

Web Engineering

Lect 12 (JavaScript)

Instructor: Faheem Shaukat

Meeting Hours

Wednesday and Thursday

12PM to 02PM

script.js index.html

```
1 // DOM manipulation
2
3
4
```

Lecture 53

Say hello to Say it!

Elements Console >>

<top frame>

>

```
1 // DOM manipulation
2
3
4
```

Lecture 53

Say hello to

Elements Console >>

<top frame>

> window

```
< ▶ Window {external: Object, chrome:
  Object, document: document,
  __browserSync__oldSocketIo:
  undefined, io: undefined...}
```

>



Lecture 53

Say hello to

```
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5   </head>
6   <body>
7     <h1 id="title">Lecture 53</h1>
8
9     <p>
10       Say hello to
11       <input id="name" type="text">
12       <button>Say it!</button>
13     </p>
14
15     <div id="content"></div>
16   </body>
17 </html>
18
19
```

Lecture 53

Say hello to

Elements Console >>

<top frame>

> window.document

< ▶ #document

>

script.js

index.html

```
1 // DOM manipulation
```

```
2
```

```
3
```

```
4
```

Lecture 53

Say hello to

Elements Console

<top frame>

> window.document

< ▼ #document

<!DOCTYPE html>

<html lang="en">

▶ #shadow-root (open)

▶ <head>...</head>

▶ <body>...</body>

</html>

> |


```

1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5   </head>
6   <body>
7     <h1 id="title">Lecture 53</h1>
8
9     <p>
10      Say hello to
11      <input id="name" type="text">
12      <button>Say it!</button>
13    </p>
14
15    <div id="content"></div>
16  </body>
17 </html>
18
19

```

http://localhost:3000/index.html

localhost:3000/index.html

Lecture 53

h1#title 514px x 37px Say it!

Elements Console >>

<top frame>

- > window.document
- < ▶ #document
- > document.getElementById("title");
- < <h1 id="title">Lecture 53</h1>
- > |

```
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5     <script src="_js/script.js"></script>
6   </head>
7   <body>
8     <h1 id="title">Lecture 53</h1>
9
10    <p>
11      Say hello to
12      <input id="name" type="text">
13      <button>Say it!</button>
14    </p>
15
16    <div id="content"></div>
17  </body>
18 </html>
19
20
```

Lecture 53

Connected to Bro

Say hello to Say it!

Elements Console >>

<top frame>


```

1 // DOM manipulation
2 console.log(document.getElementById("title"));
3
4

```

Lecture 53

Connected to Browser

Say hello to Say it!

Elements Console >>

<top frame>

null script.js



```
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5   </head>
6   <body>
7     <h1 id="title">Lecture 53</h1>
8
9     <p>
10      Say hello to
11      <input id="name" type="text">
12      <button>Say it!</button>
13    </p>
14
15    <div id="content"></div>
16
17    <script src="js/script.js"></script>
18  </body>
19 </html>
20
21
```

Lecture 53

Say hello to

Elements Console >>

<top frame>

null

script.js

```
1 // DOM manipulation
2 console.log(document.getElementById("title"));
3
4
```

Lecture 53

Say hello to Say It!

Elements Console >>

<top frame>

script.
<h1 id="title">Lecture 53</h1>

```

1 // DOM manipulation
2 console.log(document.getElementById("title"));
3
4 console.log(document instanceof HTMLDocument);
5
6

```

Lecture 53

Say hello to Say it!

Elements Console >>

<top frame>

h1#title script.

true script.




```
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5   </head>
6   <body>
7     <h1 id="title">Lecture 53</h1>
8
9     <p>
10      Say hello to
11      <input id="name" type="text">
12      <button>Say it!</button>
13    </p>
14
15    <div id="content"></div>
16
17    <script src="js/script.js"></script>
18  </body>
19 </html>
20
21
```

Lecture 53

Say hello to

Elements Console >>

<top frame>


```

1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5   </head>
6   <body>
7     <h1 id="title">Lecture 53</h1>
8
9     <p>
10      Say hello to
11      <input id="name" type="text">
12      <button onclick="_sayHello();"_
13        Say it!
14      </button>
15    </p>
16
17    <div id="content"></div>
18
19    <script src="js/script.js"></script>
20  </body>
21 </html>
22
23

```

Lecture 53

Connected to Bro

Say hello to Say it!

