

Q1. Discuss in detail the concept of Document Object Model for an HTML page. Elaborate using illustrations and code snippets in HTML. (30 points)

The DOM put simply is a way to document HTML as a tree-structure where each node is an object representing a part of the HTML code.

- Here is some Simple HTML code

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  |   <title>DOM Example</title>
5  </head>
6  <body>
7  |   <h1 id="header">Hello, DOM!</h1>
8  |   <p class="description">This is a simple example.</p>
9  </body>
10 </html>
```

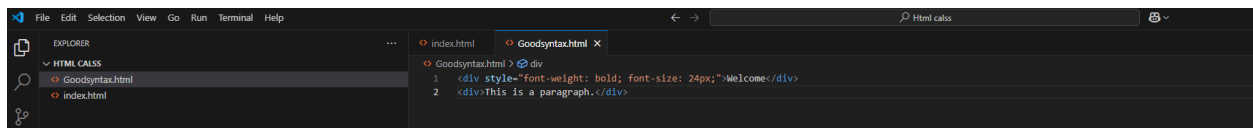
- Here is what it would look like if it was documented using DOM

```
Document
├── html
│   ├── head
│   │   └── title: "DOM Example"
│   └── body
│       ├── h1 (id="header"): "Hello, DOM!"
│       └── p (class="description"): "This is a simple example."
```

Q2. Comment on the following statement, “Learning HTML is more about learning the semantic than the syntax”. Explain your answer with the help of an example use-case scenario. (15 points)

"Learning HTML is more about learning the semantics than the syntax" expresses the importance of understanding the meaning and proper use of elements rather than just memorizing tag, having a good understanding of the concept instead of memorizing the examples

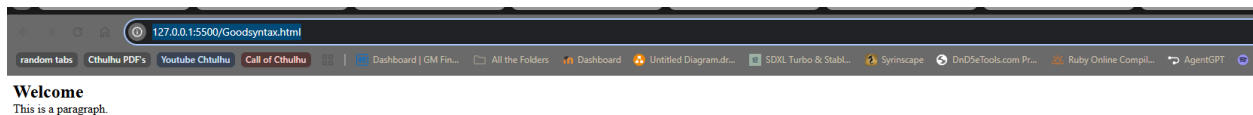
You can visualize this with this syntax:



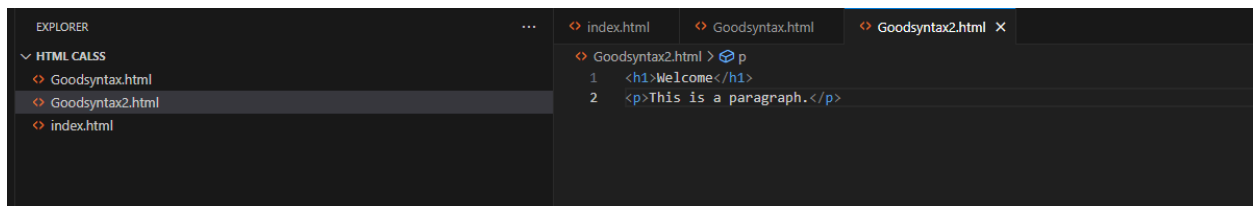
The screenshot shows the VS Code editor with a file named 'Goodsyntax.html' open. The code is as follows:

```
1 <div style="font-weight: bold; font-size: 24px;">Welcome</div>
2 <div>This is a paragraph.</div>
```

Here is the output:



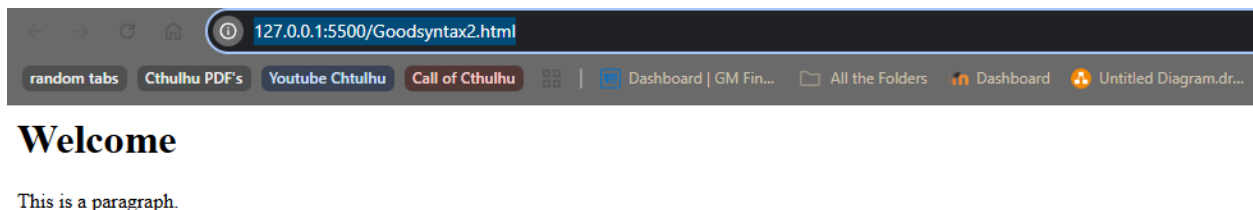
Here is the same code but now it is simpler to understand:



The screenshot shows the VS Code editor with a file named 'Goodsyntax2.html' open. The code is as follows:

