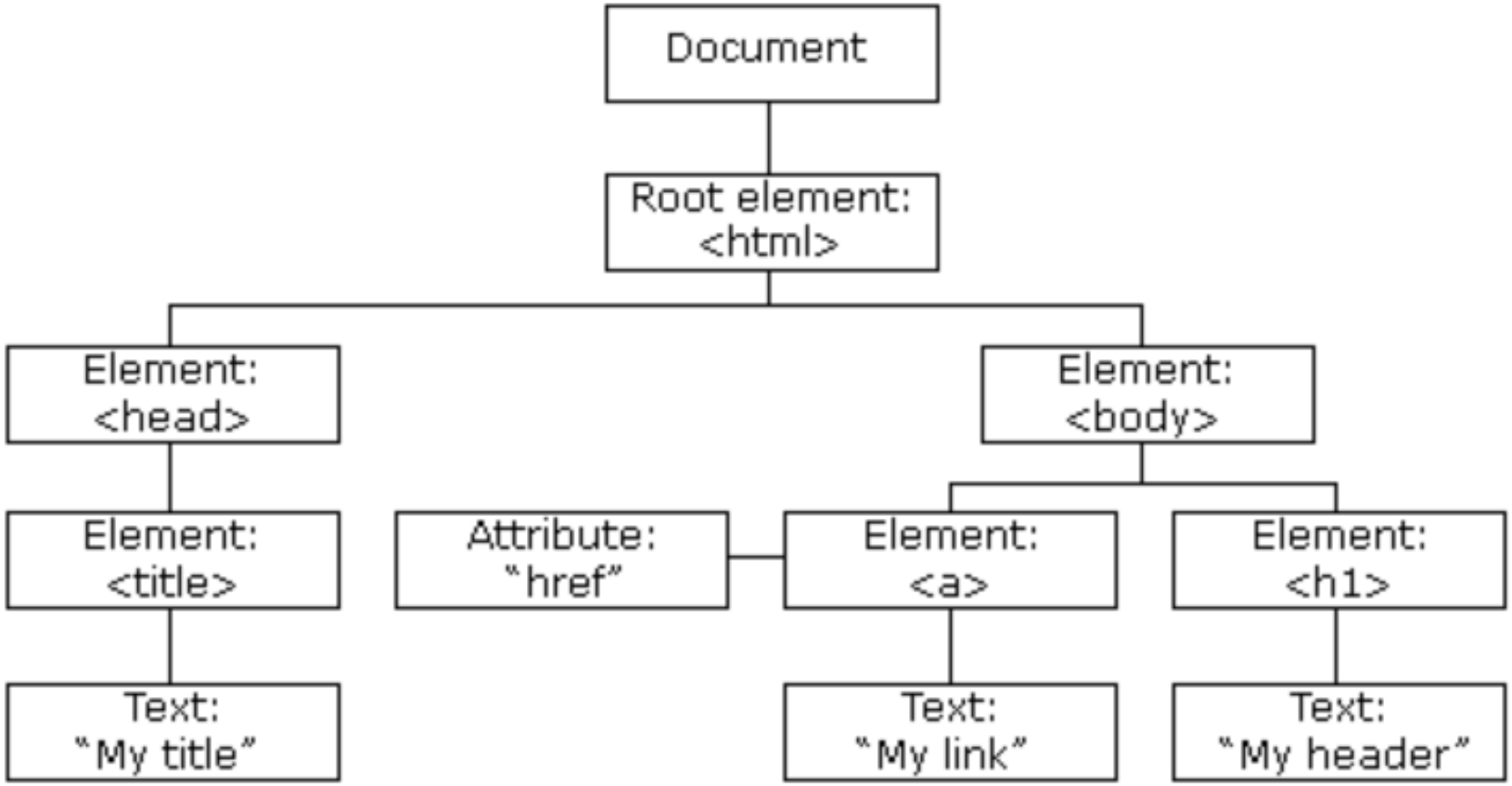
Lab 8
web 2

Dr : Rasha

Eng : Gehad Mustafa

DOM (Document Object Model)



getElementById()

