



前端網絡開發人員證書

5. HTML: Embedding multimedia I

Presented by Krystal Educational Platform



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5.1 Revise

5.1 Revise



- Can you name any contextual classes in BS4? And their colors?
 - e.g. Warning is in yellow
- How many spinner types does BS4 have?
 - Can you name and describe them?
- How to add hover effect to a table using BS4?



5.2 What is multimedia?

5.2 What is multimedia?



- Almost anything you can hear or see
 - E.g. image, audio, video, animations...
- Webpages often contain different types and formats of multimedia elements

5.2.1 Classification of multimedia



- Image
 - Image:
 - Image map: <map>, <area>
 - Different image for different browser size: <picture>, <source>,
 - Video
 - Video file: <video>, <source>
 - Audio
 - Audio file: <audio>, <source>
- Next lesson: <iframe>, <SVG>



5.3 Image



5.3.1 Image:



- **Attributes**

- src: Path to the image (URL / Image file)
- alt: Alternate text for the image when the path is disabled
- width: Change the image width
- height: Change the image height
- usemap: Should be the same with the related <map> name attribute

5.3.1 Image:



- Image file: Method 1
 - Download the image to the same location with the HTML file

6. HTML Embedding multimedia Chrome HTML

The screenshot shows the browser's developer tools with the HTML tab selected. It displays the following code:

```
<!-- Image -->

```

A red box highlights the "src" attribute, and another red box highlights the "JPEG 檔案" label above it. A red bracket points from the "src" attribute to a text box containing the text "src="File name.File format"".

src="File name.File format"

If image found



If image NOT found



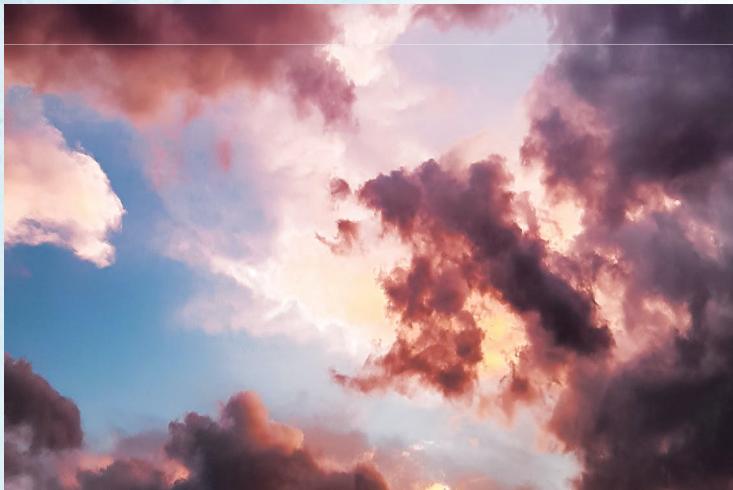
5.3.1 Image:



- Example of changing image size

```

```

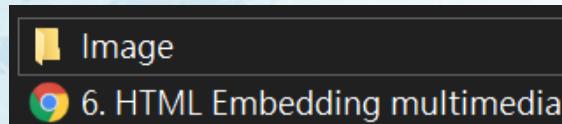


5.3.2 Image:

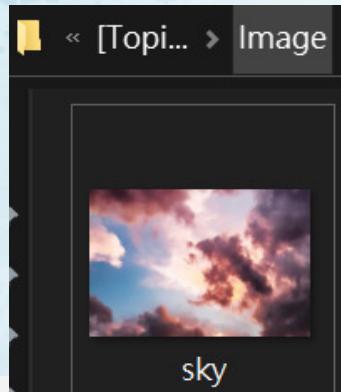


- Image file: Method 2

1. Open another folder in the location of HTML file



2. Put the image inside the new folder



3. Change the path

```

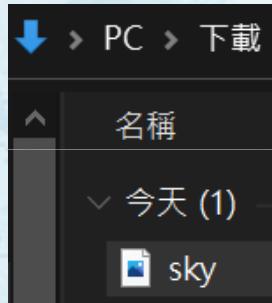
```

5.3.3 Image:



- Image file: Method 3 (Not recommended)

1. Put the image to another location that is NOT related to the HTML file



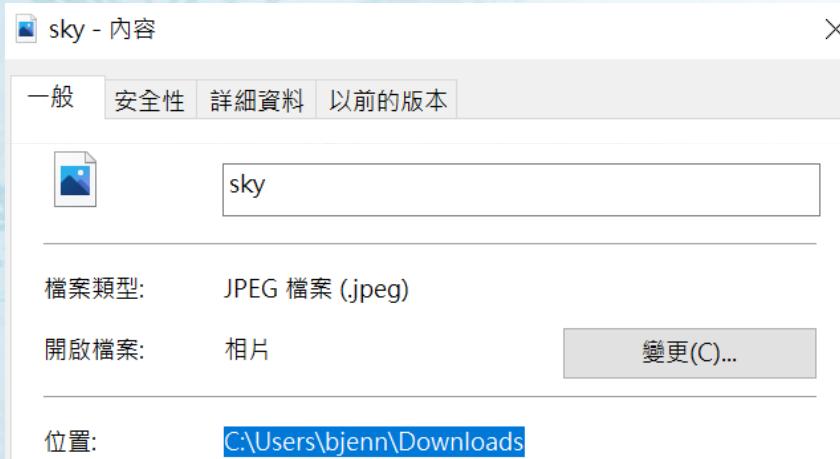
2. Right click the image and select “Properties” at the bottom