```
1 <h1>Welcome</h1>
2 <p>This is a paragraph.</p>
```

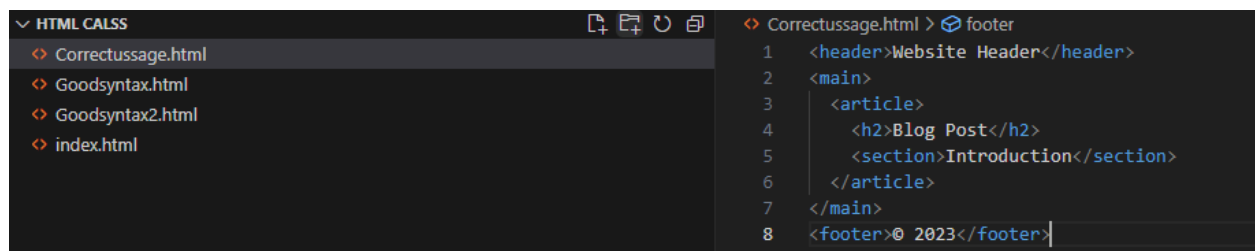
Here is the output:



Q3. What is the correct usage of the following HTML5 semantic elements: <article>, <footer>, <header>, <section>, <main>? (15 points)

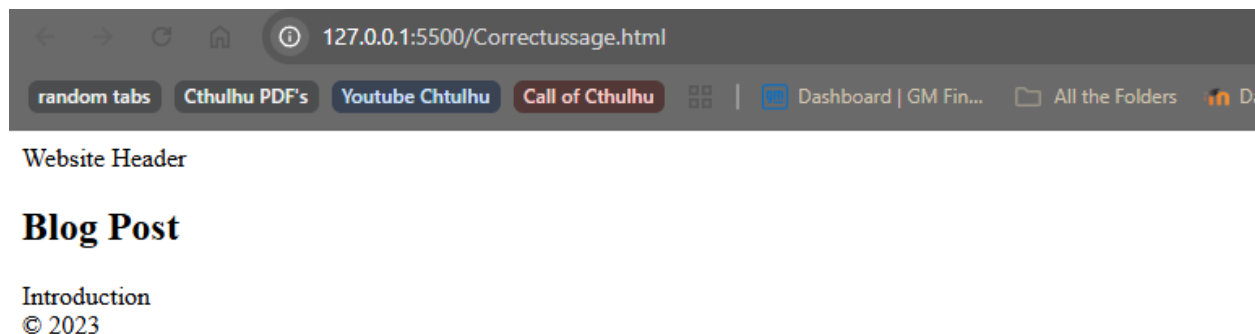
- <article>: Self-contained content
- <footer>: Footer for a section/page
- <header>: Introductory content
- <section>: Thematic grouping
- <main>: Primary content of the page.

Here is an example of each semantic elements in their correct use:



```
Correctusage.html > footer
1 <header>Website Header</header>
2 <main>
3   <article>
4     <h2>Blog Post</h2>
5     <section>Introduction</section>
6   </article>
7 </main>
8 <footer>© 2023</footer>
```

Here is the output:

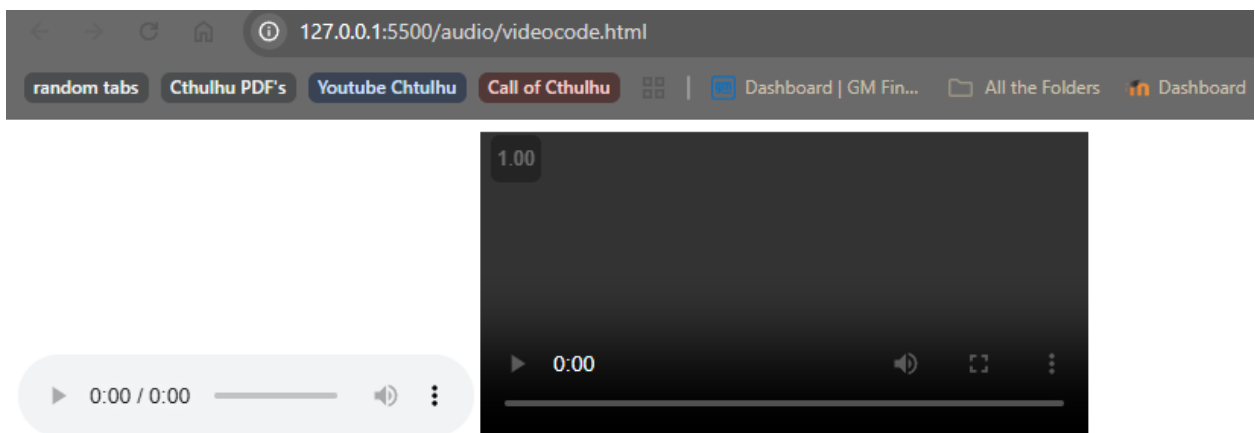


Q4. Write the HTML5 code snippet to embed an audio file and a video file in your webpage.  
What are the acceptable audio and formats for embedding on web page? (10 points)

