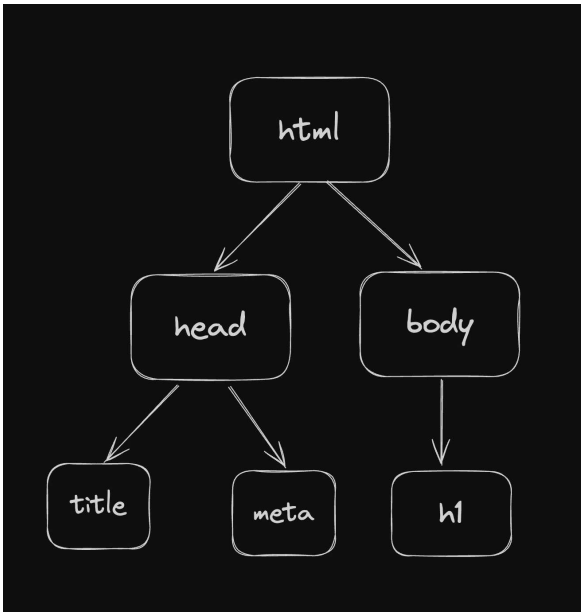
# What is DOM?

The DOM, or Document Object Model, is a programming interface for web documents. It represents the structure of a web page as a tree of objects.

```
<html>
  <head>
    <title>Simple app</title>
    <meta name="description" c
  </head>
  <body>
    <h1>
      hi there
    </h1>
  </body>
</html>
```




# Static HTML

As the name suggests, static HTML represents HTML that does not change.

For example -

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width">
    <title>replit</title>
    <link href="style.css" rel="stylesheet" type="text/css" />
  </head>
```

```
<h4>1. Take class</h4>
<h4>2. Take a break</h4>
<div>
  <input type="text"></input>
  <button>Add Todo</button>
</div>
<script src="script.js"></script>
</body>

</html>
```

If you click on the Add Todo button, nothing happens

# Dynamic HTML

How can you update the elements of the page dynamically ?

## Assignment

When the user clicks on the Add todo button, a new TODO should be added.

## document object

a fundamental part of the Document
web page currently loaded in the

browser and provides a way to interact with and manipulate its content.



# Fetching elements

There are many methods available for fetching DOM elements -

- querySelector
- querySelectorAll
- getElementById
- getElementByClassName
- getElementsByClassName

### 1. Fetching the title

```
const title = document.querySelector('h1');
console.log(title.innerHTML)
```

### 2. Fetching the first TODO (Assignment)

```
const firstTodo = document.querySelector('h4');
console.log(firstTodo.innerHTML)
```

# Updating elements

- .innerHTML - Used for updating the HTML inside an element
- .textContent - Used for updating the text content inside an element

### Assignment - Update the first todo's contents

```
ument.querySelector("h4");
"Dont' take class"
```

# Deleting elements

- removeChild - Removes a specific node of a parent
- onclick - function that triggers whenever you click on a button

**tton right next to the todo**

Basics of DOM 1 of 8

```
<!
ht...

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width">
  <title>replit</title>
  <link href="style.css" rel="stylesheet" type="text/css" />
</head>

<body>
  <h1>Todo list</h1>
  <div>
    <div id="todo-1">
      <h4>1. Take class</h4>
      <button onclick="deleteTodo(1)">delete</button>
    </div>
    <div id="todo-2">
      <h4>2. Go out to eat</h4>
      <button onclick="deleteTodo(2)">delete</button>
    </div>
  </div>
  <div>
    <input type="text"></input>
    <button>Add Todo</button>
  </div>
</body>

<script>
  function deleteTodo(index) {
    const element = document.getElementById("todo-" + index);
    element.parentNode.removeChild(element);
  }
</script>

</html>
```

Anoth did in class -



```
html>
  <body id="body">
    <h2>Todo 1</h2>
    <h2>Todo 2</h2>
    <h2>Todo 3</h2>
    <button onclick="deleteRandomTodo()">Delete todo!</button>
  </body>
  <script>
    function deleteRandomTodo() {
      const element = document.querySelector("h2");
      const parentElement = element.parentNode;
      parentElement.removeChild(element);
    }

  </script>
</html>
```

# Adding elements

What we're learning -

- createElement
- appendChild

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## Assignment - Write a function to add a TODO text to the list

Steps -

1. Get the current text inside the input element
2. Create a new div element
3. Add the text from step 1 to the div element
4. Append the div to the todos list

```
<!DOCTYPE html>
<html>

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width">
  <title>replit</title>
  <link href="style.css" rel="stylesheet" type="text/css" />
</head>

