

# Introduction to Web Development Javascript

Client side scripting.

what type of language?

Why,Where & How to use Javascript?

## **Perquisites**

1. Download and Install Visual Studio Code

<https://code.visualstudio.com/download>

2. Working Browser (Google Chrome is Preferable)

## **What is Javascript?**

1. Javascript is a client side scripting language, that runs on the browser.
2. Javascript is an Object Oriented Language.
3. Javascript has some of the syntax's from Java but is not related to Java.
4. ECMAScript 6 or ES6 is the latest Major version of Javascript.
5. Javascript is case sensitive

## **Structure of Javascript**

```
<script>
    All Running Statements
</script>
```

## **Comments in Javascript**

```
<script>
    /*Multiline Comment*/
    //Single line Comment
</script>
```

# Variables in Javascript

**Var is used for defining global scoped variables**

```
<script>
    var name = "Some String";
    var age = 11; //Some Number
</script>
```

**Let is Used for Defining block Level Variables**

**Const is used for Defining block level Constants**

```
<script>
    var name = "Some String";
    var age = 11; //Some Number
</script>
```

◊ index.html ●

◊ index.html &gt; ⚒ html &gt; ⚒ body &gt; ⚒ script

```
1  <!doctype html>
2  <html>
3  <head>
4  |   <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7
8  <script>
9      var name="Jake";
10     function something(){
11         let name="dennis";
12     }
13     cont pi=3.142585;
14 </script>
15 </body>
16 </html>
```

# Javascript Outputs



## Writing Output to The Console

```
Console.log("Some Statement");
```

## Output as an Alert

```
alert("Some Statement");
```

## Output to the Browser Screen

```
Document.write("Some Statement");
```

## Writing Results to Elements as HTML

```
Document.getElementById("someID").innerHTML="Some Statement";
```

File Edit Selection View Go Run Terminal Help

index.html - MTA - Visual Studio Code

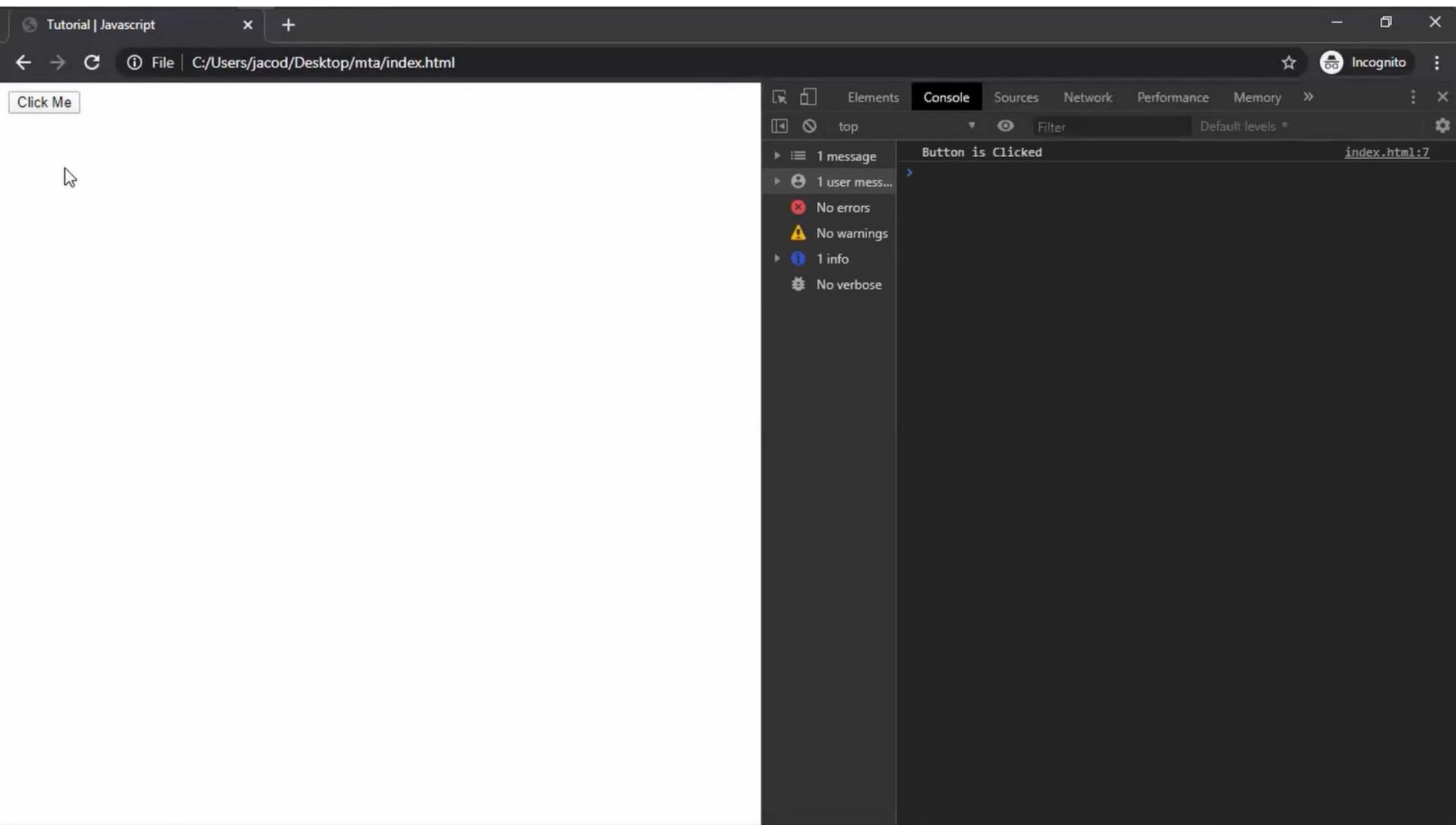
EXPLORER OPEN EDITORS MTA

- > .vscode
- bg.mp4
- index.html
- projectmantra\_white....
- script.js
- # style.css
- world-wide-web.png

index.html

```
<!doctype html>
<html>
<head>
    <title>Tutorial | Javascript</title>
</head>
<body>
    <button onclick="console.log('Button is Clicked')>Click Me</button>
</body>
</html>
```

Ln 7, Col 64 Spaces: 4 UTF-8 CRLF HTML 28m ESLint



File Edit Selection View Go Run Terminal Help

index.html - MTA - Visual Studio Code

EXPLORER

> OPEN EDITORS

MTA

- > .vscode
- bg.mp4
- ▷ index.html
- projectmantra\_white....
- JS script.js
- # style.css
- world-wide-web.png