domlab.html > html > body > button

```
1   <!DOCTYPE html>
2   <html lang="en">
3   <head>
4       <meta charset="UTF-8">
5       <meta name="viewport" content="width=device-width, initial-scale=1.0">
6       <title>Document</title>
7       <script>
8           function myFunction() {
9               document.getElementById("demo").innerHTML = "Paragraph changed.";
10          }
11      </script>
12
13  </head>
14  <body>
15      <h2>Demo JavaScript in Head</h2>
16      <p id="demo">A Paragraph</p>
17      <button  onclick="myFunction()">Try it</button>
18
19  </body>
20  </html>
```

getElementById()

domlab.html > html > body > script > myFunction

```
1   <!DOCTYPE html>
2   <html lang="en">
3   <head>
4       <meta charset="UTF-8">
5       <meta name="viewport" content="width=device-width, initial-scale=1.0">
6       <title>Document</title>
7
8
9   </head>
10  <body>
11      <h2>Demo JavaScript in Body</h2>
12      <p id="demo">A Paragraph</p>
13      <button  onclick="myFunction()">Try it</button>
14      <script>
15          function myFunction() {
16              document.getElementById("demo").innerHTML = "Paragraph changed.";
17          }
18      </script>
19
20  </body>
21  </html>
```

JavaScript Display Possibilities

JavaScript can "display" data in different ways:

- **Writing into an HTML element, using innerHTML.**
- **Writing into the HTML output using document.write().**
- **Writing into an alert box, using window.alert().**
- **Writing into the browser console, using console.log().**

innerHTML

domlab.html > ...

```
1   <!DOCTYPE html>
2   <html>
3   <body>
4       <h1>My First Web Page</h1>
5       <p>My First Paragraph</p>
6       <p id="demo"></p>
7
8       <script>
9       document.getElementById("demo").innerHTML = 5 + 6;
10      </script>
11  </body>
12  </html>
13
```

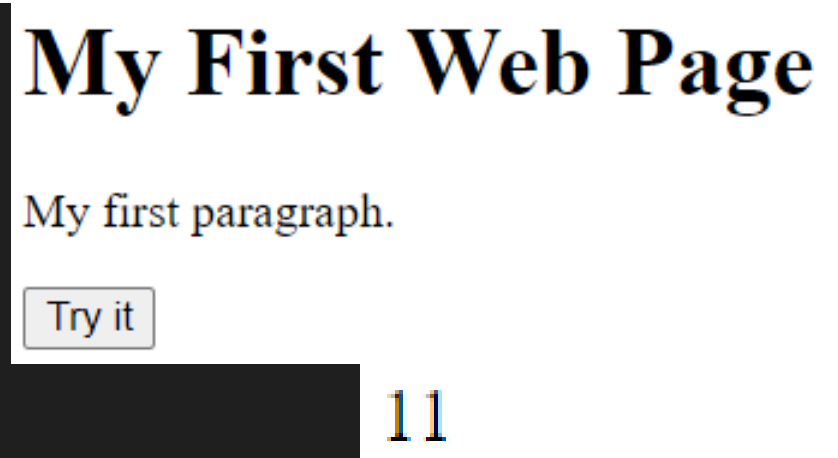
document.write()

```
<> domlab.html > ...
  1     <!DOCTYPE html>
  2     <html>
  3     <body>
  4         <h1>My First Web Page</h1>
  5         <p>My first paragraph.</p>
  6
  7         <script>
  8         document.write(5 + 6);
  9         </script>
 10     </body>
 11     </html>
 12
```

document.write().

domlab.html > ...

```
1   <!DOCTYPE html>
2   <html>
3   <body>
4
5   <h1>My First Web Page</h1>
6   <p>My first paragraph.</p>
7
8   <button onclick="document.write(5 + 6)">Try it</button>
9
10  </body>
11  </html>
12
```



document.write()

domlab.html > ...

```
1   <!DOCTYPE html>
2   <html>
3   <body>
4
5   <script src="main.js"></script>
6
7   </body>
8   </html>
9
```

Hello Page

main.js

```
1   document.write("<h1>Hello Page</h1>");
2
```

window.alert()