5.3.3 Image:



3. Copy the image path



4. Paste to src attribute

- Don't forget to add "\File name.File format" at the end

```

```

5.3.4 Image:



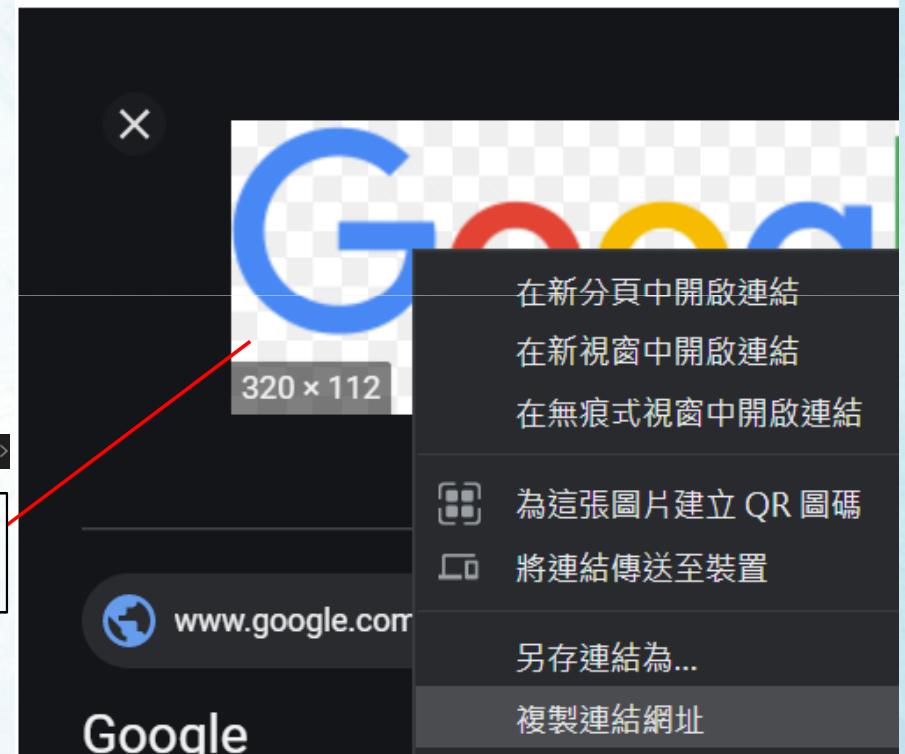
- URL
 - 1. Search for images online
 - 2. Right click any image
 - 3. Click “Copy image URL”
 - 4. Paste to the src attribute

```

```



Transparent background:
Will not be displayed



5.3.5 Image map: <map>



- Defines an image map
- Areas: <area>
 - Defines a clickable area inside the image map
 - Attributes (commonly used)
 - shape: rect / circle / poly
 - rect: Defines a rectangle region
 - circle: Defines a circle region
 - poly: Defines a polygonal region
 - coords: Assign coordinates of the shape
 - href: Specifies the hyperlink target for the clickable area

5.3.5 Image map: <map>



1. Search “google”, and download the first image as an example



5.3.5 Image map: <map>



2. Create the image map

```
<map name="googleLogoMap">  
</map>
```

3. Add the usemap attribute inside to link & <map>

```

```

4. Use <area> to define clickable areas

1. Rectangle: G
2. Circle: O
3. Polygon: g



5.3.6 Image map: <map>



- Rectangle

- To define the coords attribute, we need to know the selected region's:
 1. Top left corner's coordinate
 2. Bottom right corner's coordinate

```
<map name="googleLogoMap">
  <area shape="rect" coords="0,0,?,?" href="https://www.google.com/" alt="Google">
</map>
```

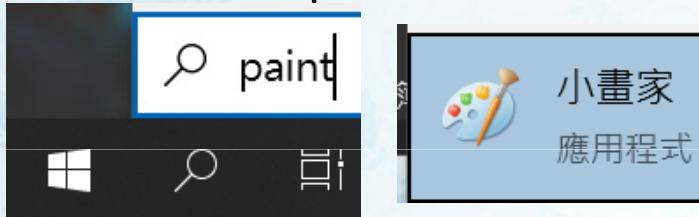


5.3.6 Image map: <map>



- Measure image coordinates

1. Search and open “Microsoft Paint” in Window



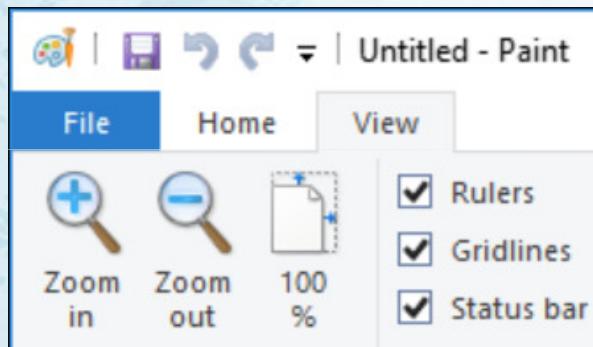
2. Drag and drop the image into the blank space



