

COMP3322 Modern Technologies on World Wide Web

Assignment One

Total 14 points

Deadline: 23:59 February 28, 2025

Overview

This assignment consists of two tasks. Task A is about revamping a webpage and Task B is about using CSS styling to transform a plain-text poem to a beautifully typeset poem. You **CAN ONLY USE** pure CSS for this assignment. You **CANNOT USE** any front-end libraries such as Bootstrap or JavaScript for the assignment.

Objectives

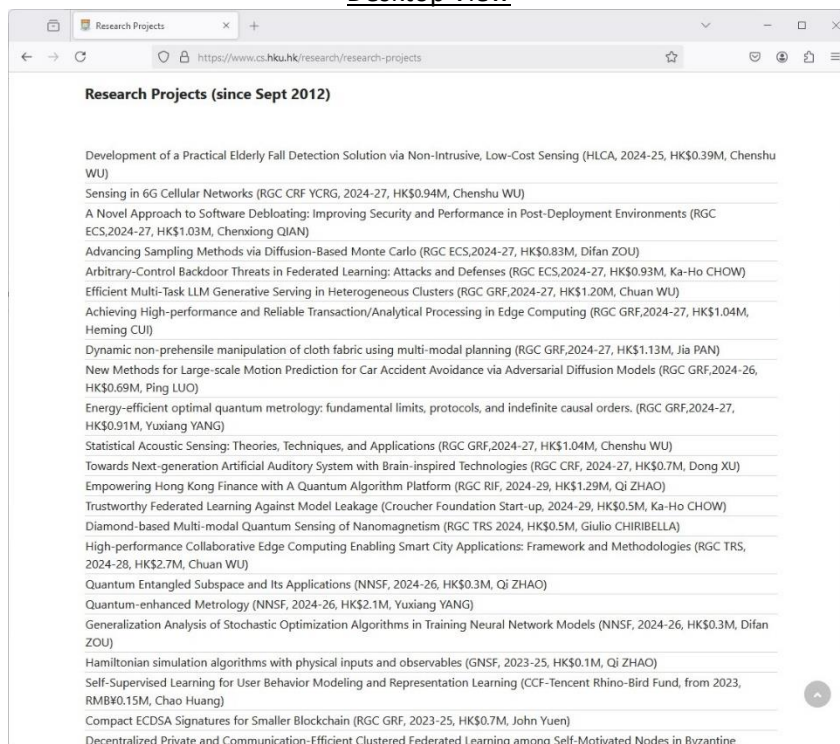
1. A learning activity to support ILO 1 and ILO 2.
2. To get solid experience in using HTML & CSS to support responsive features, appropriate styling, and appearances.

TASK A (6 points)

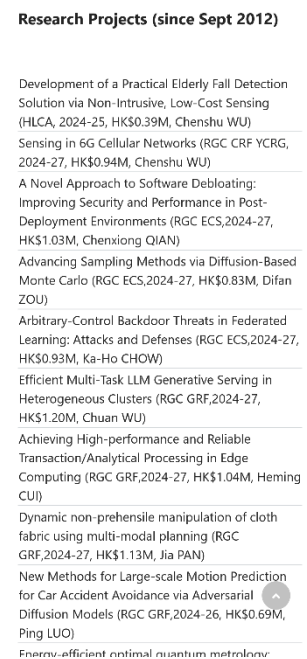
You are going to revamp a webpage on the CS Department's website (<https://www.cs.hku.hk/research/research-projects>), enhancing its look and improving the structure for better usage, exclusively utilizing HTML5 and CSS, without the need for JavaScript.

The following are screenshots of the department's webpage, which are displayed in both desktop and mobile formats.

Desktop View






Mobile View



The current design employs a table element to contain all research projects, leading to a long project list that makes it difficult to look for information, e.g., finding a project in a particular year.