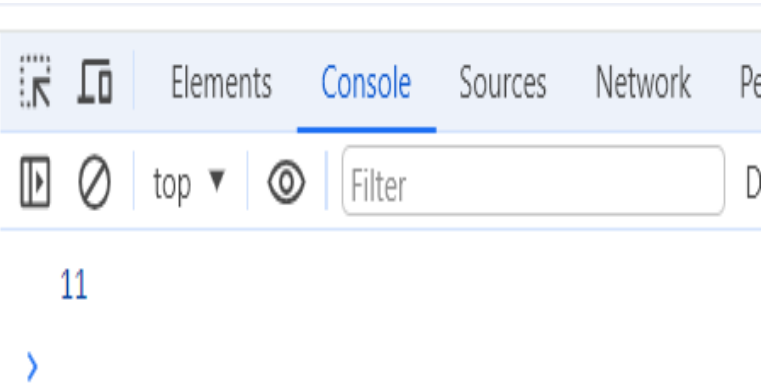
```
<> domlab.html > ...
  1     <!DOCTYPE html>
  2     <html>
  3     <body>
  4
  5     <h1>My First Web Page</h1>
  6     <p>My first paragraph.</p>
  7
  8     <script>
  9     window.alert(5 + 6);
 10     </script>
 11
 12     </body>
 13     </html>
 14
```

My First Web Page

My first paragraph.

Console.log()

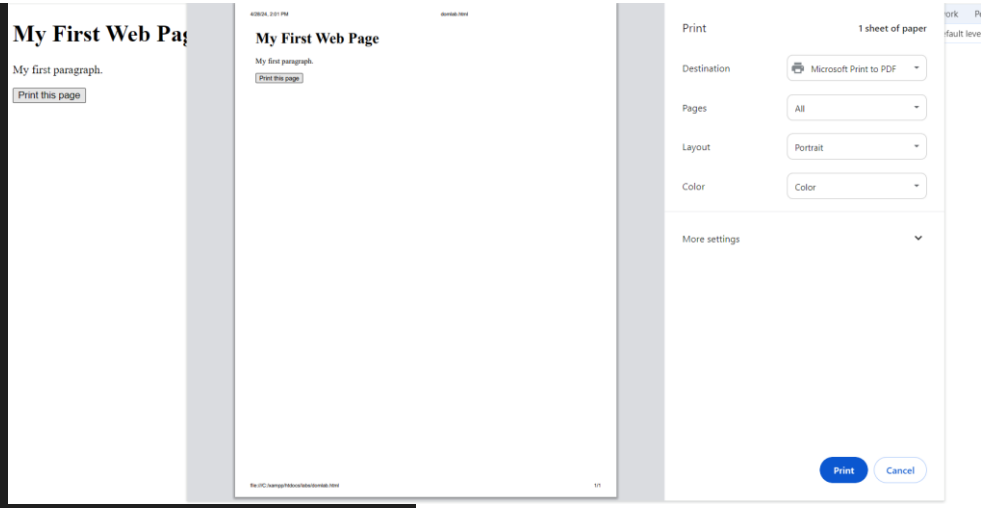
```
<> domlab.html > html > body
  1     <!DOCTYPE html>
  2     <html>
  3     <body>
  4
  5     <h1>My First Web Page</h1>
  6     <p>My first paragraph.</p>
  7
  8     <script>
  9         console.log(5 + 6);
 10         </script>
 11
 12
 13
 14     </body>
 15     </html>
 16
```



Window.print()

domlab.html > html > body

```
1   <!DOCTYPE html>
2   <html>
3   <body>
4
5   <h1>My First Web Page</h1>
6   <p>My first paragraph.</p>
7   <button onclick="window.print()">Print this page</button>
8
9   </body>
10  </html>
11
```



DOM

Document Object Model.