Elements Console >>

<top frame>

>

```

1 // DOM manipulation
2 // console.log(document.getElementById("title"));
3 // console.log(document instanceof HTMLDocument);
4
5 function sayHello () {
6     console.log(
7         document.getElementById("name")
8     );
9 }

```

Lecture 53

Say hello to Say it!

input#name 131px x 19px

Elements Console >>

<top frame>

script.
<input id="name" type="text">

```

1 // DOM manipulation
2 // console.log(document.getElementById("title"));
3 // console.log(document instanceof HTMLDocument);
4
5 function sayHello () {
6     console.log(
7         document.getElementById("name").value
8     );
9 }

```

Lecture 53

Say hello to

Elements Console >>

<top frame>

Yaakov

script.

script.

```
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5   </head>
6   <body>
7     <h1 id="title">Lecture 53</h1>
8
9     <p>
10      Say hello to
11      <input id="name" type="text">
12      <button onclick="sayHello();">
13        Say it!
14      </button>
15    </p>
16
17    <div id="content"></div>
18
19    <script src="js/script.js"></script>
20  </body>
21 </html>
22
23
```

Lecture 53

Say hello to



Elements

Console



<top frame>

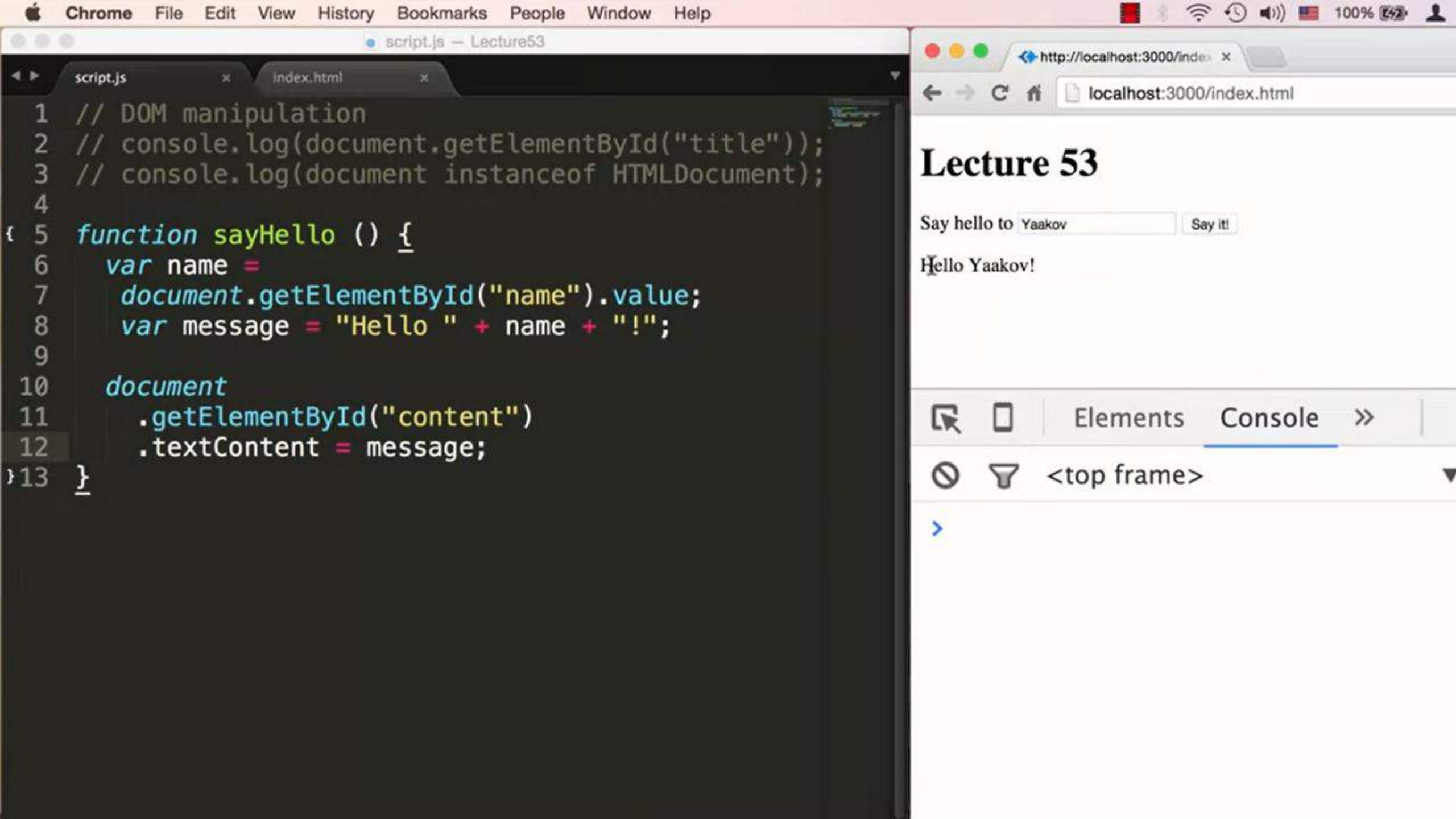
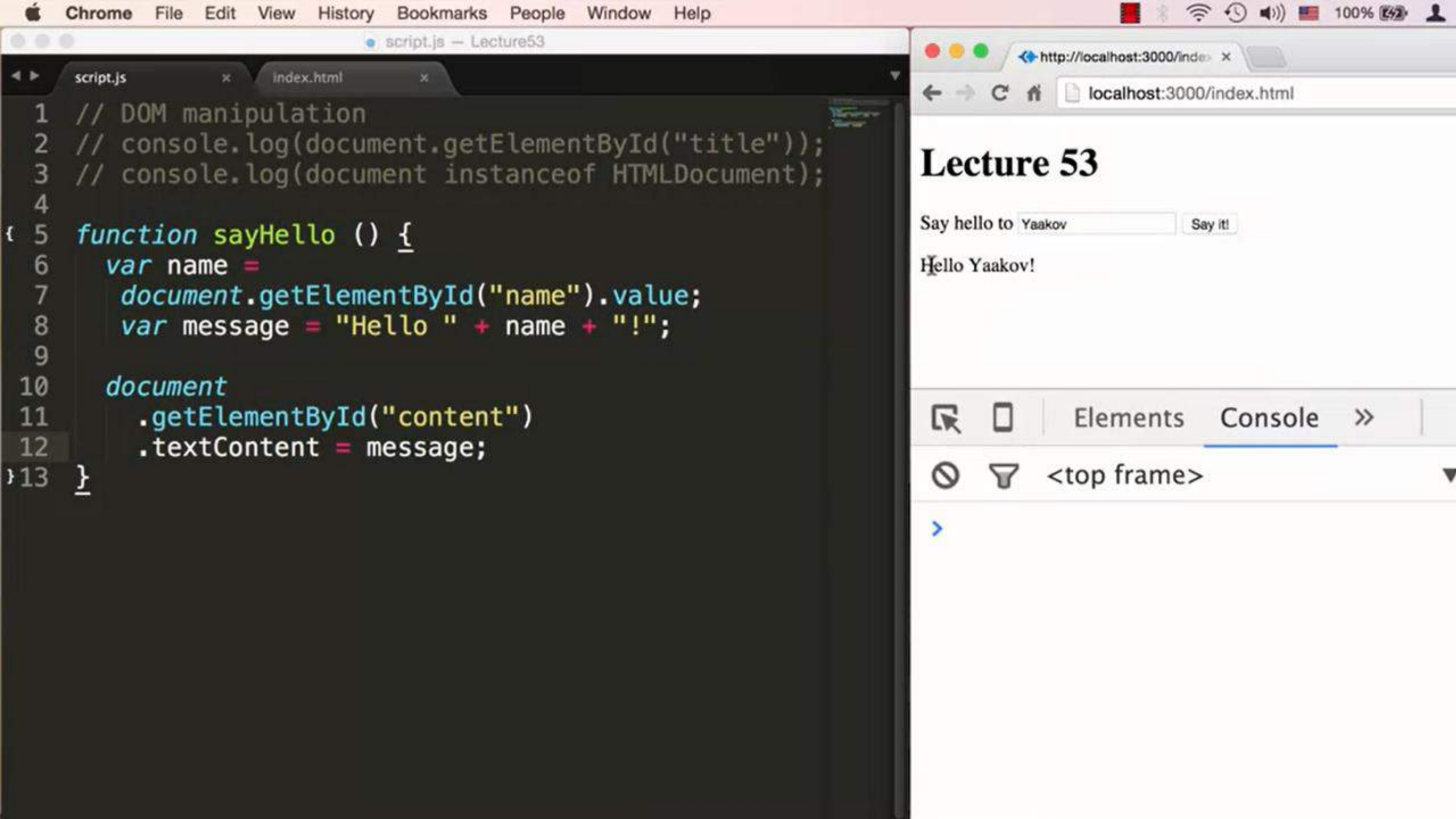


script.

