Data Stack Defenders

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Module	**: 64-31 Web Development**
Submitted on	**: 28.10.2023**

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1 Introduction

1.1 Game description

"Beyond the digital horizon lies Dataopolis, a city gleaming with towers of radiant light, where data streams pulse like the very heartbeat of the universe."
"But from the deepest cybernetic void, Glichar emerges, wielding a treacherous hook. The city's luminance dims, and chaos threatens its very foundation."
"You, the chosen Stack Engineer, stand between order and anarchy. With every block you align, you defy Glichar's intent, restoring balance bit by bit."
"But beware! The hook's deceptive dance becomes more intricate, its speed, more relentless. Your skill, strategy, and reflexes are the keys to safeguarding Dataopolis."
"With each level you master, new sectors of the city emerge from darkness.
"The digital destiny of Dataopolis is in your hands! Rise to the challenge, resist Glichar's onslaught, and become the beacon that reignites the city's brilliance!"
How to Play
Data blocks float around, and you have to align them to restore the city's luminance.
Glichar tries to disrupt this process with its hook, introducing challenges and levels.

1.2 Goal of the game

The goal of DataStack Defenders is to restore the luminance of Dataopolis by skillfully stacking blocks hanging from Glichar's hook to build tall and stable towers. Players must overcome challenges posed by the hook's movements and complete objectives in each level to progress and bring Dataopolis back to its former brilliance**.**

1.3 Character

1.Player The player assumes the role of the Stack Engineer, the hero chosen to defend Dataopolis. The player is in control of the blocks and must use precision, strategy, and reflexes to build tall and stable towers. The Stack Engineer is essentially the protagonist, working to thwart Glichar's disruptive actions and bring order and balance to the city.
2. Glichar: Glichar serves as the game's antagonist, although not a character that is seen directly. Instead, Glichar's hook is the primary element through which the antagonist interacts with the game. Glichar's role is to disrupt the tower-building process by controlling the hook's movements. The hook's erratic and challenging movements introduce obstacles and challenges for the player.

1.4 Rules of the game

Block Stacking: Players are tasked with stacking data blocks to build towers. The goal is to build stable towers by placing the blocks securely on top of each other.

Glichar's Hook: Glichar's hook, controlled by the game's AI, moves around the screen. It holds a block that players must attach to the existing tower. The hook's movements are designed to introduce challenges and obstacles for the player.

Balance and Stability: Players must stack blocks with precision and attention to balance. If the tower becomes too unstable and falls, the player loses the level.

Level Progression: The game is divided into levels, each with its own objectives and challenges. Players must complete these levels to progress and restore different sectors of Dataopolis.

Increasing Difficulty: As players advance through the game, the hook's movements become more intricate and challenging, requiring the player to adapt and improve their skills.

Winning and Losing: Players win a level by meeting the height requirements. They lose the level if the tower collapses.

Power-Ups: The game may feature power-ups that provide temporary advantages, such as stabilizing the hook or slowing down its movements. These power-ups can be used strategically.

Special Blocks: Special blocks with unique properties, like added stability or the ability to counteract the hook's movements, may be introduced to add complexity to the gameplay.

Scoring: Points or other rewards may be given based on how well the tower is built, how quickly levels are completed, or how many objectives are met. Players can strive to achieve higher scores.

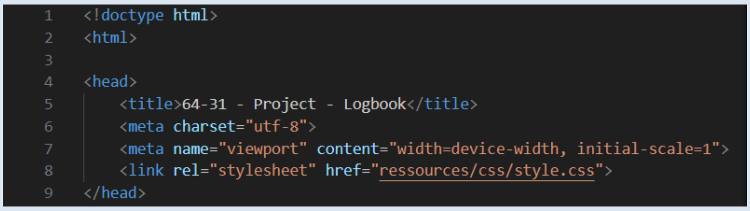
Progression and Story: As players complete levels, they gradually restore Dataopolis and progress through the game's storyline, ultimately working to defeat Glichar and bring the city back to its former brilliance.