index.html

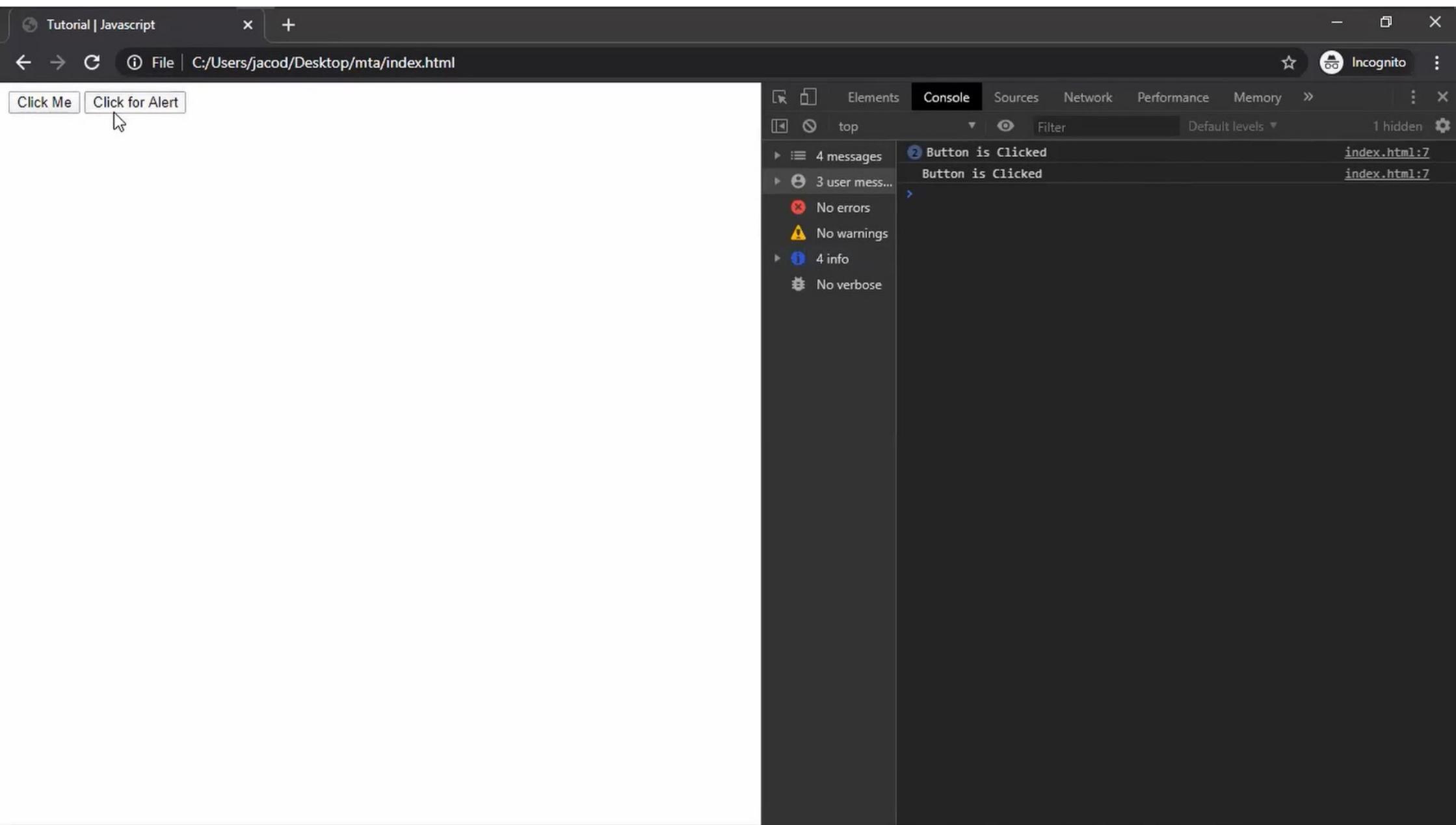
index.html > html > body > button

```
1  <!doctype html>
2  <html>
3  <head>
4  |   <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7  |     <button onclick="console.log('Button is Clicked')">Click Me</button>
8  |     <button onClick="alert('button is clicked')">Click for Alert</button>
9  </body>
10 </html>
```

a-mdb-slider-material MDB Material Slider

a-mdb-slider-default MDB Default Slider

Ln 8, Col 66 Spaces: 4 UTF-8 CRLF HTML 28m ✓ ESLint



ER

...