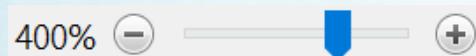
5.3.6 Image map: <map>



3. Click “View”, tick “Rulers” & “Gridlines”



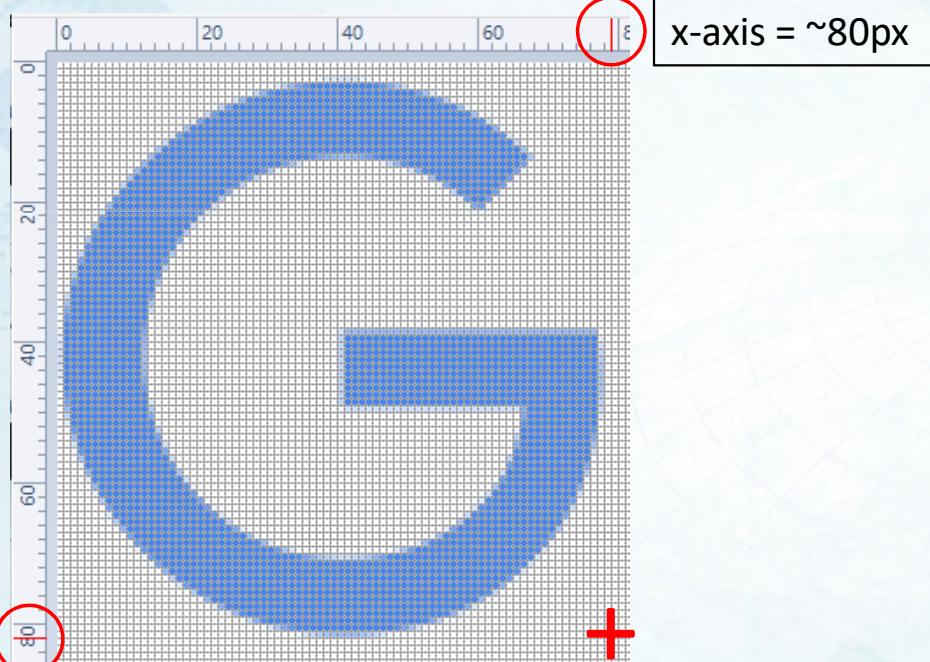
4. Zoom-in the image



5.3.6 Image map: <map>



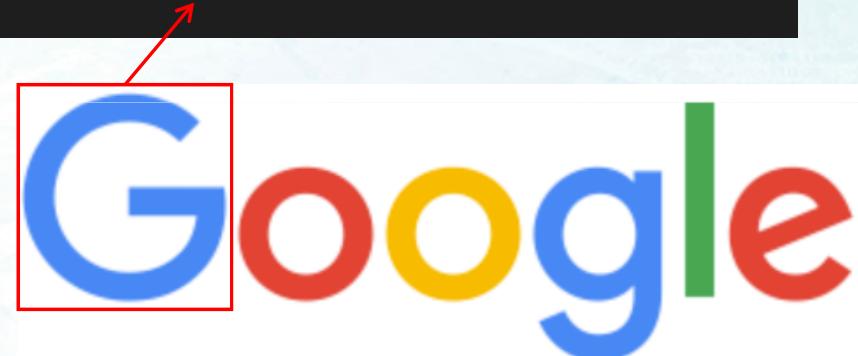
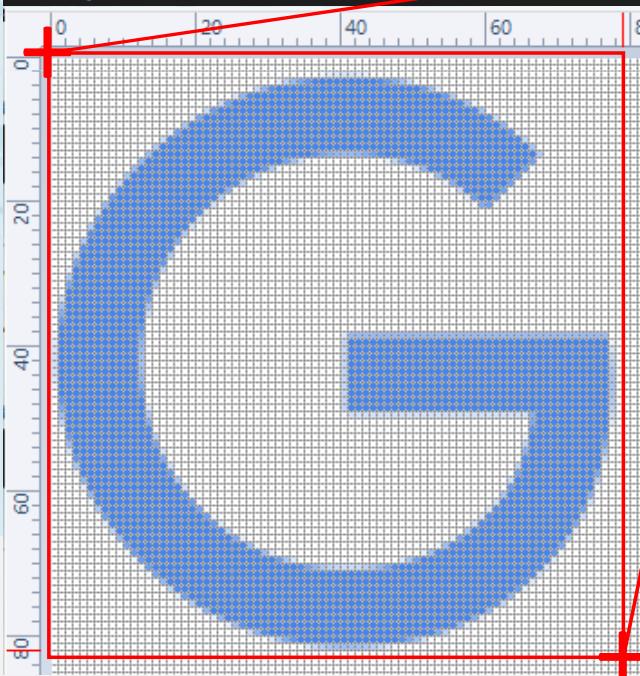
5. Point to the right corner of the letter “G” and check the ruler



5.3.6 Image map: <map>

- Type the coordinates into “coords”

```
<map name="googleLogoMap">
  <area shape="rect" coords="0,0,80,80" href="https://www.google.com/" alt="Google">
</map>
```



Now, if we click this rectangle region,
it directs to “google.com”

5.3.7 Image map: <map>



- Circle

- To define the coords attribute, we need to know the selected region's:
 1. Center coordinate
 2. Radius

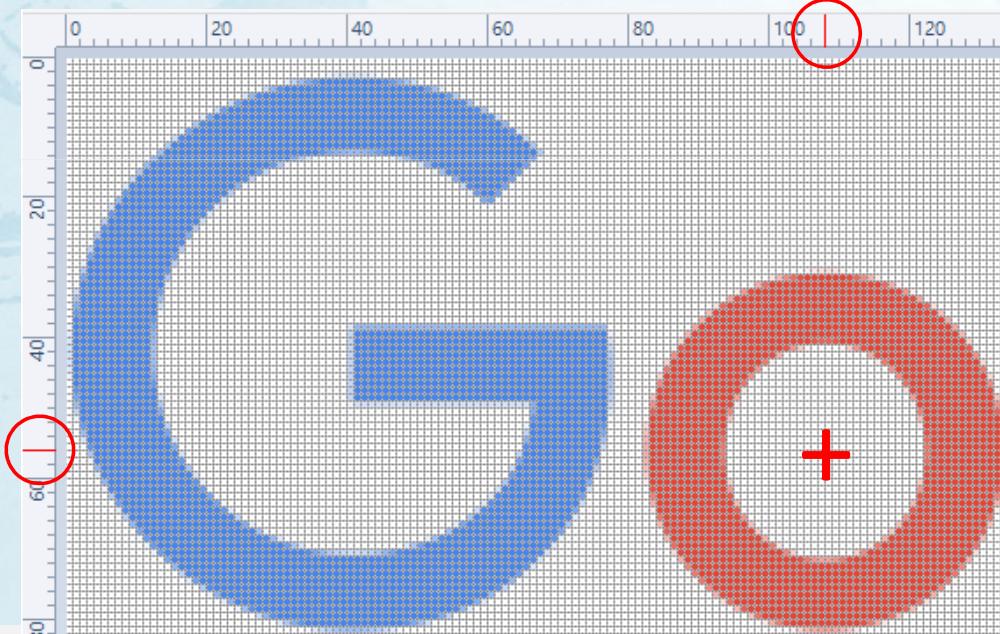
```
<area shape="circle" coords="?, ?, ?" href="https://en.wikipedia.org/wiki/O" alt="O">
```



5.3.7 Image map: <map>



- Point to the middle of the letter “O” and check the ruler

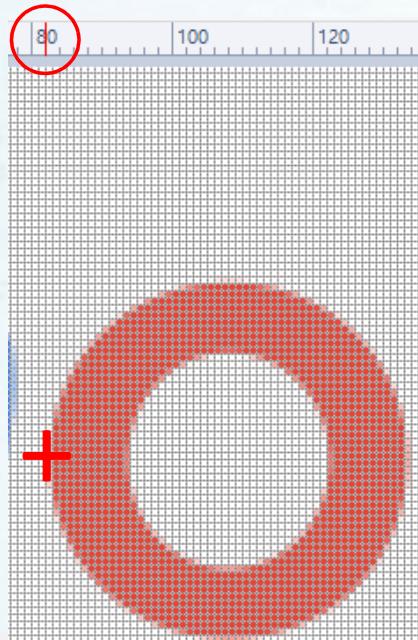


Center = (~108px, ~56px)