Yaakov

script.





script.js

index.html

```
// DOM manipulation
// console.log(document.getElementById("title"));
// console.log(document instanceof HTMLDocument);

function sayHello () {
  var name =
    document.getElementById("name").value;
  var message = "<h2>Hello " + name + "!</h2>";

  document
    .getElementById("content")
    .textContent = message;
}
```

Lecture 53

Say hello to Yaakov

Say it!

<h2>Hello Yaakov!</h2>



Elements

Console



<top frame>



```

script.js — Lecture53
script.js  index.html
1 // DOM manipulation
2 // console.log(document.getElementById("title"));
3 // console.log(document instanceof HTMLDocument);
4
5 function sayHello () {
6     var name =
7         document.getElementById("name").value;
8     var message = "<h2>Hello " + name + "!</h2>";
9
10    // document
11    //     .getElementById("content")
12    //     .textContent = message;
13
14    document
15        .getElementById("content")
16        .innerHTML = message;
17 }
    
```

Lecture 53

Say hello to

Hello Yaakov!

Elements Console >>

<top frame>

>

```

1 // DOM manipulation
2 // console.log(document.getElementById("title"));
3 // console.log(document instanceof HTMLDocument);
4
5 function sayHello () {
6     var name =
7         document.getElementById("name").value;
8     var message = "<h2>Hello " + name + "!</h2>";
9
10    // document
11    //     .getElementById("content")
12    //     .textContent = message;
13
14    document
15        .getElementById("content")
16        .innerHTML = message;
17 }
    
```

Lecture 53

Say hello to Yaakov

Say It!

Hello Yaakov!

h2 515px x 28px



Elements

Console



client.2.10.0.js"></script>

<h1 id="title">Lecture 53</h1>

<p>...</p>

<div id="content">

... <h2>Hello Yaakov!</h2>

</div>

<script src="js/script.js"></scri

<span id="buffer-extension-hover-button" style="display: none; posi

html body div#content

h2

Styles

Event Listeners

DOM Breakpoints


```

2 // console.log(document.getElementById("title"));
3 // console.log(document instanceof HTMLDocument);
4
5 function sayHello () {
6     var name =
7         document.getElementById("name").value;
8     var message = "<h2>Hello " + name + "!</h2>";
9
10    // document
11    //     .getElementById("content")
12    //     .textContent = message;
13
14    document
15        .getElementById("content")
16        .innerHTML = message;
17
18    if (name === "student") {
19        var title =
20            document
21                .querySelector("#title")
22                .textContent;
23        title += " & Lovin' it!";
24    }
25 }

```

Lecture 53

Say hello to

Hello student!

Elements Console >>

<top frame>

```

5 function sayHello () {
6   var name =
7     document.getElementById("name").value;
8   var message = "<h2>Hello " + name + "!</h2>";
9
10  // document
11  //   .getElementById("content")
12  //   .textContent = message;
13
14  document
15    .getElementById("content")
16    .innerHTML = message;
17
18  if (name === "student") {
19    var title =
20      document
21        .querySelector("#title")
22        .textContent;
23    title += " & Lovin' it!";
24    document
25      .querySelector("#title")
26      .textContent = title;
27  }
28 }

```

Lecture 53 & Lovin' it!

Say hello to

Hello student!

Elements Console >>

<top frame>

>


```

5 function sayHello () {
6   var name =
7     document.getElementById("name").value;
8   var message = "<h2>Hello " + name + "!</h2>";
9
10  // document
11  //   .getElementById("content")
12  //   .textContent = message;
13
14  document
15    .getElementById("content")
16    .innerHTML = message;
17
18  if (name === "student") {
19    var title =
20      document
21        .querySelector("#title")
22        .textContent;
23    title += " & Lovin' it!";
24    document
25      .querySelector("h1")
26      .textContent = title;
27  }
28 }

```

Lecture 53 & Lovin' it!

