages that can pass through validation.

1.   Overview

You must build a simple Web site for Hong Kong Industrial University by going through the 3S's: structure, style, and script. This CW2 is the second step focusing on style. The Web site, therefore, would not be fully functional until the third part (CW3) using JavaScript is completed.

Requirements are divided into two main groups to encourage critical thinking and discovery: mandatory and free design. The mandatory ones must be fulfilled according to specifications. At the same time, free design can be done according to your ideas, which will then be assessed according to the difficulty level of the techniques used and good practices adopted. You may add or modify HTML in CW1 to support easier styling. We strongly recommend that when you have made changes to the HTML, you check or validate it again at a site such as https://validator.w3.org/nu/#file.

To ensure timely feedback to the student's questions, each of the following TAs will be responsible for different groups of students according to **the last digit of your student ID**. If you have any questions, you can contact the corresponding TA directly.
- Student ID's **last digit 0 ~ 1:** ZENG Yuhan (yhzeng3-c@my.cityu.edu.hk)
- Student ID's **last digit 2 ~ 3:** HONG Chenhao (HONG.Chenhao@my.cityu.edu.hk)
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- Student ID's **last digit 8 ~ 9:** SANIYAZOV Dias (dsaniyazo2-c@my.cityu.edu.hk)

Guideline for late submissions:
- Late within **3 hours** - **10% marks deduction**
- Late within **3 ~ 12 hours** - **50% marks deduction**
- After **12 hours** - **no** submission will be accepted

2. Mandatory requirements

Overall

a) Create a "CSS " **folder** to store this assignment's CSS files. **Use the HTML files provided in Canvas to finish the following tasks in this assignment.** The content on the **Home, Apply, Visit, and Program** pages should be arranged in sections, referred to as 'blocks'. Each page should have a minimum of two columns to qualify as a **multi-column layout**. To be more specific, at the block level, the layout must NOT be a single column, but within blocks, the layout would be a free design.

b) All pages should have a consistent theme and layout. At a minimum, the **header, navigation bar, and footer** styles should be uniform across all pages to establish a common theme. It would be best if you were careful about the size of the logo and the layout of the footer and header. You should note that the HKIU logo and the name "Hong Kong Industrial University" must be in the **center** of the row, and it is not necessary for the logo and the name to be on the same line, so you are free to make your design. Also, in the footer, the logo and "© CityU 2023 sources of images and text from Wikipedia Commons and Courtesy of Icon pack by Icons8 -- designed by ****** "must be **centered**. However, you are free to adjust the formatting for aesthetic reasons. You will need to design the **backgrounds** for the footer and header blocks, and a single background color is a basic requirement. You can use gradient backgrounds, animated backgrounds, and other more demanding techniques to stand out and get a higher score. However, it should be noted that everything must be implemented strictly using standard CSS, and if you use JavaScript or other third-party CSS libraries, you will be deducted points.

c) Also, you should arrange the **navigation bar horizontally.** Style the navigation links to visually represent different link states: normal, hover, active, and visited. This means defining distinct styles for each state using appropriate CSS selectors. For instance, the ":active" CSS pseudo-class represents an element the user is currently activating, such as a button. The "activation" typically begins with a mouse when the user presses the primary mouse button. On the other hand, the ":hover" CSS pseudo-class is triggered when the user interacts with an element using a pointing device, but it does not necessarily activate the element. It is commonly activated when the user hovers over an element with the cursor (mouse pointer). Lastly, the ":visited" CSS pseudo-class is applied to a link once the user has visited it, while the ":link" CSS pseudo-class represents an element that has not yet been visited. **In your navigation bar styling, it is mandatory to include styles for both the ":active" and ":visited" pseudo-classes.**