5.3.7 Image map: <map>



- Point to the left side of the letter “O” and check the ruler



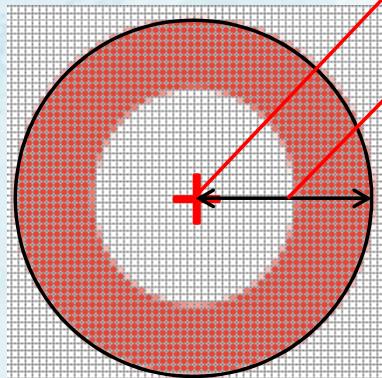
Radius $\approx 108 - 82$
 $\approx 26\text{px}$

5.3.7 Image map: <map>



- Type the center coordinate & radius into “coords”

```
<area shape="circle" coords="108,56,26" href="https://en.wikipedia.org/wiki/0" alt="0">
```



Now, if we click this circle region,
it directs to “<https://en.wikipedia.org/wiki/0>”

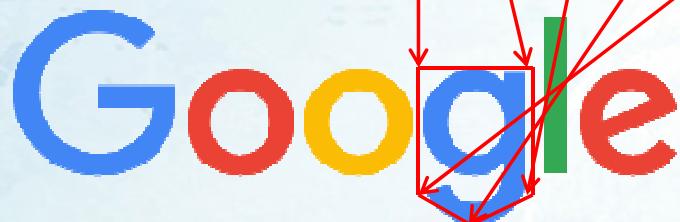
5.3.8 Image map: <map>



- Polygon

- To define the coords attribute, we need to know the selected region's:
 1. All coordinates

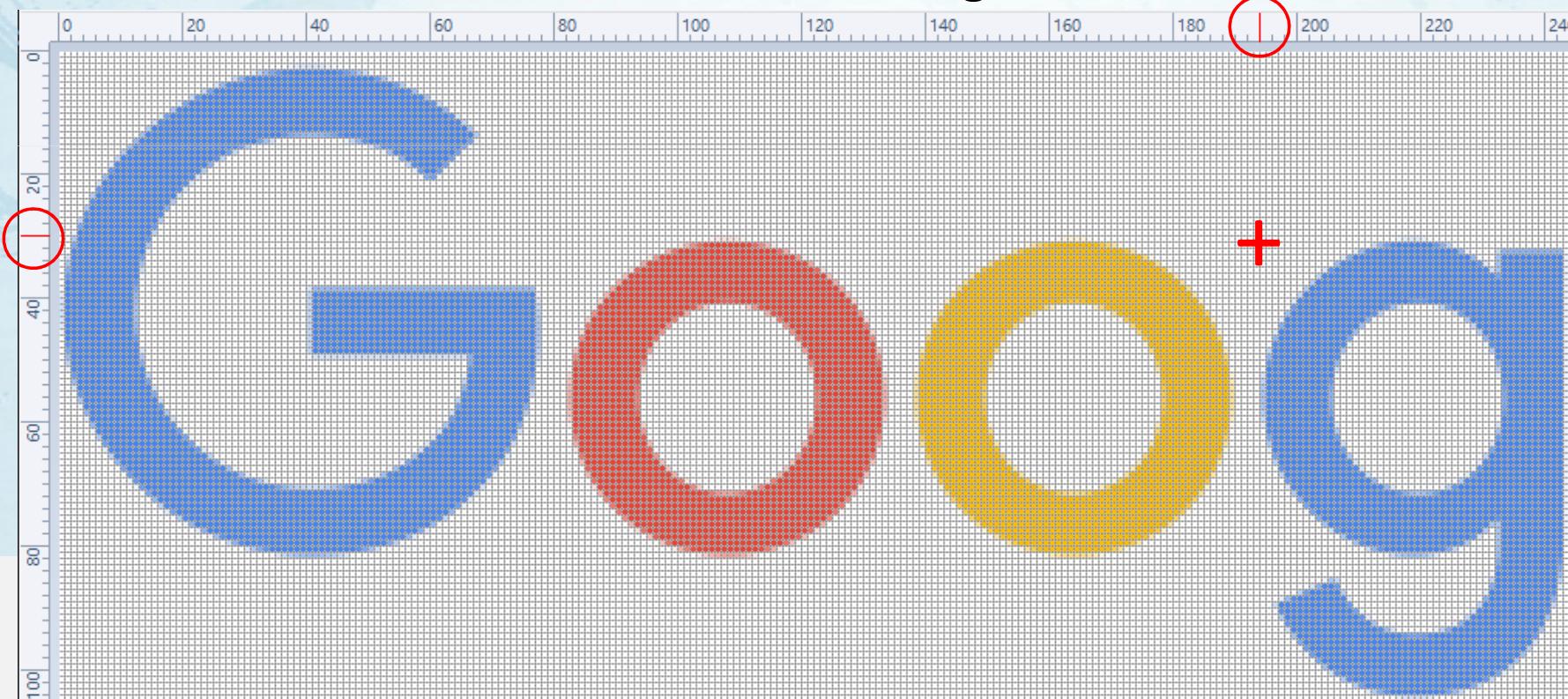
```
<area shape="poly" coords="?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?" href="https://en.wikipedia.org/wiki/G" alt="G">
```