2 Logbook (who does what when)

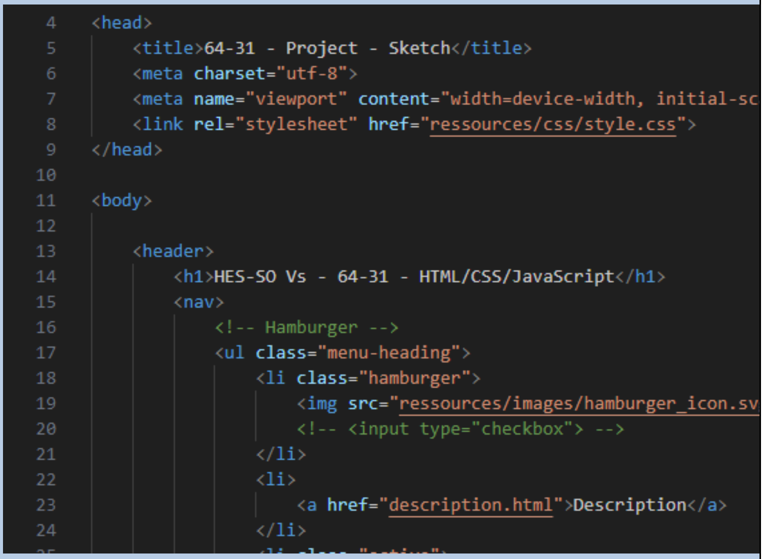
***for a more detailed logbook, refer to the website’s logbook page**

Date	Duration	Task	Author
18.9.2023		Building our Group	
25.9.2023		Game Proposal	
02.10.2023		Game Definition	
09.10.2023		Game Rules Definition	
16.10.2023		Building Website	
23.10.2023		Finishing off Website	
30.10.2023		Start Coding Game	

3 Indications of the integrated competencies and their location in the code

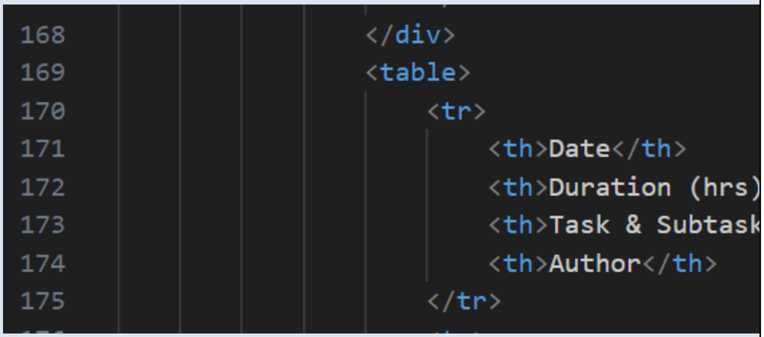
<table>
<tr><th>Competencies</th><th>Mandatory implementation in the project</th><th>Specify file and line + screenshot</th></tr>
<tr><td rowspan="2"><b><i>&lt;!DOCTYPE> Declaration</i></b>
<b><i>HTML &lt;meta&gt; Tag</i></b>
<b><i>HTML &lt;link&gt; Tag</i></b></td><td><b><i>Specification of html version.</i></b>
<b><i>Provides metadata about the web page, such as character encoding, page description, keyword tags, and other information.</i></b>
<b><i>Make a link to the css file.</i></b></td><td><b><i>logbook.html</i></b>
<b><i>line: 1, 6, 7</i></b></td></tr>
<tr><td colspan="2">
<pre>
1 <!doctype html>
2 <html>
3
4 <head>
5   <title>64-31 - Project - Logbook</title>
6   <meta charset="utf-8">
7   <meta name="viewport" content="width=device-width, initial-scale=1">
8   <link rel="stylesheet" href="ressources/css/style.css">
9 </head>
</pre></td></tr>
<tr><td><b><i>HTML Elements, attributes, charet, heading, text formatting, comments, link, images, head, file paths,</i></b></td><td><i><b>Elements:</b> The &lt;h1> element defines a heading. (line 14) Body: defines the document’s body (line 11)</i>
<i><b>Attribute:</b> The tag <img> is used in line 70 to to embed the logo image and the src attribute define the path of it to display it.</i>
<i><b>Heading:</b> In line 49, we use the <h3> tag to define that’s an heading (less important than the h2 and h1)</i>
<i><b>Text formatting</b>: line 47, the text is italic thanks to the css, but we could use <i> instead, the make it italic<b>.</b></i>
<i><b>Comments</b> : line 42 we can find a comment to help us when reading the code to find or start the page content.</i>
<i><b>Link:</b> at line 23 we used it to link the description page.</i>
<i><b>Image:</b> at line 66 we use the</i></td><td><b><i>Description.html</i></b>
<b><i>Line: 4-70</i></b></td></tr>
</table>

