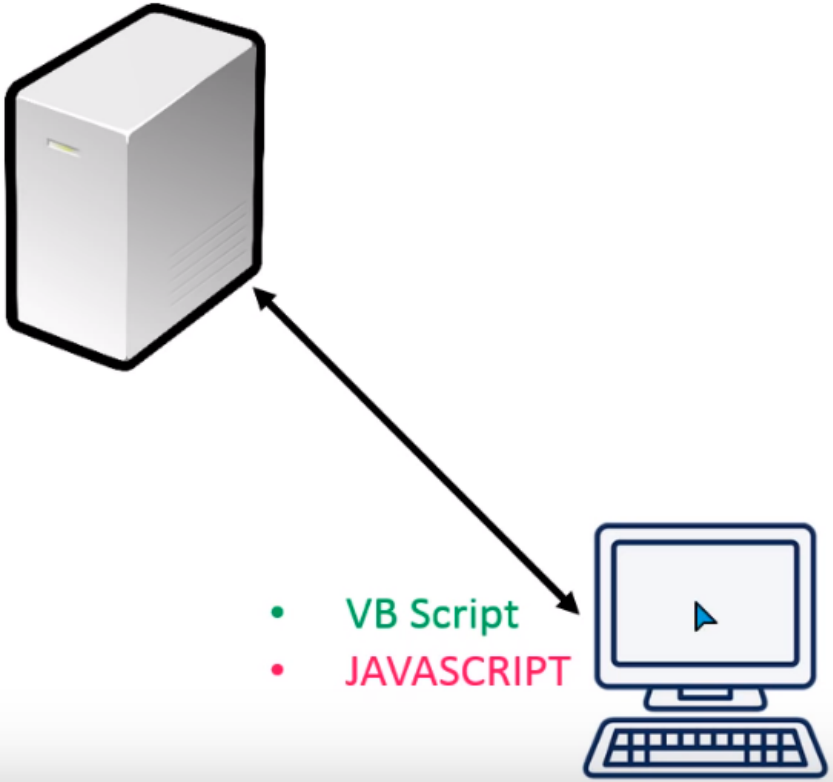
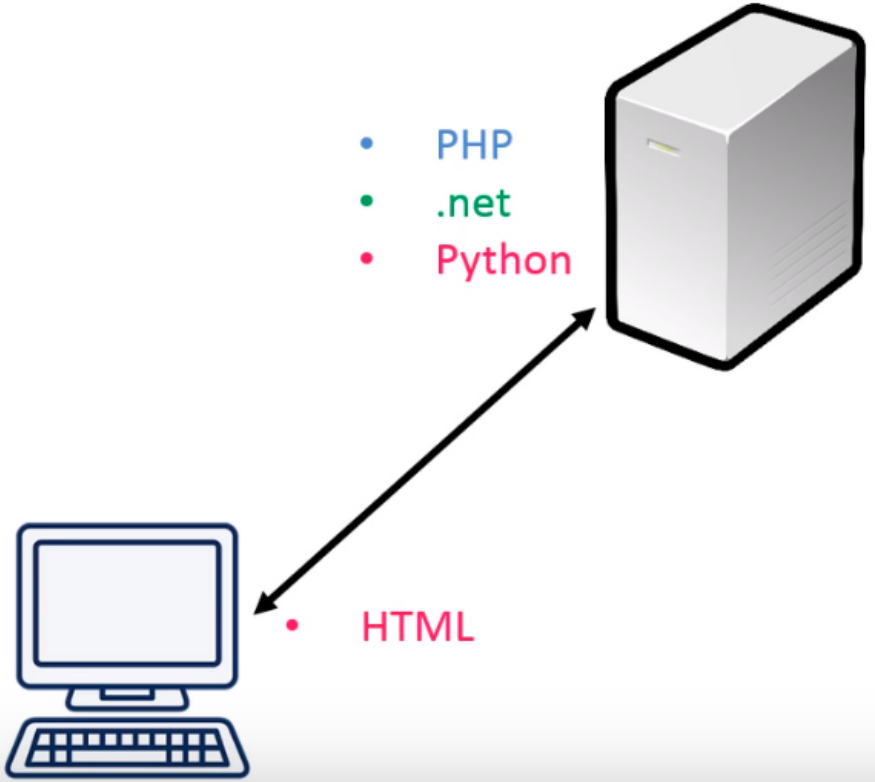
Web based Scripting Language

Client Side Script



Server Side Script



3 Essential Parts To Website Development

1) HTML (HyperText Markup Language)

>> Adds structure to our web pages.
>> Tags used for e.g. , <section>, <p>

2) CSS (Cascading Style Sheets)

>> Adds styles to our webpages.
>> E.g. colors, border, margin, image, positions etc.
>> Can use ids, classes or direct tags to reference HTML tags

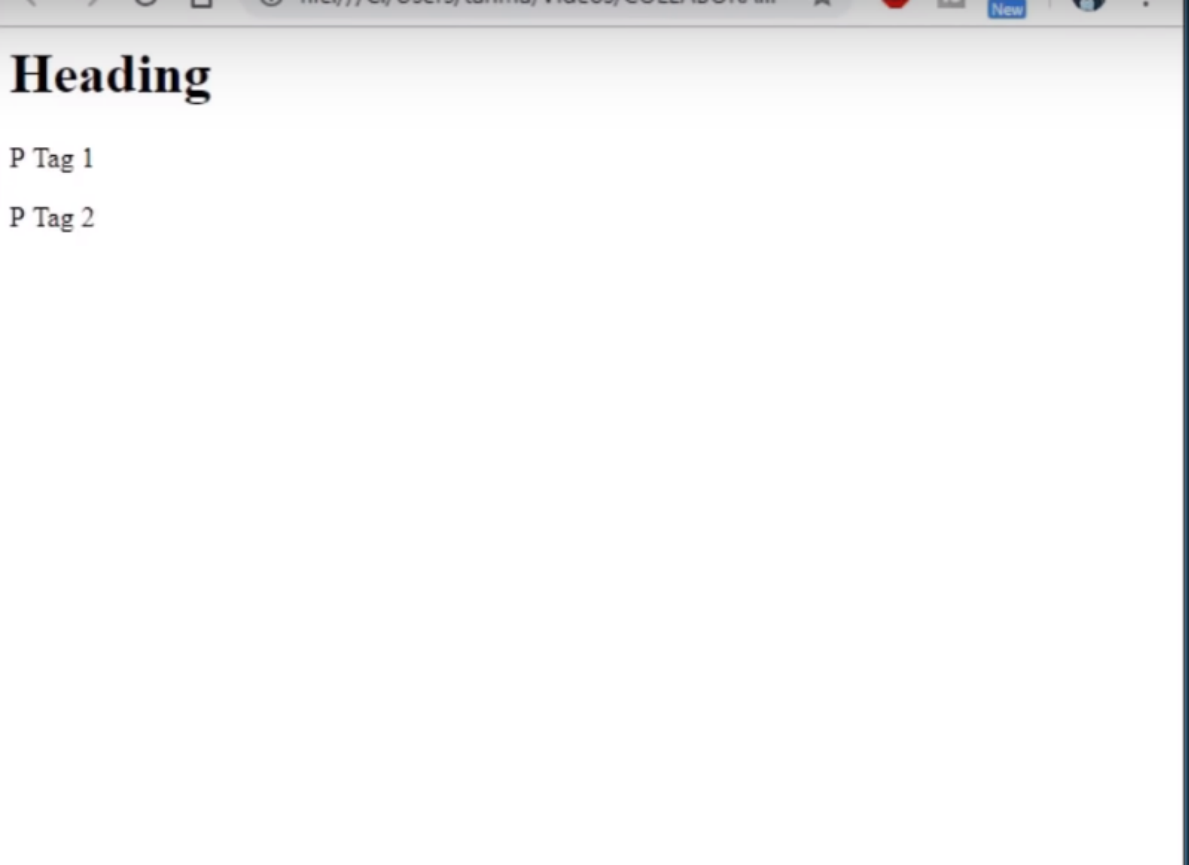
3) JS (JavaScript)

>> Adds programming to our web pages.
>> Adds functionality, e.g. client side validation, effects & events etc.

Document Object Model - DOM

HTML Document

```
<html>
  <head>
    <title>My Title </title>
  </head>
  <body>
    <h1>Heading</h1>
    <div id="div1">
      <p>P Tag 1</p>
    </div>
    <div id="div2">
      <p class="p2">P Tag 2</p>
    </div>
  </body>
</html>
```



index.html

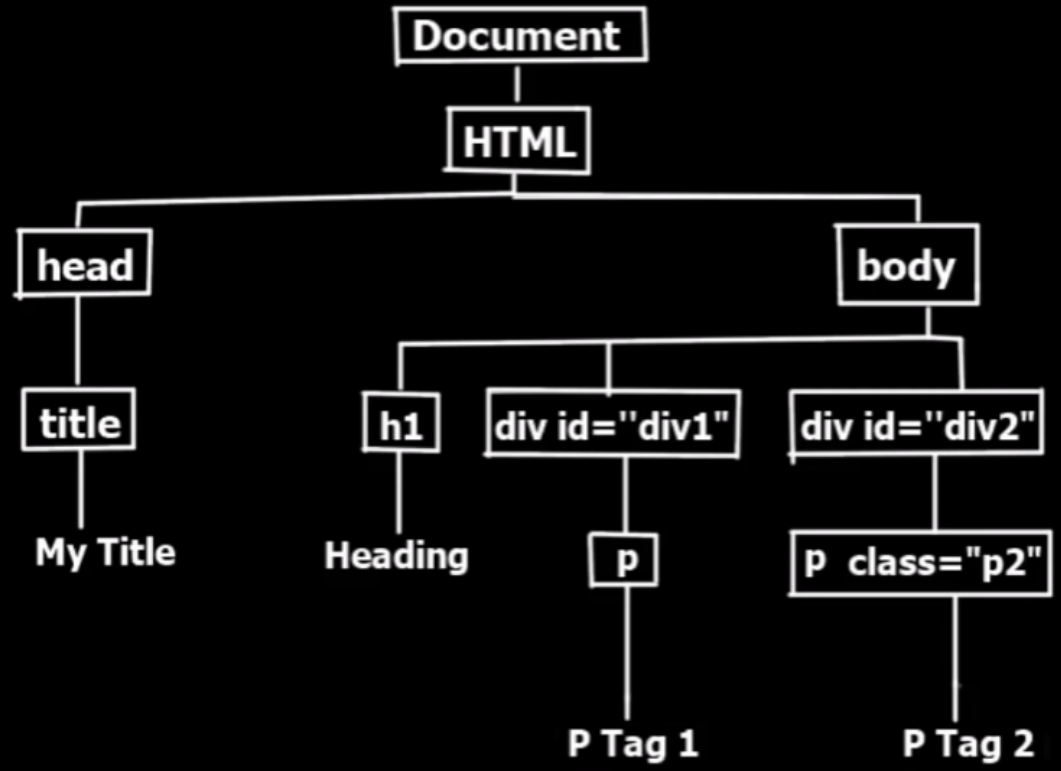
```
<html>
    <head>
        <title>My HTML Document</title>
    </head>

    <body>
        <h1>Heading</h1>
        <div id="div1">
            <p>P Tag 1</p>
        </div>
        <div id="div2">
            <p class="p2">P Tag 2</p>
        </div>
    </body>
</html>
```

Document Object Model - DOM

HTML Document

```
<html>
  <head>
    <title>My Title </title>
  </head>
  <body>
    <h1>Heading</h1>
    <div id="div1">
      <p>P Tag 1</p>
    </div>
    <div id="div2">
      <p class="p2">P Tag 2</p>
    </div>
  </body>
</html>
```

DOM - JS view

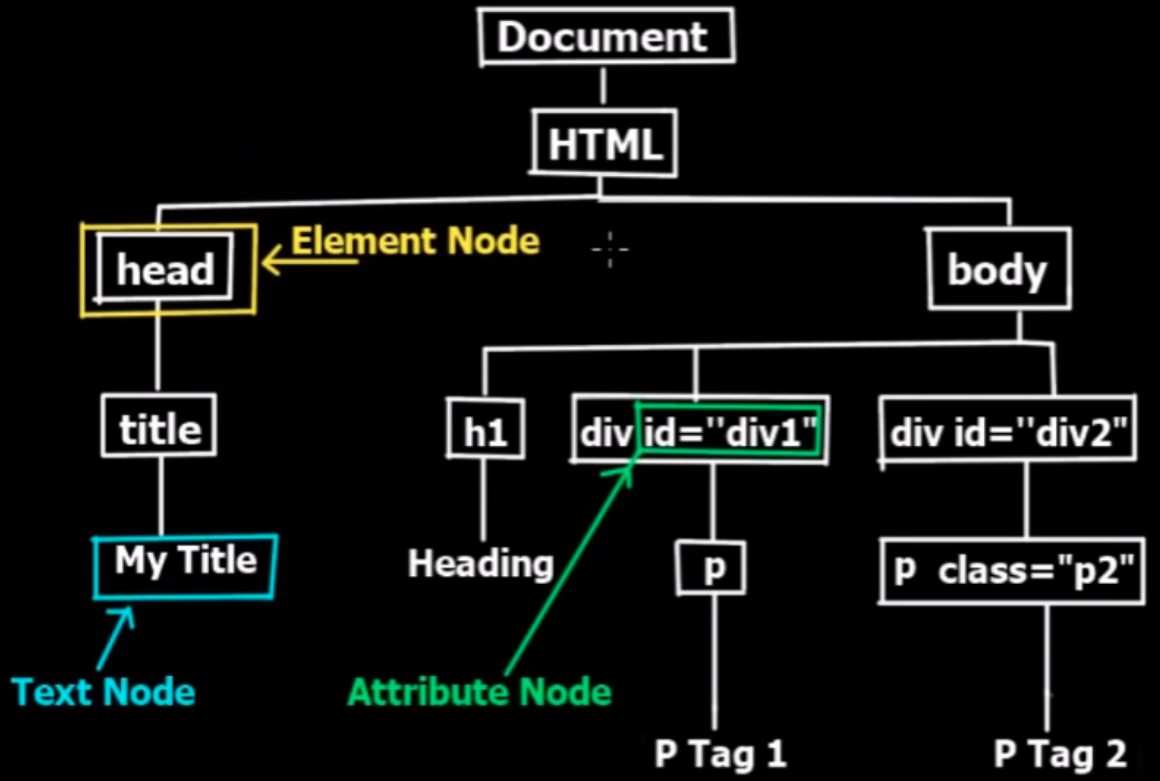


Document Object Model - DOM

HTML Document

```
<html>
  <head>
    <title>My Title </title>
  </head>
  <body>
    <h1>Heading</h1>
    <div id="div1">
      <p>P Tag 1</p>
    </div>
    <div id="div2">
      <p class="p2">P Tag 2</p>
    </div>
  </body>
</html>
```

DOM - JS view



Why We Learn JavaScript ?