5.3.8 Image map: <map>

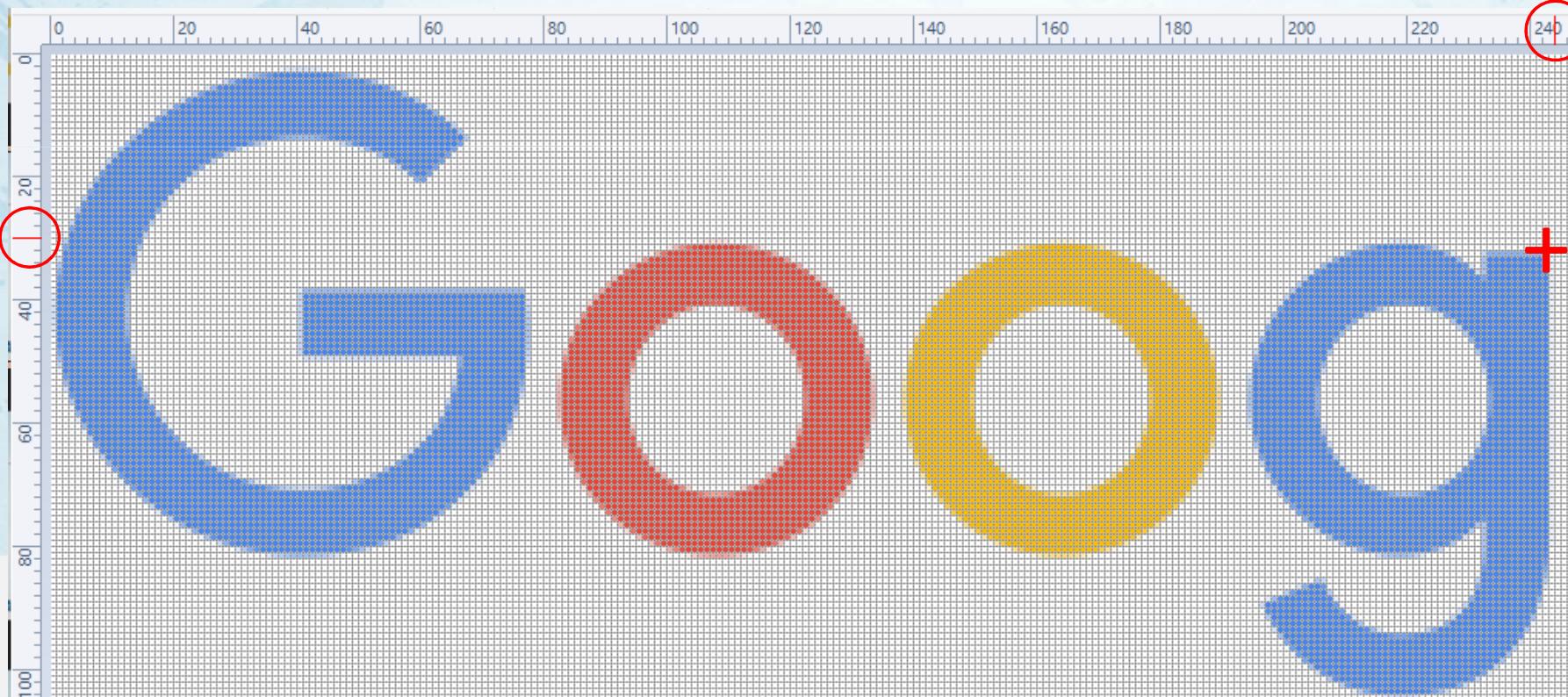
- Check the 5 coordinates of the letter “g”

1st coordinate = (~194px, ~30px)

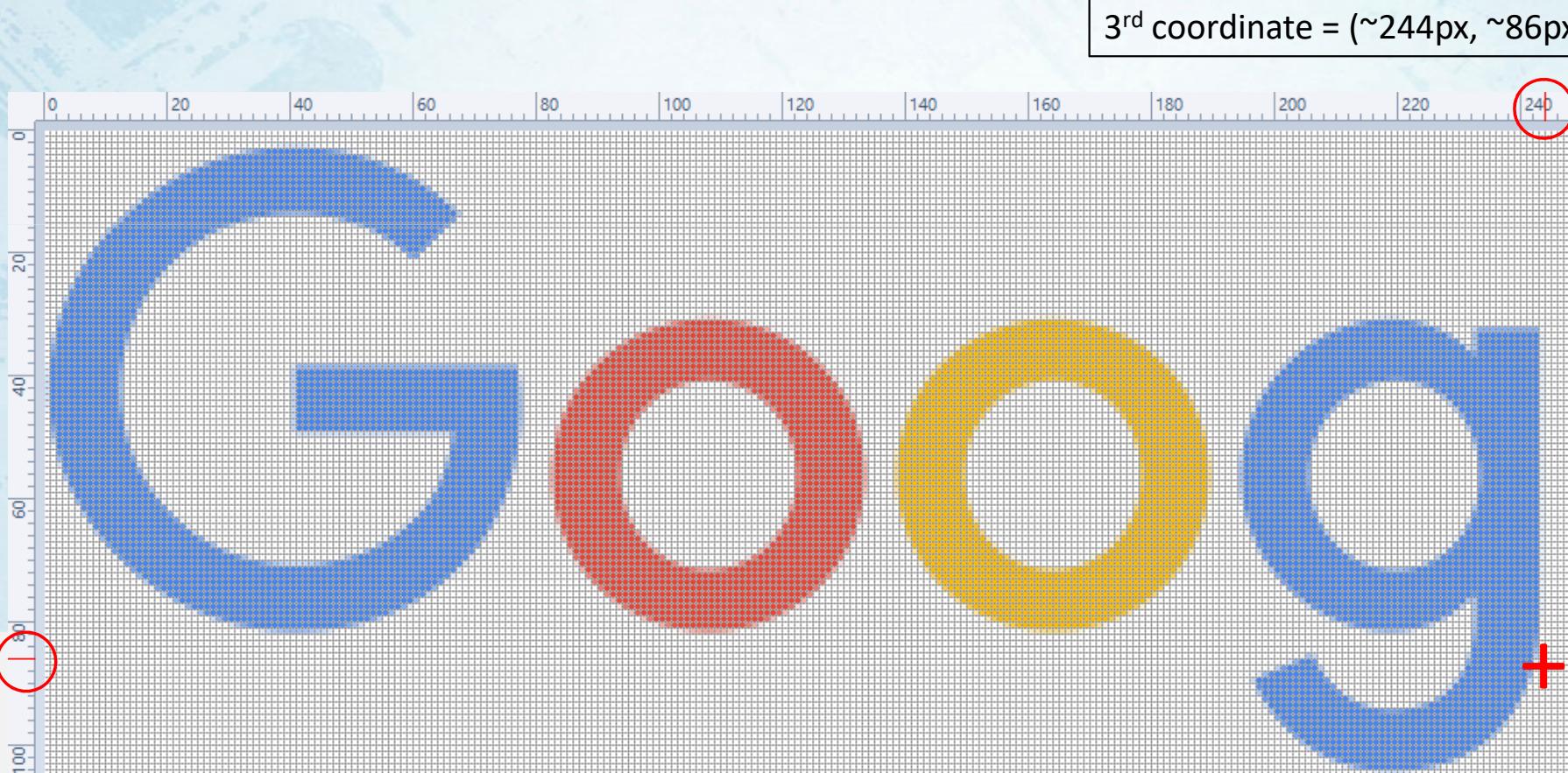


5.3.8 Image map: <map>

2nd coordinate = (~244px, ~30px)