<table>
<tr><td></td><td><em>path of an image to display it in our site and the alternative text.</em>
<em><strong>Head</strong>: contain the elements of the head of the page (line 4)</em>
<em><strong>File path:</strong> at line 58 of the flow file, we had define the path of the image “SiteMap”.</em></td><td></td></tr>
<tr><td></td><td colspan="2">



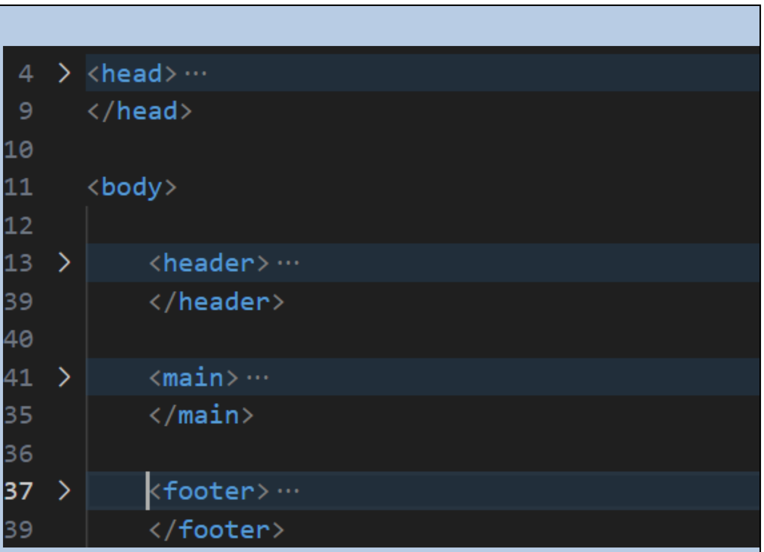
```
 4  <head>
 5      <title>64-31 - Project - Sketch</title>
 6      <meta charset="utf-8">
 7      <meta name="viewport" content="width=device-width, initial-sc
 8      <link rel="stylesheet" href="ressources/css/style.css">
 9  </head>
10
11  <body>
12
13      <header>
14          <h1>HES-SO Vs - 64-31 - HTML/CSS/JavaScript</h1>
15          <nav>
16              <!-- Hamburger -->
17              <ul class="menu-heading">
18                  <li class="hamburger">
19                      <img src="ressources/images/hamburger_icon.sv
20                      <!-- <input type="checkbox"> -->
21                  </li>
22                  <li>
23                      <a href="description.html">Description</a>
24                  </li>
```

</td></tr>
<tr><td><strong><em>HTML table</em></strong></td><td><strong><em>Table that groups all the tasks and sub-tasks of the project, time the date and the author</em></strong></td><td><strong><em>logbook.html</em></strong>
<strong><em>line: 169-333</em></strong></td></tr>
<tr><td></td><td colspan="2">



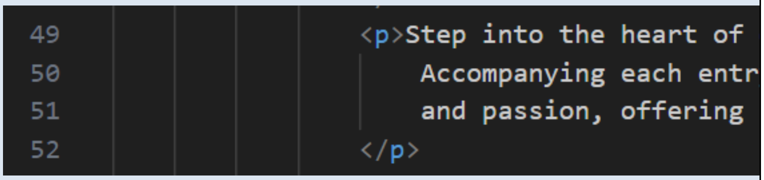
```
168                 </div>
169                 <table>
170                     <tr>
171                         <th>Date</th>
172                         <th>Duration (hrs)
173                         <th>Task & Subtask
174                         <th>Author</th>
175                     </tr>
```

</td></tr>
<tr><td><strong><em>HTML layout</em></strong></td><td><strong><em>Defines the areas of the page, to arrange them in consequences</em></strong></td><td><strong><em>Logbook.html</em></strong>
<strong><em>Line 4-339</em></strong></td></tr>
</table>