JavaScript is a Event Based Programming Language

- Click
- Double Click
- Right Click
- Mouse Hover
- Mouse Out
- Drag Drop
- Key Press
- Key Up
- Load
- Unload
- Resize
- Scroll

Benefits of learning JavaScript:

Web Development	Desktop App Development	Mobile App Development
• jQuery • Angular Js • React Js • VueJS • NodeJS	• Electron JS	• Angular Js • React Js • VueJS • React Native • NodeJS

Uses of JavaScript in Web Development :

- Dropdown Menu
- Animated Sliders
- Maps
- Chart - Graphs
- Pop-up window
- Audio Players
- Video Players
- Zoom effect
- Animated Gallery
- Form Validations
- Accordions
- Calendar

Editor for JavaScript :

- Notepad
- Notepad++
- VS Code
- Sublime
- Atom

Web Browser for JavaScript :

- Google Chrome
- Mozilla Firebox
- Internet Explorer
- Safari


```
1  <html>
2      <head>
3          <title>My title</title>
4          <script>
5
6          </script>
7
8      </head>
9
10     <body>
11
12     </body>
13
14 </html>
15
```

2 Ways to Implement JavaScript :

- Inpage JavaScript
- External JavaScript

Inpage JavaScript

```
<html>
        <head>
            <script>

            </script>
        </head>
        <body>
            <h1>Yahoo Baba</h1>
        </body>
</ html>
```

Inpage JavaScript

```
<html>
        <head>
            <script>

            </script>
        </head>
        <body>
            <h1>Yahoo Baba</h1>
            <script>
            </script>
        </body>
```

1-implementation.html

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    document.write("Hello World");
  </script>
</head>
<body>

</body>
</html>

```

127.0.0.1:3000/1-implementati...

Paused

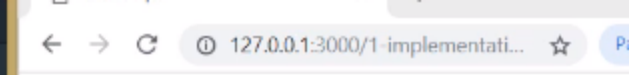
Hello World

-implementation.html

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    document.write("Hello World");
    document.write("Hello from Yahoo Baba");
  </script>
</head>
<body>

</body>
</html>
```

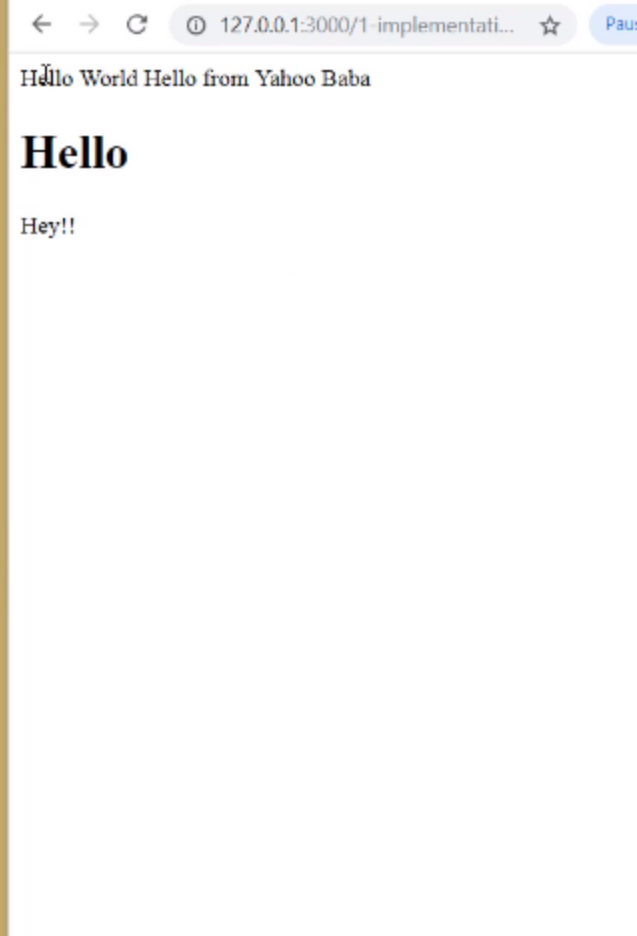
1-implementation.html

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    document.write("Hello World ");
    document.write("Hello from Yahoo Baba");
  </script>
</head>
<body>


<script>
  document.write("Hey!!");
</script>
</body>
</html>

```



Hello World Hello from Yahoo Baba Hey!!

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    document.write("Hello World ");
    document.write("Hello from Yahoo Baba");
  </script>
</head>
<body>
<h1>Hello</h1>

<script>
  document.write("Hey!!");
</script>
</body>
</html>
```



External JavaScript File

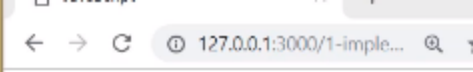

```
<head>
        <script src="myScript.js"></script>
</head>
```

JavaScript

HTML Tag in JS

1-implementation.html

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    document.write("Hello World<br>");
    document.write("Hello from Yahoo Baba");
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>
```



Hello World
Hello from Yahoo Baba

Yahoo Baba

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    document.write("Hello World<br><br>");
    document.write("<i><b>Hello from Yahoo Baba</b></i>");
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>

```

Hello World

Hello from Yahoo Baba

Yahoo Baba

JavaScript

Comments

Single Line Comment :

```
<script>
Document.write(“Hello World”); // here is comment
</script>
```

Multiple Line Comment :

```
<script>
Document.write("Hello World"); /* here is comment
Which can be on multiple lines */
</script>
```

JavaScript
Variables

Yahoo baba

```
document.write(“Yahoo Baba”);
document.write(“Yahoo Baba”);
document.write(“Yahoo Baba”);
```

Yahoo babas

```
document.write("Yahoo Baba");
document.write("Yahoo Baba");
document.write("Yahoo Baba");
```

Use of Variables :

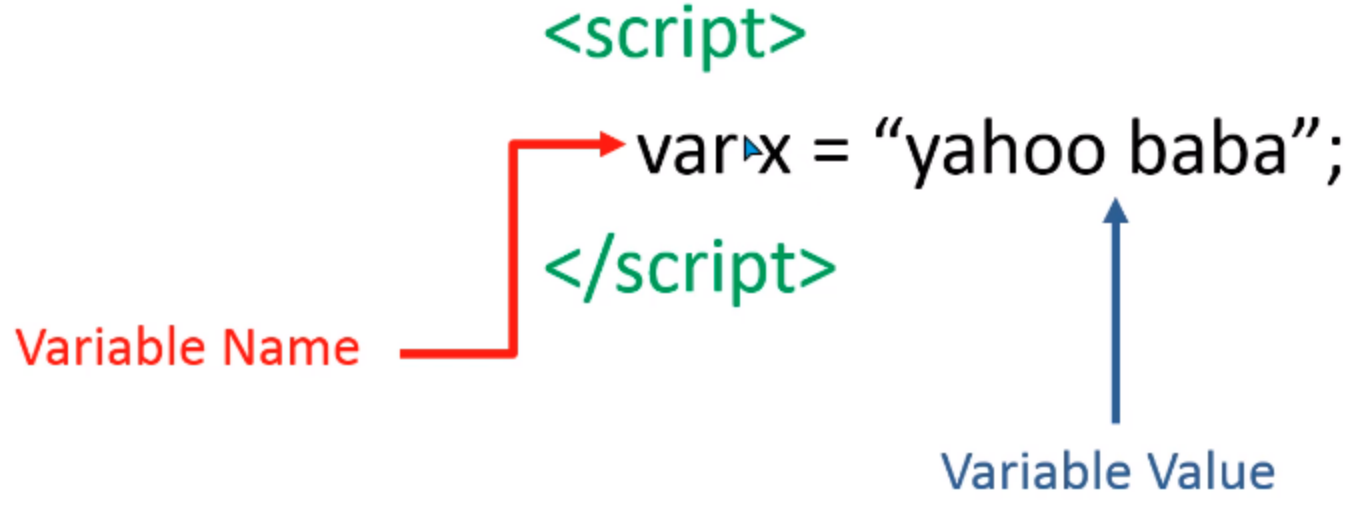
A = Yahoo baba

```
document.write(A);
document.write(A);
document.write(A);
```

Three Types of Comments :

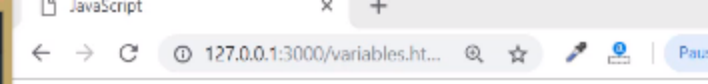
- Var
- Let
- Const

How to use Variables :



variables.html

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var z = "Hello World";
  </script>
</head>
<body>

</body>
</html>

```



variables.html — F:\YandiBaba\Learn-JavaScript — Atom

variables.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var z = "Hello World";

    document.write(z);
  </script>
</head>
<body>

</body>
</html>

```

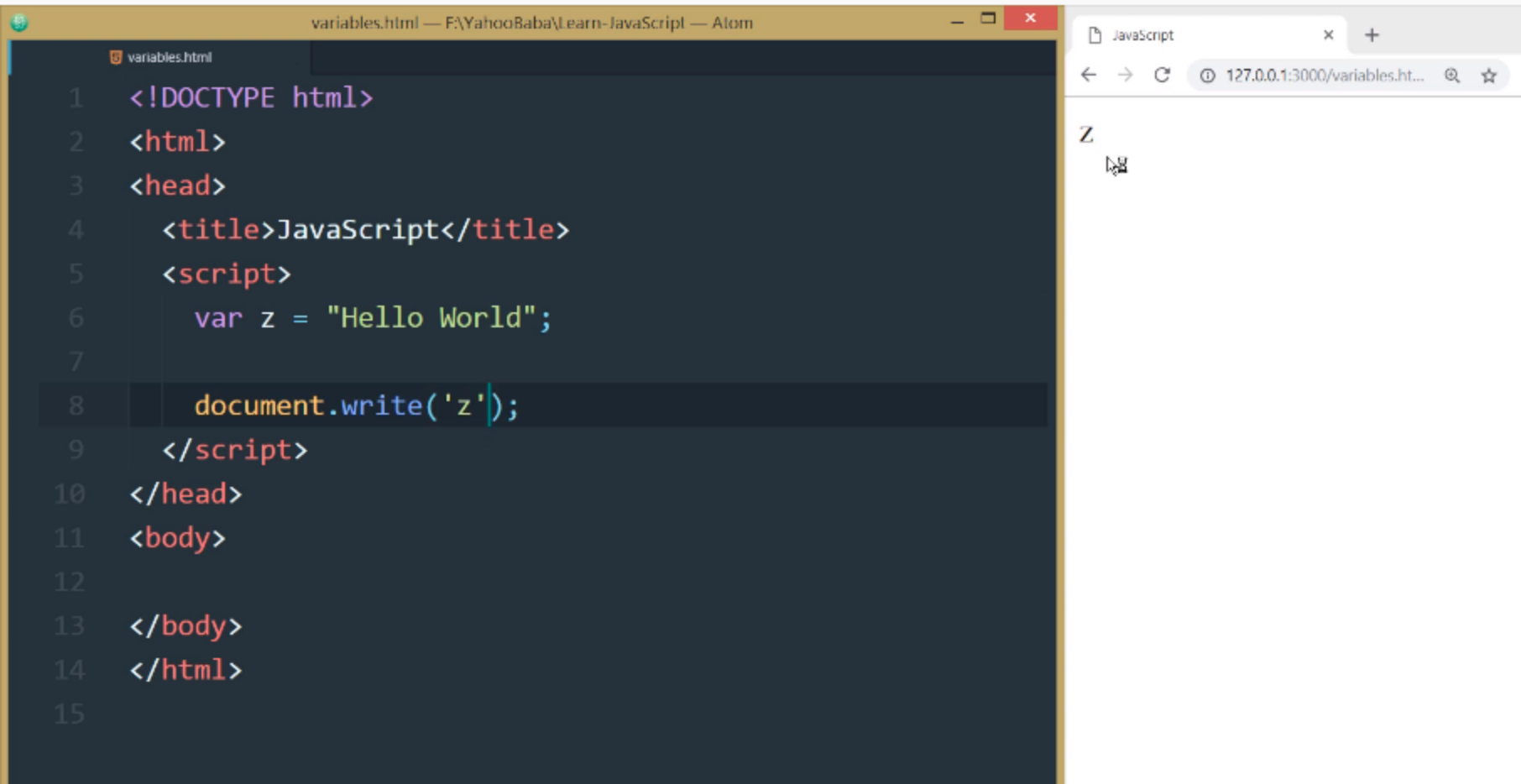
JavaScript

127.0.0.1:3000/variables.ht...