Home page

d) This page has a similar layout as the Illustration layout, including a header block, navigation bar block, welcome block, information block, map and apply block, and footer block**. For the "information block" and "map and apply block," you should try to apply a multi-column design and control the size of these two blocks.** In the 'map and apply block', adjust the sizes of the map image and button image to ensure they fit within the block without causing overflow or misalignment issues. Consider setting maximum widths and using responsive units. You can check our screenshots to see what each block should contain. Feel free to set background colors for content blocks across the website.
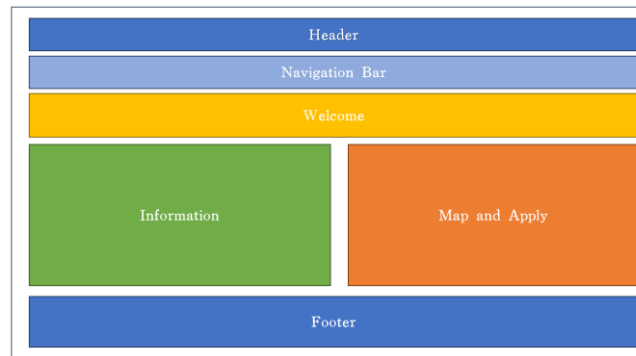
(a) Illustration of layout

(b) Example of the finished homepage

About Page

e)   Create a CSS file named "about.css" to enable the following effects. The border of each block can be shown, but the style is not required.

f)   The container holding the text content in the **welcome block** s**hould have a maximum width of 80% of the overall page width**. You can add more CSS styles to the text in the welcome block for other considerations, but as we mentioned above, this is not mandatory. The border is also not mandatory, but it's handy to see how well you control the text size in the welcome block. As mentioned above, on this page, a multi-column or two-column layout is not mandatory, but **if you can implement it, you will get a 2-point bonus.** For CW2, we have designed it so that the total score is 100 points. The bonus will not make your score more than the total score. For example, (100 points + 2 bonus points), the total score is 100 points. But (80 points + 2 bonus points), your total score will become 82 points. Also, the about.png we provide is much larger than the page needs. **Resize the image 'about.png' using CSS so it does not exceed 100% of the width of its containing element. Ensure the image is responsive for changes in screen size.**

g)   For tables, you need to control the size of the entire table to be at most **80%** of the entire page's width. At the same time, you should use different background colors for the odd rows (excluding the header rows) and the even rows of the table. **The header rows of the table need to have a different background color.** We strongly recommend that you read https://developer.mozilla.org/en-US/docs/Web/CSS/:nth-child first. At the same time, you need to **center-align the text in <caption>, <th>, and <td> in the table**. It should be implemented: when our **mouse cursor hovers over a row (excluding the title row (<thead>), the background color of that row will change.**

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Home   About   Apply   Visit   Program   Contact

Welcome to Hong Kong Industrial University -- a dynamic and innovative institution committed to providing high-quality education and research opportunities for students from Hong Kong and worldwide. Since our establishment in 1997, we have been dedicated to becoming a small-scale, high-level, and international universityoriented toward research and innovation.

Our campus covers an area of approximately 500 hectares. It is located in the Hong Kong Kowloon High-Tech Park, where we collaborate closely with institutes of the Chinese Academy of Sciences. Our faculty comprises renowned scholars and experts from home and abroad who are committed to providing students with cutting-edge knowledge and skills in 11 disciplines, including Physics, Chemistry, Biology, Materials Science and Engineering, Electronic Science and Technology, Cognitive Science, Computer Science and Technology, Biomedical Engineering, Electronics and Information Technology, Materials, and Chemical Engineering, and Biology and Medicine.

At Hong Kong Industrial University, we offer a student-centered educational approach that encourages cross-disciplinary research in an international environment. Our curriculum is based on international standards and is taught entirely in English. We encourage undergraduate students to join research groups from their first year, with approximately 82% of our undergraduate students joining research groups by their third year and 100% by their final year. To broaden our students' international perspectives, we provide them various overseas study opportunities, including at world-renowned universities such as Harvard University, Massachusetts Institute of Technology, Tsinghua University, City University of Hong Kong, and Peking University.