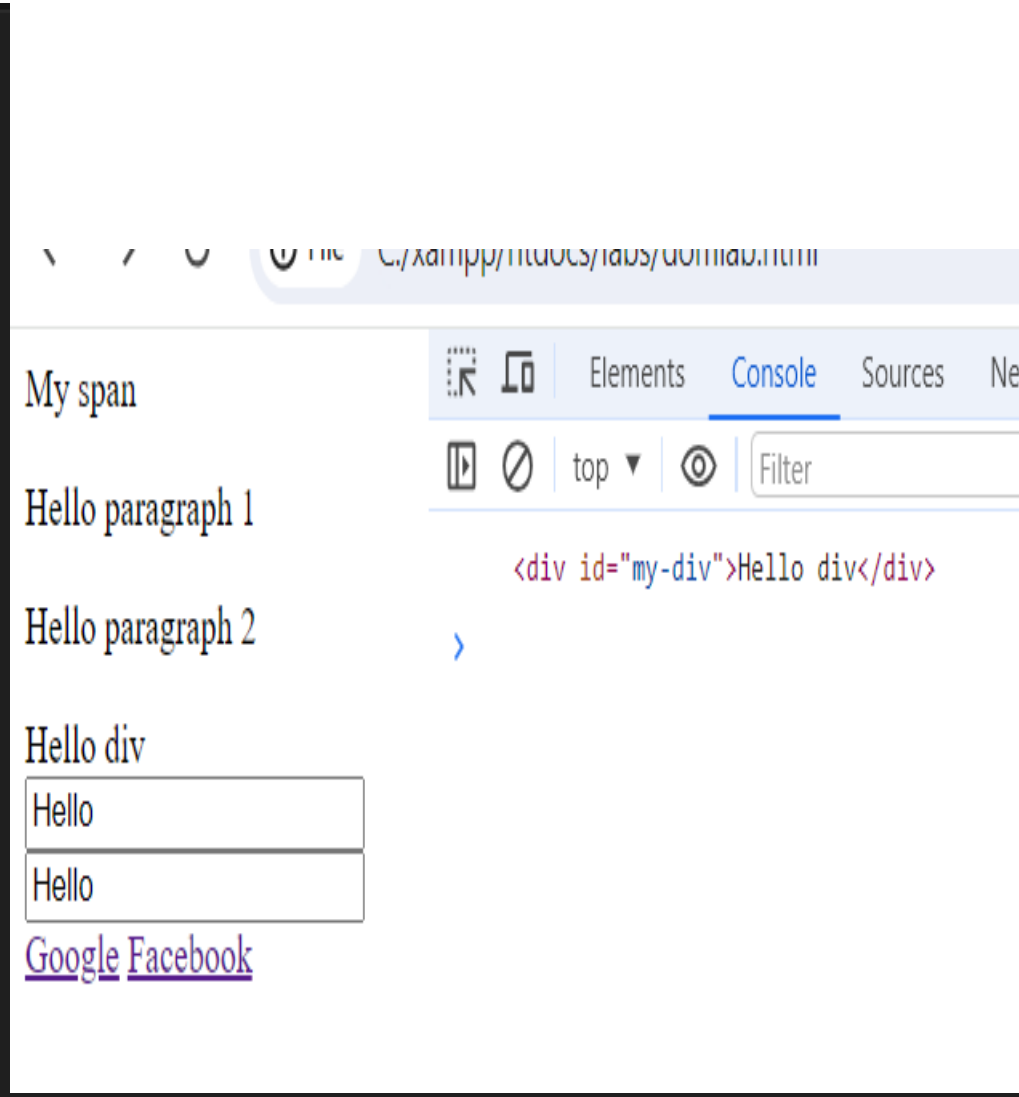
The HTML DOM is a standard object model and programming interface for HTML. It defines:

- **The HTML elements as objects**
- **The properties of all HTML elements**
- **The methods to access all HTML elements**
- **The events for all HTML elements**

In other words: The HTML DOM is a standard for how to get, change, add, or delete HTML elements.

domlab.html > ...

