

Lab 06 HTML

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General Information

What you should do

- You should first review Lecture 4 (Part A) and be familiar with the concepts on HTML as well as the related code examples so that you can refer to the specific techniques from the corresponding slides when completing the tasks in this lab.
- You should try to come up with the code yourself as much as possible. Do not be afraid of making mistakes, since debugging (finding out where your code goes wrong and fixing it) is part of the learning process.
- We do not give out model programs to the exercises. There can be multiple ways to write the code that solves the same problem. It is important that you build up the program logic yourself instead of merely looking at some code that you do not understand. At any time if you are lost or if you have any questions, feel free to ask the instructor, tutor, or teaching assistant and we will be very happy to help you.

Self-Discovery

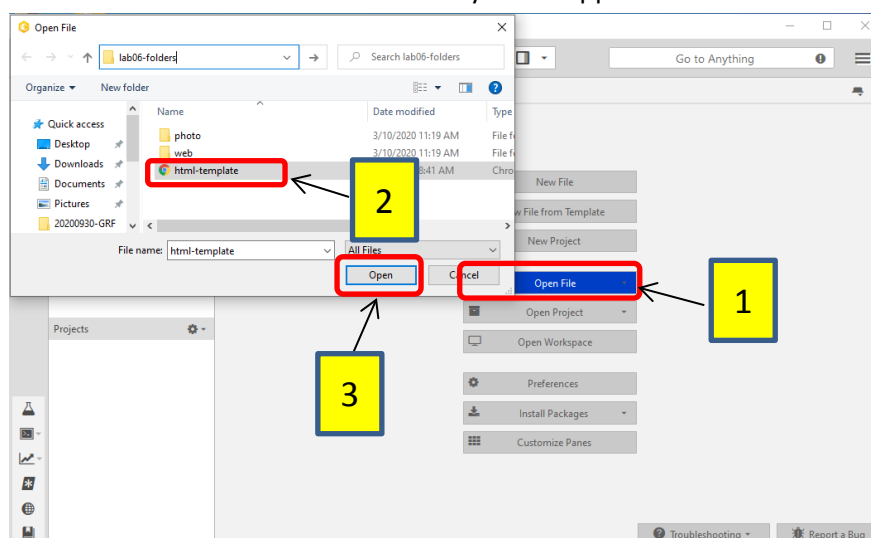
- Most lab tasks are designed to be relatively simple such that you can take the time to think about the related underlying concepts. Besides, we also encourage you to discover things on your own which may not be specified in the tasks.

Task 1.1 Unzip the File

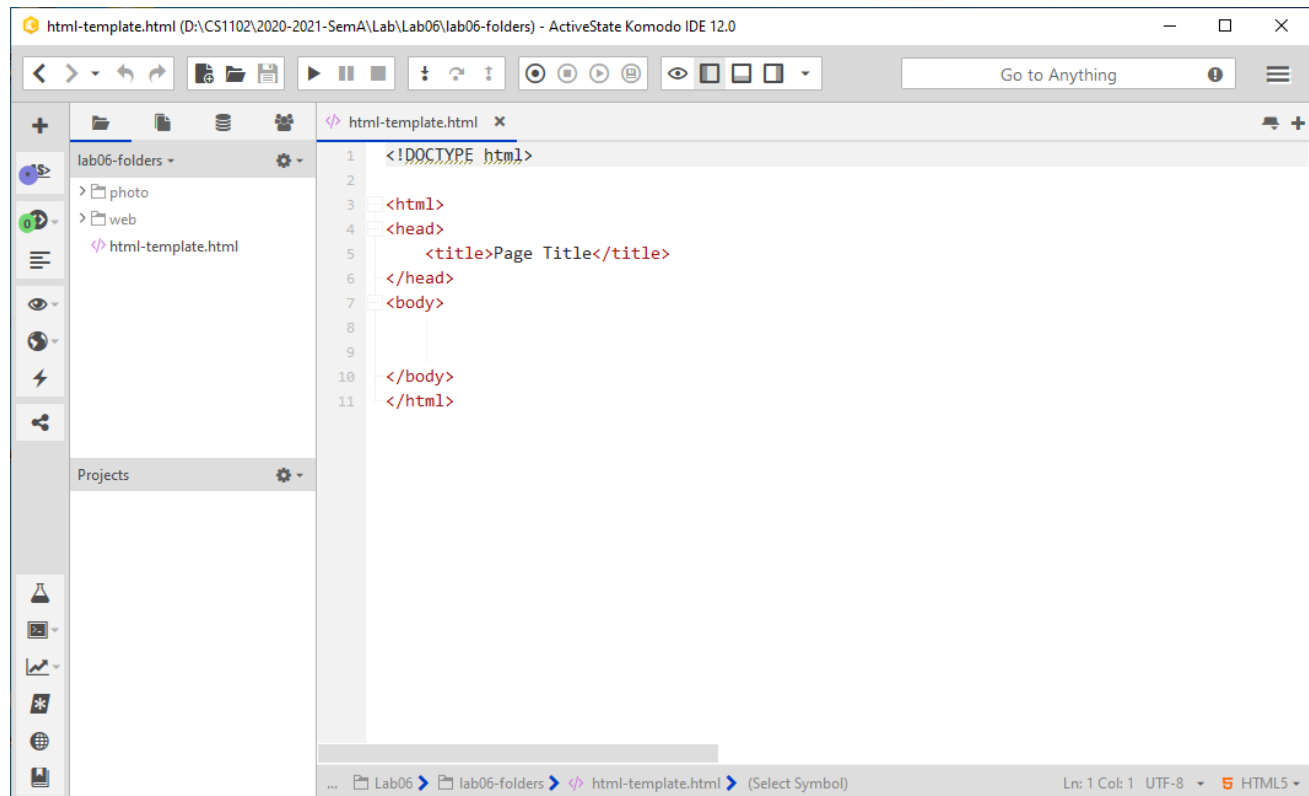
Download the zip file `lab06-folders.zip` from the Canvas course page to your computer and unzip the file. Note that your webpage will not work properly if you do not unzip the file first and just work directly in the zip folder. After unzipping, you will find that there is a file `html-template.html` inside the folder `lab06-folders`. You will use a code editor to open this HTML file.