YOUR TO-DO LIST

1. Organize all projects with the same starting year into distinct groups. Provide a summary for each of these groups and enable users to interactively expand or collapse the group to view the list of research projects it contains.
 - The summary contains the starting year of the funding, the number of research projects in that year, and the total funding amount.
 - [Diagram 5] Apply styling rules to the summary line to align its content.
2. Organize the groups in reverse chronological order.
3. [Diagram 1] Upon loading the webpage, all the projects within the first group are automatically displayed, i.e., the first group is in the 'expand' state, while the other groups are in the 'collapse' state.
4. [Diagrams 1, 4 & 5] Implement a mechanism to ensure at most one group can be in the 'expand' state at any given time.
5. [Diagram 1] Apply this style setting to a group in the 'expand' state
 - Use this bullet  for the summary line.
 - Change the color of the summary line to blue.
 - Enclose the project list in a round-corner box.
 - Apply suitable styling rules for displaying the project list.
6. [Diagrams 1 & 5] Apply this style setting to a group in the 'collapse' state
 - Use this bullet  for the summary line.
7. [Diagrams 1 & 2] Add a button  to the web page. Users can click the button to jump back to the top of the web page. Apply styling rules to fix the button to the bottom-right of the web page with some spaces between the bottom and the right edges.
8. Apply styling rules for responsive design
 - [Diagram 1] In the desktop format, center the content in the middle with spaces between the left and right edges of the window.
 - In the mobile format
 - [Diagram 2] Set the width of the page to the full window width.
 - [Diagram 3] The summary line of an 'expand' group remains fixed at the top of the window as the user scrolls through the project list.
9. Name the web page to index_taskA.html

The following are screenshots from a sample implementation.



Diagram 1

Research Projects (since Sept 12)

2024 19 projects Funding: HK\$18.52M

- Development of a Practical Elderly Fall Detection Solution via Non-Intrusive, Low-Cost Sensing (HLCA, 2024-25, HK\$0.39M, Chenshu WU)
- Sensing in 6G Cellular Networks (RGC CRF YCRG, 2024-27, HK\$0.94M, Chenshu WU)
- A Novel Approach to Software Debloating: Improving Security and Performance in Post-Deployment Environments (RGC ECS, 2024-27, HK\$1.03M, Chenxiang QIAN)
- Advancing Sampling Methods via Diffusion-Based Monte Carlo (RGC ECS, 2024-27, HK\$0.83M, Difan ZOU)
- Arbitrary-Control Backdoor Threats in Federated Learning: Attacks and Defenses (RGC ECS, 2024-27, HK\$0.93M, Ka-Ho CHOW)
- Efficient Multi-Task LLM Generative Serving in Heterogeneous Clusters (RGC GRF, 2024-27, HK\$1.20M, Chuan WU)
- Achieving High-performance and Reliable Transaction/Analytical Processing in Edge Computing (RGC GRF, 2024-27, HK\$1.04M, Heming CUI)
- Dynamic non-prehensile manipulation of cloth fabric using multi-modal planning (RGC GRF, 2024-27, HK\$1.13M, Jia PAN)

Diagram 2

2022 28 projects

Funding: HK\$22.78M

- Intelligent Robotics for Elderly Assistance in Hong Kong (RGC TRS, 2020-25, HK\$43.3M, Wenping Wang)
- Accelerating Distributed DNN Training through Fine-grained Communication and Computation Placement and Scheduling (RGC GRF, 2020-23, HK\$0.8M, Chuan Wu)
- Highly Accurate and Efficient Scene Understanding via Mixture of Neural Sub-Network Architecture Search (RGC ECS, 2020-23, HK\$1.1M, Ping Luo)
- On 3D Tooth Tracking and Reconstruction Using Consumer Cameras with Applications in Digital Orthodontics (RGC GRF, 2020-23, HK\$0.6M, Wenping Wang)
- Using Knowledge Graphs for Long-Tail Keyword Query Recommendation in Video Search (HKU-TCL, 2020-23, HK\$1M, Reynold Cheng)
- 抗量子隐私保护密码方案的关键技术研究 (MRPO NSFC, 2020-23, HK\$0.7M, Allen Au)
- A data centric approach for constructing multiple sequence alignments (RGC GRF, 2020-22, HK\$0.5M, Hing-Fung Ting)
- Deep Learning-Driven Schedulers for Distributed Machine Learning Clusters (RGC GRF, 2020-22, HK\$0.7M, Chuan Wu)
- Effective Navigation in Dense Crowds: Getting Robot Unlost, Unfrozen, and Unobtrusive using Deep Reinforcement Learning (RGC GRF, 2020-22, HK\$0.7M, Jia Pan)
- Foundations for Dependently Typed Object-Oriented Languages (RGC GRF, 2020-22, HK\$0.7M, Bruno Oliveira)
- Self-Supervised Knowledge Distillation and Neural Architecture Search for Video Classification and Detection (HKU-TCL, 2020-22, HK\$1M, Ping Luo)
- Towards Blockchain-Enabled Post-Quantum Secure Data Sharing Platform (URC Seed, 2020-22, HK\$0.2M, Allen Au)
- Motif-Paths: A New Technique for Higher-Order Graph Analytics (URC Seed, 2022, HK\$0.07M, Reynold Cheng)
- New Frontiers of Efficient Attention Mechanisms (URC Seed, 2022, HK\$0.07M, Lingpeng Kong)
- Robotic Excavator for Efficient and Non-destructive Exposure of Archaeological Remains (URC Seed, 2022, HK\$0.2M, Jia Pan)
- Towards a Unified Framework for Scalable and Reliable Structured Knowledge Grounding in Task-oriented Dialogue Systems (URC Seed, 2022, HK\$0.07M, Tao Yu)
- Towards efficient and participant-governed exchange of genetic variants in large-scale population genome (URC Seed, 2022, HK\$0.07M, Ruibang Luo)