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Learn Javascript</title>
    </head>
    <body>
        <span class="my-span">My span</span>
        <p>Hello paragraph 1</p>
        <p>Hello paragraph 2</p>
        <div id="my-div">Hello div</div>
        <form action="">
            <input type="text" name="one" value="Hello">
        </form>
        <form action="">
            <input type="text" name="two" value="Hello">
        </form>
        <a href="https://google.com">Google</a>
        <a href="https://facebook.com">Facebook</a>
        <script src="main.js"></script>
    </body>
</html>

```



main.js > ...

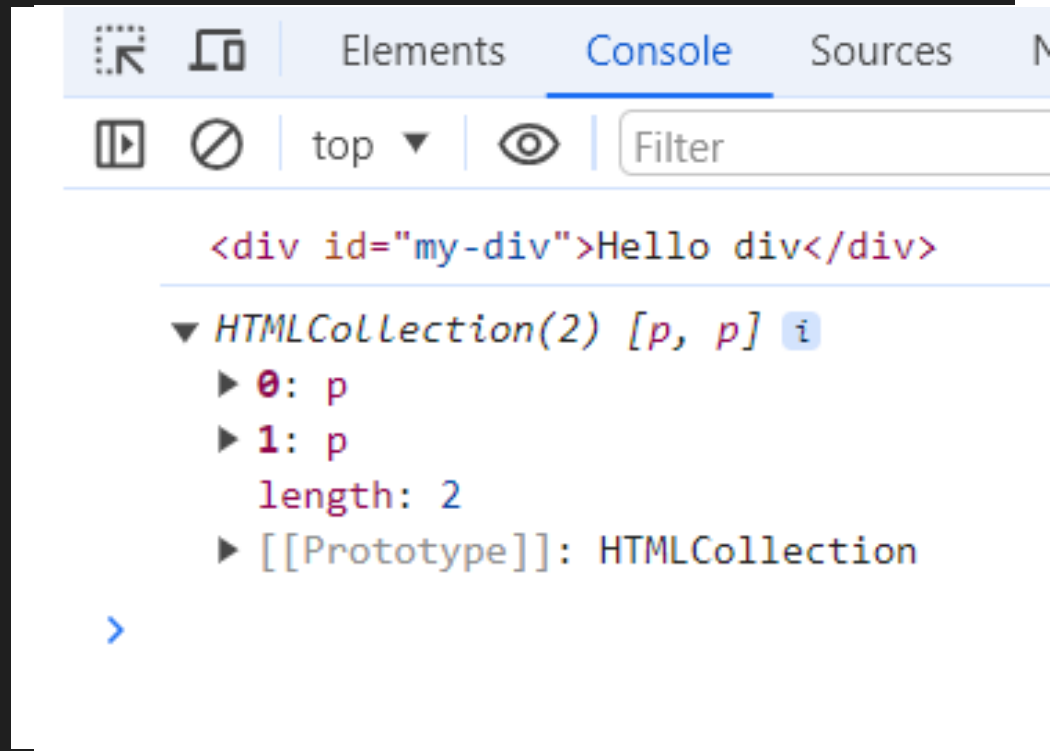
```js
let myIdElement = document.getElementById("my-div");

console.log(myIdElement);

```

domlab.html > ...

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Learn Javascript</title>
    </head>
    <body>
        <span class="my-span">My span</span>
        <p>Hello paragraph 1</p>
        <p>Hello paragraph 2</p>
        <div id="my-div">Hello div</div>
        <form action="">
            <input type="text" name="one" value="Hello">
        </form>
        <form action="">
            <input type="text" name="two" value="Hello">
        </form>
        <a href="https://google.com">Google</a>
        <a href="https://facebook.com">Facebook</a>
        <script src="main.js"></script>
    </body>
</html>

```

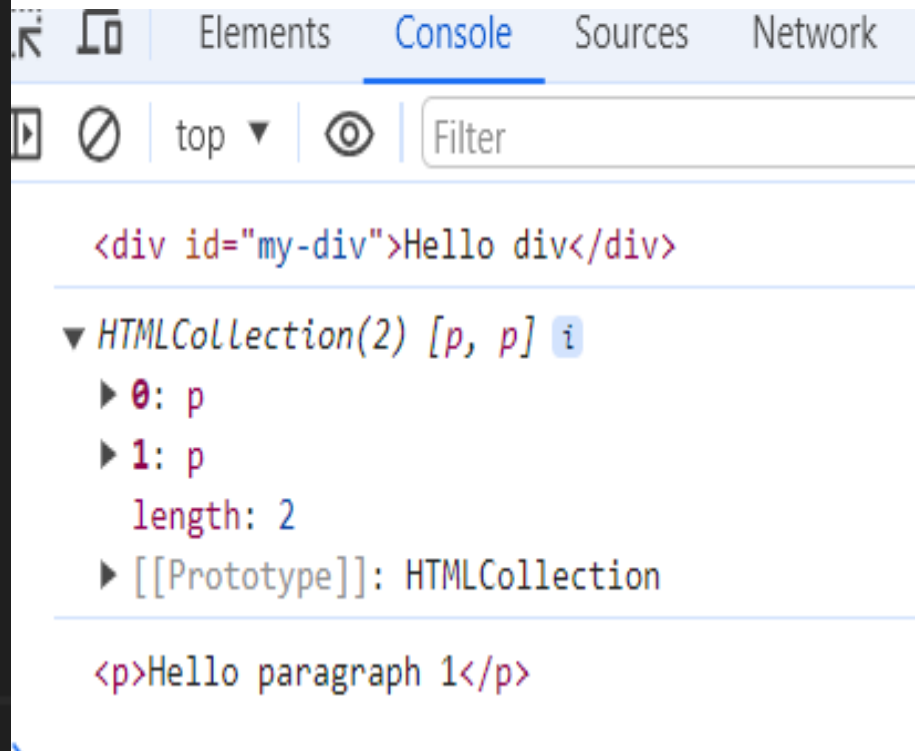
main.js > ...

```js
let myIdElement = document.getElementById("my-div");
let myTagElement = document.getElementsByTagName("p");

console.log(myIdElement);
console.log(myTagElement);