Hello World

variables.html

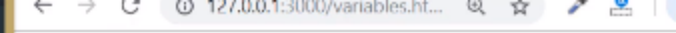
```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var z = "Hello World";

    document.write('z');
  </script>
</head>
<body>

</body>
</html>
```


variables.html — F:\YahooBaba\Learn-JavaScript — Atom
variables.html
<!DOCTYPE html>
<html>
<head>
<title>JavaScript</title>
<script>
var z = "Hello World";
document.write('z');
</script>
</head>
<body>
</body>
</html>
JavaScript
127.0.0.1:3000/variables.ht...
z

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var z = "Hello World";
    var x = 100;

    document.write(z);
    document.write(x);
  </script>
</head>
<body>

</body>
</html>
```

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var z = "Hello World";
    var x = 100.25;
    z = "Wow";
    document.write(z);
    //document.write(x);
  </script>
</head>
<body>

</body>
</html>

```

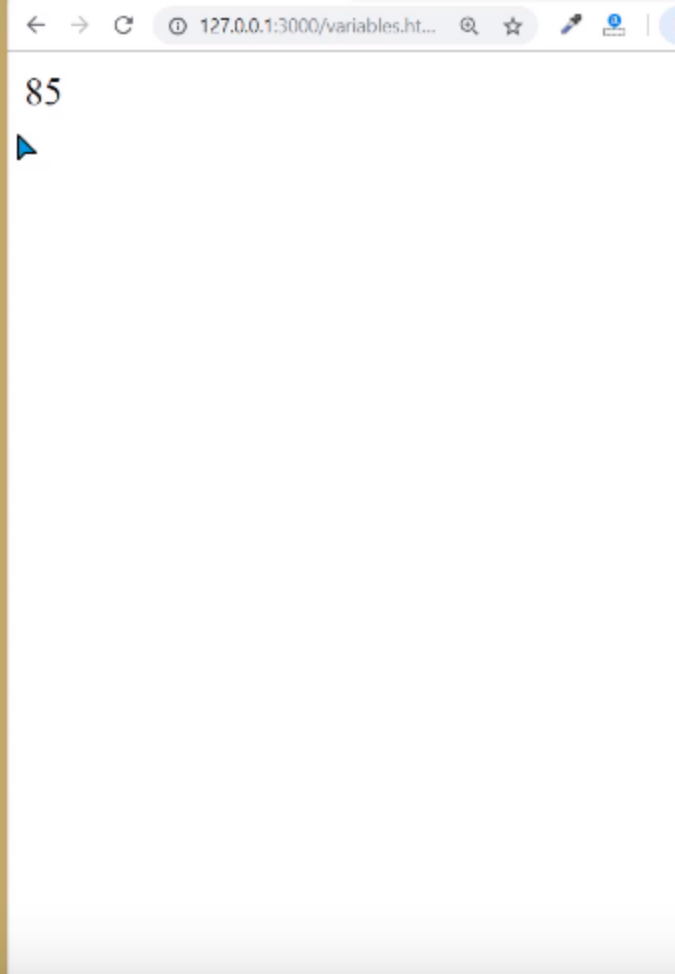
```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var z = "Hello World";
    var x = 100.25;
    z = "Wow";
    document.write(z);
    //document.write(x);
  </script>
</head>
<body>

</body>
</html>
```



Wow

variables.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var z = "Hello World";
    var x = 100.25;
    z = "Wow";
    z = 85;
    document.write(z);
    //document.write(x);
  </script>
</head>
<body>

</body>
</html>
```



How to write a Variable Name :

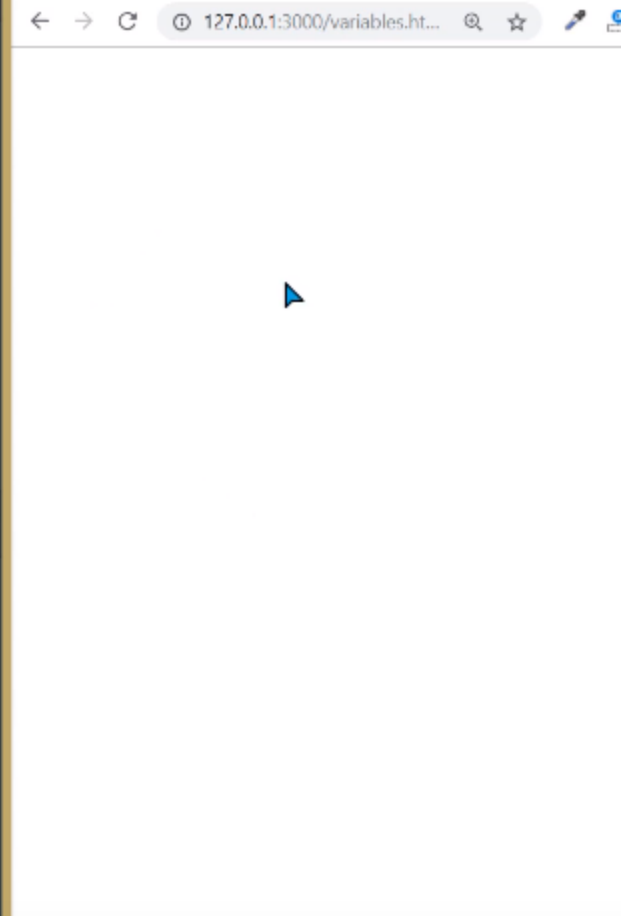
Write Way

- firstname
- first_name
- first-name
- firstName
- firstname99

Wrong Way

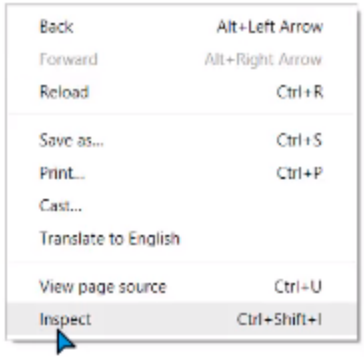
- first name
- 99firstname

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var 34firstName = "Hello World";

    document.write(34firstName);

  </script>
</head>
<body>

</body>
</html>
```



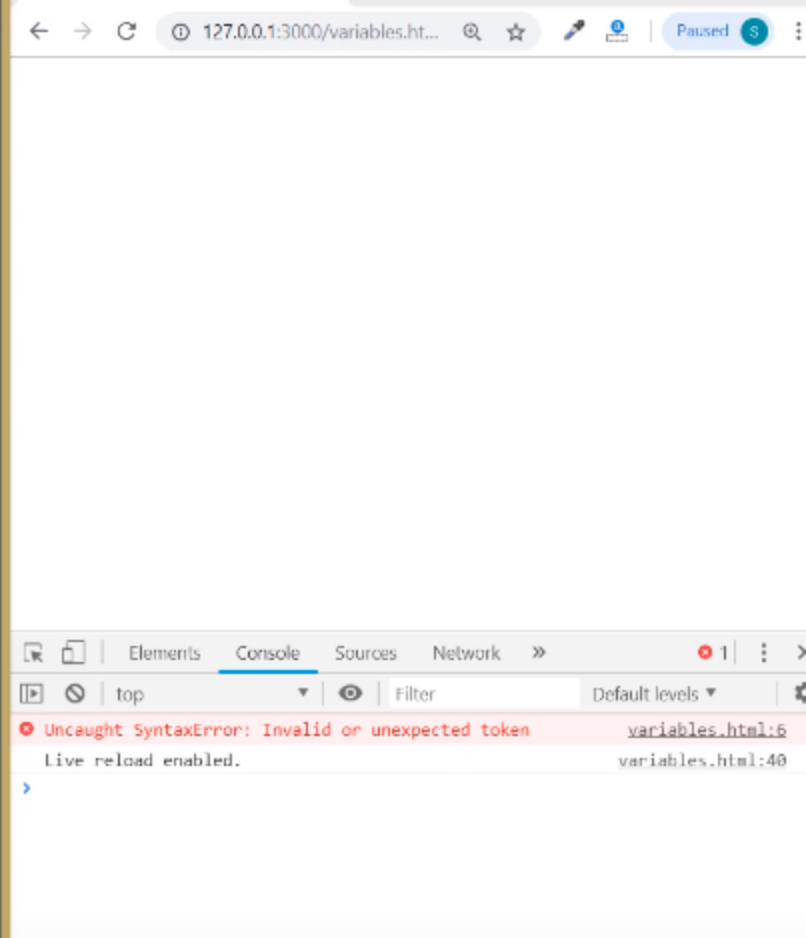
variables.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var 34firstName = "Hello World";

    document.write(34firstName);

  </script>
</head>
<body>

</body>
</html>
```



variables.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var 34firstName = "Hello World";

    document.write(34firstName);

  </script>
</head>
<body>

</body>
</html>

```



variables.html

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var firstName34 = "Hello World";

    document.write(firstName34);

  </script>
</head>
<body>

</body>
</html>

```

127.0.0.1:3000/variables.ht...

Paused

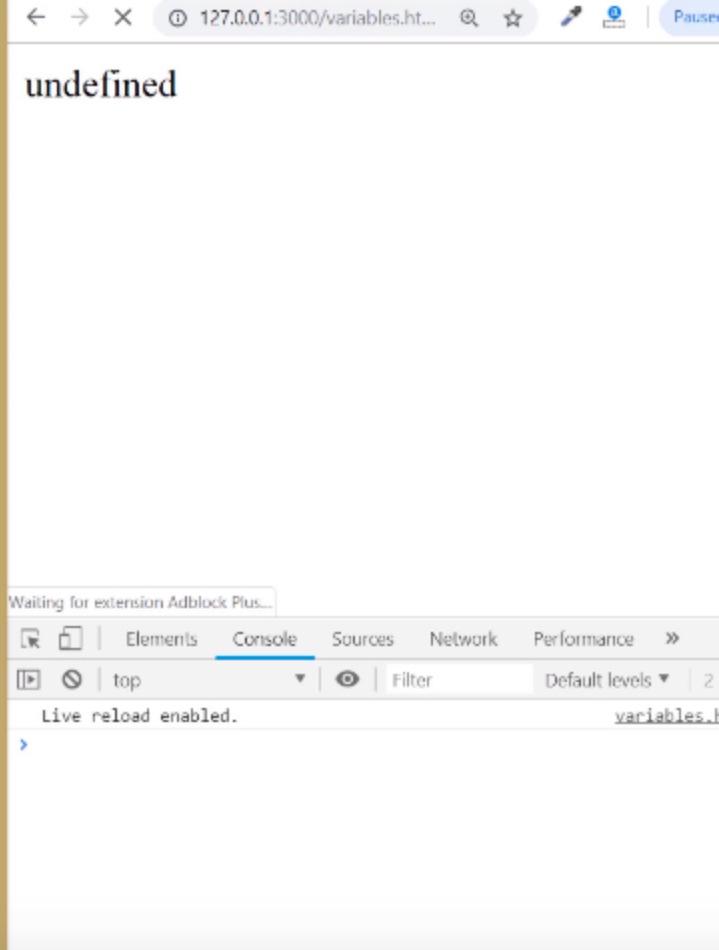
Hello World

Elements Console Sources Network Performance

top Filter Default levels 3 hidden

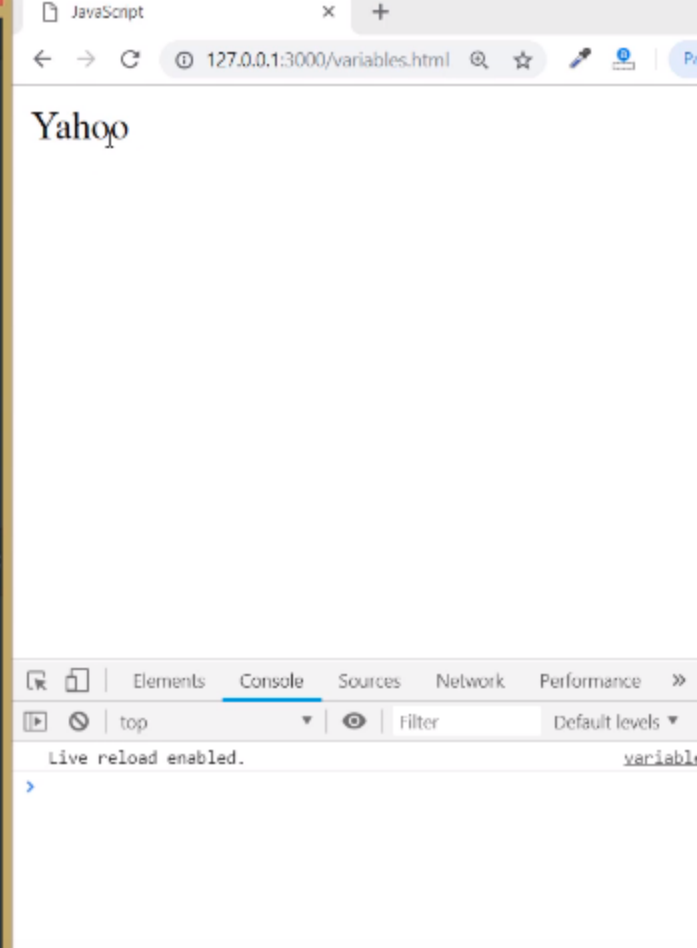
Live reload enabled. variables.html:40

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var first , second;

    document.write(first);

  </script>
</head>
<body>

</body>
</html>