Task 1.2 Open a File Using Code Editor

The code editor that we will use in this lab is Komodo Edit which is a free editor that you can download and install on your own notebook (<https://www.activestate.com/products/komodo-ide/downloads/edit/>). Open Komodo Edit on your computer. Choose Open File from the menu and then a file dialog box will pop up. Select the file `html-template.html` from your unzipped folder:



You will see that this template file contains the basic html tags to help you get started:

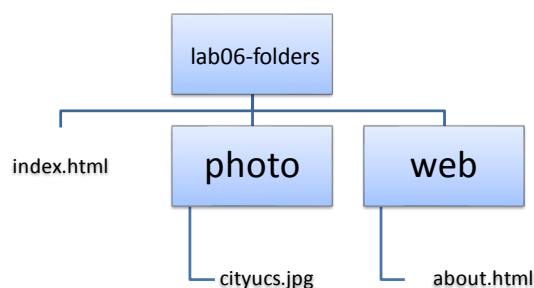


You can save it as a new HTML file for each of the 2 required html files in the subsequent tasks.

Note that you should NOT copy and paste any code from this document to your code editor. Type up the code instead, otherwise it may not work properly, especially with symbols such as quotation marks “ ”.

Task 1.3 Add Content and Markup with HTML Tags

After extracting the zip file in Task 1.2, you will find that it contains a folder called `lab06-folders`. Inside this folder there are two subfolders `photo` and `web`. The image file that you need for this task is stored in the folder `photo` with the filename `cityucs.jpg`. You need to create 2 html files for this task: `index.html` to be placed in the root folder `lab06-folders` and `about.html` to be placed in the folder `web`. The file structure after you complete this task should be the same as illustrated in the following diagram:



The first html file `index.html` should be placed in the root folder `lab06-folders`. You are required to add the content to this html file and add HTML tags so that your webpage will appear according to the following specifications:

The screenshot shows a web browser window titled 'CS1102 Lab 06' with the address bar displaying 'index.html'. The page content includes:

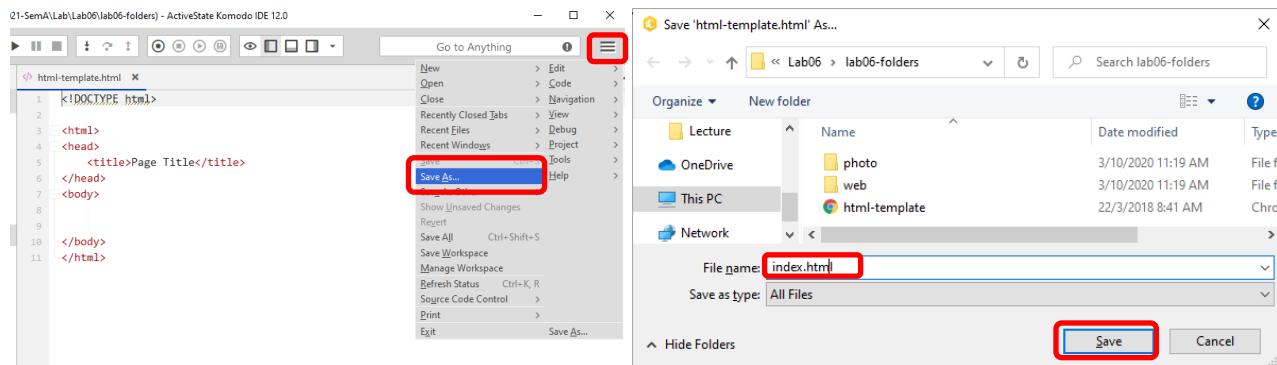
- Title of this webpage:** Points to the browser title 'CS1102 Lab 06'.
- 1st level heading:** Points to the heading 'Task 1.3 Index'.
- 2nd level heading:** Points to the subheading 'Department of CS'.
- Link to `http://www.cs.cityu.edu.hk` to be opened in a new tab/window:** Points to a link in the text 'Located near Lift 9, 6/F, YEUNG'.
- Image `cityucs.jpg` with alternate text "CityU CS":** Points to an image of a hallway.
- Line break here so that subsequent text will appear in a new line but you should not put them under different paragraphs:** Points to a line break in the text 'Our BSCCS program offers the following study streams:'.
- Ordered list:** Points to a numbered list of study streams:
 1. Software Engineering and Project Management
 2. Artificial Intelligence
 3. Data Science
 4. Information Security
 5. Multimedia Computing
- Paragraph:** Points to the text 'Many of our students have joined the exchange programme and have been to different countries, e.g.:'.
 - Unordered list:** Points to a bulleted list of countries:
 - North America : US, Canada
 - Europe : Denmark, Finland, France, Spain, Sweden, UK
 - Asia : Singapore, South Korea, Japan, Israel
- Link to the file `about.html` using relative URL to be opened in the same tab/window:** Points to the link 'More information'.

The second html file `about.html` should be placed in the folder `web`. You are required to add the content to this html file and add HTML tags so that your webpage will appear according to the following specifications:

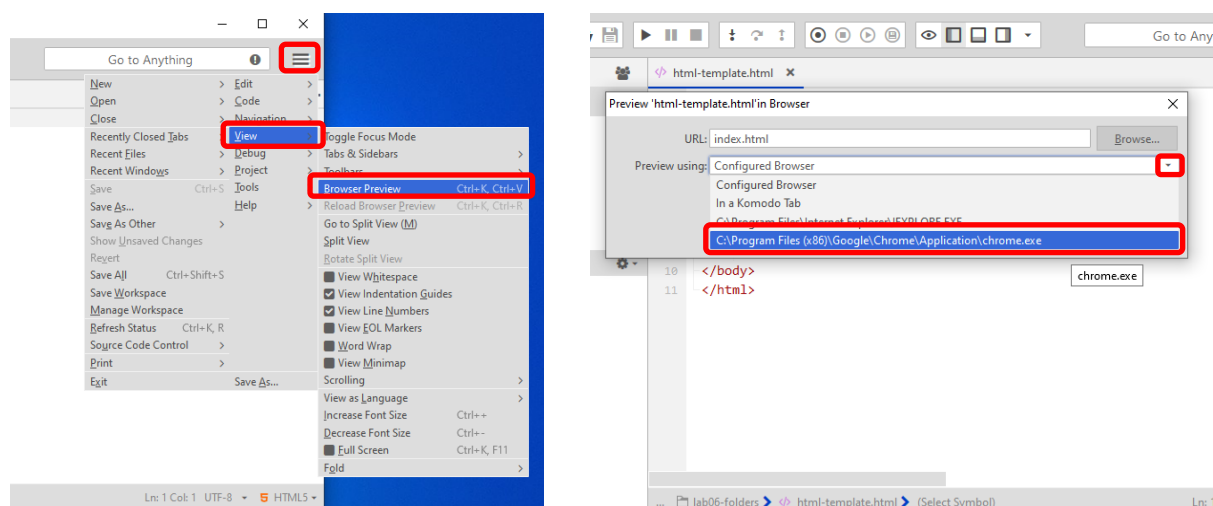
The screenshot shows a web browser window titled 'More Info' with the address bar displaying 'about.html'. The page content includes:

- Title of this webpage:** Points to the browser title 'More Info'.
- 1st level heading:** Points to the heading 'Task 1.3 More Info'.
- Link to `http://www.cs.cityu.edu.hk` to be opened in a new tab/window:** Points to a link in the text 'CS1102 is offered by the Department of Computer Science'.
- Line break here so that subsequent text will appear in a new line but you should not put them under different paragraphs:** Points to a line break in the text 'CS1102 is offered by the Department of Computer Science'.
- Image `cityucs.jpg` using relative URL with alternate text "CityU CS":** Points to an image of a hallway.
- Horizontal line:** Points to a horizontal line below the image.
- Paragraph:** Points to the text 'Back to [index.html](#)'.
- Link to the file `index.html` using relative URL to be opened in the same tab/window:** Points to the link 'Back to [index.html](#)'.

To start working with the 1st html file, switch back to Komodo Edit and save the file (the file that you opened in Task 1.2) by selecting Save As from the menu and choose the folder lab06-folders. Save it under the filename index.html.



You can open the html file on a browser to see what it looks like after you make a change on the file. **Verify that each update you make is correct before working on the next item:**



Some hints are provided below to help you on this 1st html file. It is assumed that you have read the related code examples from Lecture 04 (Part A) such that you know the basics of HTML.

- 1) 1st level and 2nd level headings: use <h1> and <h2>
- 2) Line break: use the empty element

- 3) Paragraph: use <p>
- 4) Unordered List: use and
- 5) Ordered List: use and
- 6) Link:
 - Use with relative URL to link it to the html file about.html in the folder web
 - Set the attribute target to a proper value inside the a tag for opening a link in a new tab/window
 - Make sure that the link is clickable from both the text "Department of Computer Science" as well as the image
- 7) Image: use the empty element with relative URL to link it to the given image file cityuacs.jpg in the folder photo. Set the attribute alt to a proper value inside the img tag for providing an image alternate text

Remember to save your file.

To start working with the 2nd html file, open the template file `html-template.html` according to the steps shown in Task 1 and save it under the filename `about.html` in the folder `web`. Additional hints are provided below to help you on this 2nd html file.

- 8) In specifying the path, use `../` to refer to the parent folder, i.e., go up one level in the folder structure
- 9) Horizontal line: use the empty element `<hr />`

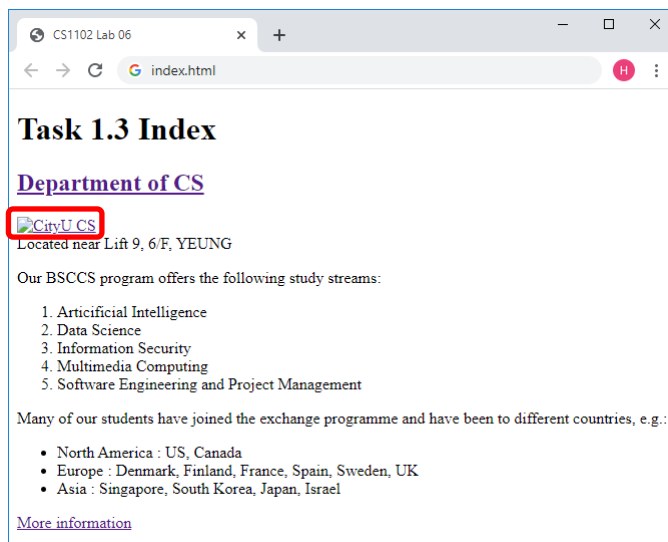
Remember to save your files.

After you complete these 2 html files, view each webpage on a browser and check that it satisfies all the requirements specified on p.3.

Task 1.4 Image with Alternate Text

When you included the image `cityucs.jpg` on the webpage `index.html` in Task 1.3, you were asked to add the alternate text “CityU CS” with it. In this task, we will verify that the alternate text will be displayed if the image linked by the webpage cannot be opened. Do the followings:

- 1) Rename your image from `cityucs.jpg` to `cityucs2.jpg`.
- 2) Open the webpage `index.html` on the browser. Since this webpage is expecting to display the image `cityucs.jpg` but it does not exist any more (as you have renamed it to `cityucs2.jpg`), your webpage shown in the browser should be as follows:



- 3) Now rename the image back from `cityucs2.jpg` to `cityucs.jpg`.
 - 4) Open the webpage again in the browser and verify that the image is back on display.
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Task 1.5 Update the List

Now update the ordered list in the webpage so that the new list (same list items with rearranged order) is shown as follows:

Our BSCCS program offers the following study streams:

1. Software Engineering and Project Management
2. Artificial Intelligence
3. Data Science
4. Information Security
5. Multimedia Computing

Do you find it easy to update the list?