```



myTagElement[0]

```
JS main.js > ...
1   let myIdElement = document.getElementById("my-div");
2   let myTagElement = document.getElementsByTagName("p");
3
4   console.log(myIdElement);
5   console.log(myTagElement);
6   console.log(myTagElement[0]);
7
```



main.js

```
1  let myIdElement = document.getElementById("my-div");
2  let myTagElement = document.getElementsByTagName("p");
3
4  console.log(myIdElement);
5  console.log(myTagElement);
6  console.log(myTagElement[0]);
7  myTagElement[0].innerHTML="Test";
8
```

My span

Test

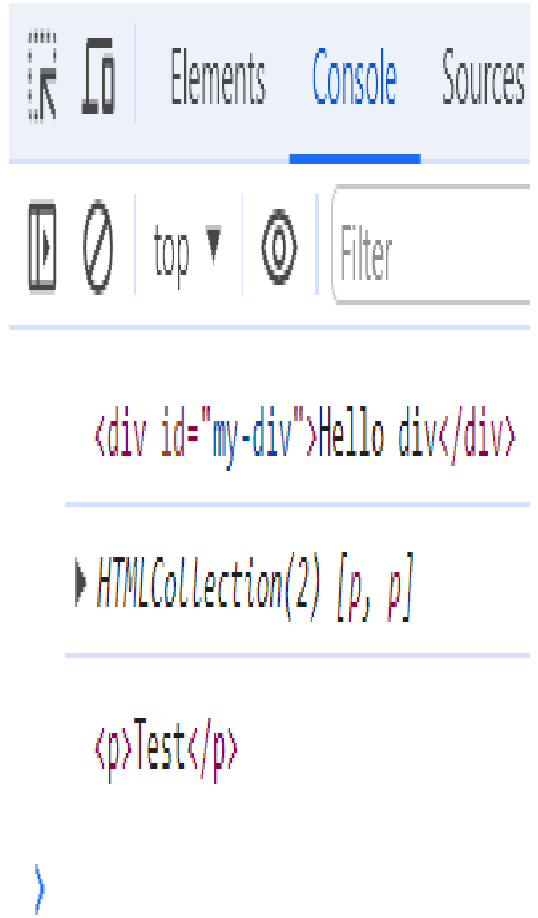
Hello paragraph 2

Hello div

Hello

Hello

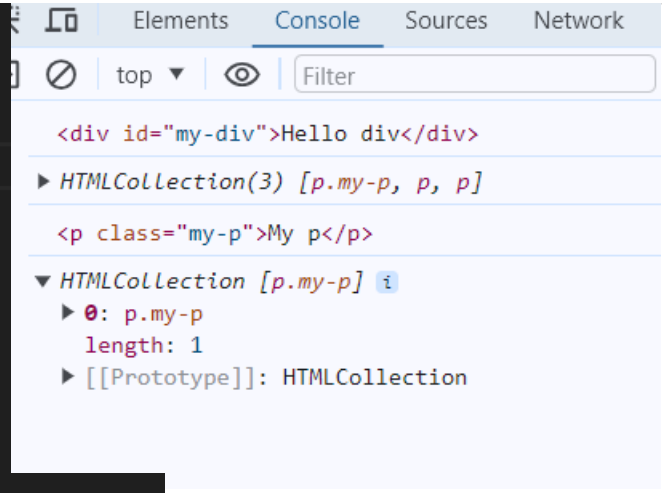
Google Facebook



getElementsByClassName

```
JS main.js > myClassElement
1   let myIdElement = document.getElementById("my-div");
2   let myTagElement = document.getElementsByTagName("p");
3   let myClassElement = document.getElementsByClassName("my-p");
4
5   console.log(myIdElement);
6   console.log(myTagElement);
7   console.log(myTagElement[0]);
8   console.log(myClassElement);
9
```

```
<!DOCTYPE html>
<html>
    <head>
        <title>Learn Javascript</title>
    </head>
    <body>
        <p class="my-p">My p</p>
        <p>Hello paragraph 1</p>
        <p>Hello paragraph 2</p>
```



querySelector()

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Learn Javascript</title>
    </head>
    <body>