```



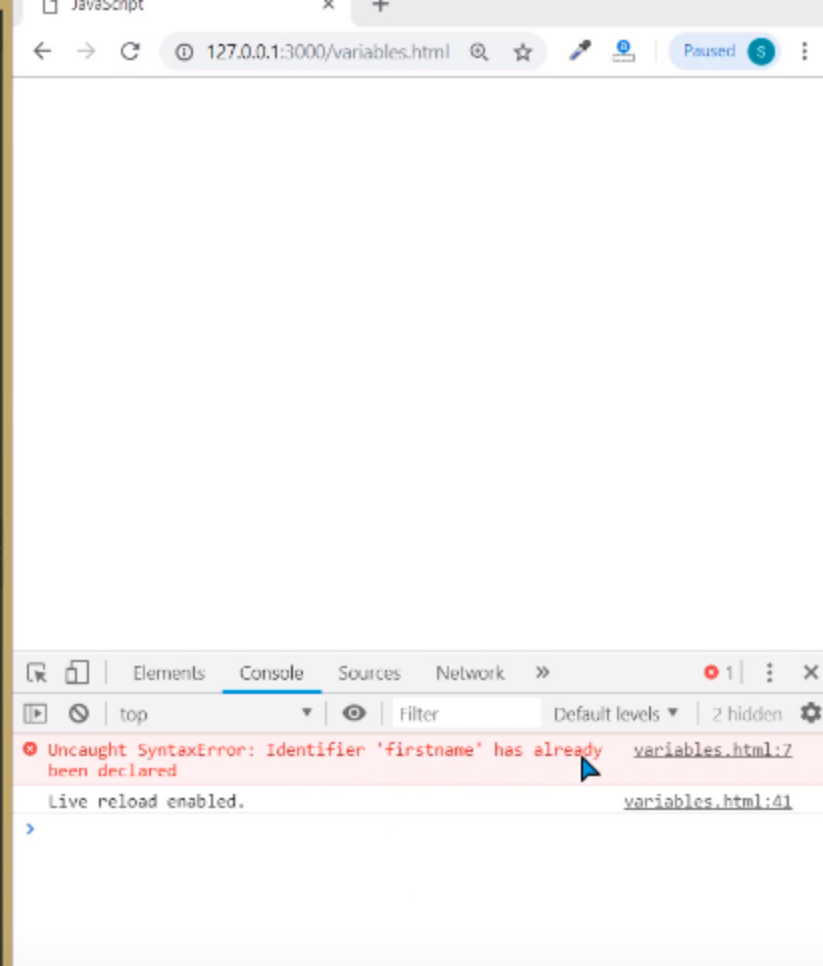
variables.html

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    let firstname = "Yahoo";
    //firstname = "Baba";

    document.write(firstname);

  </script>
</head>
<body>

</body>
</html>
```

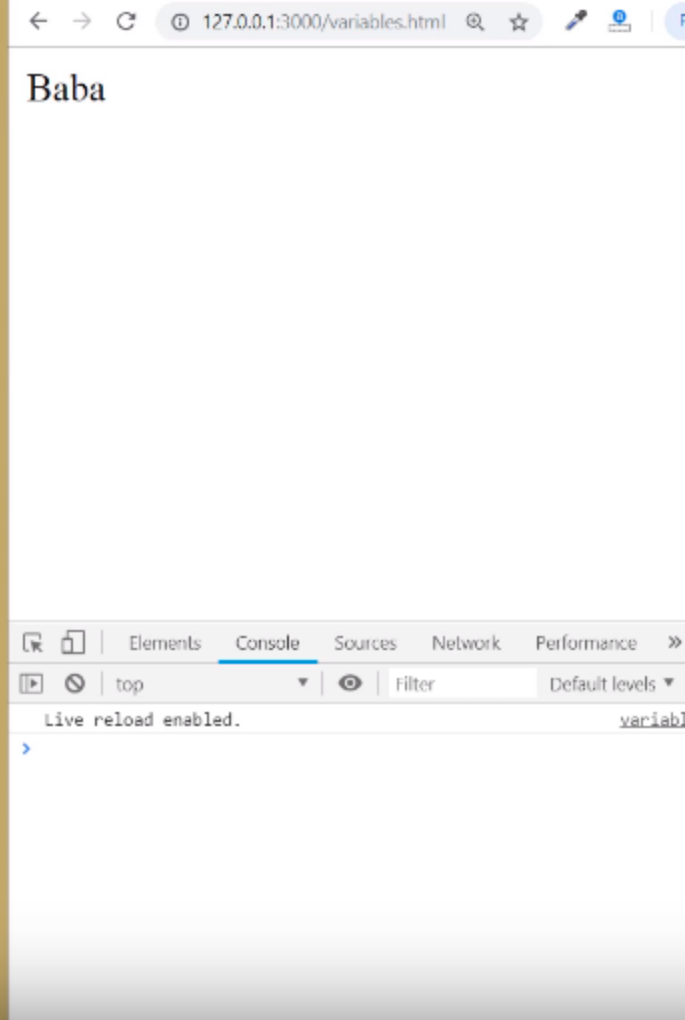


variables.html

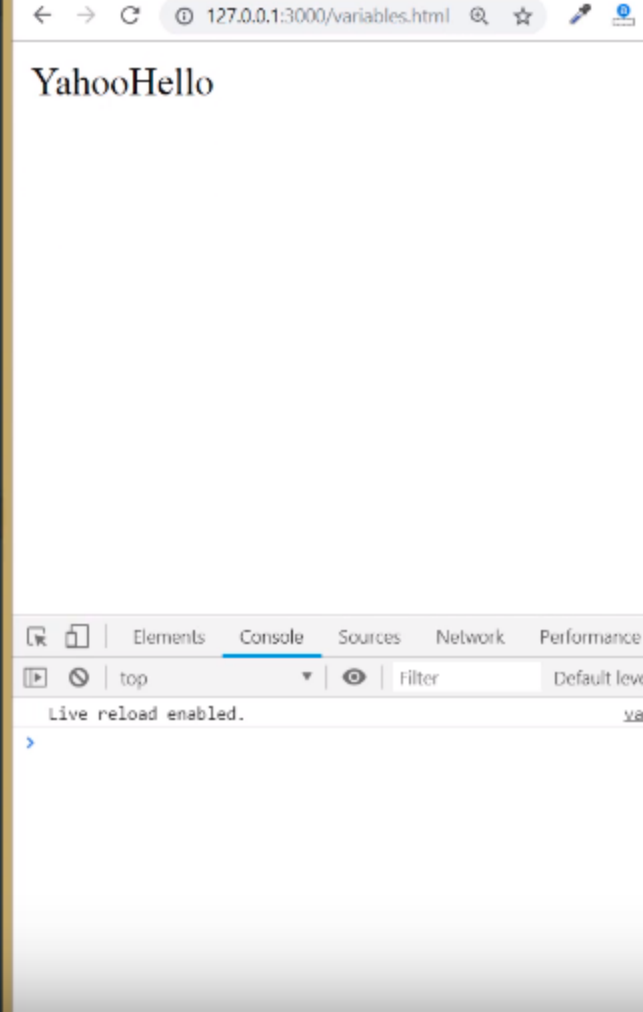
```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    let firstname = "Yahoo";
    let firstname = "Baba";

    document.write(firstname);

  </script>
</head>
<body>

</body>
</html>

```



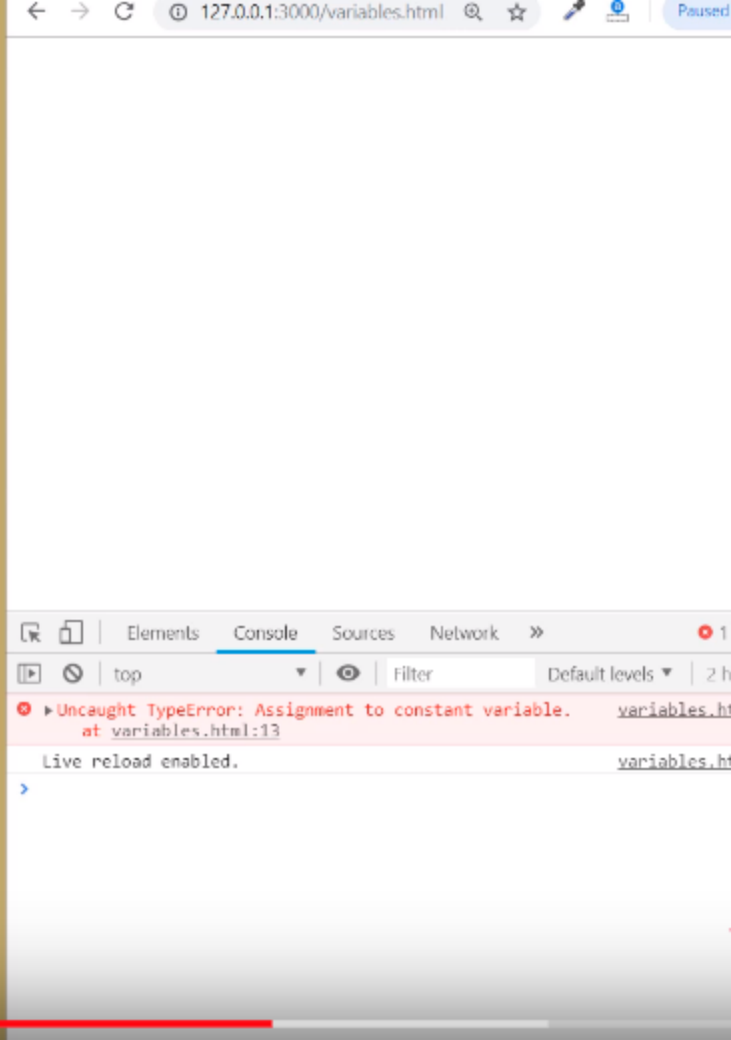
```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var firstname = "Yahoo";
    var firstname = "Baba";

    document.write(firstname);

  </script>
</head>
<body>

</body>
</html>
```



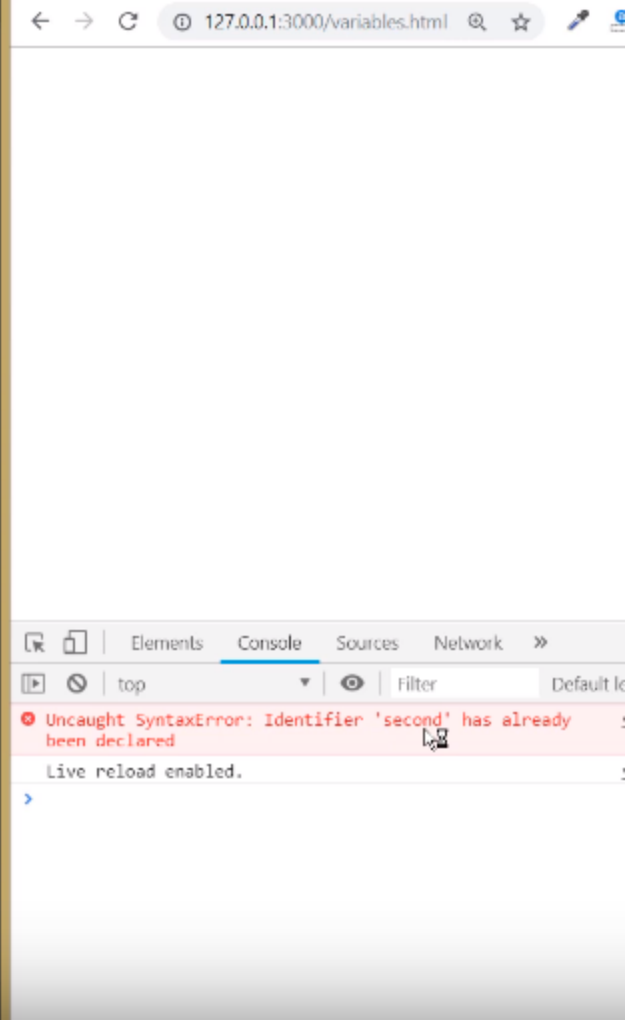
```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    let firstname = "Yahoo";
  //  let firstname = "Baba";

    document.write(firstname);

    // constant variable
    const second = "Hello";
    document.write(second);
  </script>
</head>
<body>

</body>
</html>
```



```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    let firstname = "Yahoo";
  //  let firstname = "Baba";

    //document.write(firstname);

    // constant variable
    const second = "Hello";
    second ="World";
    document.write(second);
  </script>
</head>
<body>

</body>
</html>
```



```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    let firstname = "Yahoo";
  //  let firstname = "Baba";

    //document.write(firstname);

    // constant variable
    const second = "Hello";
    const second ="World";
    document.write(second);
  </script>
</head>
<body>