```
HTML CALSS
> assets
  > audio
    > videocode.html
    > Correctussage.html
    > Goodsyntax.html
    > Goodsyntax2.html
    > index.html

audio > videocode.html > video
1 <audio controls>
2   <source src="ValorantGaming.mp3" type="audio/mpeg">
3   Your browser does not support audio.
4 </audio>
5
6 <video controls width="480">
7   <source src="Apexclip.mp4" type="video/mp4">
8   Your browser does not support video.
9 </video>
```

- Here is the output :



- These are most acceptable formats for both:
  - Audio: MP3, WAV, OGG.
  - Video: MP4, WebM, Ogg.

Q5. What is the difference between <figure> and <img> tags. (10 points)

- <img>: Embeds an image.
- <figure>: Wraps media

Here is the code:

```
HTML CALSS
> assets
  > audio
    > videocode.html
  > art.jpg
  > Artfile.html
  > Correctussage.html
  > Goodsyntax.html
  > Goodsyntax2.html
  > index.html

Artfile.html > figure
1 <figure>
2   
3   <figcaption>Fig 1: Modern Art</figcaption>
4 </figure>
```

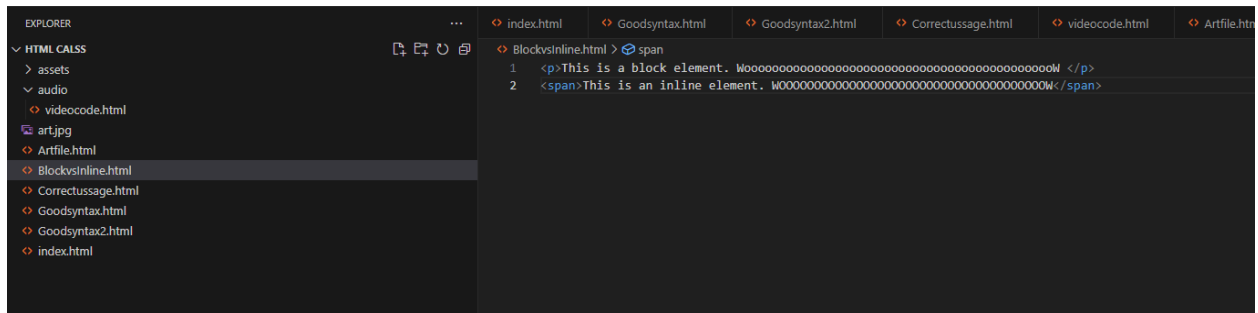
Here is the output:



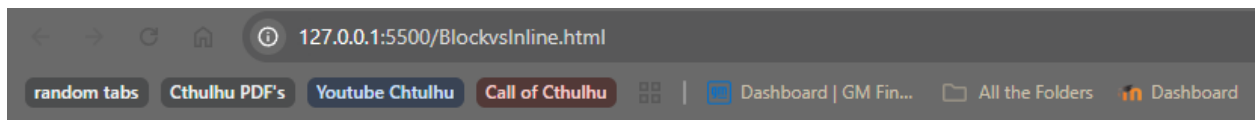
Fig 1: Modern Art

Q6. What is the difference between Block display elements and inline display elements?  
Give examples of each. (10 points)

- **Block:**
  - Start on a new line
  - Take up full width available
  - e.g., <div>, <p>, <h1>
- **Inline:**
  - Flow within text
  - Only take up necessary width Occupies needed width
  - e.g., <span>, <a>, <img>



Here is the output:



This is a block element. WoooW

This is an inline element. WOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

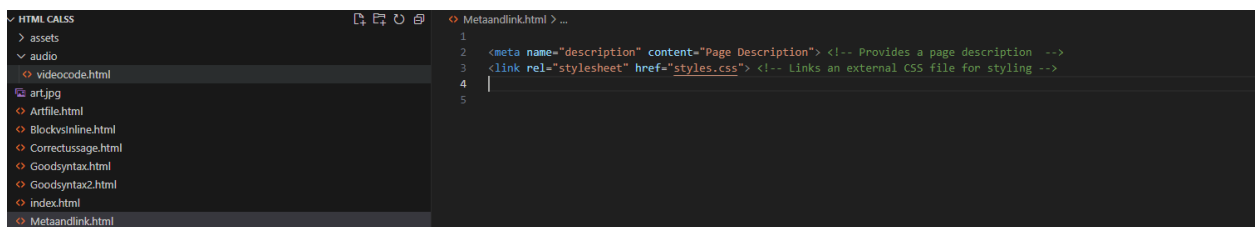
Q7. What are meta and link tags used for in HTML? Describe their usage with code snippets with detailed explanations. (10 points)

Link Tags:

- link tags define relationships between the current document and external resources
  - Connecting stylesheets
  - Defining favicons
  - Resource preloading
  - Alternate versions of the document

Meta:

- Meta tags provide metadata about the HTML document
  - Character encoding
  - Social media previews
  - Browser behavior control



## Citations

Questions 1-7: Stockoverflow.com

Question 5: YouTube

Question 4: YouTube