2021 21 projects Funding: HK\$18.15M

2020 20 projects Funding: HK\$53.01M

2019 20 projects Funding: HK\$8.99M

2018 18 projects Funding: HK\$8.74M

2017 19 projects Funding: HK\$8.37M

2016 23 projects Funding: HK\$19.12M

2015 14 projects Funding: HK\$5.06M

2014 18 projects Funding: HK\$5.58M

2013 10 projects Funding: HK\$3.68M

2012 7 projects Funding: HK\$3.9M

Diagram 3

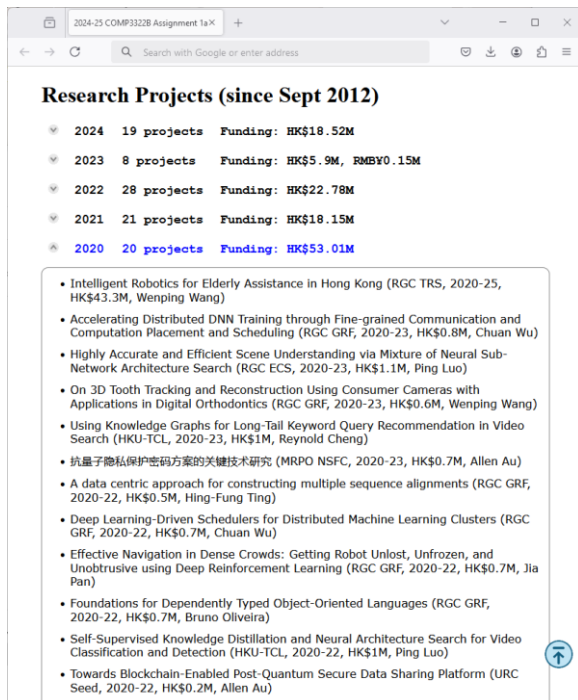


Diagram 4

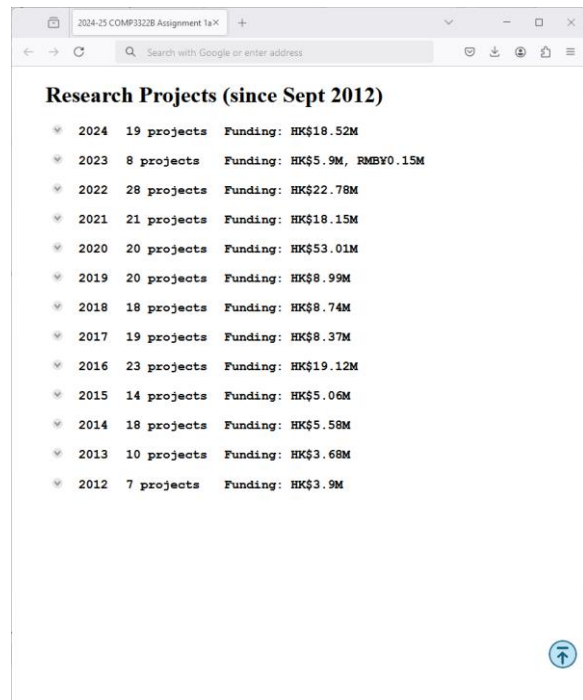


Diagram 5

RESOURCES

You can download the file resource_A.zip from the course's Moodle page. This file contains the following files:

- research_projects.txt – the list of research projects.
- summary.txt – the summary lines of each year.
- close.png, open.png & top.png – image icons. (Note: you can edit the icons to fit for the use.)