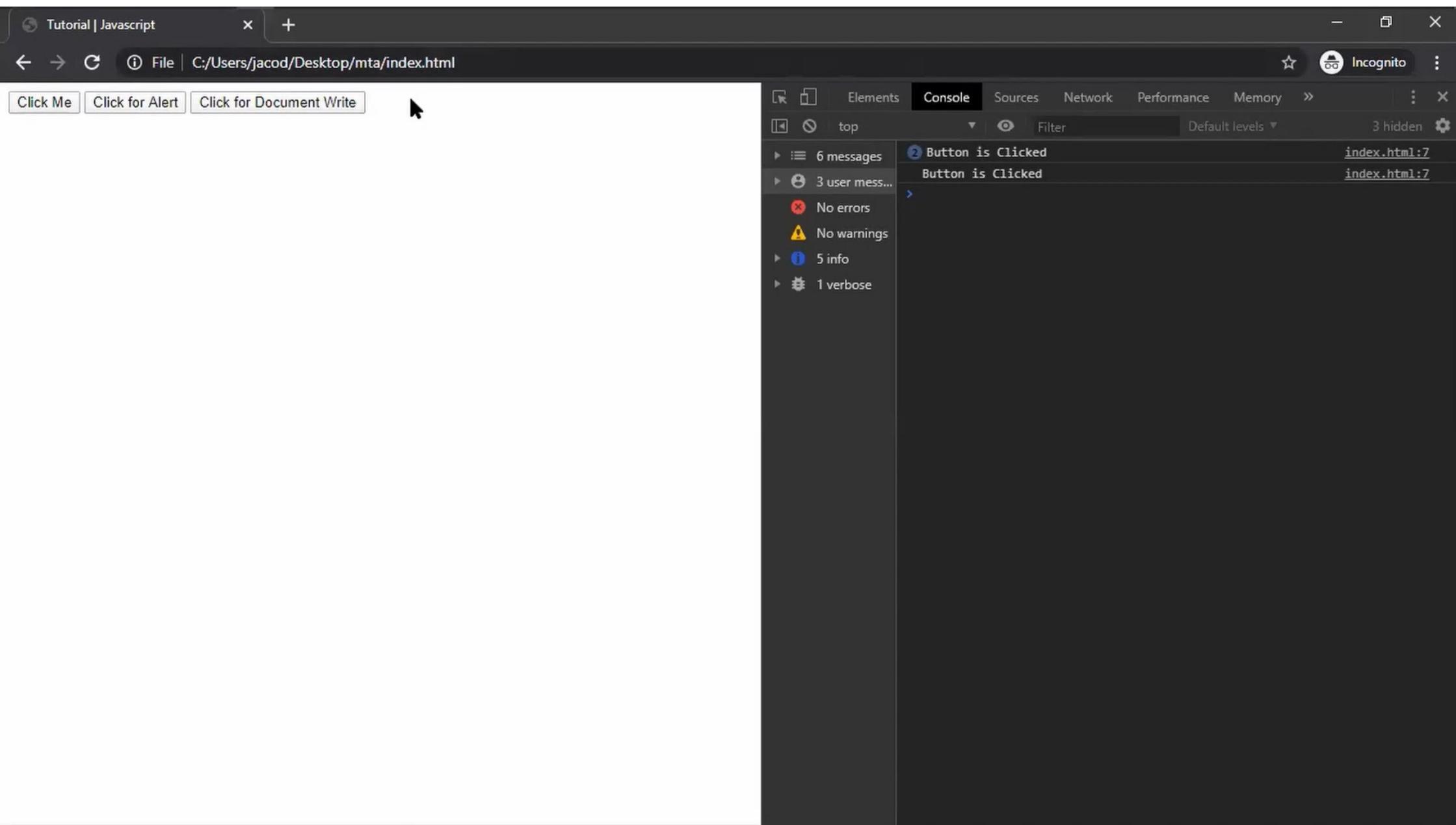


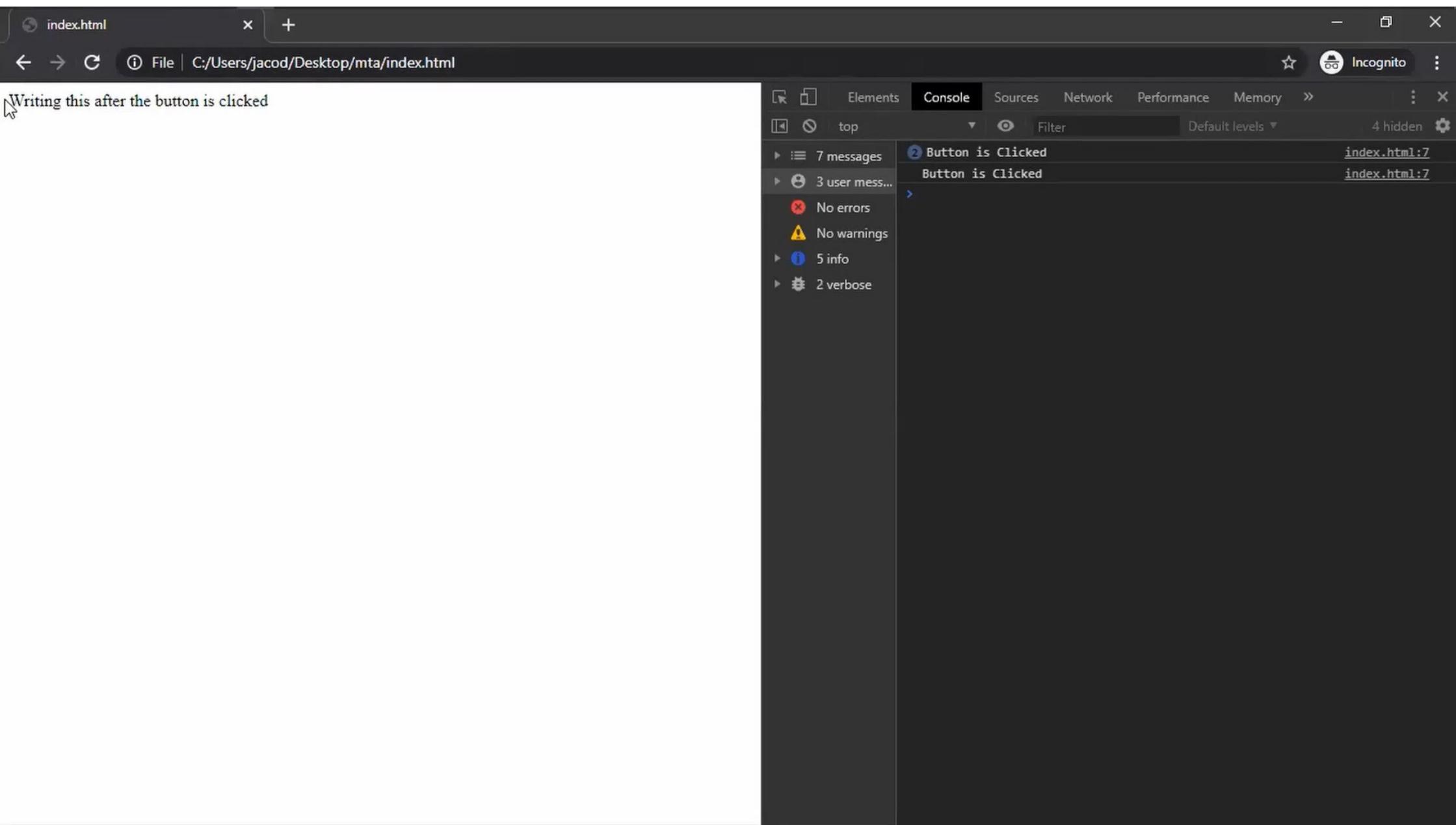
index.html X

index.html &gt; html &gt; body &gt; button

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <button onclick="console.log('Button is Clicked')">Click Me</button>
8      <button onClick="alert('button is clicked')">Click for Alert</button>
9      <button onclick="document.write('Writing this after the button is clicked')">Click for Document Write</button>
10 </body>
11 </html>
```

ode  
mp4  
x.html  
ectmantra\_white....  
ot.js  
e.css  
d-wide-web.png





Go Run Terminal Help

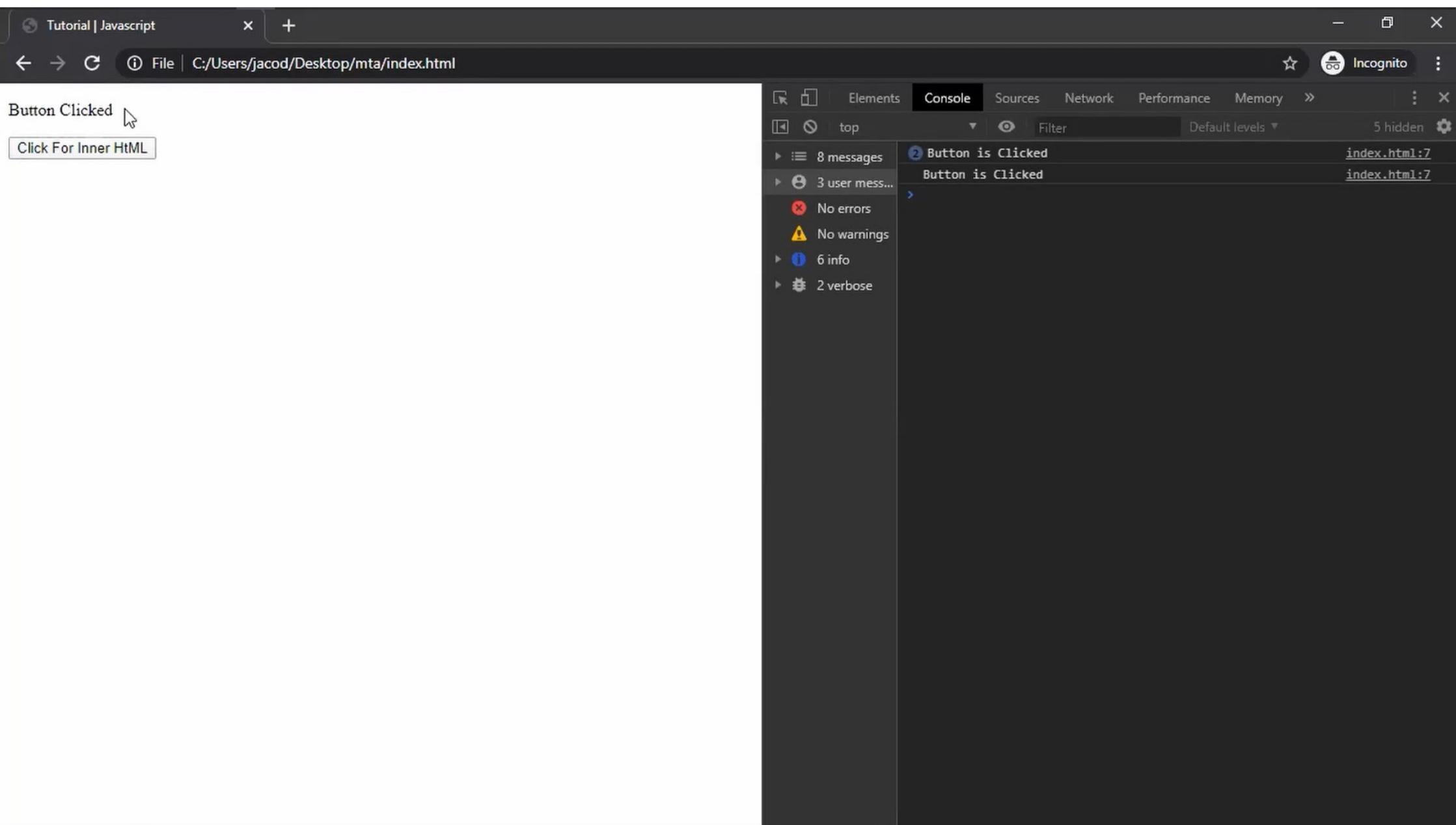
index.html - MTA - Visual Studio Code

- □ X

index.html X

index.html > html > body > p#para

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <!-- <button onclick="console.log('Button is Clicked')">Click Me</button>
8      <button onClick="alert('buttion is clicked')">Click for Alert</button>
9      <button onclick="document.write('Writing this after the button is clicked')">Click for Document Write</button> -->
10     <p id="para"></p>
11     <button onclick="document.getElementById('para').innerHTML='Button Clicked'">Click For Inner HtML</button>
12 </body>
13
14 </html>
```



# Javascript Datatypes

1. Undefined
2. Null
3. Boolean
4. String
5. Symbols
6. Number
7. object

# Array Definition

- *array* - a list of similar variables with two names:
  - *name of the array* it is the same for all variables in the array
  - *index (or subscript)* - different for every variable, put in square brackets [ ]

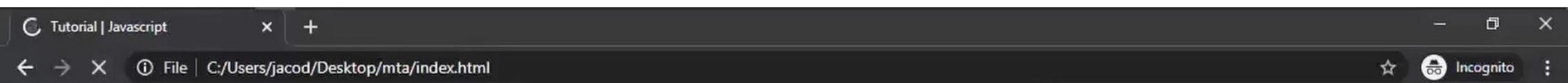
Go Run Terminal Help

• index.html - MTA - Visual Studio Code

index.html ●

index.html > html > script

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7
8  </body>
9  <script>
10     var car
11     alert(car);
12 </script>
13 </html>
```



The screenshot shows the Visual Studio Code interface with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar indicates the current file is "index.html - MTA - Visual Studio Code".

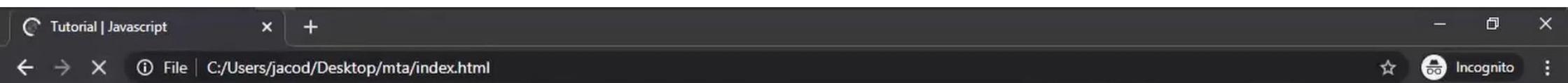
The Explorer sidebar on the left lists the project structure:

- OPEN EDITORS (1 UNSAVED)
- MTA
  - .vscode
  - bg.mp4
  - index.html
- projectmantra\_white....
- script.js
- style.css
- world-wide-web.png

The main editor area displays the content of the "index.html" file:

```
<!doctype html>
<html>
<head>
    <title>Tutorial | Javascript</title>
</head>
<body>
    <script>
        var car='';
        alert(car)
    </script>
</body>
</html>
```

The status bar at the bottom shows file statistics: 0 0 △ 0, Login, Configure, Preview Available, Ln 10, Col 20, Spaces: 4, UTF-8, CRLF, HTML, 43m, ESLint, and a bell icon.



This page says  
undefined

OK

File Edit Selection View Go Run Terminal Help

index.html - MTA - Visual Studio Code

EXPLORER OPEN EDITORS

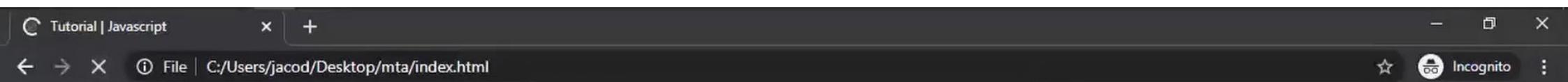
MTA .vscode bg.mp4 index.html projectmantra\_white.... script.js style.css world-wide-web.png

index.html

```
<!doctype html>
<html>
<head>
    <title>Tutorial | Javascript</title>
</head>
<body>
</body>
<script>
    var is_car=true;
    alert(is_car)
</script>
</html>
```

OUTLINE NPM SCRIPTS MAVEN

0 0 Login Configure Preview Available Ln 11, Col 18 Spaces: 4 UTF-8 CRLF HTML 43m ESLint



This page says

true

OK

File Edit Selection View Go Run Terminal Help

index.html - MTA - Visual Studio Code

EXPLORER OPEN EDITORS

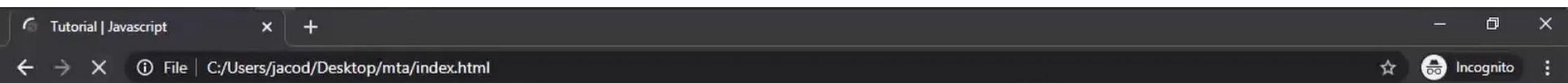
MTA .vscode bg.mp4 index.html projectmantra\_white.... script.js style.css world-wide-web.png

index.html

```
<!doctype html>
<html>
<head>
    <title>Tutorial | Javascript</title>
</head>
<body>
    <script>
        var is_car=true;
        alert(typeof is_car);
    </script>
</body>
</html>
```

OUTLINE NPM SCRIPTS MAVEN

0 △ 0 Login Configure Preview Available Ln 11, Col 30 Spaces: 4 UTF-8 CRLF HTML 44m ESLint

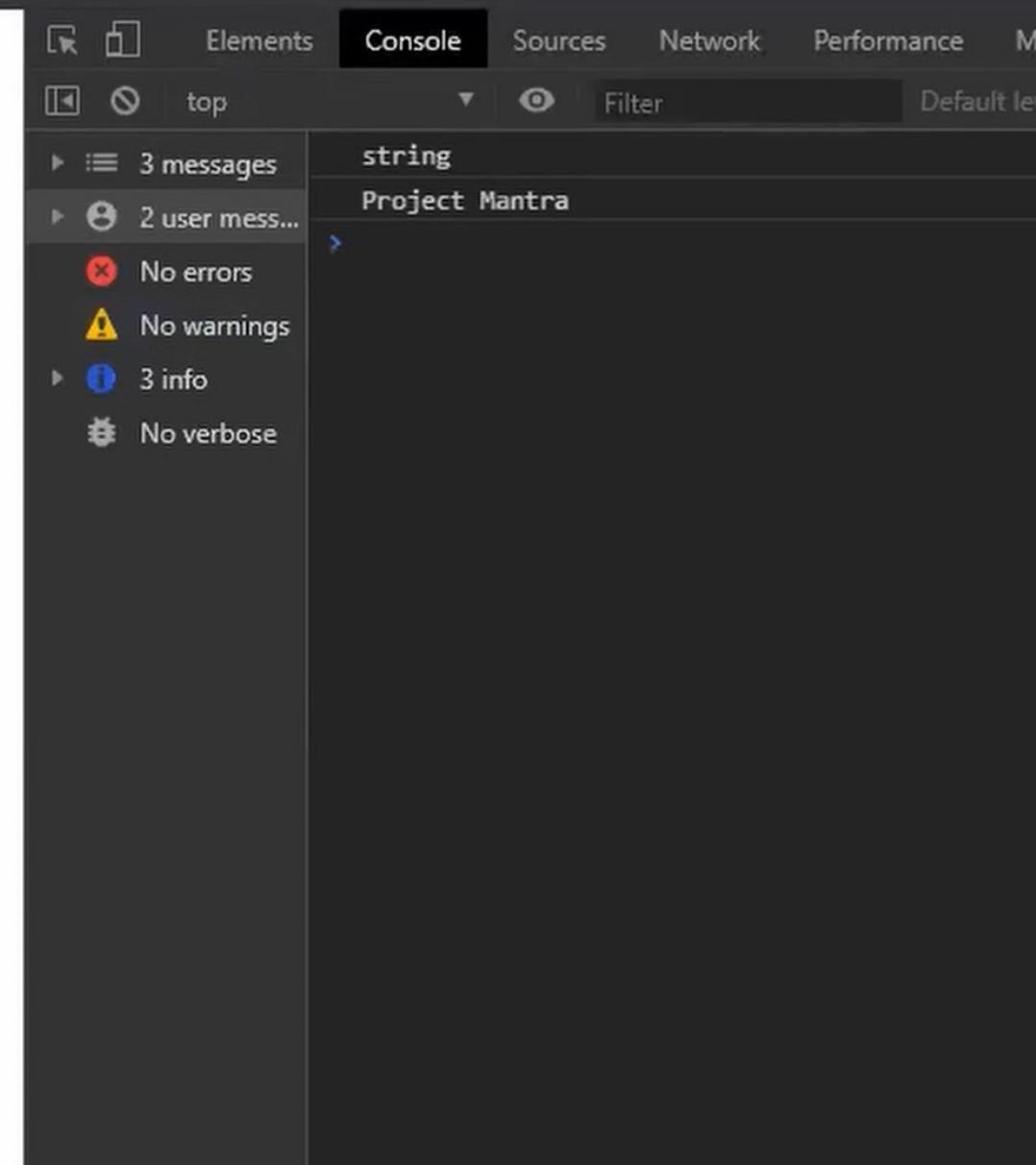


This page says

boolean

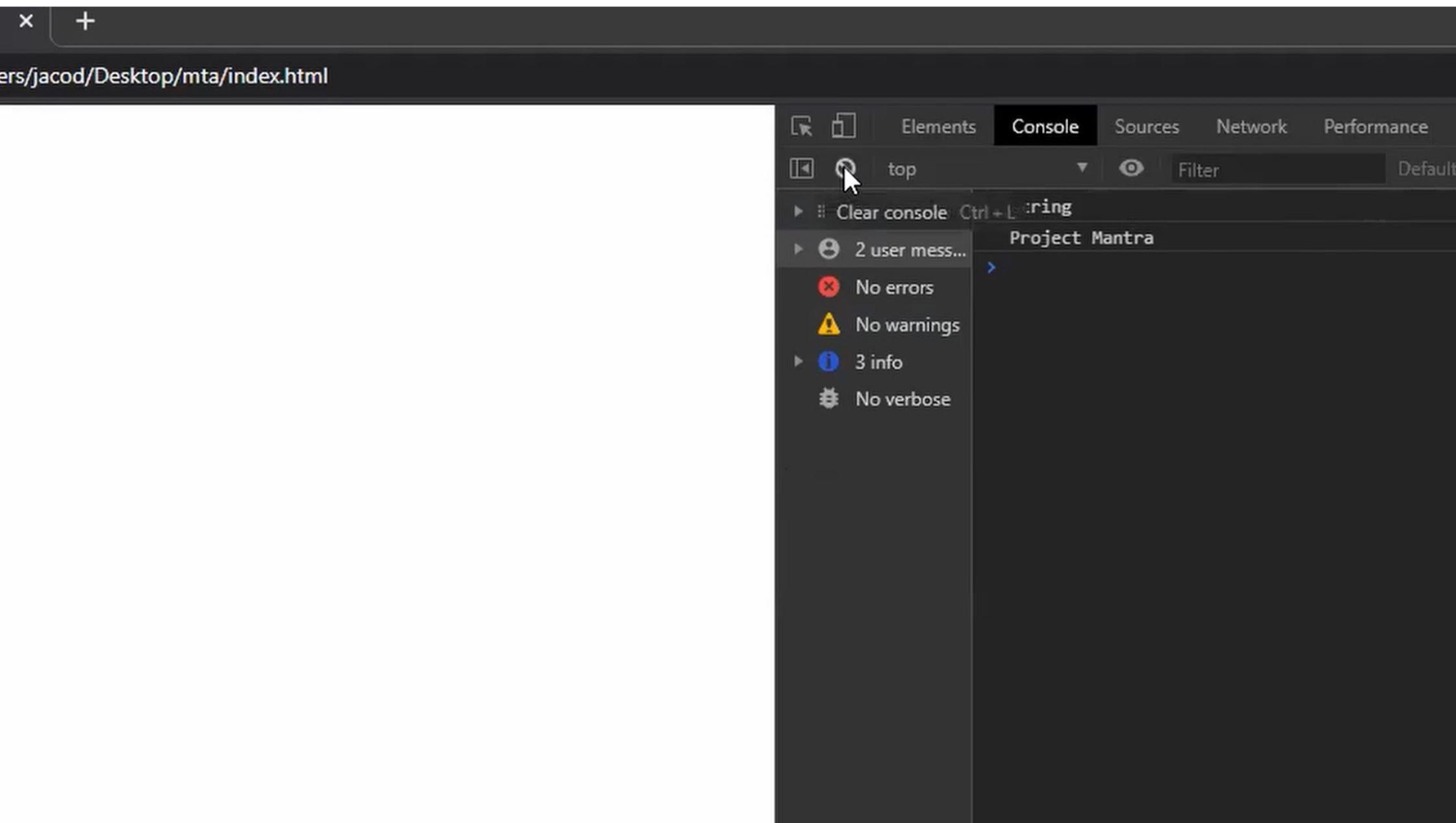
OK