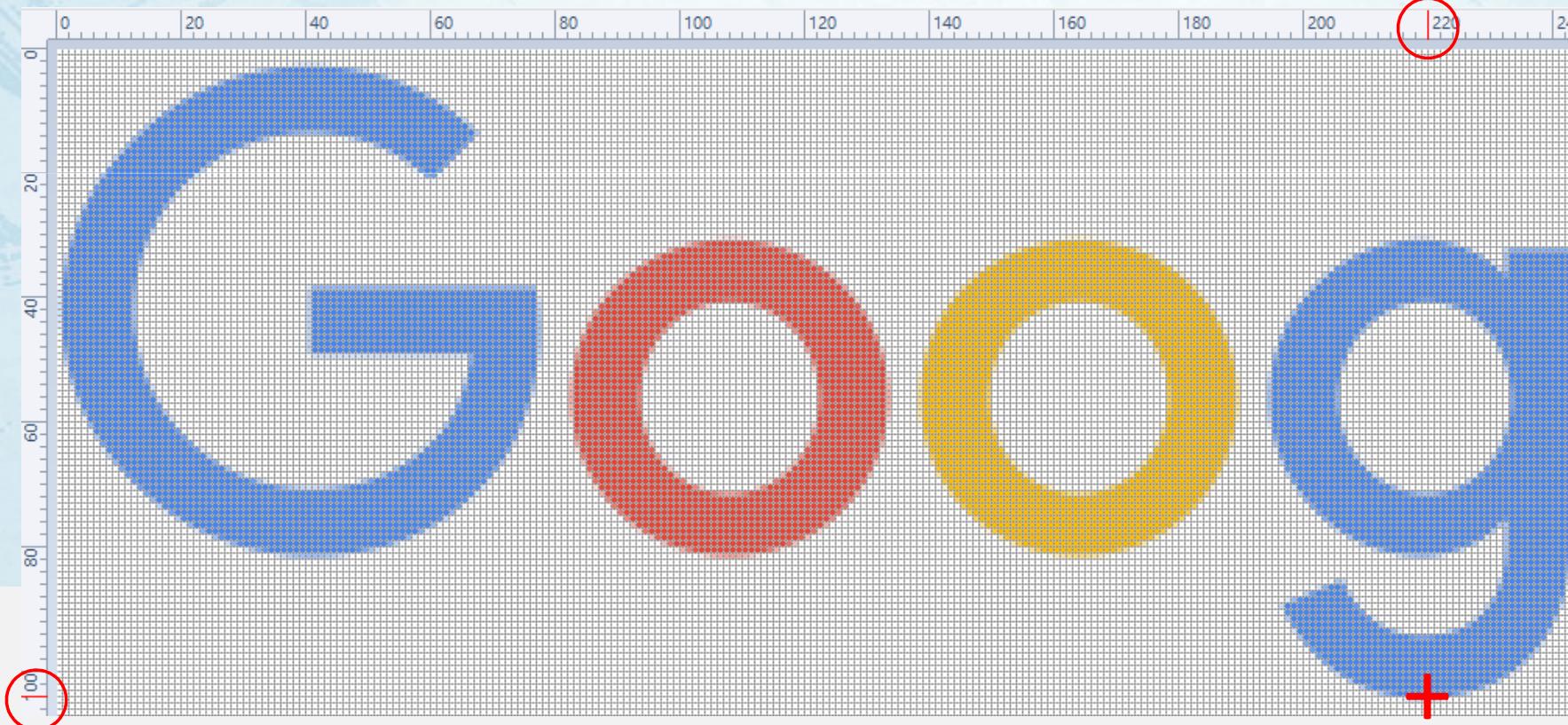


5.3.8 Image map: <map>



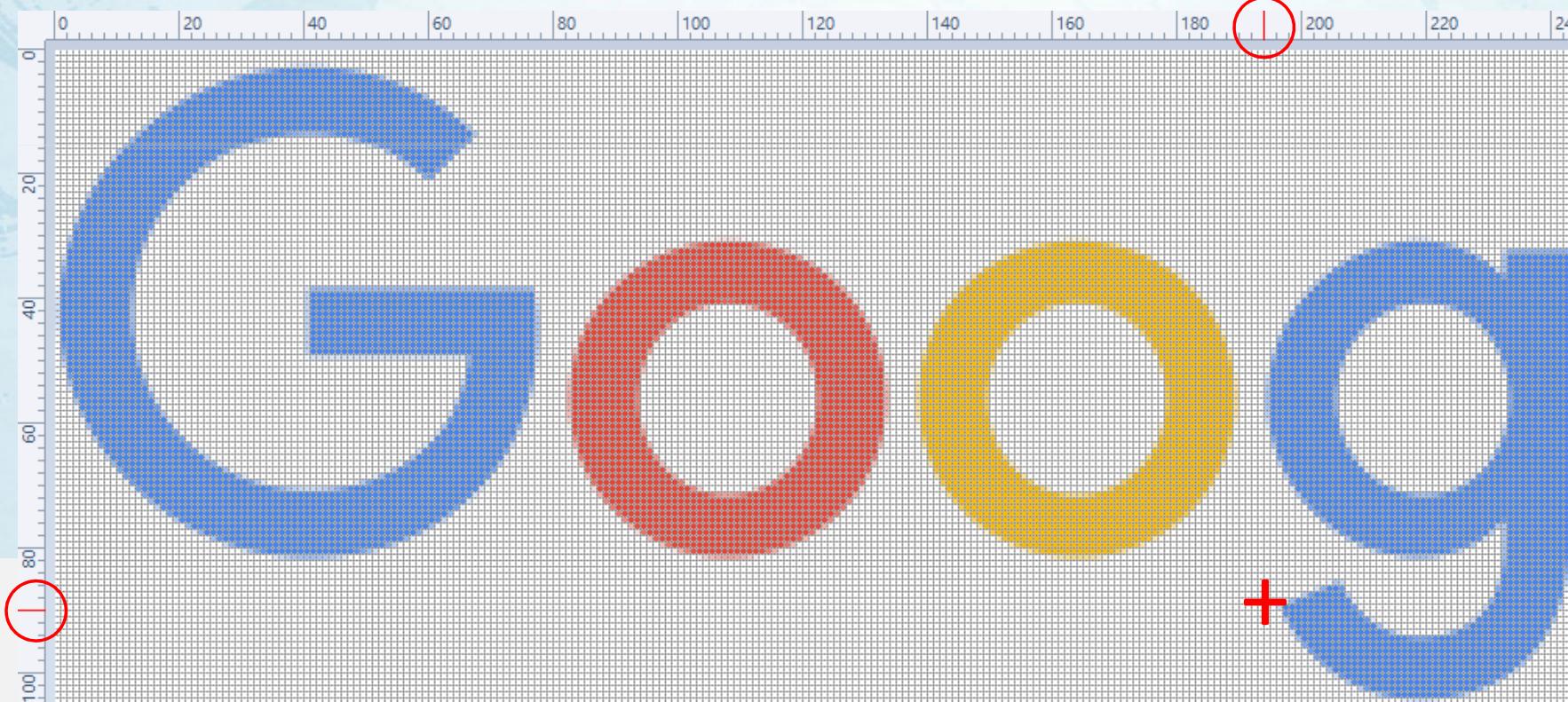
5.3.8 Image map: <map>

4th coordinate = (~220px, ~104px)



5.3.8 Image map: <map>

5th coordinate = (~194px, ~90px)

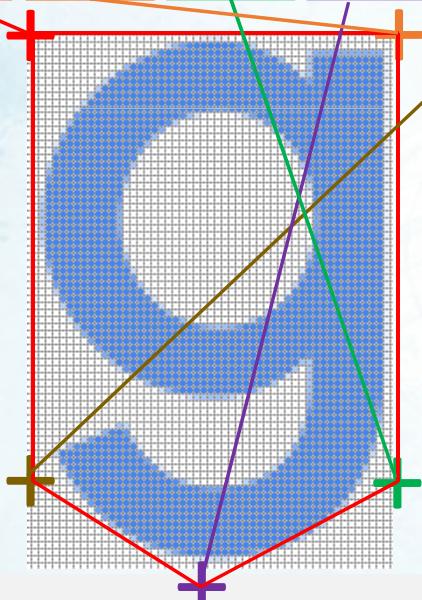


5.3.8 Image map: <map>



- Type the coordinates into “coords”

```
<area shape="poly" coords="194,30,244,30,244,86,220,104,194,90" href="https://en.wikipedia.org/wiki/G" alt="G">
```



Now, if we click this polygon region,
it directs to “<https://en.wikipedia.org/wiki/G>”

5.3.9 Picture: <picture>



- Shows different images for different screen sizes
- Image: <source>
 - Attribute
 - media: sets the browser width
 - srcset: sets the image path
- Image:
 - Puts this at the bottom so when the images in <source> can't be displayed, this image will display instead

```
<picture>
  <source media="(min-width: 700px)" width="200px" srcset="URL/File">