GRADING POLICY

Points	Criteria
1.5	[To-do #1 & #2]
0.5	[To-do #3 & #4]
1.5	[To-do #5 & 6]
1	[To-do #7]
1.5	[To-do #8]
-1	Not using index_taskA.html
-3	Using JavaScript

TESTING PLATFORM

We should use Chrome and Firefox to test the web page with two screen widths: $350\text{px} \leq \text{vw} \leq 500\text{px}$ and $\text{vw} \geq 1000\text{px}$.

TASK B (8 points)

The following are the HTML code of a page and the image of that page rendered by the Firefox Web browser without applying any CSS styling. On another page, we have the same page rendered by the same browser with appropriate CSS styling. Complete the assignment by adding the required CSS styling file **cat.css** according to the hints and information given along with the display image. You **CANNOT** make changes to the **body part** of this HTML code, i.e., no class or id attributes and additional HTML code are added to the body part of the HTML code; in addition, you **CANNOT** make changes to the images. You **CANNOT** make use of any JavaScript code or external libraries too.

2024-25 COMP3322B Assignment 1b: X

Search with Google or enter address

"The three little kittens, they lost their mittens,"

From Mother Goose Collection

Source: [Wikipedia](#)

The three little kittens, they lost their mittens,
And they began to cry,
"Oh, mother dear, we sadly fear,
That we have lost our mittens."
"What! Lost your mittens, you naughty kittens!
Then you shall have no pie."
"Meow, meow, meow."
"Then you shall have no pie."

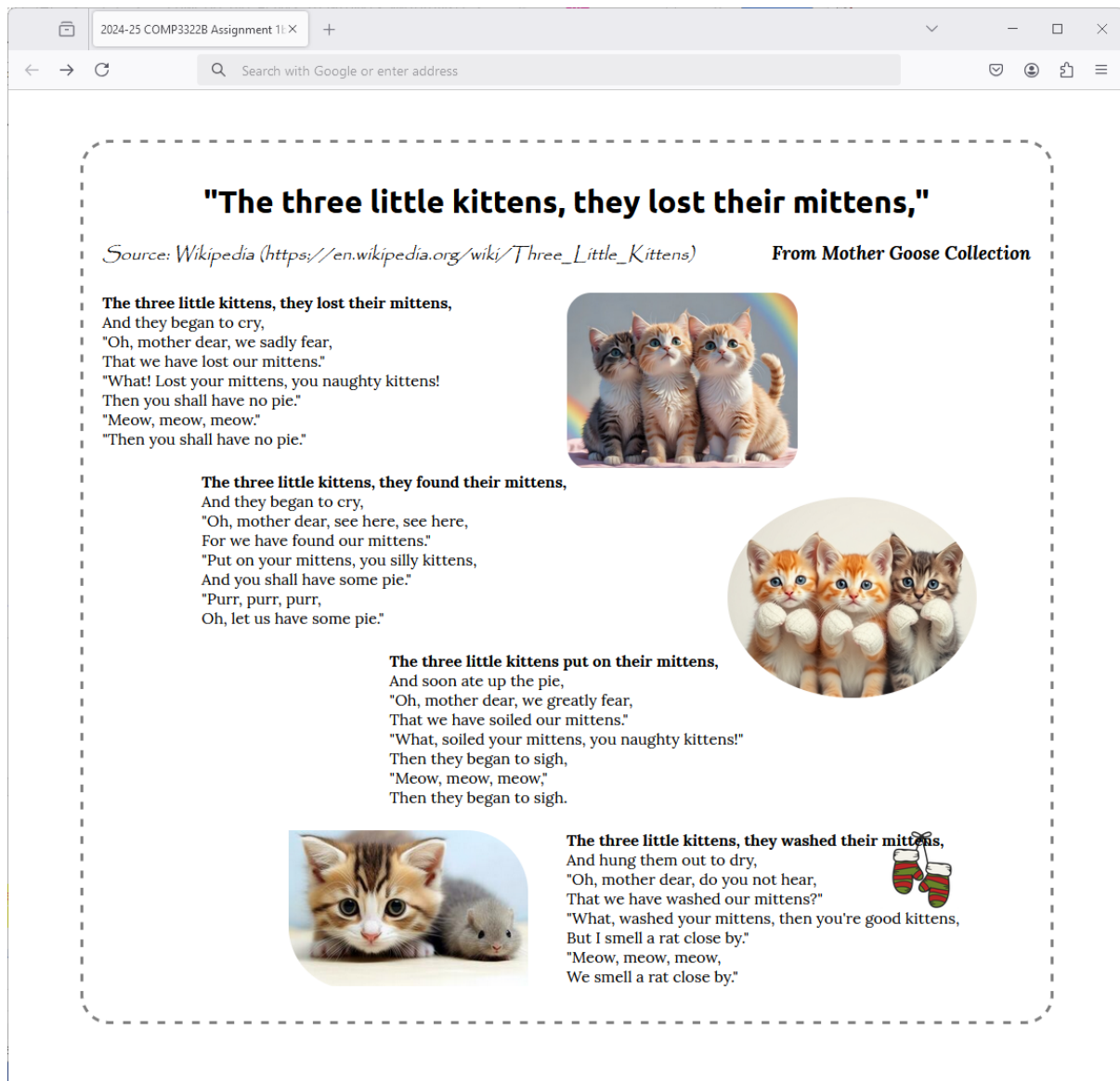
The three little kittens, they found their mittens,
And they began to cry,
"Oh, mother dear, see here, see here,
For we have found our mittens."
"Put on your mittens, you silly kittens,
And you shall have some pie."
"Purr, purr, purr,
Oh, let us have some pie."