</body>
```



Difference between Variable Types:

Var	Let	Const
var x = “Hello”;	let x = “Hello”;	const x = “Hello”;
var x = “World”;	let x = “World”;	const x = “World”;
x = “WoW”;	x = “WoW”;	x = “WoW”;

JavaScript
Data Types

What is Data Types :

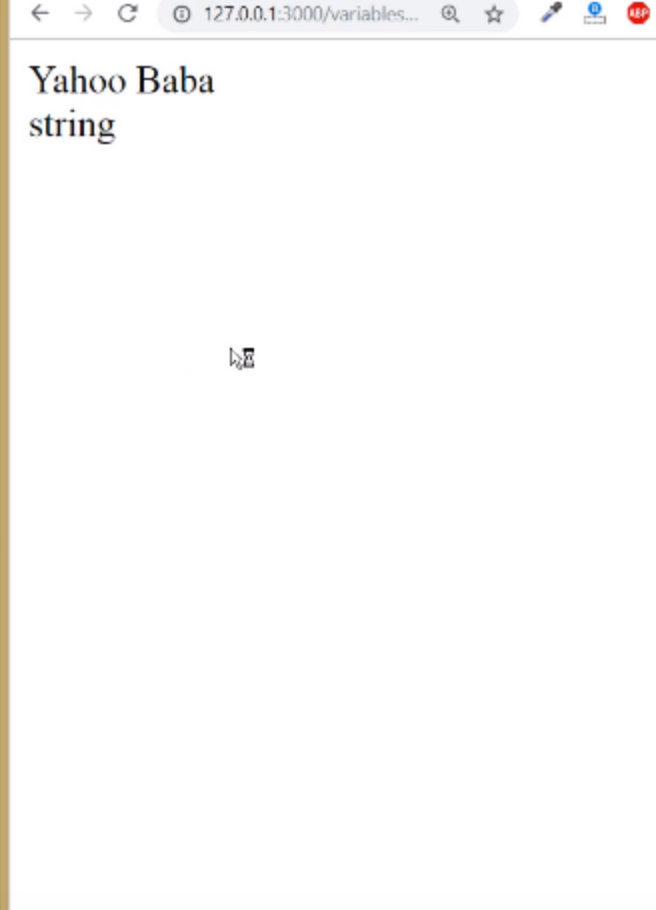
var x = “Hello World”;

Type of Value is Data Type

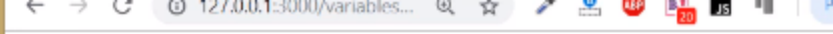
Different Type of Data Types :

```
var x = "Hello World";          → String
var x = 25;                     → Number
var x = true;                   → Boolean
var x = ["HTML","CSS","JS"];    → Array
var x = {first:"Jane", last:"Doe"}; → Object
var x = null;                   → Null
var x;                          → Undefined
```

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = "Yahoo Baba";

    document.write(x);
    document.write("<br>");
    document.write(typeof x);
  </script>
</head>
<body>

</body>
</html>
```



```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 'Y';
    x = -34.50;
    x = false;

    document.write(x);
    document.write("<br>");
    document.write(typeof x);
  </script>
</head>
<body>

</body>
</html>
```

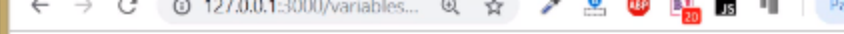


false
boolean

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 'Y';
    x = -34.50;
    x = false;
    x = undefined;

    document.write(x);
    document.write("<br>");
    document.write(typeof x);
  </script>
</head>
<body>

</body>
</html>
```

undefined
undefined

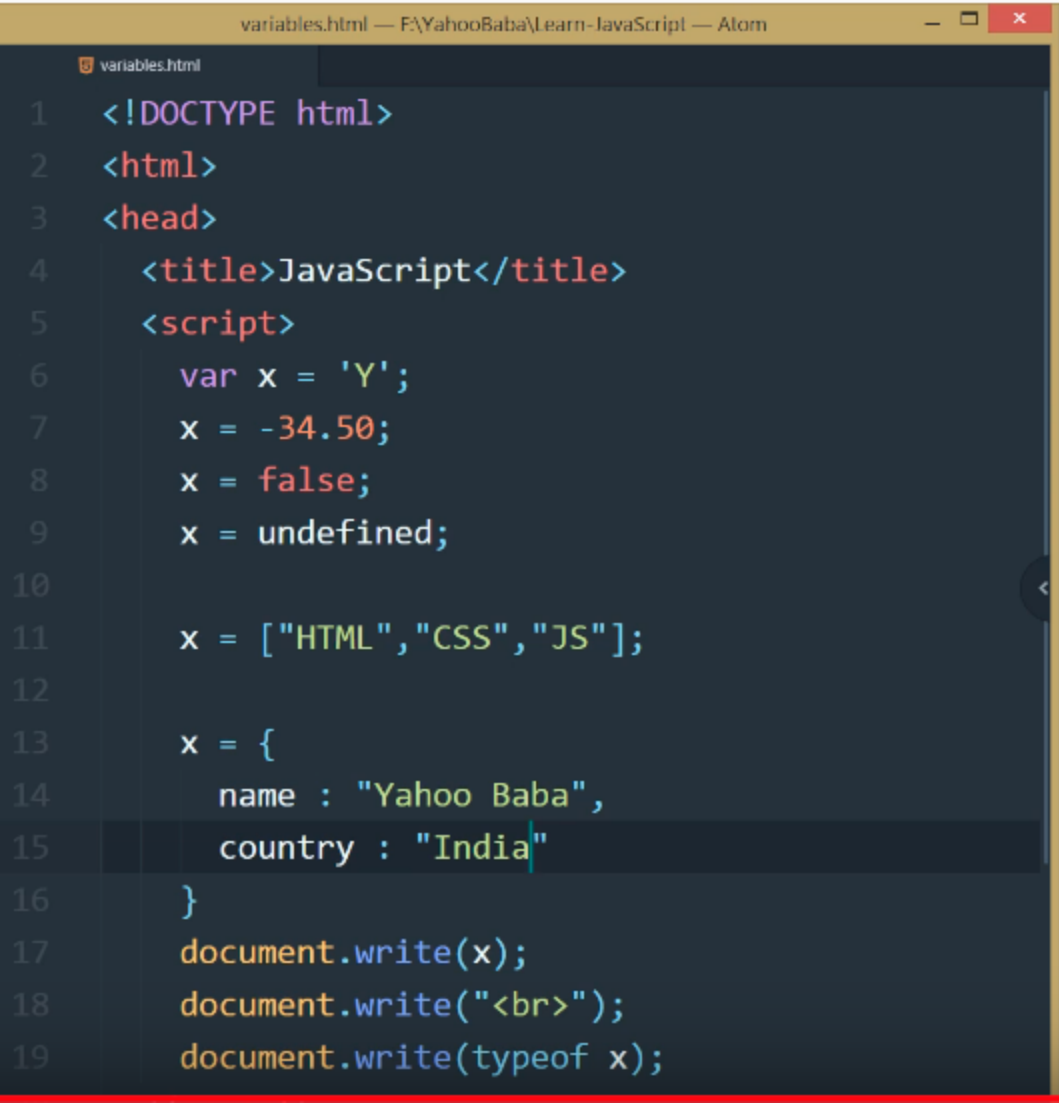
```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 'Y';
    x = -34.50;
    x = false;
    x = undefined;
    var z;
  //  document.write(x);
    document.write("<br>");
    document.write(typeof z);
  </script>
</head>
<body>

</body>
</html>
```

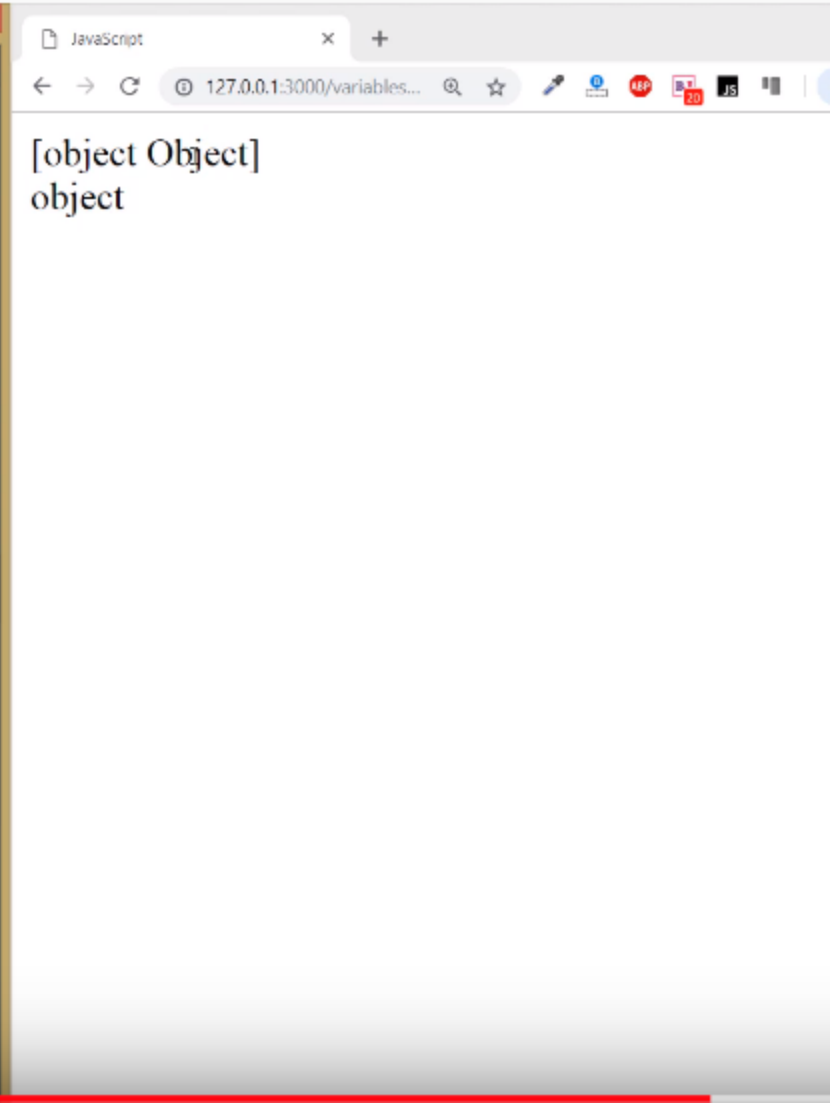


undefined

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 'Y';
    x = -34.50;
    x = false;
    x = undefined;

    x = ["HTML","CSS","JS"];
    document.write(x);
    document.write("<br>");
    document.write(typeof x);
  </script>
</head>
<body>

</body>
```

HTML,CSS,JS
object


variables.html — F:\YahooBaba\Learn-JavaScript — Atom
variables.html
<!DOCTYPE html>
<html>
<head>
<title>JavaScript</title>
<script>
var x = 'Y';
x = -34.50;
x = false;
x = undefined;
x = ["HTML","CSS","JS"];
x = {
name : "Yahoo Baba",
country : "India"
}
document.write(x);
document.write("
");
document.write(typeof x);

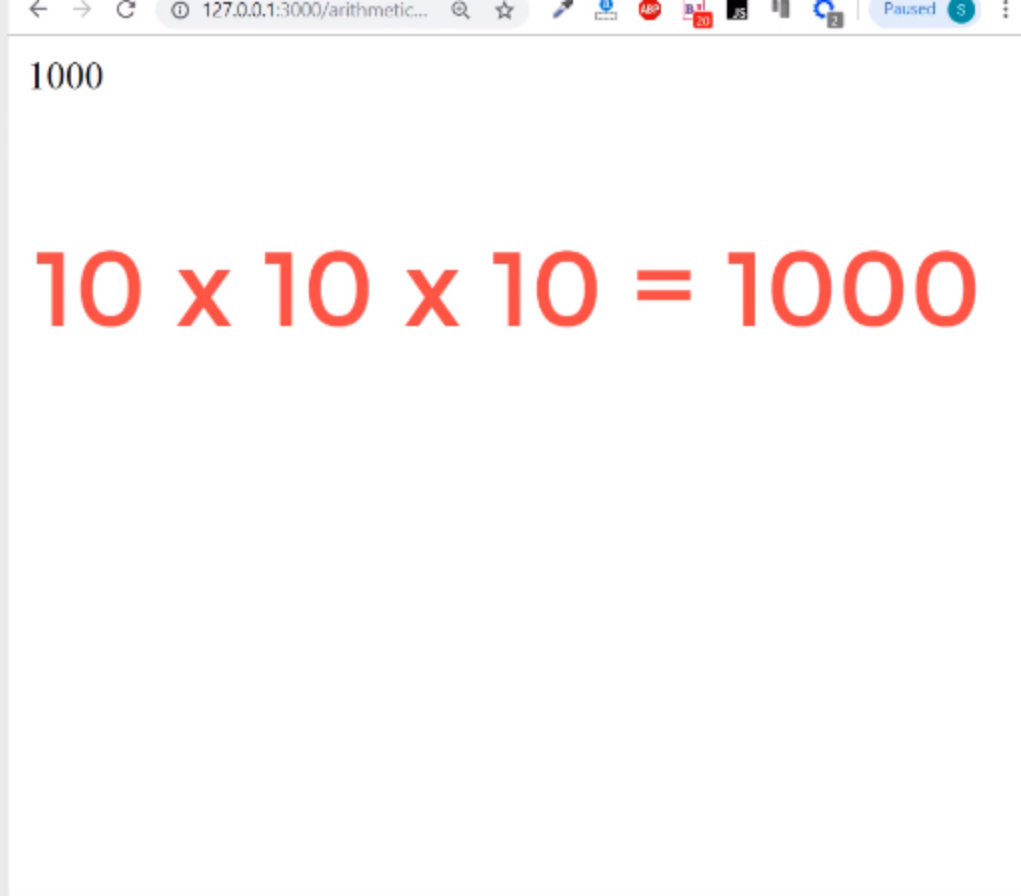

JavaScript
127.0.0.1:3000/variables...
[object Object]
object

JavaScript
Arithmetic Operators

Different Type of Arithmetic Operators :

Operator	Description
+	Addition
-	Subtraction
*	Multiplication
**	Exponentiation
/	Division
%	Modulus (Remainder)
++	Increment
--	Decrement

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = 3;
    var c = a ** b;
    document.write(c);
  </script>
</head>
<body>

</body>
</html>
```



arithmetic-operators.html — F:\YahooBaba\Learn-JavaScript — Atom

arithmetic-operators.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = 3;
    a++;
    document.write(c);
  </script>
</head>
<body>

</body>
</html>
```

JavaScript

127.0.0.1:3000/arithmetic...