```
① index.html ✘  
② index.html > ⏺ html > ⏺ script  
1  <!doctype html>  
2  <html>  
3  <head>  
4    <title>Tutorial | Javascript</title>  
5  </head>  
6  <body>  
7  
8  </body>  
9  <script>  
10   var name="Project Mantra";  
11   console.log(typeof name);  
12   console.log(name);  
13 </script>  
14 </html>
```



- index.html ×
- index.html > ⚒ html > ⚒ script

```
1  <!doctype html>
2  <html>
3  <head>
4  |   <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7
8  </body>
9  |   <script>
10 |     var age=4;
11 |     console.log(typeof age);
12 |     console.log(age);
13 |   </script>
14 </html>
```



x +

ers/jacod/Desktop/mta/index.html

Elements Console Sources Network Performance

top Filter Default

3 messages

2 user mess...

No errors

No warnings

3 info

No verbose

number

45

Go Run Terminal Help

index.html - MTA - Visual Studio Code

index.html X

index.html > html > script

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7
8  </body>
9      <script>
10         var student={
11             name:"Rakesh",
12             age:"25",
13             class:"BTech"
14         };
15         console.log(typeof student);
16         console.log(student);
17
18     </script>
19 </html>
```

x +

ers/jacod/Desktop/mta/index.html

Elements Console Sources Network Performance

top Filter Default

▶ :≡ 6 messages  
▶ ⚡ 4 user mess...  
✖ No errors  
⚠ No warnings  
▶ ⓘ 6 info  
✖ No verbose

number  
45  
object  
▶ {name: "Rakesh", age: "25", class: "BTech"}  
> [ ]