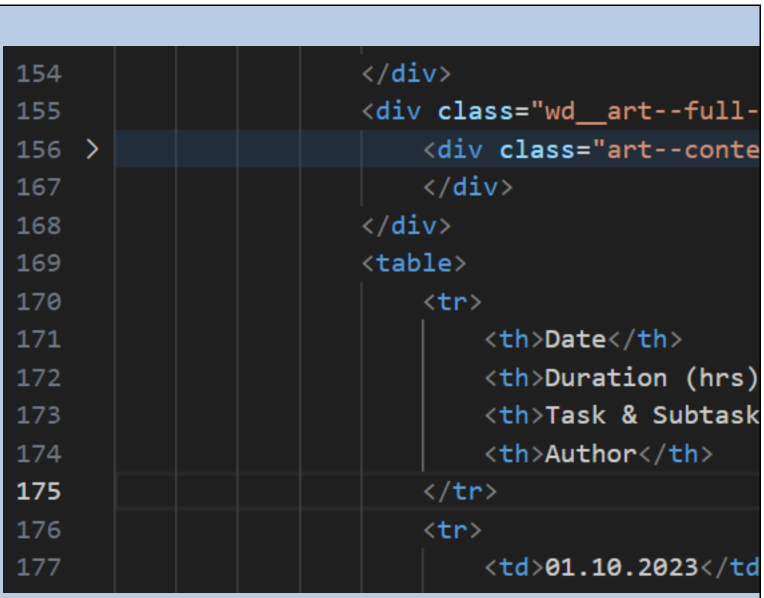
```
 4 > <head>···
 9   </head>
10
11   <body>
12
13 >     <header>···
39       </header>
40
41 >     <main>···
35       </main>
36
37 >     <footer>···
39       </footer>
```

HTML Paragraphs	***Define a paragraph of text, it speaks of the tasks for the development of the project***	***flow.html*** ***line: 49-52***

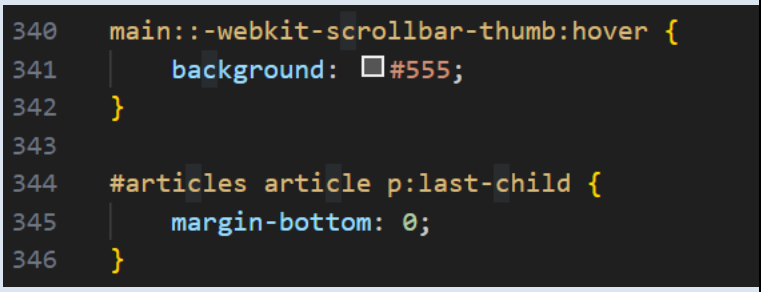


```
49              <p>Step into the heart of
50                  Accompanying each entr
51                  and passion, offering
52              </p>
```

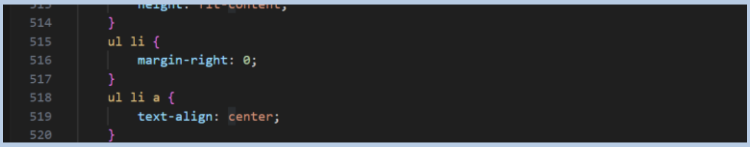
HTML Blocks	***The <div> element defines a division in this HTML document.*** ***And the <tab> element defines a table in the HTML document***	***Logbook.html*** ***Line 4,11,90***

	
	`</div>`
	`<div class="wd__art--full-`
	`    <div class="art--conte`
	`    </div>`
	`</div>`
	`<table>`
	`    <tr>`
	`        <th>Date</th>`
	`        <th>Duration (hrs)`
	`        <th>Task & Subtask`
	`        <th>Author</th>`
	`    </tr>`
	`    <tr>`
	`        <td>01.10.2023</td`	

CSS: Hover	***hover pseudo class in CSS selects elements when the mouse cursor is current over them. It's commonly associated with link (<a>) elements.***	***Style.css*** ***line: 340,346***

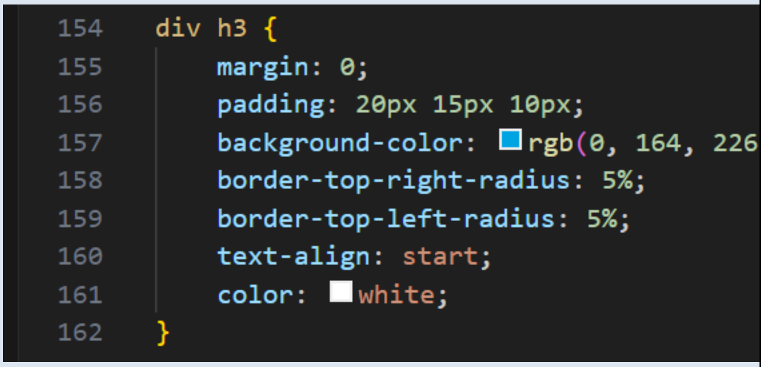
	
	`340 main::-webkit-scrollbar-thumb:hover {`
	`341     background: □#555;`
	`342 }`
	`343`
	`344 #articles article p:last-child {`
	`345     margin-bottom: 0;`
	`346 }`	