1000

a = a + 1

arithmetic-operators.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = 3;
    a++;
    document.write(a + b);
  </script>
</head>
<body>

</body>
</html>

```

JavaScript

127.0.0.1:3000/arithmetic...

14

arithmetic-operators.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = 3;
    document.write(a + b);
    document.write("<br>");
    a++;
    document.write(a + b);
  </script>
</head>
<body>

</body>
</html>
```

JavaScript

127.0.0.1:3000/arithmetic...

13
14

arithmetic-operators.html — F:\YahooBaba\Learn-JavaScript — Atom

arithmetic-operators.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = 3;
    document.write(a + b);
    document.write("<br>");
    a--;
    document.write(a + b);
  </script>
</head>
<body>

</body>
</html>

```

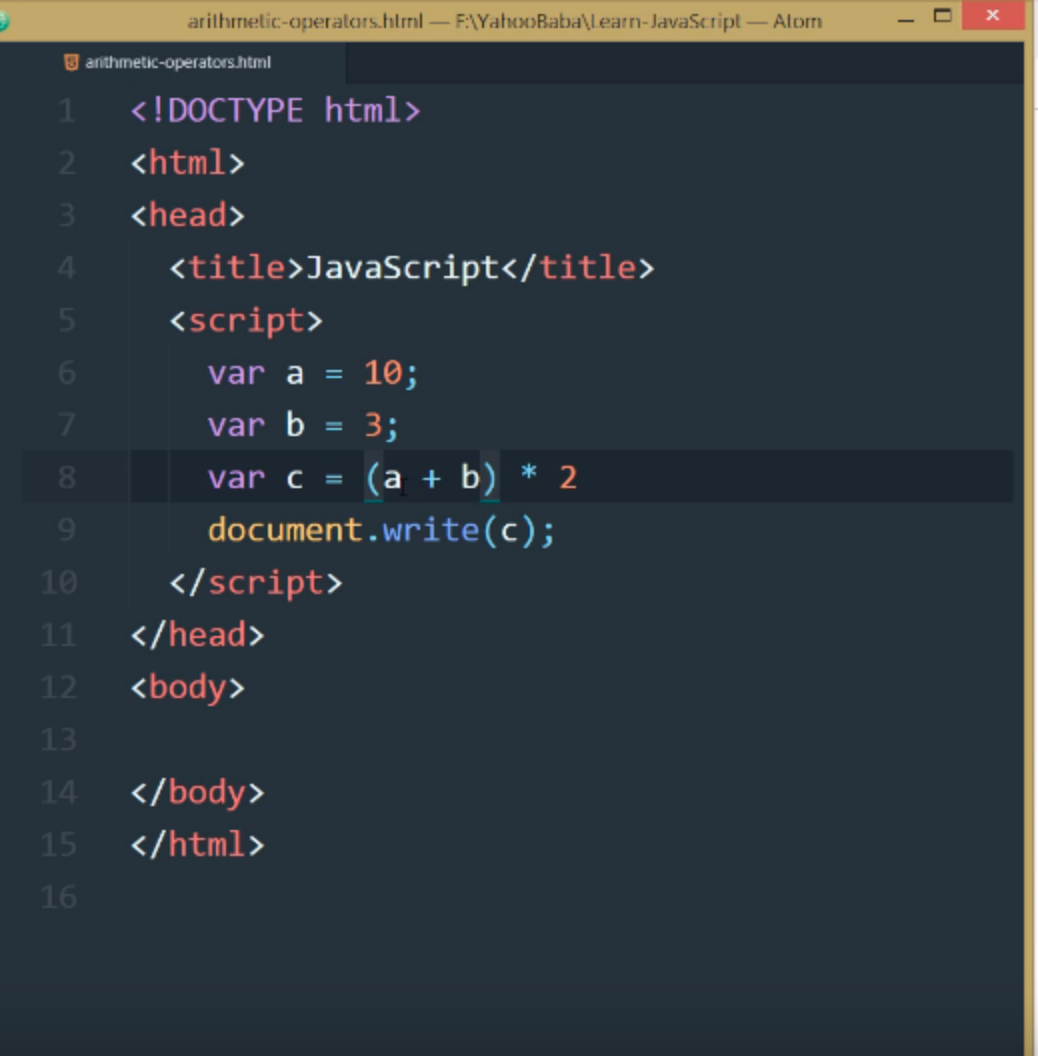
JavaScript

127.0.0.1:3000/arithmetic...

13
12

arithmetic-operators.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = 3;
    var c = a + b * 2
    document.write(c);
  </script>
</head>
<body>

</body>
</html>
```


arithmetic-operators.html — F:\YahooBaba\Learn-JavaScript — Atom
arithmetic-operators.html
<!DOCTYPE html>
<html>
<head>
<title>JavaScript</title>
<script>
var a = 10;
var b = 3;
var c = (a + b) * 2
document.write(c);
</script>
</head>
<body>
</body>
</html>


JavaScript
127.0.0.1:3000/arithmetic
26

JavaScript
Assignment Operators

Different Type of Assignment Operators :

Operator	Example	Same As
=	x = y	x = y
+=	x += y	x = x + y
-=	x -= y	x = x - y
*=	x *= y	x = x * y
/=	x /= y	x = x / y
%=	x %= y	x = x % y
**=	x **= y	x = x ** y

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = 3;
    a **= b;
    document.write(a);
  </script>
</head>
<body>

</body>
</html>
```

127.0.0.1:3000/arithmetic...

1000

JavaScript

Comparison Operators

Comparison Operator :

```
var x = 15;
var y = 25;
```

x > y

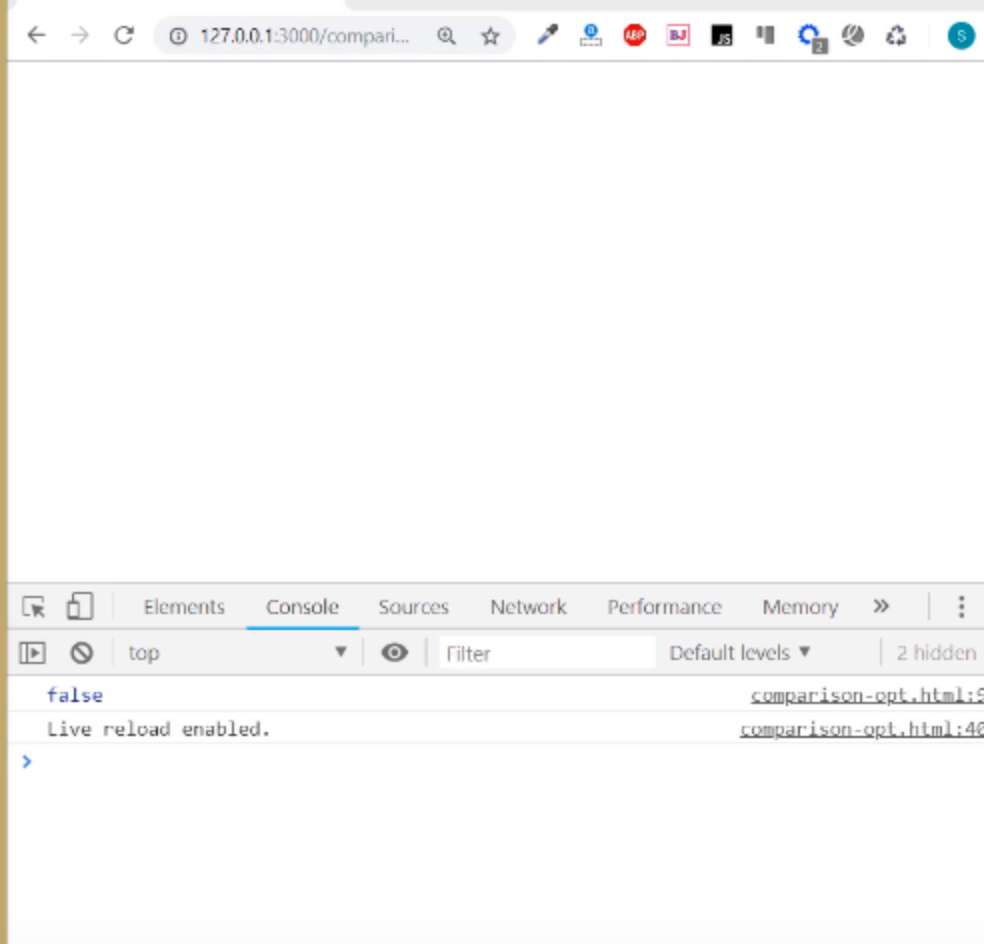
False

Different Type of Comparison Operators :

Operator	Description
==	equal to
===	equal value and equal type
!=	not equal
!==	not equal value or not equal type
>	greater than
<	less than
>=	greater than or equal to
<=	less than or equal to

comparison-opt.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 10;
    var b = "10";

    console.log(a === b);
  </script>
</head>
<body>

</body>
</html>

```



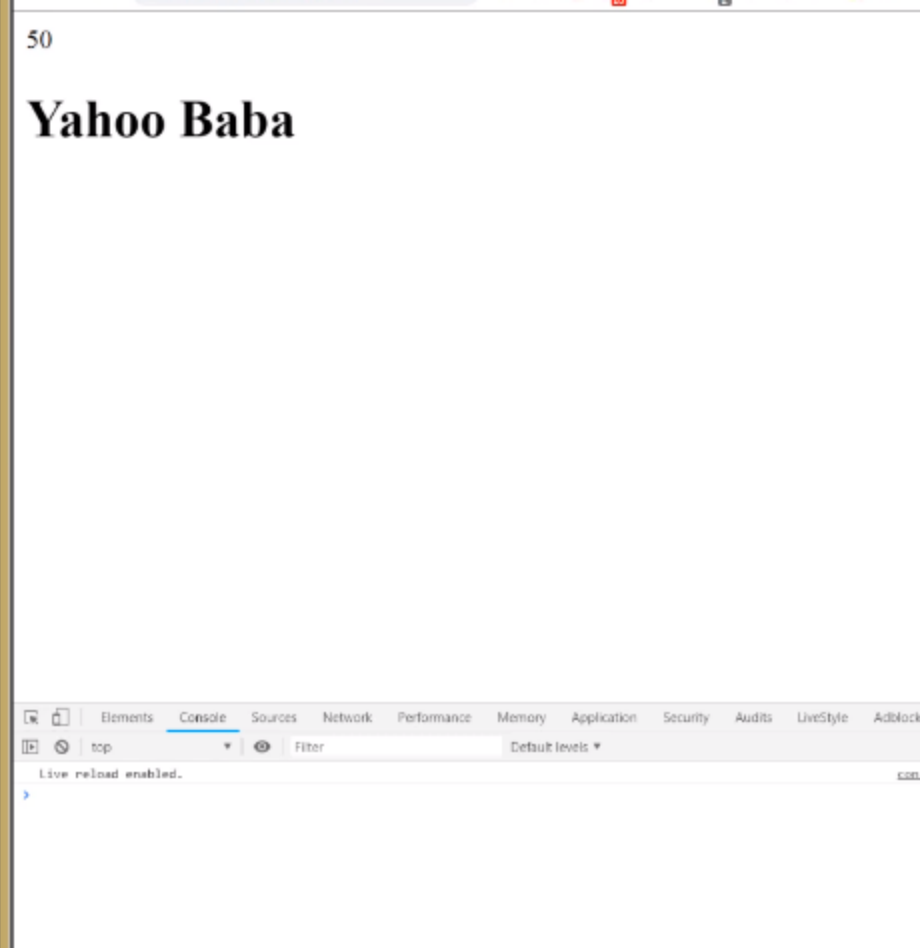
Switch Statement in JavaScript :

```
switch (expression) {
  case condition 1: statement(s)
  break;

  case condition 2: statement(s)
  break;

  case condition 3: statement(s)
  break;

  default: statement(s)
}
```