## **Javascript Control Statement**

1. If Statement
2. If Else Statement
3. Nested If Else Statement

## **Javascript Conditional Select**

1. Switch Statement

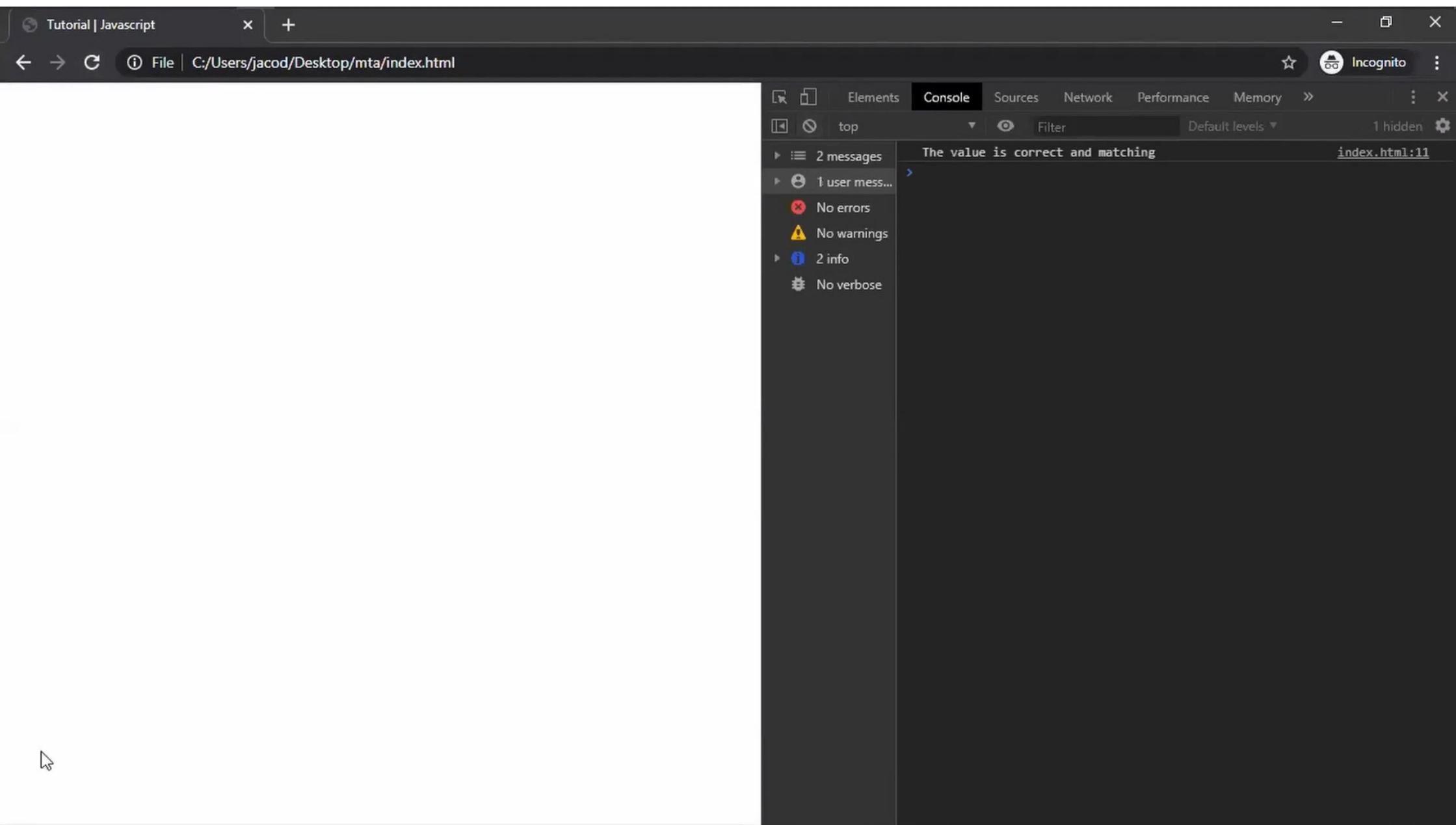
## **Javascript Looping Statements**

1. While loop
2. Do While Loop
3. For loop

&lt; index.html x

&lt; index.html &gt; html &gt; body &gt; script

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          a=10;
9          b=10;
10         if(a==b){
11             console.log("The value is correct and matching")
12         }
13     </script>
14 </body>
15 </html>
```



File Edit Selection View Go Run Terminal Help

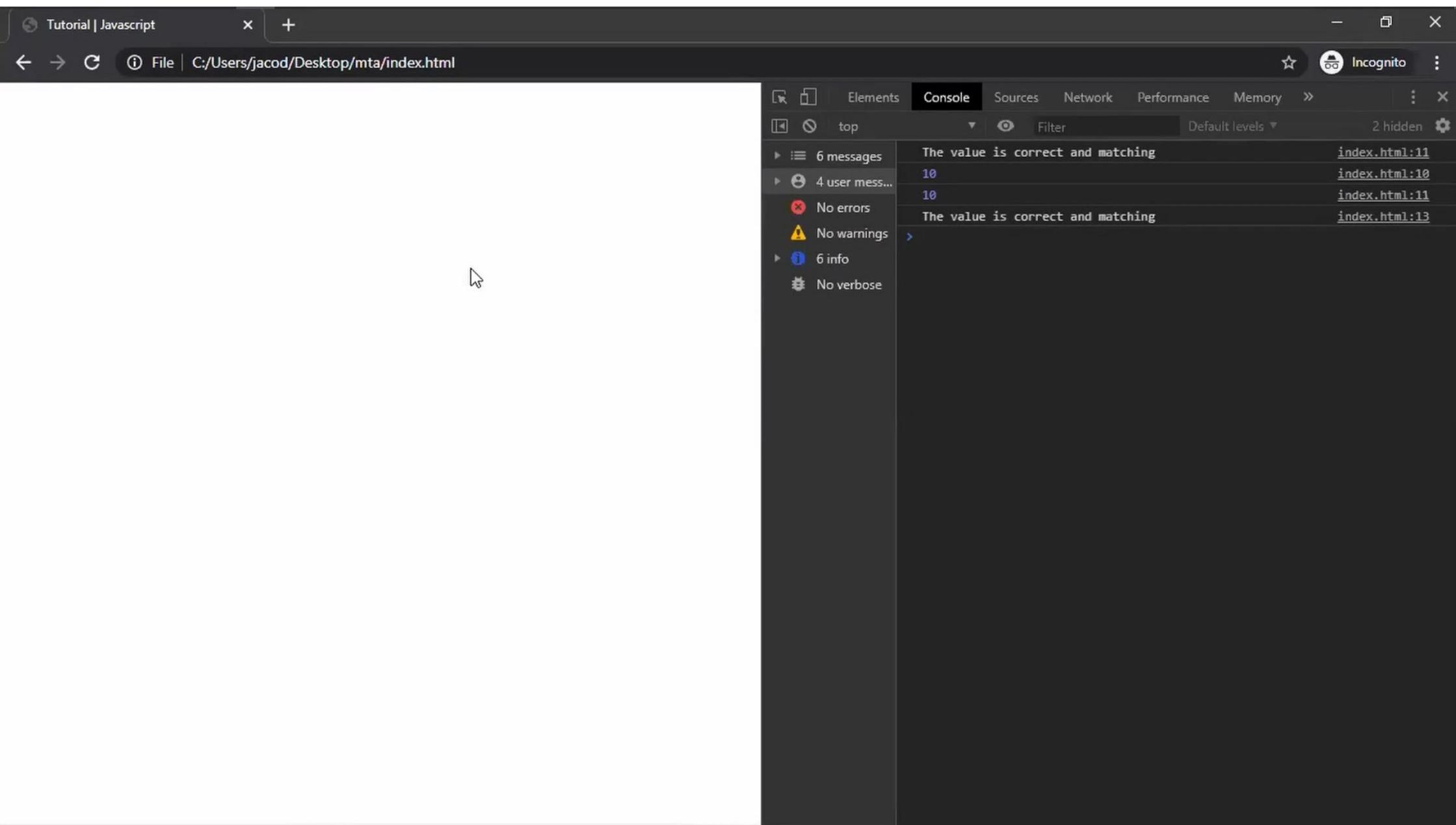
index.html - MTA - Visual Studio Code

EXPLORER OPEN EDITORS MTA .vscode bg.mp4 index.html projectmantra\_white.... script.js style.css world-wide-web.png

index.html > html > body > script

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          a=10;
9          b=10;
10         console.log(a);
11         console.log(b);
12         if(a==b){
13             console.lb
14         }
15     </script>
16 </body>
17 </html>
```

Ln 11, Col 22 Spaces: 4 UTF-8 CRLF HTML 52m ESLint



File Edit Selection View Go Run Terminal Help index.html - MTA - Visual Studio Code

EXPLORER OPEN EDITORS MTA .vscode bg.mp4 index.html projectmantra\_white.... script.js style.css world-wide-web.png

index.html

```
<!doctype html>
<html>
<head>
    <title>Tutorial | Javascript</title>
</head>
<body>
    <script>
        a=10;
        b=10;
        console.log("a = "+a);
        console.log("b = "+b);
        if(a==b){
            console.log("The value is correct and matching")
        }
    </script>
</body>
</html>
```

OUTLINE NPM SCRIPTS MAVEN

0 △ 0 Login Configure Preview Available Ln 11, Col 28 Spaces: 4 UTF-8 CRLF HTML 53m ESLint

Elements Console Sources Network Performance

top Filter

- ▶ 4 messages
- ▶ 3 user mess...
- ✖ No errors
- ⚠ No warnings
- ▶ 4 info
- ⠇ No verbose

a = 10

b = 10

The value is correct and matching

```
< index.html > html > body > script
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          a=10;
9          b=5;
10         console.log("a = "+a);
11         console.log("b = "+b);
12         if(a==b){
13             console.log("The value is correct and matching")
14         }
15     </script>
16 </body>
17 </html>
```

Elements Console Sources Network Performance

top Filter

- ▶ 7 messages
  - ▶ 5 user mess...
  - ✖ No errors
  - ⚠ No warnings
  - ▶ 7 info
  - ⠇ No verbose
- a = 10  
b = 10  
The value is correct and matching  
a = 10  
b = 5

```
<!DOCTYPE html>
<html>
  <head>
    <title>Tutorial | Javascript</title>
  </head>
  <body>
    <script>
      a=10;
      b=5;
      console.log("a = "+a);
      console.log("b = "+b);
      if(a==b){
        console.log("The value is correct and matching")
      }else{
        console.log("The is incorrect and not matching")
      }
    </script>
  </body>
</html>
```

log(...data: any[]): void

The screenshot shows the 'Console' tab of a browser's developer tools. The sidebar on the left lists several message categories:

- ▶ 11 messages
- ▶ 3 user mess...
- ✖ No errors
- ⚠ No warnings
- ▶ 11 info
- ✖ No verbose

The main pane displays the following log entries:

```
a = 10
b = 10
The value is correct and matching
a = 10
b = 5
a = 10
b = 5
The is incorrect and not matching
```

A double-headed horizontal arrow icon is positioned between the 'No warnings' message and the first 'a = 10' entry.