CSS: descendant	***A descendant selector in CSS is any selector with white space between two selectors without a combinator***	***Style.css*** ***Line 4,11,90***

	
	`    height: fit-content;`
	`}`
	`ul li {`
	`    margin-right: 0;`
	`}`
	`ul li a {`
	`    text-align: center;`
	`}`	

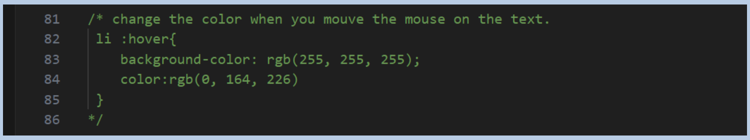
CSS: Universal	***The Universal Selector is the * in CSS. Literally the asterisk character. It is***	***Style.css*** ***line: 154,167,174***

	essentially a type selector that matches any type. Type meaning an HTML tag like <div>, <body>, <button>, or literally any of the others.	



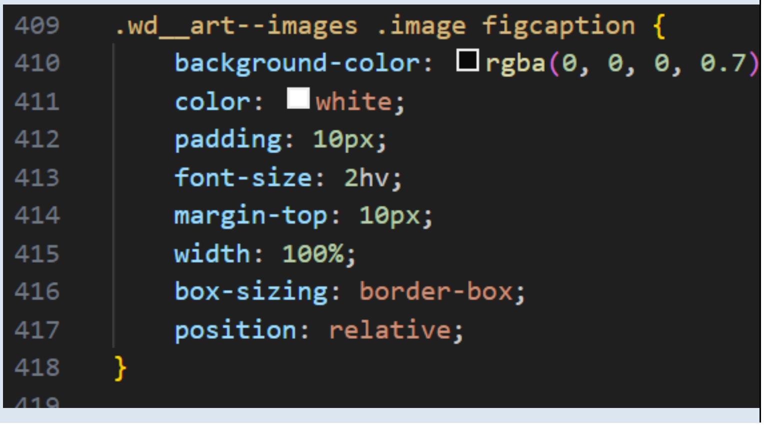
```
div h3 {
    margin: 0;
    padding: 20px 15px 10px;
    background-color: 🟦rgb(0, 164, 226
    border-top-right-radius: 5%;
    border-top-left-radius: 5%;
    text-align: start;
    color: □white;
}
```

CSS: Note	***not() property in CSS is a negation pseudo class and accepts a simple selector or a selector list as an argument. It matches an element that is not represented by the argument. The passed argument may not contain additional selectors or any pseudo-element selectors.***	***Style.css*** ***Line:16, 25,32,81***



```
81   /* change the color when you mouve the mouse on the text.
82    li :hover{
83       background-color: rgb(255, 255, 255);
84       color:rgb(0, 164, 226)
85    }
86   */
```

CSS: display, color, font, flex, background, position, padding, float, box-sizing	*Every element on a web page is a rectangular box.* ***The display*** *property in CSS determines just how that rectangular box behaves.* ***The color:*** *property in CSS sets the color of text and text decorations.* ***The font*** *property in CSS is a shorthand property that combines all the following sub-properties in a single declaration*	***Sketch.html*** ***line: 1, 6, 7***

	***The flex** property is a sub-property of the Flexible Box Layout* ***The background** property in CSS allows you to control the background of any element (what paints underneath the content in that element)* ***The padding** property in CSS defines the innermost portion of the box model, creating space around an element's content, inside of any defined margins and/or borders.*	
		

```
.wd__art--images .image figcaption {
    background-color: ■rgba(0, 0, 0, 0.7)
    color: □white;
    padding: 10px;
    font-size: 2hv;
    margin-top: 10px;
    width: 100%;
    box-sizing: border-box;
    position: relative;
}
```

4 Outcome

Coming soon! But for the initial mockups and sketches. Refer to our website.

5 Links

- **Link to source code of the website: https://github.com/Noeame/64-31_WEB-DEVELOPMENT_GRPB_TowerTopiaGame.git**
- **Link to demo: Coming soon!**