Say hello to

Hello student!

Elements Console >>

<top frame>

>

Events

```
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5
6   </head>
7   <body>
8     <h1 id="title">Lecture 54</h1>
9
10    <p>
11      Say hello to
12      <input id="name" type="text">
13      <button onclick="_sayHello();"_>
14        Say it!
15      </button>
16    </p>
17
18    <div id="content"></div>
19    <script src="js/script.js"></script>
20  </body>
21 </html>
22
23
```

Lecture 54

Say hello to

Say it!

Hello yaakov!



Elements

Console



<top frame>



```
index.html — Lecture54
index.html script.js
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5
6   </head>
7 <body>
8   <h1 id="title">Lecture 54</h1>
9
10  <p>
11    Say hello to
12    <input onblur="_sayHello();" id="name" type="
13      text">
14    <button onclick="sayHello();">
15      Say it!
16    </button>
17  </p>
18
19  <div id="content"></div>
20  <script src="js/script.js"></script>
21 </body>
22 </html>
23
```

http://localhost:3000/index x
localhost:3000/index.html

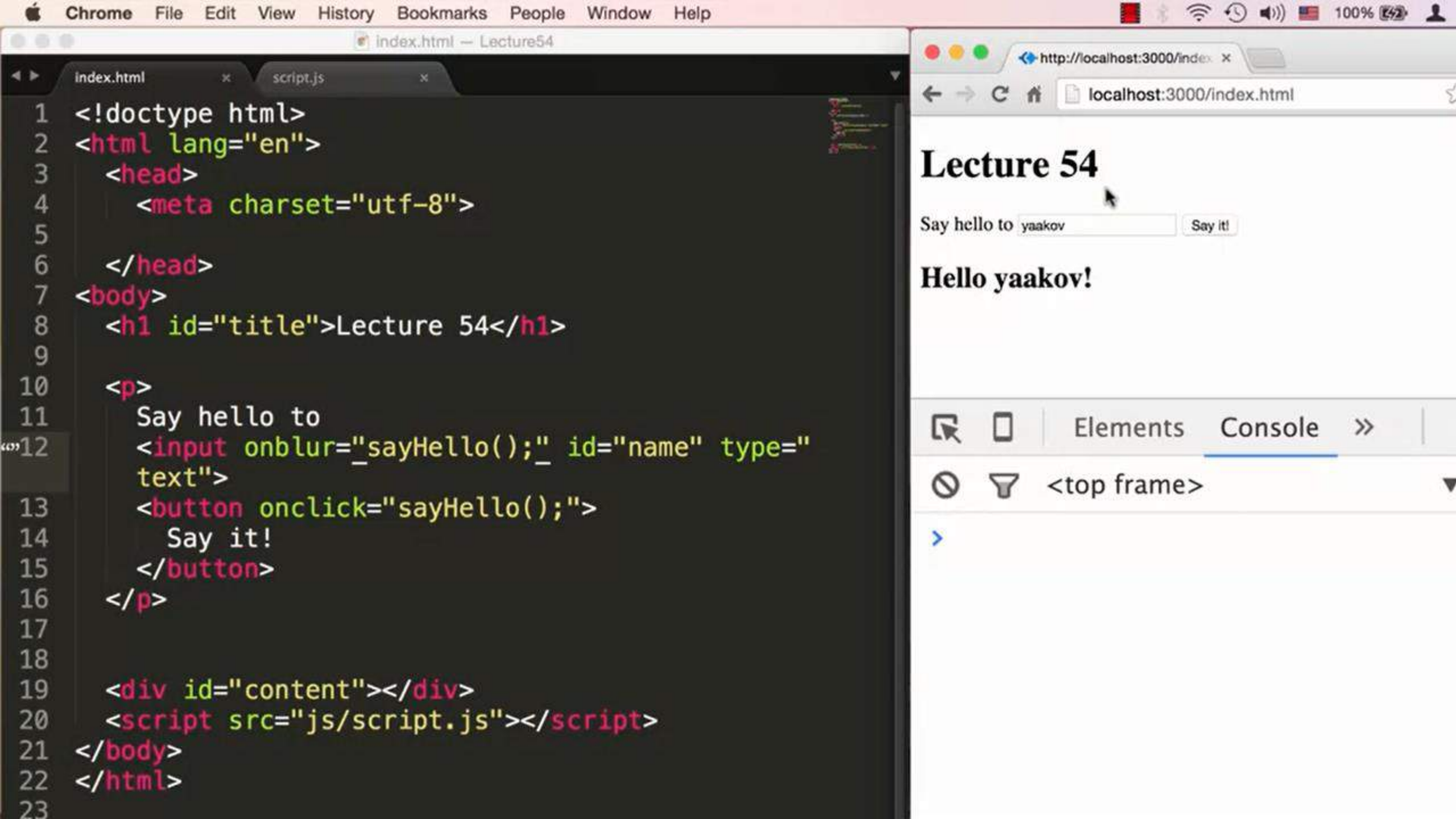
Lecture 54

Say hello to

Elements Console >>

<top frame>

>




```
1 // Event handling
2 function sayHello (event) {
3   console.log(this);
4   var name =
5     document.getElementById("name").value;
6   var message = "<h2>Hello " + name + "!</h2>";
7
8   document
9     .getElementById("content")
10    .innerHTML = message;
11
12   if (name === "student") {
13     var title =
14       document
15         .querySelector("#title")
16         .textContent;
17     title += " & Lovin' it!";
18     document
19       .querySelector("h1")
20       .textContent = title;
21   }
22 }
23
24 // Unobstrusive event binding
```

Lecture 54

Say hello to

Hello !

Elements Console >>

<top frame>

```
script.js
▶ Window {external: Object, chrome:
Object, document: document,
__browserSync__oldSocketIo:
undefined, io: undefined...}
```

>

```
7
8  document
9    .getElementById("content")
10   .innerHTML = message;
11
12  if (name === "student") {
13    var title =
14      document
15        .querySelector("#title")
16        .textContent;
17    title += " & Lovin' it!";
18    document
19      .querySelector("h1")
20      .textContent = title;
21  }
22 }
23
24 // Unobstrusive event binding
25 document.querySelector("button")
26 .addEventListener("click", sayHello);
27
28
29 // document.querySelector("button")