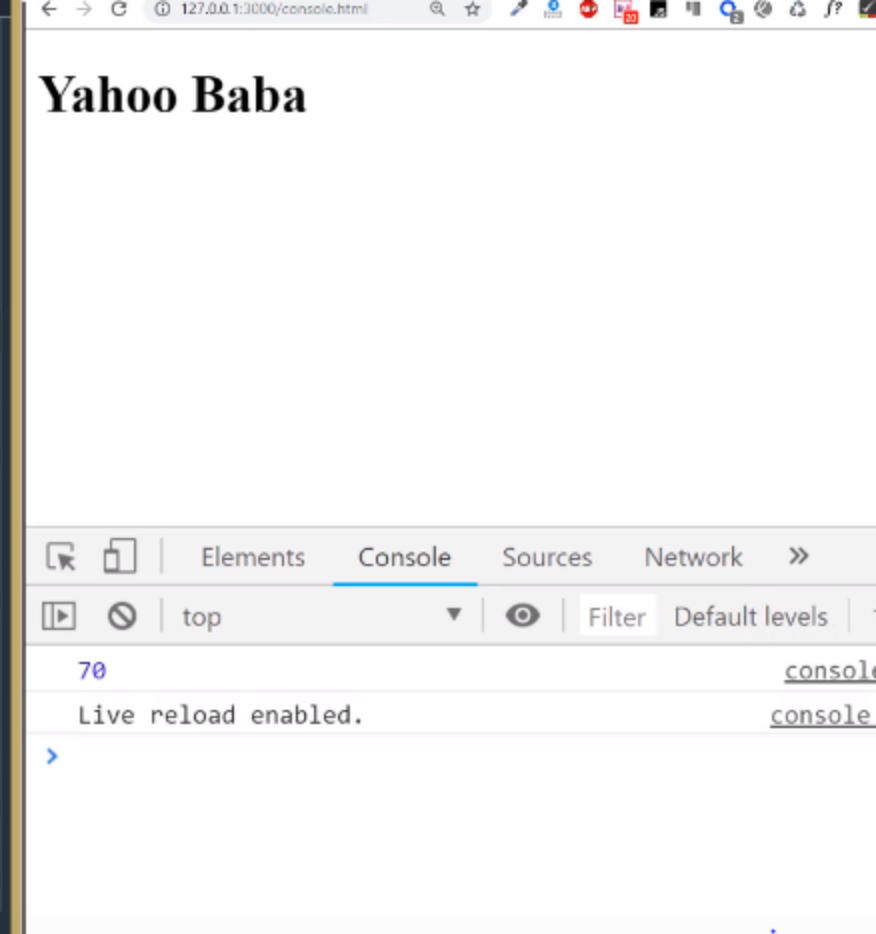
JavaScript

Google Chrome Console

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 50;

    console.log(x);
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>
```



```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 50;

    console.log(x + 20);
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>
```



```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 50;

    console.log([1,2,3]);
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>
```

Yahoo Baba

Elements Console Sources Network

top Filter Default levels 2 hidden

▼ (3) [1, 2, 3] console.html:8
  0: 1
  1: 2
  2: 3
  length: 3
  ▶ __proto__: Array(0)

Live reload enabled. console.html:39

>

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 50;

    console.table([1,2,3]);
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>
```

Yahoo Baba

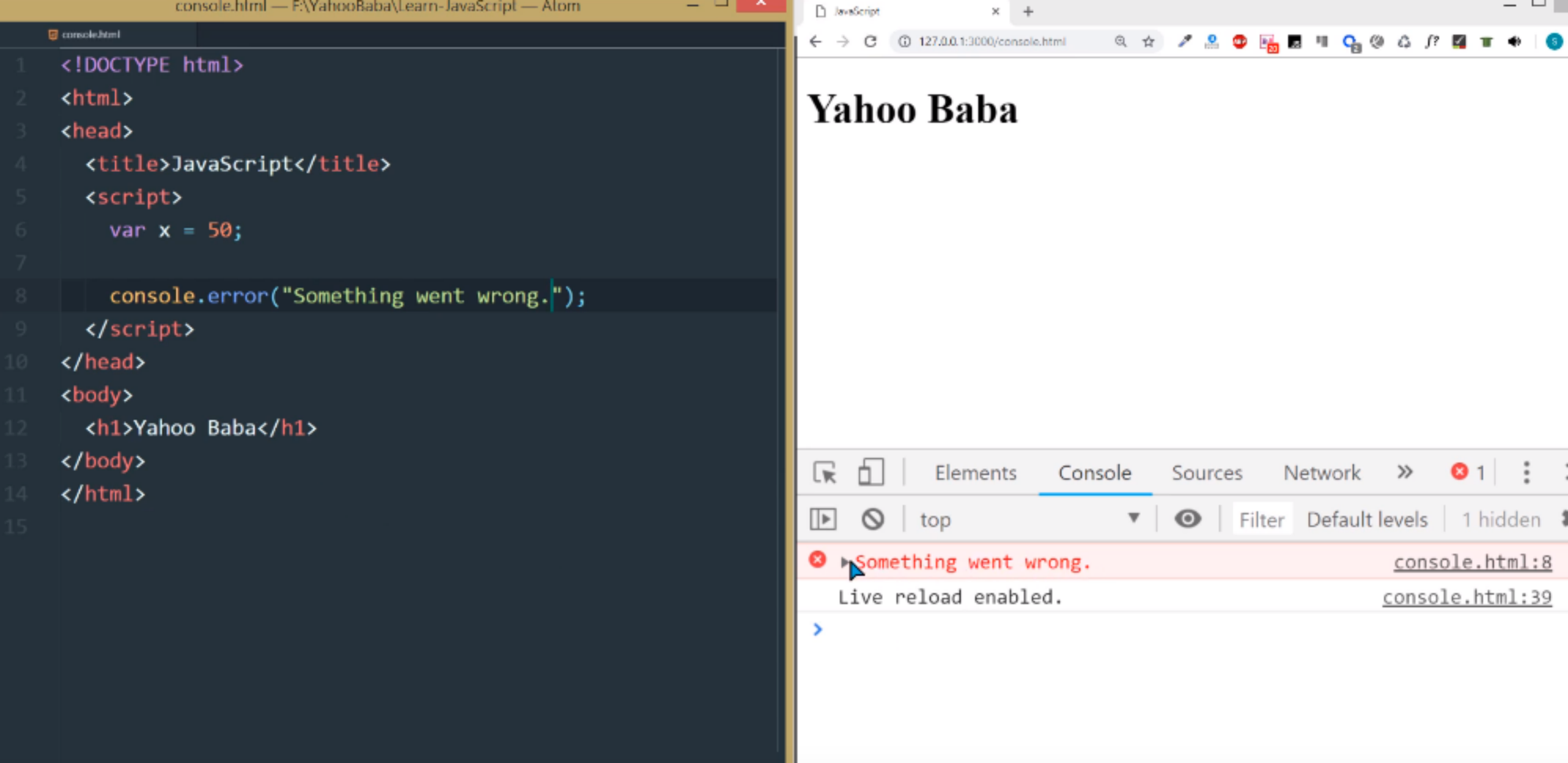
Elements Console Sources Network

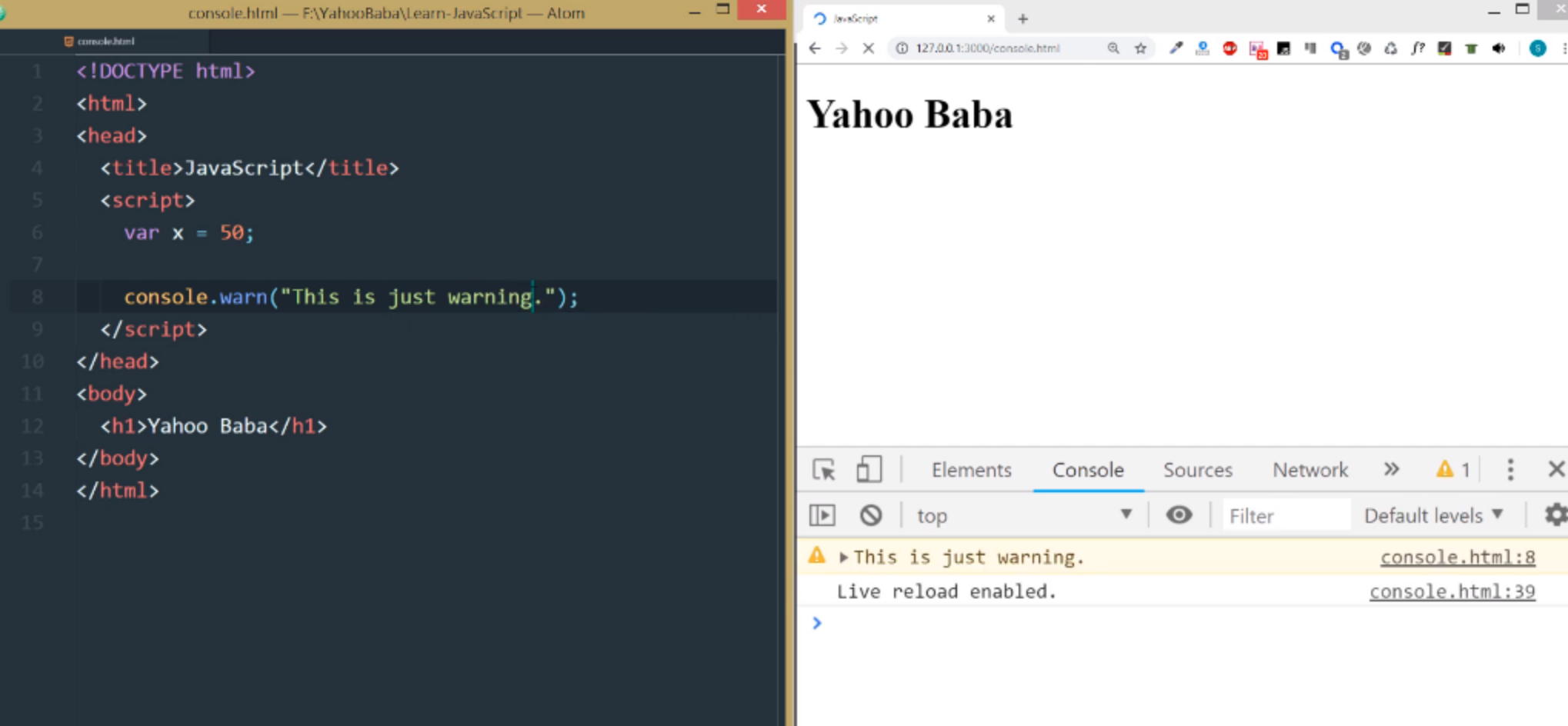
top Filter Default levels 2 hidden

console.html:8

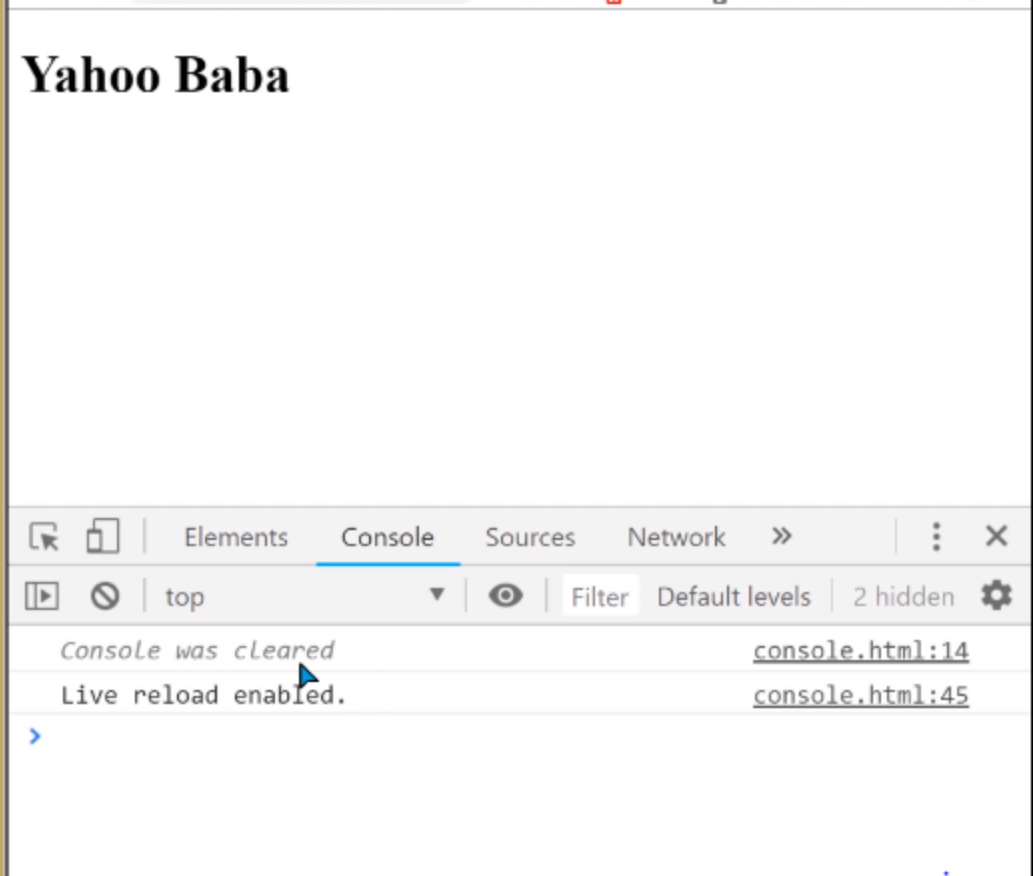
(index)	Value
0	1
1	2
2	3

▶ Array(3)