Our faculty members are recognized leaders in their fields, with 321 tenured professors and 80% with overseas study or work experience. As a university committed to innovation, we have created an atmosphere on campus that supports and encourages entrepreneurship. We have established 370 spin-off companies, with 114 of them founded in 2024 alone. Our incubator programs provide students and faculty opportunities to connect with technology, market, policy, and capital resources, making it a crucial "power source" for innovation practice.

Hong Kong Industrial University's strength lies in our world-class facilities and talented faculty and students. We are dedicated to providing our students with the resources and guidance they need to excel in their fields and positively impact society. Thank you for considering us as your academic home.

HKIU at a Glance

Undergraduates	Master's and Ph.D. Students	Faculty Members	Nobel Laureates on Faculty
1,926	1,919	321	10+

Apply Page

h) This page contains the header, navigation bar, footer, Common Application to Undergraduate Program form, and chosen major table in five major parts.

i) Create a CSS file named "apply.css" to enable the following effects. This CSS style is used for "screen" display only.

j) In the "Chosen Major Table," the colors of the entire form need to be set. **The heading, footer, and odd and even rows can be seen and identified distinctly.** At the same time, the table body row's **background color changes when the mouse cursor hovers over the rows. "Submit" and "Clear" are links in this table**. Please set them to empty links in CW2, but ensure their appearance remains **unchanged** when you click the link. You can position borders for "submit" and "clear.

k) Set the three headings (i.e., "College of Engineering," "College of Science," and "College of Interdisciplinary Studies") to **equal width.**

l) Different chosen majors are shown when the mouse moves over each heading. Implement a mechanism where the major application form is hidden or collapses once the cursor moves away from the 'Common Application to Undergraduate Program' form area. The Common Application to Undergraduate Program block returns to its original format, as shown in the figure above**. WITH CSS ONLY (i.e., no JavaScript).** We call the item below a **major application form.**
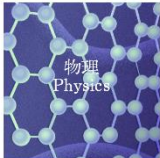
If we move the cursor to a Major Application Form, the appearance must change so the user understands which Major Application Form their cursor is now pointing to. **We require changing the Major Application Form's background color when the cursor hovers.**
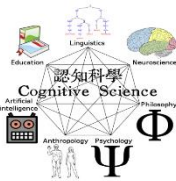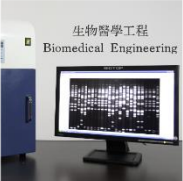
(1) When the mouse cursor is on the "College of Science" heading, five major application forms are shown as follows: the **first three major application forms are in the first row with equal width, and the fourth major application form starts from a new line**.:

(2) When the mouse is on the "College of Science" heading, the major application forms are shown as follows:

(3) When the mouse is on the "College of Interdisciplinary Studies" heading, the major application forms are shown as follows:

Please read this section carefully for some tips and requirements. When the mouse cursor is not hovering over the heading, the background color of the heading cannot be white. When the mouse

cursor is **hovering over the heading, the background color of the heading will be set to white**; **the corresponding chosen major application forms(majors belonging to the college) will be shown**, while the other chosen major application forms will be hidden(majors do not belong to the college). Please note that if the cursor hovers on either the heading or the chosen major application forms, the chosen major application forms will not disappear**. If the cursor moves away from any of the headings and chooses major apply forms, the display will return to the initial stage**. Note that when the mouse cursor hovers on the heading, the background color of the heading where the cursor hovers will be set to white**. If the cursor hovers over the chosen major application forms, we do not require the background color of the heading(which college the majors belong to) to stay white. If you can make the background color of the header still set to white when the cursor hovers over the chosen major application forms, you will get a 2-point bonus.**

m) For this apply page, write another CSS file, **"printApply.css," to show the following page style when this page is to be printed, where only the header, footer, and the result table are displayed.** You need to hide unnecessary elements: You can optimize your print layout by setting unnecessary elements to invisible or hidden. You can use display: none or visibility: hidden to hide elements. You are free to set the size of each component to make its layout more print-friendly.