File Edit Selection View Go Run Terminal Help

• index.html - MTA - Visual Studio Code

EXPLORER OPEN EDITORS 1 UNSAVED

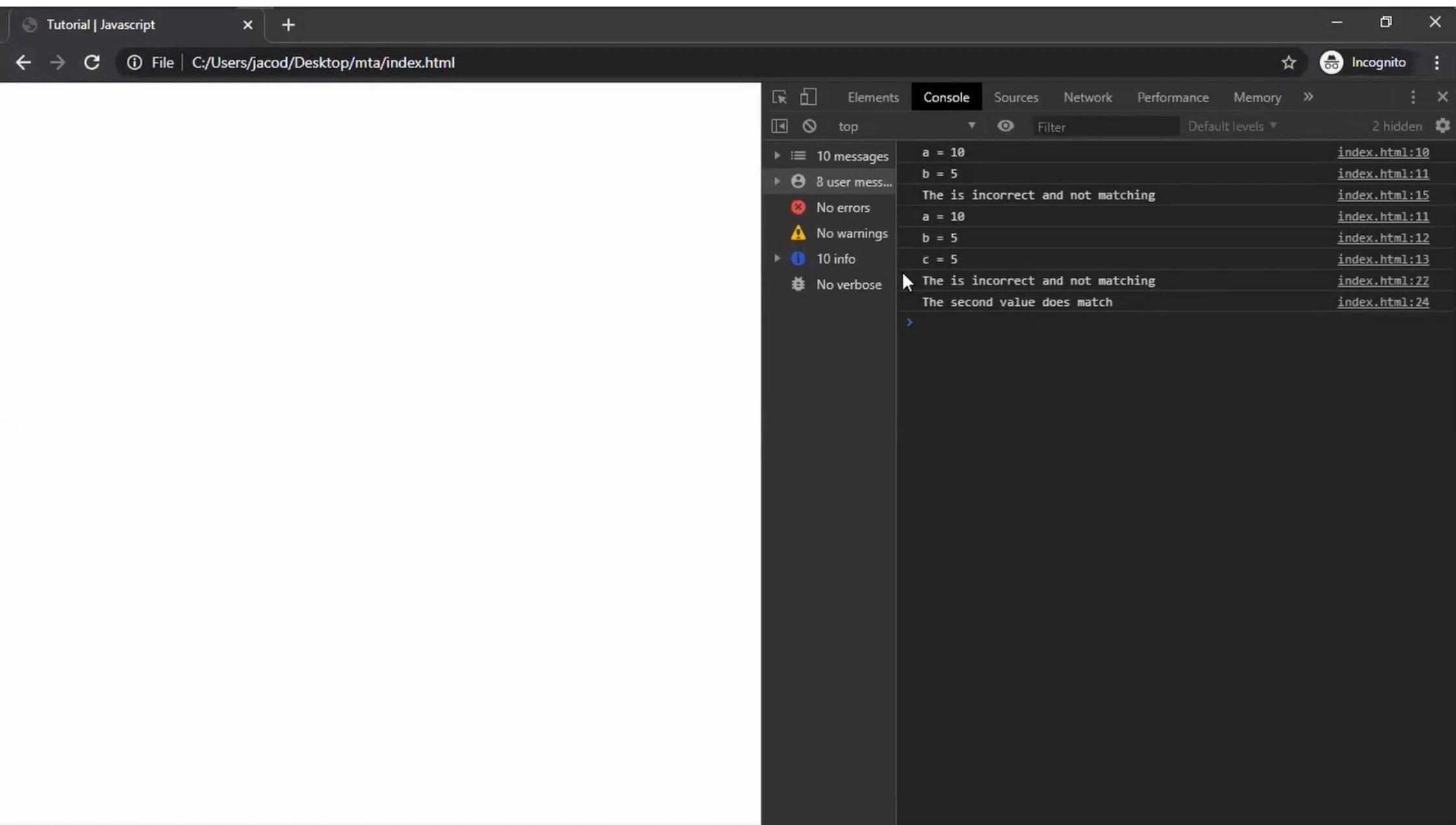
MTA .vscode bg.mp4 index.html projectmantra\_white.... script.js style.css world-wide-web.png

index.html

```
<!doctype html>
<html>
<head>
    <title>Tutorial | Javascript</title>
</head>
<body>
    <script>
        a=10;
        b=5;
        c=5;
        console.log("a = "+a);
        console.log("b = "+b);
        console.log("c = "+c);
        if(a==b){
            console.log("The value is correct and matching")
            if(a==c){
                console.log("The Second Value does match");
            }else{
                console.log("The second value doesn't match")
            }
        }else{
            console.log("The is incorrect and not matching")
            if(b==c){
                console.log("The second value does match");
            }else{
                console.log("The Second Value doesn't match")
            }
        }
    </script>
</body>
</html>
```

OUTLINE NPM SCRIPTS MAVEN

0 △ 0 Login Configure Preview Available Ln 13, Col 29 Spaces: 4 UTF-8 CRLF HTML 57m ESLint



index.html x

index.html &gt; html &gt; body &gt; script

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          var value=1;
9          var b=5;
10         var c=5;
11         switch(value){
12             case 1: console.log("addition");
13                 sum=b+c;
14                 console.log("The Sum of "+b+" + "+c+" is " +sum);
15                 break;
16             case 2: console.log("difference");
17                 diff=b-c;
18                 console.log("The Difference of "+b+" - "+c+" is " +diff);
19                 break;
20             default:
21                 console.log("You have entered a invalid option");
22         }
23 
```

x +

s/jacod/Desktop/mta/index.html

Elements Console Sources Network Performance

top Filter Default

▶ 13 messages  
▶ 10 user mes...  
✖ No errors  
⚠ No warnings  
▶ 13 info  
⠇ No verbose

a = 10  
b = 5  
The is incorrect and not matching  
a = 10  
b = 5  
c = 5  
The is incorrect and not matching  
The second value does match  
addition  
THe Sume of 5 + 5 is 10

index.html X

index.html &gt; html &gt; body &gt; script &gt; value

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          var value=2;    ||
9          var b=5;
10         var c=5;
11         switch(value){
12             case 1: console.log("addition");
13                 sum=b+c;
14                 console.log("The Sum of "+b+" + "+c+" is " +sum);
15                 break;
16             case 2: console.log("difference");
17                 diff=b-c;
18                 console.log("The Difference of "+b+" - "+c+" is " +diff);
19                 break;
20             default:
21                 console.log("You have entered a invalid option");
22         }
23 }
```

x +

s/jacod/Desktop/mta/index.html

Elements Console Sources Network Performance

top Filter

- ▶ 6 messages
  - ▶ 4 user mess...
  - ✖ No errors
  - ⚠ No warnings
  - ▶ 6 info
  - ⚙ No verbose
- addition  
THe Sume of 5 + 5 is 10  
difference  
The Difference of 5- 5 is 0

## index.html ●

## index.html &gt; html &gt; body &gt; script &gt; value

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          var value=10;
9          var b=5;
10         var c=5;
11         switch(value){
12             case 1: console.log("addition");
13                 sum=b+c;
14                 console.log("The Sum of "+b+" + "+c+" is " +sum);
15                 break;
16             case 2: console.log("difference");
17                 diff=b-c;
18                 console.log("The Difference of "+b+" - "+c+" is " +diff);
19                 break;
20             default:
21                 console.log("You have entered a invalid option");
22         }
23     
```

x +

s/jacod/Desktop/mta/index.html

Elements Console Sources Network Performance

top Filter Default

- ▶ ⚡ 8 messages
  - ▶ 🧑 5 user mess...
  - ✖ No errors
  - ⚠ No warnings
  - ▶ ⓘ 8 info
  - ⚙ No verbose
- addition  
THe Sume of 5 + 5 is 10  
difference  
The Difference of 5- 5 is 0  
You have entered a invalid option  
No warnings

File Edit Selection View Go Run Terminal Help index.html - MTA - Visual Studio Code

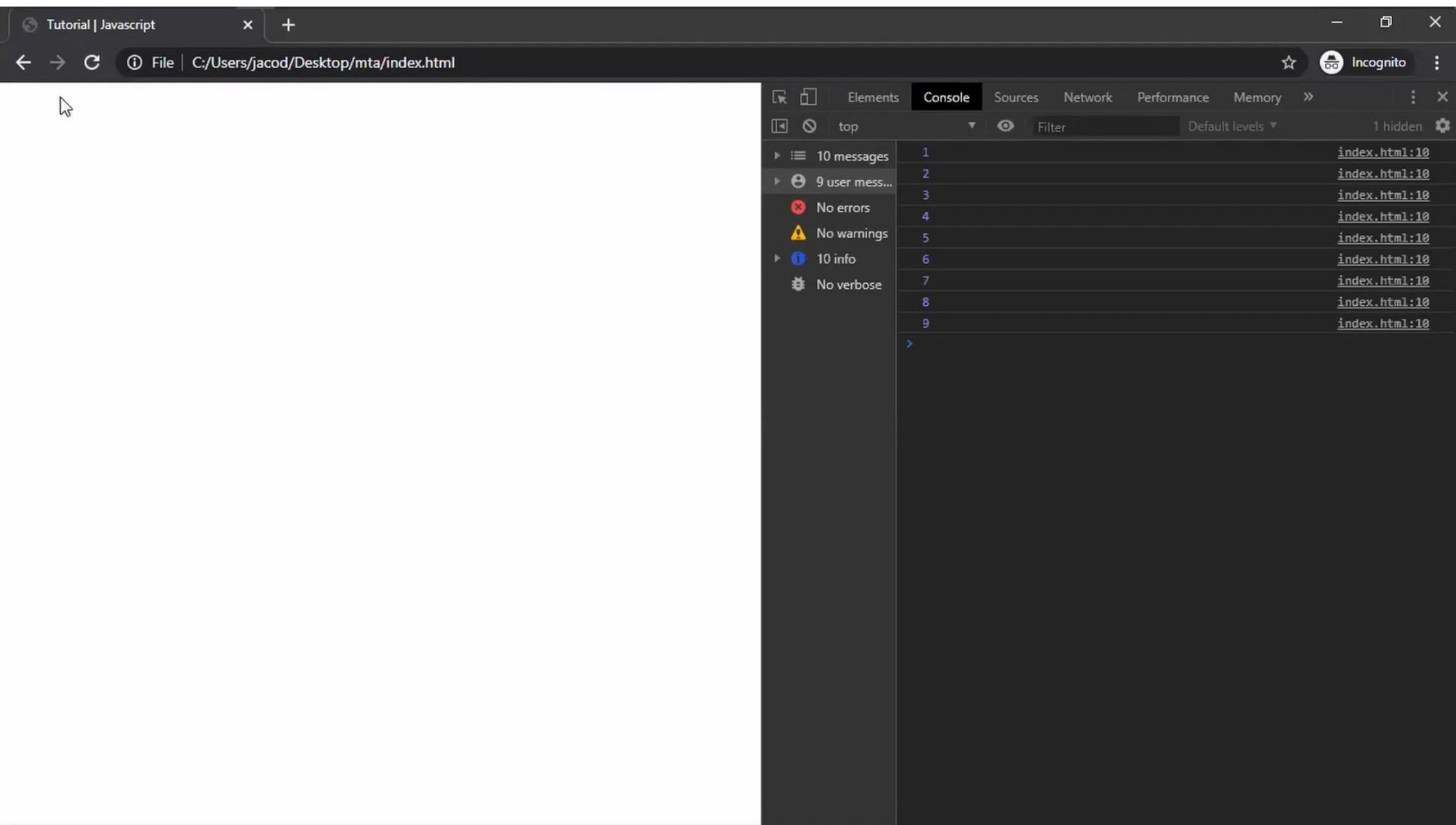
EXPLORER OPEN EDITORS MTA .vscode bg.mp4 index.html projectmantra\_white.... script.js style.css world-wide-web.png

index.html

