* DOM

```
<html>
    <head>
        <title> My website </title>
    </head>

    <body>
        <button> Alert </button>
    </body>
</html>
```

```
Document
    ↓
  HTML
  ↙    ↘
head      Body
 ↓         ↓
Title     Button
 ↓         ↓
My website  Alert
```
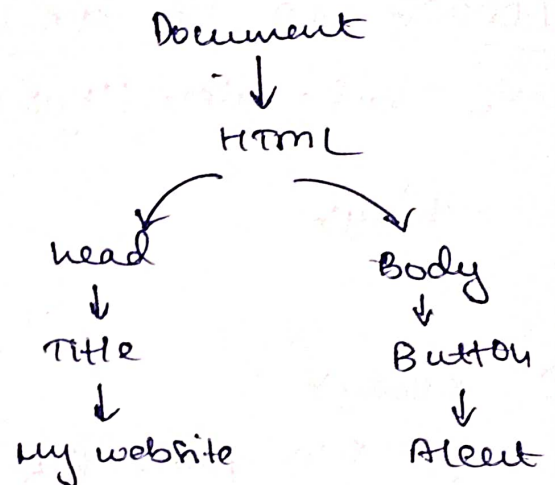
Ab agar humein is DOM tree mein se **head** ko access kerna hai. to ↓

document . firstElementChild . FirstElementChild

body ko access kerna ho to ↓

document . firstElementChild . Last Element Child

* Selecting HTML Elements

```
< Body >
    <h1> Hello </h1>
    <input type = "checkbox">
    <button style = " :active color: red ;"> Click Me </button>
    <ul>
      <li class = "list">
        <a href = " https://www.google.com"> Google </a>
      </li>
      <li class = "list"> Second </li>
      <li class = "list"> Third </li>
    </ul>
    <script src = "./index.js"> </script>
</Body>
```

① **query Selector**

document . query Selector ("ul") . last Element Child . innerHTML
= "hello"

⤷ ul element ke andar last element ke inner
HTML Ko change Kardia.

[more ahead] →

② **Get elements by tag name**

eg -

(i) document . getElements By TagName ("Li") ;

o/p → HTML Collection (3) [Li.item, Li.item, Li.item]

‸‸‸‸‸‸‸‸‸‸
element array

(ii) document . getElements ByTagName ("Li") . style . color = "purple" ;

o/p → error

as array return Kerta hai and humm usko
Koi property nhi de skte
to humein array Ka element specify Kerna hoga.

⤵ second index wala
element will turn purple

(iii) document . getElements ByTagName ("Li") [2] . style . color = "purple" ;

o/p → "Third" will get purple color
⤷ element at index 2.

property given
as a string

(iv) Ese hi hum is array Ki length bhi nikal skte hai

document . getElements By TagName ("Li") . length ;

o/p → 3

③ Get elements by class Name

eg-

(i) document.getElementsbyClassName("btn");

O/p → HTML Collection [button.btn]

elements ~~array~~ /HTML collection

we can convert it | So to make any changes (even if
to array to use | 1 element with that class)
filter, map etc. | we need to specify element index.

(ii) document.getElementsbyClassName("btn")[0].style.color="red"

④ Get elements by Id

eg-

(i) document.getElementById("title");

O/p→   <h1 id="title"> Hello </h1>

↳ returns element not array
as ID is unique

(ii) document.getElementbyID("title").innerHTML = "good bye";

CONVERTING SOMETHING TO ARRAY

eg-   tempClasslist is a HTML collection
then to convert it to array we use

[Array.from (tempClassList)]

* Query Selector

↳ can be used to select any element, class, or id

for selecting the h1 in our code we can use h1 tag or the # title id.

↓

document.querySelector("h1");   document.querySelector("#title");

↳ we can combine selector to target specific element.

eg- for selecting anchor tag inside list item.
     document.querySelector("li a");
                                    space

eg- for selecting list items with .item class
     document.querySelector("li.item");
                              ↳ gives us first
                                list item.

O/p → <li class = "item"> ...

for getting all li with item class use All

document.querySelectorAll("li.item");

⟶ To be precise   ↳ returns an array
   It returns node   So to manipulate them
   list which is same   we need to specify index
   as Array.

document.querySelectorAll("li.item")[2].style.color = "blue";

→ Node list mein sirf forEach loop available hota hai. Baki filter, map, reduce ke karne ke liye convert it to array.

* Change behaviour on toggle

HTML `<button class = "btn"> click Me </button>`

CSS

```
.btn {
  ---
  ---
}

.invisible {
    visibility : hidden;
}
```

JS

```
document. querySelector("button"). classList. add("invisible");
```

↓

Ye button element ki class mein
invisible class add kar rho hai.

```
document. querySelector("button"). classList. remove ("invisible");
```

Or

we can use toggle
(added hoga to remove)
(removed hoga to add)

```
document. querySelector("button"). classList. toggle ("invisible");
```

* Manipulating Text content

[html]

`<h1 id="title"> <strong> Hello </strong> </h1>`

[js]

eg- `document.querySelector("h1").innerHTML;`

    o/p → `<strong> Hello </strong>`

eg- `document.querySelector("h1").textContent;`

    o/p → Hello

using innerHTML we can also change HTML prop.

  eg- `document.querySelector("h1").innerHTML = "`
                                     `<em> Hello </em>"`

      o/p →   Hello
                  italisized Hello.

⇒ We can also manipulate text by using .innerText

  for eg- agar hummein CSS se koi text ko invisible kardia
    to .innerText hummein visible text dega
    lekin .textContent hummein saara text dega.

* Manipulating HTML elements attributes

HTML
```
<a href = "www.google.com"> google </a>
```

JS
```
document.querySelector("a").attributes;
```
⌣ gives list of attributes in a tag.

```
document.querySelector("a").getAttribute("href");
```
⌣ iss href attribute ki value dedega.

o/p → "www.google.com"

```
document.querySelector("a").setAttribute("href",
                                "www.bing.com");
```
⌣ is attribute ki value change kardi

ab click karne pe bing khulega