Now think about the following scenario:

If you do not use ordered list, i.e., ``, ``, but rather type up the number for each item to make the list by yourself as shown by the following HTML code:

```
<p>  
  1. Software Engineering and Project Management<br/>  
  2. Artificial Intelligence<br/>  
  3. Data Science<br/>  
  4. Information Security<br/>  
  5. Multimedia Computing<br/>  
</p>
```

What do you need to do with the above code if you need to make the same change by reordering the items as shown above?

Task 1.6 Absolute vs Relative URL

In Task 1.3 you were required to use relative URL to link from the webpage `index.html` to another webpage `about.html`. This means that in the webpage `index.html`, it is linking to `about.html` using the following HTML code:

```
<a href="web/about.html">
```

In the webpage `about.html`, it is linking back to `index.html` using relative URL with the following code:

```
<a href=" ../index.html">
```

Let us explore how the webpages with relative URLs will behave when the files are moved to a different location (by renaming the parent folder).

- 1) Close all applications with which any of your files in the folder `lab06-folders` are opened. This means that you should close Komodo Edit, close all browsers on which your webpages for this lab are opened, and close any image viewer that you may have used to open the image file `cityuys.jpg`
- 2) Rename your folder from `lab06-folders` to `lab06-folders2`.
- 3) Open the webpage `index.html` and click on the link at the bottom of the page to verify that it can successfully link to the webpage `about.html` which is displayed on the browser.
- 4) Open the webpage `about.html` and click on the link at the bottom of the page to verify that it can successfully link to the webpage `index.html` which is displayed on the browser.
- 5) Rename your folder from `lab06-folders2` back to `lab06-folders`.

From the above steps, you should see that the files have been moved to a different location (changing to another parent folder) while the file structure inside the parent folder has not been changed. In this case, the relative URLs still work without the need for any update.

Now let us explore how the webpages with absolute URLs will behave under the same scenario.

- 6) Open Komodo Edit.
- 7) Open the file `index.html` in Komodo Edit and change the link to `about.html` from relative URL to absolute URL, e.g.,

```
<a href="c:/cs1102/lab06/lab06-folders/web/about.html">
```

Note that you should replace the path `c:/cs1102/lab06/` with the actual path where you store the folder `lab06-folders`.
- 8) Open the file `about.html` in Komodo Edit and change the link to `index.html` from relative URL to absolute URL, e.g.,

```
<a href="c:/cs1102/lab06/lab06-folders/index.html">
```

Note that you should replace the path `c:/cs1102/lab06/` with the actual path where you store the folder `lab06-folders`.
- 9) Open each of the webpages `index.html` and `about.html` on a browser and click on the link at the end of each webpage to make sure that it can still link to the other webpage correctly.
- 10) Close all applications with which any of your files in the folder `lab06-folders` are opened. This means that you should close Komodo Edit, close all browsers on which your webpages for this lab are opened, and close any image viewer that you may have used to open the image file `cityucs.jpg`.
- 11) Rename your folder from `lab06-folders` to `lab06-folders2`.
- 12) Open the webpage `index.html` and click on the link at the bottom of the page to verify that it can no longer go to the webpage `about.html`.
- 13) Open the webpage `about.html` and click on the link at the bottom of the page to verify that it can no longer go to the webpage `index.html`.
- 14) Rename your folder from `lab06-folders2` back to `lab06-folders`.

From the above steps, you should see that the files have been moved to a different location (changing to another parent folder). Even if the file structure inside the parent folder has not been changed, the absolute URLs do not work any more.

Task 2 Review Previous Labs

You can review the previous labs by reading and following the lab instructions, and check that you are able to complete the lab tasks and exercises by yourself. If you have any questions, you can ask the lab tutor or TA during the lab session.

Task 3 Complete the assessment from the Canvas course page

You should complete the [Lab 06 Assessment](#) from the Canvas course page before the posted deadline.

Task 4 Complete Homework 1 from the Canvas course page

You should complete [Homework 1](#) from the Canvas course page before the posted deadline.

Task 5 Challenge your classmates

You can first reflect on what you have learnt in this lab, and then come up with problems to challenge your classmates. You can post your problem on the Canvas course page, under this [Discussion page](#). One should be able to solve your problem by using what he/she learns in Lab 06. You will not get extra marks by posting a challenging problem or solving a challenging problem posted by another student, but you will earn your fame so that you can impress the course leader, the lab tutors, and your classmates.