```
<!doctype html>
<html>
<head>
    <title>Tutorial | Javascript</title>
</head>
<body>
    <script>
        index=1;
        while(index<10){
            console.log(index);
            index++;
        }
    </script>
</body>
</html>
```

OUTLINE NPM SCRIPTS MAVEN

0 △ 0 Login Configure Preview Available Ln 8, Col 17 Spaces: 4 UTF-8 CRLF HTML 1h 6m ESLint



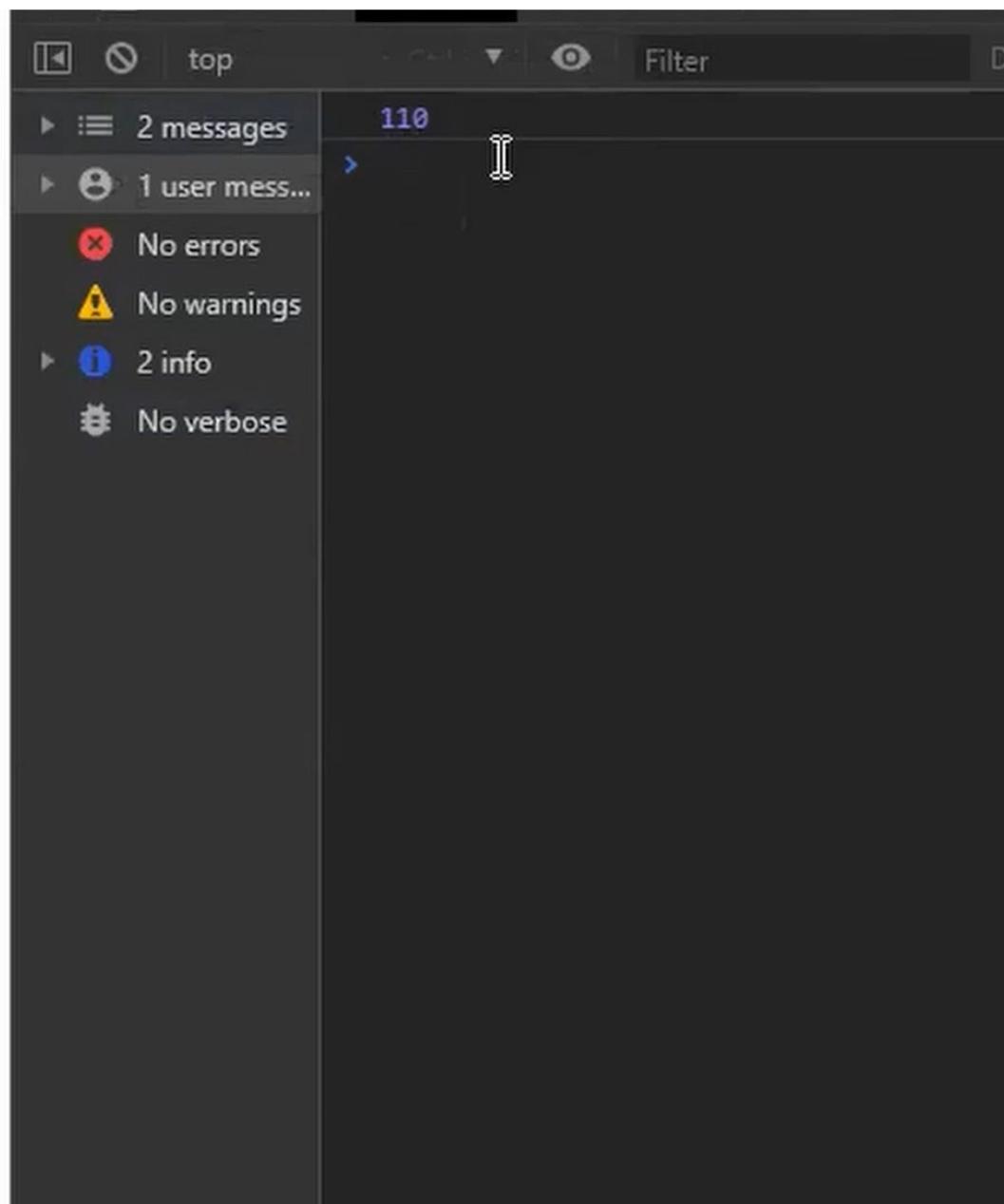
index.html X  
index.html > html > body > script

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          index=1;
9          do{
10              console.log(index);
11              index++
12          }while(index<10);
13      </script>
14  </body>
15  </html>
```

A screenshot of a terminal window displaying a log viewer. The window has a dark theme with light-colored text. At the top, there are icons for back, forward, and search, followed by the word "top". To the right is a "Filter" input field containing the placeholder "e.g. /event\\d/ -cdn url". Below the filter is a table with two columns. The left column lists log entries with icons and counts: a list icon for 10 messages, a user icon for 9 user mess..., a red X icon for No errors, a yellow warning icon for No warnings, a blue info icon for 10 info, and a gear icon for No verbose. The right column contains numbers 1 through 9, each preceded by a small blue arrow pointing right.

1	e.g. /event\\d/ -cdn url
2	
3	
4	
5	
6	
7	
8	
9	
>	

```
1 <!doctype html>
2 <html>
3 <head>
4     <title>Tutorial | Javascript</title>
5 </head>
6 <body>
7     <script>
8         index=110;
9         do{
10             console.log(index);
11             index++;
12         }while(index<100];
13     </script>
14 </body>
15 </html>
```



Go Run Terminal Help

• index.html - MTA - Visual Studio Code

index.html ●

index.html > html > body > script

```
1  <!doctype html>
2  <html>
3  <head>
4      <title>Tutorial | Javascript</title>
5  </head>
6  <body>
7      <script>
8          var index;
9          for(index=0;index<10;index++){
10              console.log(index);    []
11      }
12  </script>
13 </body>
14 </html>
```

x +

s/jacod/Desktop/mta/index.html

Elements Console Sources Network Performance

top Filter Default

Count	Message Type	Details
110	13 messages	
0	11 user mes...	
1	No errors	
2	No warnings	
3	13 info	
4	No verbose	
5		
6		
7		
8		
9		
>		