Here’s an \*\*in-depth problem statement\*\* for the Functions and Events assignment, styled like a coding challenge from \*\*LeetCode\*\* or \*\*Codecademy\*\*:

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### \*\*Problem: Functions and Events - Change Content on Button Click\*\*

\*\*Problem Statement\*\*:

You are tasked with creating a simple interactive webpage that changes the content of an HTML element when a button is clicked. This will help you practice defining functions and handling events in JavaScript.

\*\*Requirements\*\*:

1. Create an HTML file named `index.html`.

2. In this file, include:

- An HTML element (like a `<div>`, `<p>`, or `<span>`) to display content.

- A button that the user can click to change the content of the HTML element.

3. Write a JavaScript function that:

- Changes the content of the specified HTML element when the button is clicked.

4. Use the `addEventListener()` method to attach the click event to the button.

\*\*Example HTML Structure\*\*:

Here’s a sample implementation for your `index.html` file:

```html

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Change Content on Button Click</title>

<style>

body {

font-family: Arial, sans-serif;

text-align: center;

margin-top: 50px;

}

#content {

font-size: 24px;

margin-bottom: 20px;

}

</style>

</head>

<body>

<div id="content">Original Content</div>

<button id="changeContentButton">Change Content</button>

<script>

// Function to change the content of the HTML element

function changeContent() {

const contentElement = document.getElementById('content');

contentElement.textContent = "Content has been changed!";

}

// Attach event listener to the button

const button = document.getElementById('changeContentButton');

button.addEventListener('click', changeContent);

</script>

</body>

</html>

```

\*\*Expected Output\*\*:

1. When you open the `index.html` file in a web browser, you will see the original content displayed.

2. When the "Change Content" button is clicked, the content of the HTML element will change to "Content has been changed!".

3. The JavaScript function `changeContent()` is called, which updates the `textContent` of the `<div>` with the id `content`.

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This problem statement clearly outlines the task and provides requirements and examples, guiding learners through creating functions and handling events in JavaScript.