The three little kittens put on their mittens,
And soon ate up the pie,
"Oh, mother dear, we greatly fear,
That we have soiled our mittens."
"What, soiled your mittens, you naughty kittens!"
Then they began to sigh,
"Meow, meow, meow,"
Then they began to sigh.

The three little kittens, they washed their mittens,
And hung them out to dry,
"Oh, mother dear, do you not hear,
That we have washed our mittens?"
"What, washed your mittens, then you're good kittens,
But I smell a rat close by."
"Meow, meow, meow,
We smell a rat close by."

```
1 <!doctype html>
2 <html lang="en">
3 <head>
4 <meta charset="utf-8">
5 <title>2024-25 COMP3322B Assignment 1b</title>
6 <link rel='stylesheet' type='text/css' href='cat.css'>
7 </head>
8 <body>
9 <!--
10 YOU ARE NOT ALLOWED TO MODIFY THE BODY PART OF THIS INDEX FILE
11 -->
12 <div>
13 <h1>The three little kittens, they lost their mittens,</h1>
14 <p>From Mother Goose Collection</p>
15 <cite>Source: <a href="https://en.wikipedia.org/wiki/Three_Little_Kittens">Wikipedia</a></cite>
16 <p>
17 The three little kittens, they lost their mittens,<br>
18 And they began to cry,<br>
19 "Oh, mother dear, we sadly fear,<br>
20 That we have lost our mittens."<br>
21 "What! Lost your mittens, you naughty kittens!<br>
22 Then you shall have no pie."<br>
23 "Meow, meow, meow."<br>
24 "Then you shall have no pie."
25 </p>
26 <p>
27 The three little kittens, they found their mittens,<br>
28 And they began to cry,<br>
29 "Oh, mother dear, see here, see here,<br>
30 For we have found our mittens."<br>
31 "Put on your mittens, you silly kittens,<br>
32 And you shall have some pie."<br>
33 "Purr, purr, purr,<br>
34 Oh, let us have some pie."
35 </p>
36 <p>
37 The three little kittens put on their mittens,<br>
38 And soon ate up the pie,<br>
39 "Oh, mother dear, we greatly fear,<br>
40 That we have soiled our mittens."<br>
41 "What, soiled your mittens, you naughty kittens!"<br>
42 Then they began to sigh,<br>
43 "Meow, meow, meow,"<br>
44 Then they began to sigh.
45 </p>
46 <p>
47 The three little kittens, they washed their mittens,<br>
48 And hung them out to dry,<br>
49 "Oh, mother dear, do you not hear,<br>
50 That we have washed our mittens?"<br>
51 "What, washed your mittens, then you're good kittens,<br>
52 But I smell a rat close by."<br>
53 "Meow, meow, meow,<br>
54 We smell a rat close by."
55 </p>
56 </div>
57 </body>
58 </html>
```


Here is an example screenshot of the page (with CSS styling) rendered by Firefox on the Windows platform.



You can assume browsers use their standard display setting for each element except the specific settings specified in this assignment.