  <source media="(min-width: 500px)" width="100px" srcset="URL/File">
  
</picture>
```

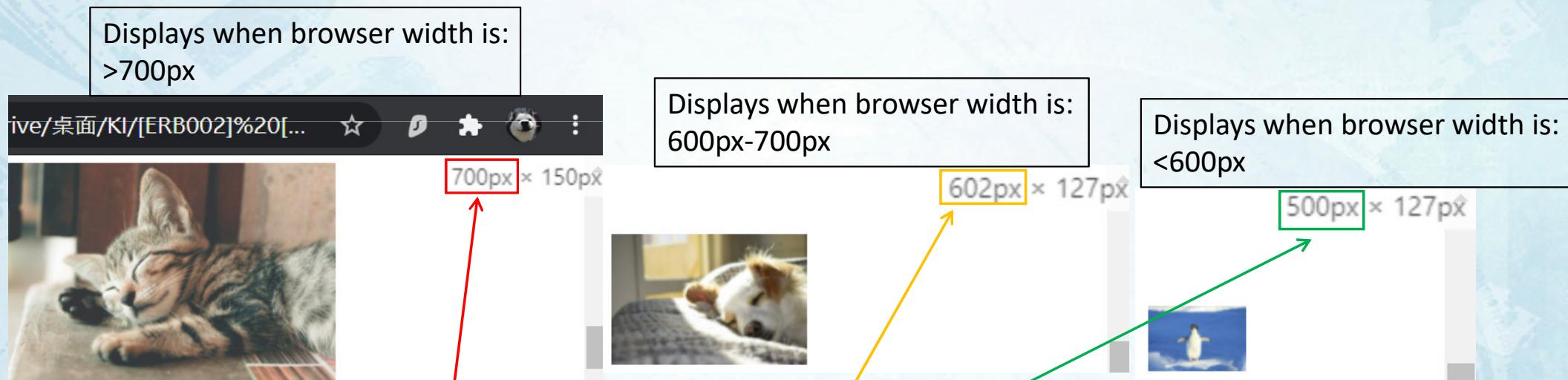
5.3.9 Picture: <picture>

- Turn on Developer Tool and try to resize the browser width

Displays when browser width is:
>700px

Displays when browser width is:
600px-700px

Displays when browser width is:
<600px



```
<picture>
  <source media="(min-width: 700px)" width="200px" srcset="path">
  <source media="(min-width: 600px)" width="100px" srcset="path">
  
</picture>
```



5.4 Video

5.4 Video file: <Video>



- Video file's path & format: <source>
- Download any video to try

The screenshot shows a video player with the following code:

```
<!-- Video -->
<video width="300" controls>
  <source src="Video/reading.mp4" type="video/mp4">
  Your browser does not support the video tag.
</video>
```

The video content is a slide titled "Passion Flower" with text about the flower. Below the video, there is a transcript of a poem and a timestamp bar.