        <span class="special">My span</span>
```

JS main.js > ...

```js

let myQueryElement = document.querySelector(".special");

console.log(myQueryElement);

```

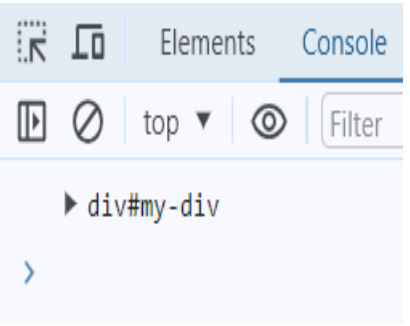
querySelector()

domlab.html > html > body

```
1   <!DOCTYPE html>
2   <html>
3       <head>
4           <title>Learn Javascript</title>
5       </head>
6       <body>
7           <div id="my-div">Hello div</div>
8
```

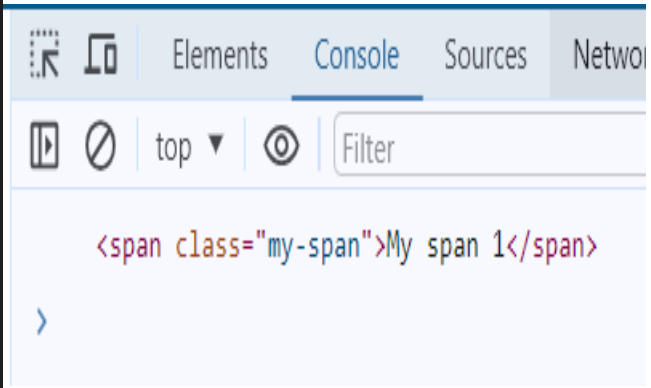
main.js > ...

```
1   let myQueryElement = document.querySelector("#my-div");
2
3   console.log(myQueryElement);
```



querySelector()

```html
<head>
    <title>Learn Javascript</title>
</head>
<body>
    <span class="my-span">My span 1</span>
```



JS main.js > ...

```
1    let myQueryElement = document.querySelector(".my-span");
2
3    console.log(myQueryElement);
```

domlab.html > html > body

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Learn Javascript</title>
    </head>
    <body>
        <span class="my-span special">My span 1</span>
        <span class="my-span">My span 2</span>

        <script src="main.js"></script>
    </body>
</html>
```

```
NodeList(2) [span.my-span.special, span.my-span] i
  0: span.my-span.special
  1: span.my-span
  length: 2
  [[Prototype]]: NodeList
```

main.js > ...

```js
let myQueryElement = document.querySelectorAll(".my-span");

console.log(myQueryElement);