DIV ELEMENT – which contains the poem

- Set the width to 1000px
- Set the borders with grey color, dashed pattern, round corner (radius 30px), and the thickness is 3px.
- Set the top margin to 50px
- Center the div element in the middle of the browser
- Set the 4-side paddings to 20px

H1 ELEMENT

- Set the font family to "Ubuntu"
 - Add this line to the <head> element of the index.html file to add the font

<link href="https://fonts.cdnfonts.com/css/ubuntu" rel="stylesheet">

- Center the element in the middle of the div container

PARAGRAPH ELEMENTS

- Set the font family to “Lora”
 - Add this line to the <head> element of the index.html file to add the font
<link href="https://fonts.cdnfonts.com/css/lora-4" rel="stylesheet">

1ST PARAGRAPH

- Align to the right
- Set the font size to 120%, the font style to italics, and the weight of the font to bold

CITE ELEMENT

- Set the font family to “papyrus”
 - Add this line to the <head> element of the index.html file to add the font
<link href="https://fonts.cdnfonts.com/css/papyrus" rel="stylesheet">
- Set the font size to 120%
- Make it appear on the same line as the 1st paragraph

LINK ELEMENT

- Show the URL of the link as part of the text of the link
- Set the font color to black **for all states**
- Disable the default “underline” setting except when the mouse is over the link
- When the mouse pointer is over the link, display a blue wavy underline and change the background color of the link element to a greenyellow color.
Here is the expected effect when the mouse is over the link.

Source: [Wikipedia \(https://en.wikipedia.org/wiki/Three_Little_Kittens\)](https://en.wikipedia.org/wiki/Three_Little_Kittens)

2ND, 3RD, 4TH, & 5TH PARAGRAPHS

- Set the first line to bold

2ND PARAGRAPH

- There is a gap of 24px between the cite element and the 2nd paragraph
- There is a gap of 24px between the 2nd and 3rd paragraphs

3RD PARAGRAPH

- Align the paragraph’s right edge of the content to the middle of the div element
- There is a gap of 24px between the 3rd and 4th paragraphs

4TH PARAGRAPH

- Align to the paragraph in the middle of the div element
- There is a gap of 24px between the 4th and 5th paragraphs

5TH PARAGRAPH

- Align to the paragraph’s left edge of the content to the middle of the div element

1ST IMAGE (THREE_KITTENS.JPG)

- Add this image to the right of the 2nd paragraph
- Align the top of the image with the top of the 2nd paragraph
- Position the left edge of the image in the middle of the div element
- Set the image to 50% of the original size
- Clip the image with a round corner (Hint: using clip-path property)

2ND IMAGE (KITTENS_WEAR_MITTENS.JPG)

- Add this image to the 3rd paragraph
- Align the original top of the image (before clipping) with the top of the 3rd paragraph
- Move the image to the right so that it will not overlap or obscure the 3rd and 4th paragraph and the 1st image
 - Find a suitable location to place the image; there is no specific guideline for this case
- Set the image to 50% of the original size
- Clip the image with an ellipse shape
 - Find a suitable setting so that we can see the three lovely kittens

3RD IMAGE (KITTEN_RAT.JPG)