30 //   .click = sayHello;
```

Lecture 54

Say hello to

Elements Console >>

<top frame>

>

```
12  if (name === "student") {
13      var title =
14          document
15              .querySelector("#title")
16              .textContent;
17      title += " & Lovin' it!";
18      document
19          .querySelector("h1")
20          .textContent = title;
21  }
22  }
23
24  // Unobstrusive event binding
25  // document.querySelector("button")
26  //     .addEventListener("click", sayHello);
27
28
29  document.querySelector("button")
30  .onclick = sayHello;
31
32
33
34
35
```

Lecture 54

Say hello to

Hello !



Elements

Console



<top frame>

<button>

Say it!

</button>

script.




```
1 // Event handling
2 function sayHello (event) {
3   this.textContent = "Said it!";
4   var name =
5     document.getElementById("name").value;
6   var message = "<h2>Hello " + name + "!</h2>";
7
8   document
9     .getElementById("content")
10    .innerHTML = message;
11
12   if (name === "student") {
13     var title =
14       document
15         .querySelector("#title")
16         .textContent;
17     title += " & Lovin' it!";
18     document
19       .querySelector("h1")
20       .textContent = title;
21   }
22 }
23
24 // Unobstrusive event binding
```

Lecture 54

Say hello to Yaakov

Said it!

Hello Yaakov!

Elements Console >>

<top frame>

>



index.html x script.js x

```
1 // Event handling
2 document.addEventListener("DOMContentLoaded",
3     function (event) {
4
5         function sayHello (event) {
6             this.textContent = "Said it!";
7             var name =
8                 document.getElementById("name").value;
9             var message = "<h2>Hello " + name + "!</h2>";
10
11             document
12                 .getElementById("content")
13                 .innerHTML = message;
14
15             if (name === "student") {
16                 var title =
17                     document
18                         .querySelector("#title")
19                         .textContent;
20                 title += " & Lovin' it!";
21                 document
22                     .querySelector("h1")
23                     .textContent = title;
24             }
25         }
26     }
27 );
```

http://localhost:3000/index.html x

localhost:3000/index.html

Lecture 54

Say hello to Yaakov

Said it!

Hello Yaakov!

Elements

Console



<top frame>