<body>
  <h1>Todo list</h1>
  <div id="todos">
    <div id="todo-1">
      <h4>1. Take class</h4>
      <button onclick="deleteTodo(1)">delete</button>
    </div>
    <div id="todo-2">
      <h4>2. Go out to eat</h4>
      <button onclick="deleteTodo(2)">delete</button>
    </div>
  </div>
  <div>
    <input id="inp" type="text"></input>
    <button onclick="addTodo()">Add Todo</button>
  </div>
</body>
```

```
function addTodo() {
    ument.getElementById("inp");
    const textNode = document.createElement("div");
    textNode.innerHTML = inputEl.value;
    const parentEl = document.getElementById("todos");
    parentEl.appendChild(textNode);

  }
</script>

</html>
```

# More complex elements

Until now, we created a simple `div` element

```
const textNode = document.createElement("div");
textNode.innerHTML = inputEl.value;
```

The problem is it doesn't have a corresponding `delete` button.

Can you try to fix it?

```
<!
ht...
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width">
  <title>replit</title>
  <link href="style.css" rel="stylesheet" type="text/css" />
</head>

<body>
  <h1>Todo list</h1>
  <div id="todos">
    <div id="todo-1">
      <h4>1. Take class</h4>
      <button onclick="deleteTodo(1)">delete</button>
    </div>
    <div id="todo-2">
      <h4>2. Go out to eat</h4>
      <button onclick="deleteTodo(2)">delete</button>
    </div>
  </div>
  <div>
    <input id="inp" type="text"></input>
    <button onclick="addTodo()">Add Todo</button>
  </div>
</body>

<script>
  let currentIndex = 3;
  function addTodo() {
    const inputEl = document.getElementById("inp");
    const textNode = document.createElement("div");
    textNode.innerHTML = "<div id='todo-" + currentIndex + "'><h4>" + inputEl.value
    const parentEl = document.getElementById("todos");
    parentEl.appendChild(textNode);

    currentIndex = currentIndex + 1;
```

```
function deleteTodo(index) {
  var element = document.getElementById("todo-" + index);
  element.parentNode.removeChild(element);
}
</script>

</html>
```

## Solution #2

```
<html>

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width">
  <title>Todo List</title>
  <link href="style.css" rel="stylesheet" type="text/css" />
</head>

<body>
  <h1>Todo list</h1>
  <div id="todos">
    <div id="todo-1">
      <h4>1. Take class</h4>
      <button onclick="deleteTodo(1)">Delete</button>
    </div>
    <div id="todo-2">
      <h4>2. Go out to eat</h4>
      <button onclick="deleteTodo(2)">Delete</button>
    </div>
  </div>
  <div>
    <input id="inp" type="text">
    <button onclick="addTodo()">Add Todo</button>
  </div>

  <script>
```

```
function addTodo() {
  const inputEl = document.getElementById("inp");
  const todoText = inputEl.value.trim();

  if (todoText === '') {
    alert('Please enter a todo item.');
    return;
  }

  const parentEl = document.getElementById("todos");

  // Create new todo div
  const newTodo = document.createElement('div');
  newTodo.setAttribute("id", 'todo-' + currentIndex);

  // Create new heading element
  const newHeading = document.createElement('h4');
  newHeading.textContent = currentIndex + '. ' + todoText;

  // Create new button element
  const newButton = document.createElement('button');
  newButton.textContent = 'Delete';
  newButton.setAttribute("onclick", "deleteTodo(" + currentIndex + ")");

  // Append elements to the new todo div
  newTodo.appendChild(newHeading);
  newTodo.appendChild(newButton);

  // Append new todo to the parent element
  parentEl.appendChild(newTodo);

  // Increment the index for the next todo item
  currentIndex++;

  // Clear the input field
  inputEl.value = '';
}

function deleteTodo(index) {
  const todoEl = document.getElementById("todo-" + index);
```

```
    if (element) {
      node.removeChild(element);
    }
  }
 </script>
</body>

</html>
```

## Code to debug

```
<html>

<body>
 <input type="text"></input>
 <button onclick="addTodo()">Add todo!</button>
</body>
<script>
 let ctr = 1;
 function deleteTodo(index) {
  const element = document.getElementById(index);
  element.parentNode.removeChild(element);
 }

 function addTodo() {
  const inputEl = document.querySelector("input");
  const value = inputEl.value;

  const newDivEl = document.createElement("div");
  newDivEl.setAttribute("id", ctr);
  ctr = ctr + 1;
  newDivEl.innerHTML = "<div>" + value + '</div><button onclick="deleteTodo(' +

  document.querySelector("body").appendChild(newDivEl)
 }
</script>
```

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