```

Find Element By Collection

- **Title**
- **Body**
- **Images**
- **Forms**
- **Links**

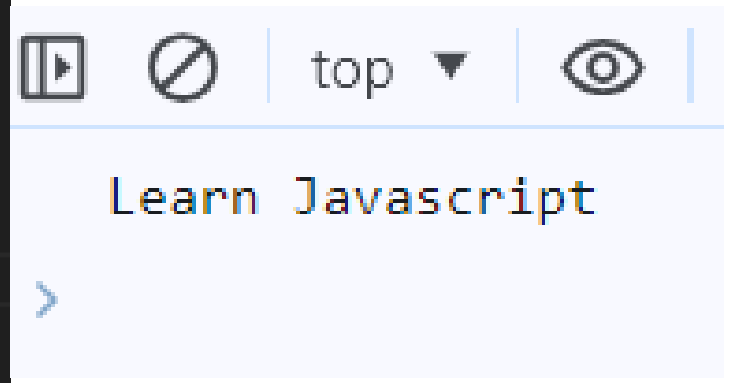
Title

domlab.html > html > head

```
1   <!DOCTYPE html>
2   <html>
3       <head>
4           <title>Learn Javascript</title>
5
6       </head>
7       <body>
8           <span class="my-span special">My span 1</span>
9           <span class="my-span">My span 2</span>
10
11          <script src="main.js"></script>
12      </body>
13  </html>
```

main.js

```
1   console.log(document.title);
2
```



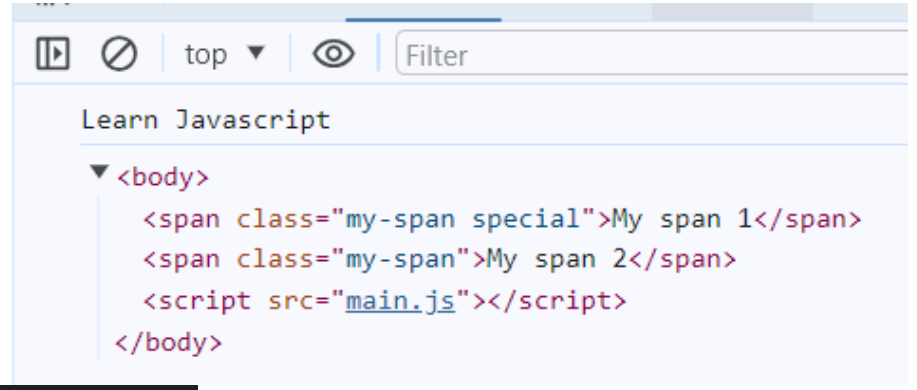
body

domlab.html > html > head

```
1   <!DOCTYPE html>
2   <html>
3       <head>
4           <title>Learn Javascript</title>
5
6       </head>
7       <body>
8           <span class="my-span special">My span 1</span>
9           <span class="my-span">My span 2</span>
10
11          <script src="main.js"></script>
12      </body>
13  </html>
```

main.js

```
1   console.log(document.title);
2   console.log(document.body);
```



domlab.html > ...

```html
<!DOCTYPE html>
<html>
    <head>
        <title>Learn Javascript</title>
    </head>
    <body>
        <span class="my-span special">My span 1</span>
        <span class="my-span">My span 2</span>
        <p>Hello paragraph 1</p>
        <p>Hello paragraph 2</p>
        <div id="my-div">Hello div</div>
        <form action="">
            <input type="text" name="one" value="Hello">
        </form>
        <form action="">
            <input type="text" name="two" value="Hello">
        </form>
        <a href="https://google.com">Google</a>
        <a href="https://facebook.com">Facebook</a>
        <script src="main.js"></script>
    </body>
</html>
```

Elements Console Sources Network Perform

top Filter

```
Learn Javascript
▼ <body>
    <span class="my-span special">My span 1</span>
    <span class="my-span">My span 2</span>
    <p>Hello paragraph 1</p>
    <p>Hello paragraph 2</p>
    <div id="my-div">Hello div</div>
  ▶ <form action> … </form>
  ▶ <form action> … </form>
    <a href="https://google.com">Google</a>
    <a href="https://facebook.com">Facebook</a>
    <script src="main.js"></script>
  </body>
▼ HTMLCollection(2) [form, form] i
  ▶ 0: form
  ▶ 1: form
    length: 2
  ▶ [[Prototype]]: HTMLCollection
Hello
▼ HTMLCollection(2) [a, a] i
  ▶ 0: a
  ▶ 1: a
    length: 2
  ▶ [[Prototype]]: HTMLCollection
https://google.com/
>
```

main.js

```js
console.log(document.title);
console.log(document.body);
console.log(document.forms);
console.log(document.forms[0].one.value);
console.log(document.links);
console.log(document.links[0].href);
```

Try

- Try to create a div with id =“div_1” and change the div content by using JS.
- Print div content in console.