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Your chosen majors:

Last change time:

| College	Major	Rank
College of Engineering	BEng in Electronic Information	1
College of Science	BSc in Physics	2
College of Interdisciplinary Studies	BSc in Cognitive Science	3

Total number of completed choices: 3

submit clear

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Visit Page

n)   This page has a similar layout as the home page, including a header block, navigation block, and footer block. Other blocks should be organized like the image shown below.
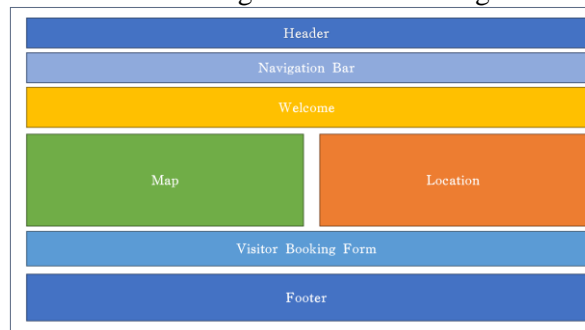

(a) Illustration of layout
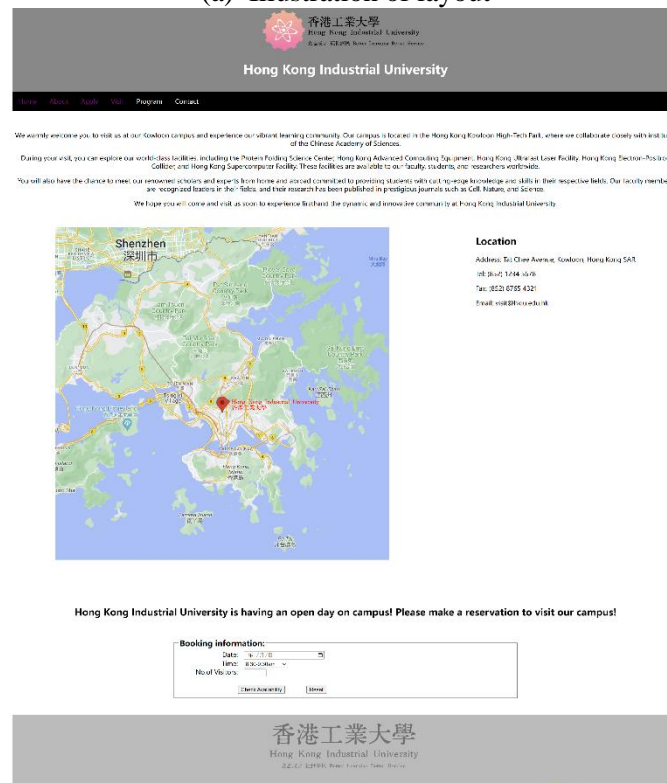
(b) Example of the finished visit page

o)   Create a CSS file named "visit.css" to enable the following effects. The border of each block can be shown, but the border is not required. **The blocks mentioned above in visit pages must be arranged in a multi- or 2-column layout.**

p)   The map and the location block should be in the multi-column layout. The map is just an image. It would be best to **use CSS to control the map image size.**
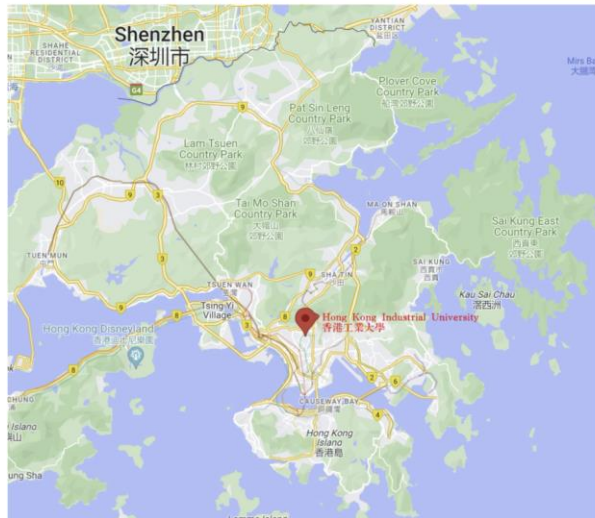
Location

Address: Tat Chee Avenue, Kowloon, Ho

Tel: (852) 1234 5678

Fax: (852) 8765 4321

Email: visit@hkiu.edu.hk

q) **Labels, inputs, and buttons in the visitor reservation form should be appropriately aligned as follows.**

Hong Kong Industrial University is having an open day on campus! Please make a reservation to visit our campus!