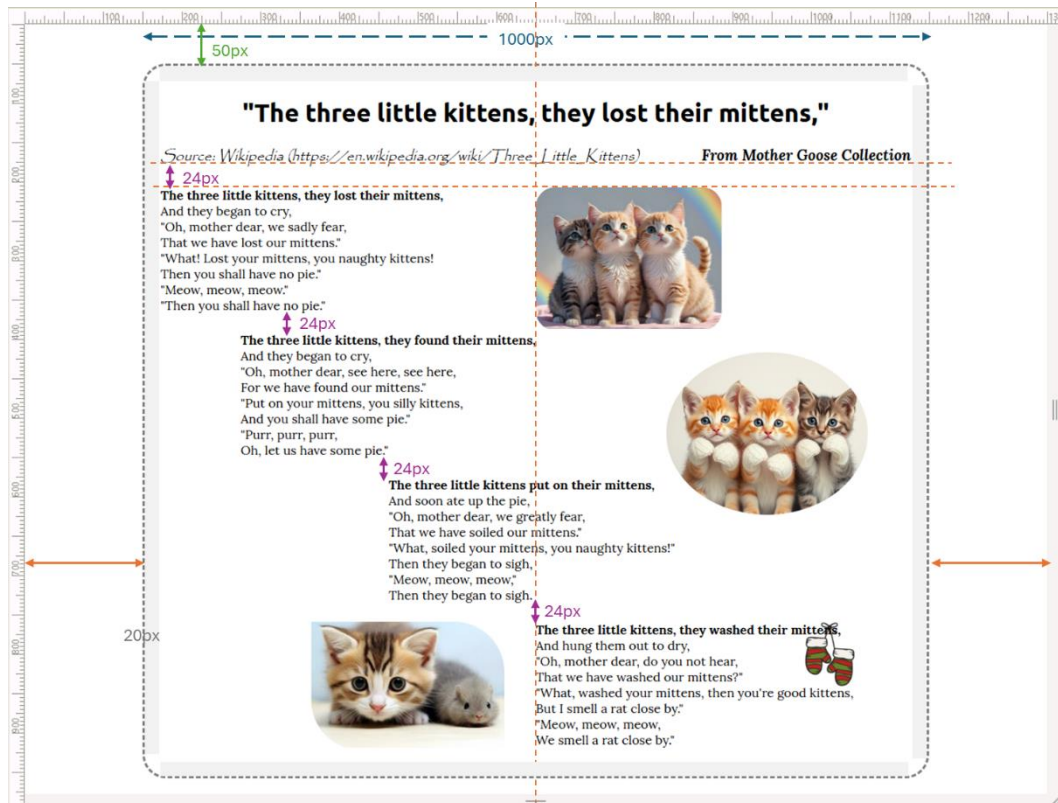
- Add the image to the left of the 5th paragraph
- Align the top of the image with the top of the 5th paragraph
- Position the right edge of the image (before clipping) in the middle of the div element
- Set the image to 80% of the original size
- Clip the image with round corners on top right and bottom left



4TH IMAGE (HANGING_MITTENS.JPG)

- Add the image to the top right of the 5th paragraph
- Set the image to 20% of the original size

The following diagram is another screenshot of the web page with annotations; the page was rendered by Chrome. (Please note that those color lines and measurements are drawn by hand.)



RESOURCES

You can download the file resource_B.zip from the course's Moodle page. This file contains the following files:

- index_taskB.html
- three_kittens.jpg, kittens_wear_mittens.jpg, kitten_rat.jpg, and hanging_mittens.png – four image files

GRADING POLICY

Points	Criteria
0.8	Correctly set the div container
0.3	Correctly set the H1 element
0.4	Correctly set the cite element
0.6	Correctly set the link element
0.6	Correctly set the 1 st paragraph
0.4	Correctly set the 2 nd paragraph
0.5	Correctly set the 3 rd paragraph
0.5	Correctly set the 4 th paragraph
0.5	Correctly set the 5 th paragraph
1.0	Correctly add and set the 1 st image
1.0	Correctly add and set the 2 nd image
1.0	Correctly add and set the 3 rd image
0.4	Correctly add and set the 4 th image
-1.0	Not using index_taskB.html as the filename of the web page
-1.0	Not using cat.css as the filename of the style sheet or placing style rules directly inside index_taskB.html
-4.0	Have modified the body part of the index.html file

TESTING PLATFORM

We should use Chrome and Firefox to test the web pages with screen width > 900px.

Submission

Task A – Compress all required files into a zip file and name it taskA_studentNo.zip; replace studentNo with your HKU student number.

Task B – Compress all required files into a zip file and name it taskB_studentNo.zip.

GenAI usage report (if applicable).

Submit the zip files (and the GenAI usage report) to the course's Moodle page. Please finish this assignment before **Feb 28 Friday 23:59**.

Plagiarism

Plagiarism is a very serious academic offence. Students should understand what constitutes plagiarism, the consequences of committing an offence of plagiarism, and how to avoid it. ***Please note that we may request you to explain to us how your program is functioning as well as we may also make use of software tools to detect software plagiarism.***

Using GenAI

You are allowed to use Generative AI to explore various coding techniques and examples to complete your assignment. Feel free to divide the work into subtasks and employ GenAI to generate code snippets for better understanding. If you are using GenAI, you SHOULD include a report to clearly state the use of GenAI, including:

- The GenAI models you used.
- The prompts/questions you had with the GenAI and the responses. If you have adopted those code snippets, you SHOULD clearly indicate to us.

Should we suspect plagiarism in your submission, it would be unacceptable to justify this by stating you used GenAI for coding guidance and its output merely mirrors that of other students. While GenAI can be a valuable tool for exploring different techniques, we often need to apply adjustments to the provided code snippet to tailor it to our specific tasks.