Transcript (approximate text):

There used to be a metro station that still remains. There is a huge traffic there, cars often honking and people rushing. There were a few points there that I would like to see. Eiffel Tower for one because such views overlooking the city are just amazing. I parked on Champs-Elysées on foot for a tourist. It was a thrill because I've seen many boutiques and stores with colorful souvenirs. I stood under the shade of trees and went to Notre Dame Cathedral, an exceptional cathedral. And next was the Sacré-Cœur Basilica that sits high on the hill, and then went to Lyon, famous from history train station this one I visited.

Passion Flower
The flower, dressed in red, the more it blossomed, the more it was loved. I walked through a beautiful bouquet of passion flowers.
The flowers surrounded her red full lips, she was proud of them, and overflowed with admiration. Many men envied their beauty.
Her beauty, just as the red flowers in full bloom, fragrances of those flowers filled the room, she walked proudly with her head lifted high, enjoying the prime time in her life.

0:00 / 0:18

0:00 / 0:18

SCAPE
School of Continuing and Professional Education
香港專上學院
A.Y.U.-S.P.E.

- Attributes:
 1. controls
 2. autoplay
 3. muted
 - Combination is allowed:
autoplay muted
controls muted

It is noted that Google Chrome does NOT support “autoplay”



5.5 Audio

5.5 Audio file: <audio>



- Audio file's path & format: <source>
- Download any audio to try

```
<!-- Audio -->
<audio controls>
  <source src="Audio/beat.mp3" type="audio/mpeg">
  Your browser does not support the audio element.
</audio>
```



- Attributes:
 1. controls
 2. autoplay
 3. muted
 - Combination is allowed:
controls muted

It is noted that Google Chrome
does NOT support “autoplay”

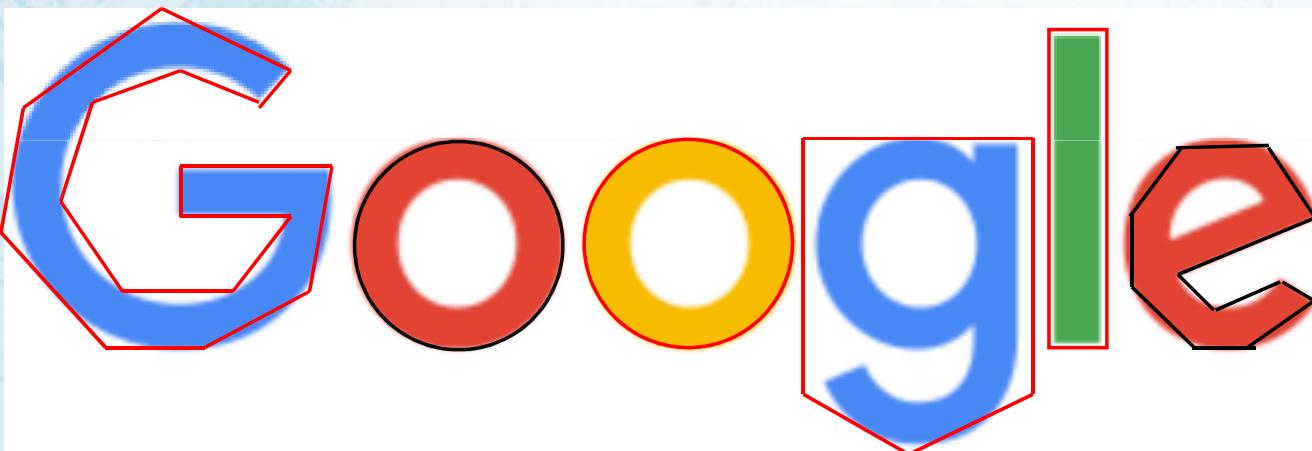


5.6 Exercise

5.6 Exercise



- Use <map> to make these regions clickable



- Add `target="_blank"` in the <area> if you want to open the link in new tab

5.6 Exercise



```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Exercise5</title>
5      <meta charset="UTF-8">
6      <meta http-equiv="refresh" content="30">
7      <meta name="viewport" content="width=device-width, initial-scale=1.0">
8  </head>
9  <body>
10     <!-- Header -->
11     <header>
12         <h1>5. HTML: Embedding of multimedia I</h1>
13         <h2>Presented by Krystal Institute</h2>
14     </header>
```

5.6 Exercise



```
15    <main>
16        <!-- Image -->
17        
19        <map name="googlelogoMap">
20            <area shape="poly" coords="32,2,68,12,58,20,40,14,18,24,12,46,28,68,52,68,66,50,40,50,40,38,
21            78,38,74,64,56,80,28,80,8,66,0,50,0,32,12,14" href="https://en.wikipedia.org/wiki/G" alt="G">
22            <area shape="circle" coords="108,56,26" href="https://en.wikipedia.org/wiki/O" alt="O">
23            <area shape="circle" coords="164,56,26" href="https://en.wikipedia.org/wiki/O" alt="O">
24            <area shape="poly" coords="194,30,244,30,244,86,220,104,194,90"
25            href="https://en.wikipedia.org/wiki/G" alt="G">
26            <area shape="rect" coords="252,6,262,80" href="https://en.wikipedia.org/wiki/L" alt="L">
27            <area shape="poly" target="_blank" coords="284,32,304,32,315,49,282,64,294,71,306,65,314,70,
28            301,81,281,79,270,67,269,47" href="https://en.wikipedia.org/wiki/E" alt="E">
29        </map>
30    </main>
31    <footer>
32        <!-- copyright -->
33        <div style="text-align: center;">© 2021 Copyright: Krystal Institute</div>
34    </footer>
35 </body>
36 </html>
```

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MC Quiz



- 10 minutes

<https://www.online-stopwatch.com/countdown/>



Reference



- Freesound (2017). *Blues Beat.MP3* [online] available from <<https://freesound.org/people/samueloak89/sounds/405641/>> [20 May 2021]
- Pexels (2021). *The best free stock photos & videos shared by talented creators.* [online] available from <<https://www.pexels.com/>> [20 May 2021]
- W3Schools (2021). *HTML Tutorial* [online] available from <<https://www.w3schools.com/html/default.asp>> [20 May 2021]