Program Page

r) Create a CSS file named "program.css" to enable the following effects. The "Program Page" will use a two-column layout to present the video and promotion message. To present the content clearly and logically, we need to control the size of the promotional message and the size of the video. **The screenshot shows that a PROMOTION INFORMATION corresponds to a VIDEO in a two-column layout.**

s) Use CSS to have a consistent look and layout for tables. **The header row has a background color, and the text in the data cells is centered and aligned.**

College	Program	Duration	Language	Fee
College of Engineering	BSc in Computer Science and Technology	4 years	English	HK$42,100
College of Engineering	BEng in Electronic Information	4 years	English	HK$42,100
College of Engineering	BEng in Materials Science and Engineering	4 years	English	HK$42,100
College of Engineering	BEng in Materials and Chemicals	4 years	English	HK$42,100
College of Science	BSc in Physics	4 years	English	HK$42,100
College of Science	BSc in Chemistry	4 years	English	HK$42,100
College of Science	BSc in Biology	4 years	English	HK$42,100
College of Science	BSc in Cognitive Science	4 years	English	HK$42,100
College of Interdisciplinary Studies	BEng in Biomedical Engineering	4 years	English	HK$42,100
College of Interdisciplinary Studies	BEng in Electronics and Information Technology	4 years	English	HK$42,100
College of Interdisciplinary Studies	BEng in Biology and Medicine	4 years	English	HK$42,100

Contact Page & Design Page

For the Contact Page and Design Page, you can design it in CSS freely, which makes sense so that it has a clear layout and is readable.

3.   Free design requirements

You are required to use CSS to meet each of the following requirements. Marks are awarded according to the stated level of difficulty. **You MUST write down clearly in the Design Page what and where (i.e., the line no. where your CSS rules start) you have used the techniques; otherwise, no mark will be given.** We are not going to find your CSS rules in your code.

1)   use of positioning schemes: static (none) < any one other positioning < more than one meaningful positioning

2)   Apply two different kinds of CSS3 techniques: basic (round corner, gradient, transform, etc.) < transition < animation

3)   how styles are grouped into style sheet(s)/embedded style

Design page

This is the free format Web page for you to acknowledge the sources of information used in your design. **Write the precise explanation for items (1) to (3) with the line numbers where the CSS rules are found.**

4.   Assessment criteria

You will be assessed by how much and how well you can apply what has been learned from the course; some considerations are:

- No inline style (or style-related HTML), third-party CSS library, and JavaScript are allowed.
- Adopt good practices discussed in lectures.
- Your work should pass through validation for document type HTML5.
- Your website should be organized in proper folders, e.g., HTML, image, CSS, etc.

5.   Submission

- Submit a zip file of your website with appropriate folders set up so that it can be tested directly by unzip - be careful with your URLs; they should work when your submission is tested as local files on other computers or as Web pages served by a Web server.

- DO NOT include video files in your submission file; DO NOT use YouTube video; should use any one given video link in the server folder. Note that this link can only be accessed within the CityU network. If you are outside campus, you should use VPN.

  https://personal.cs.cityu.edu.hk/~cs2204/2023/video/video1.mp4
  https://personal.cs.cityu.edu.hk/~cs2204/2023/video/video2.mp4
  https://personal.cs.cityu.edu.hk/~cs2204/2023/video/video1.mkv
  https://personal.cs.cityu.edu.hk/~cs2204/2023/video/video2.mkv

  Videos for the promotion information block: video1.mp4, video1.mkv, video2.mp4, video2.mkv

6.   Miscellaneous information

- You should retain a copy of your submission. The same set of web pages will be used again in CW3 for adding JavaScript. Some images are available in the Canvas CW2 folder.

~ End ~