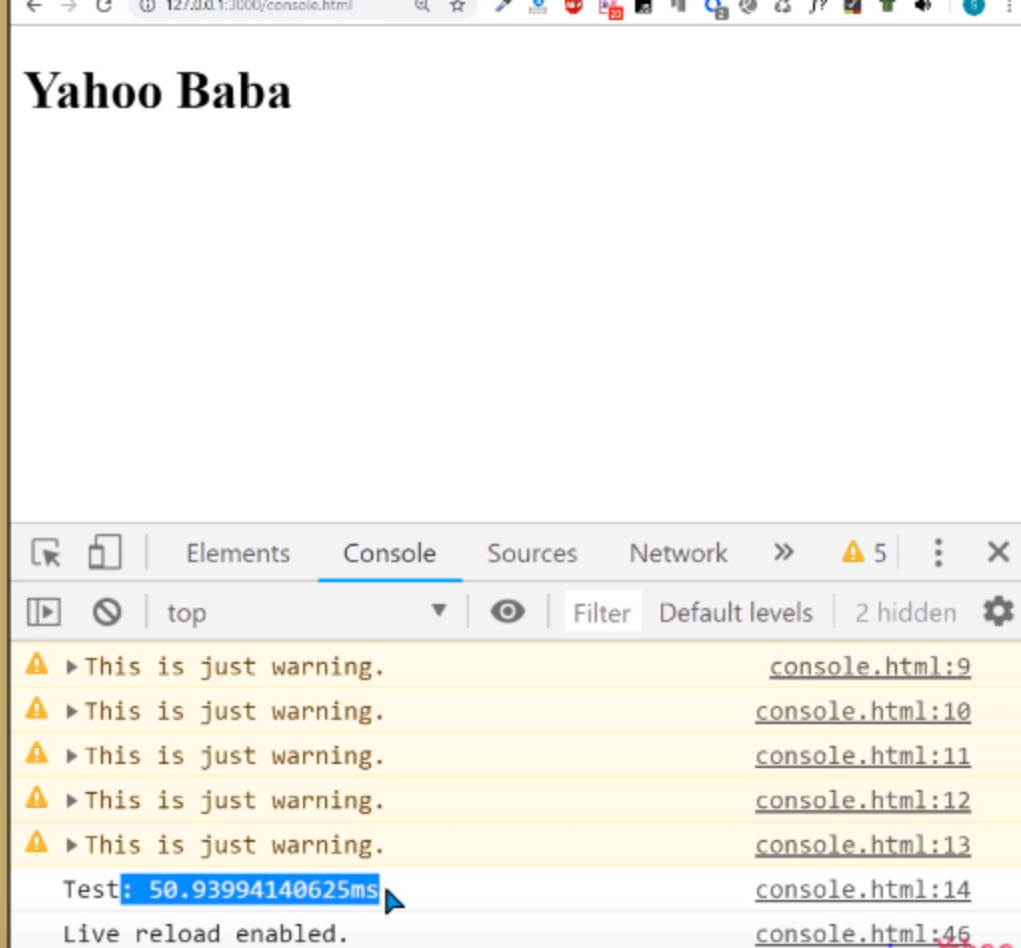

console.html — F:\YahooBaba\Learn-JavaScript — Atom
console.html
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>JavaScript</title>
5 <script>
6 var x = 50;
7
8 console.error("Something went wrong.");
9 </script>
10 </head>
11 <body>
12 <h1>Yahoo Baba</h1>
13 </body>
14 </html>
15
JavaScript
127.0.0.1:3000/console.html
Yahoo Baba
Elements
Console
Sources
Network
1
top
Filter
Default levels
1 hidden
Something went wrong.
console.html:8
Live reload enabled.
console.html:39

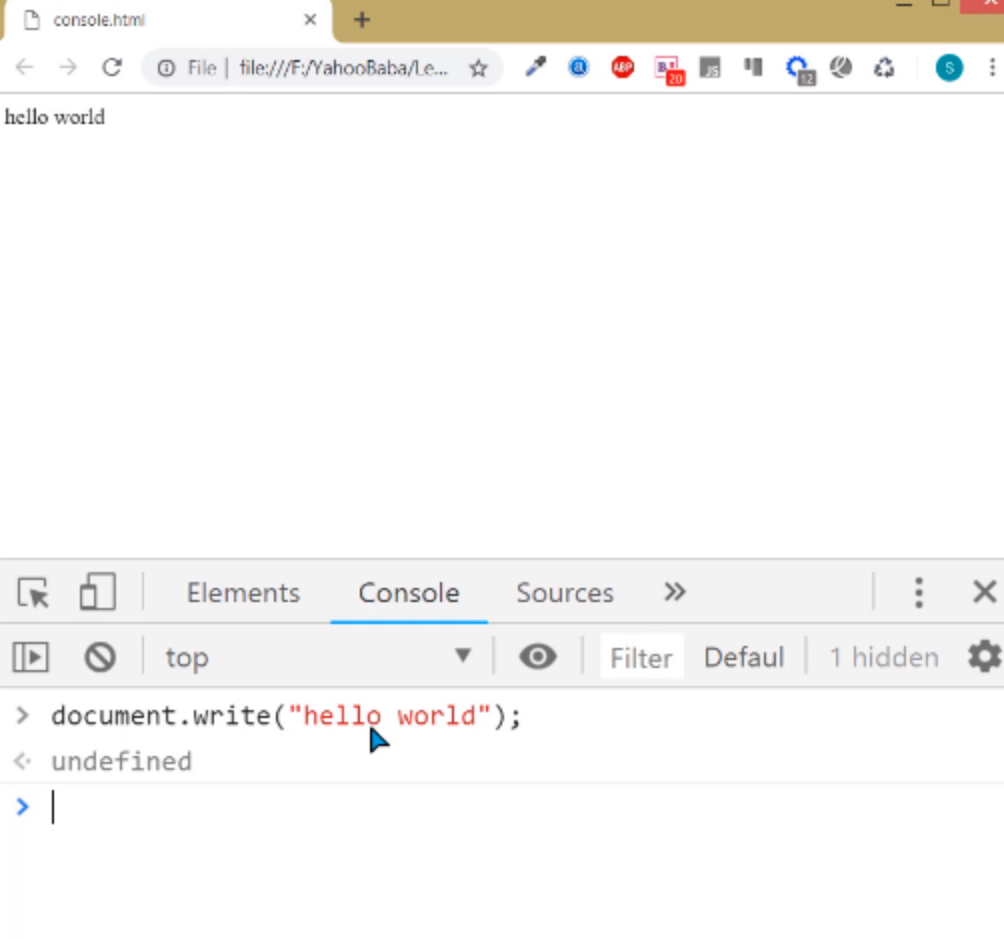

console.html — F:\YahooBaba\Learn-JavaScript — Atom
console.html
<!DOCTYPE html>
<html>
<head>
<title>JavaScript</title>
<script>
var x = 50;
console.warn("This is just warning.");
</script>
</head>
<body>
<h1>Yahoo Baba</h1>
</body>
</html>
JavaScript
127.0.0.1:3000/console.html
Yahoo Baba
Elements
Console
Sources
Network
top
Filter
Default levels
This is just warning.
console.html:8
Live reload enabled.
console.html:39

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 50;

    console.warn("This is just warning.");
    console.warn("This is just warning.");
    console.warn("This is just warning.");
    console.warn("This is just warning.");
    console.warn("This is just warning.");

    console.clear();
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>
```



```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var x = 50;

    console.time("Test");
    console.warn("This is just warning.");
    console.warn("This is just warning.");
    console.warn("This is just warning.");
    console.warn("This is just warning.");
    console.warn("This is just warning.");
    console.timeEnd("Test");
    //console.clear();
  </script>
</head>
<body>
  <h1>Yahoo Baba</h1>
</body>
</html>
```

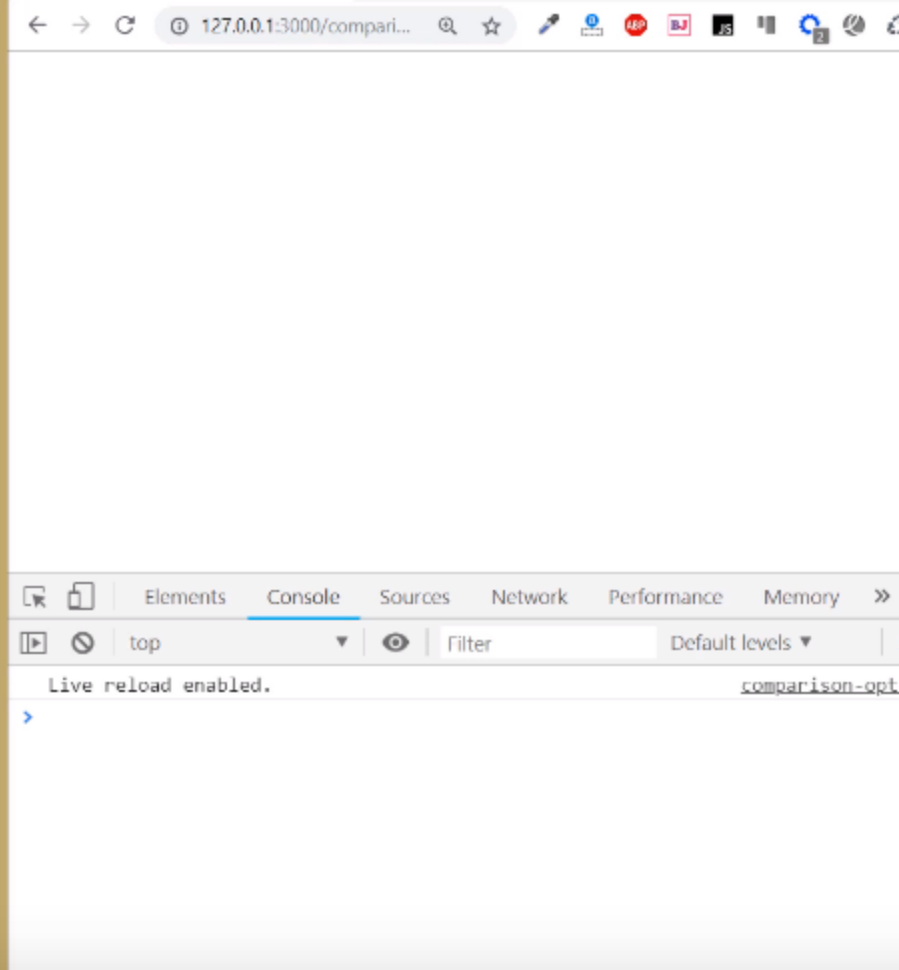



console.html
File | file:///F:/YahooBaba/Le...
hello world
Elements
Console
Sources
top
Filter
Defaul
1 hidden
document.write("hello world");
undefined

JavaScript

If Statement

```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 100;
    var b = "100";

    if(a === b){
      document.write("Yahoo Baba");
    }

  </script>
</head>
<body>

</body>
</html>
```



Different Type of Logical Operators :

Operator	Name
&&	Logical AND
||	Logical OR
!	Logical NOT

If Statement with Logical AND :

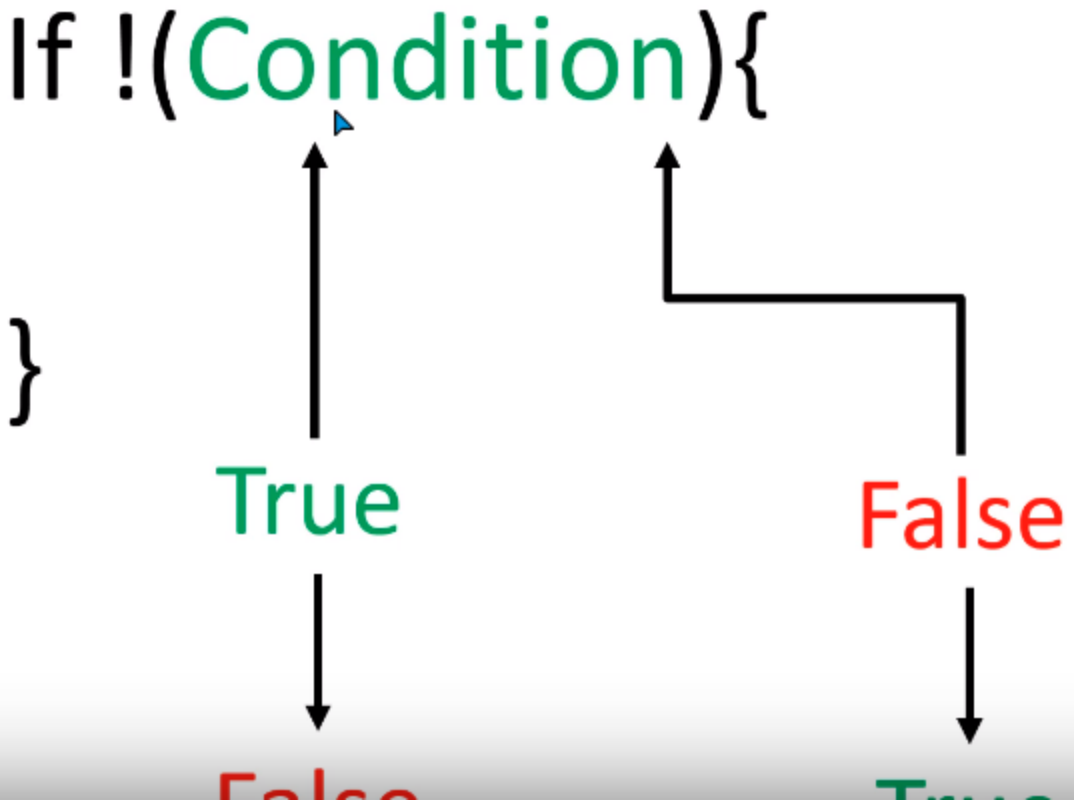
```
If(Condition 1 && Condition 2){

}
```

If Statement with Logical OR :

```
If(Condition 1 || Condition 2){

}
```

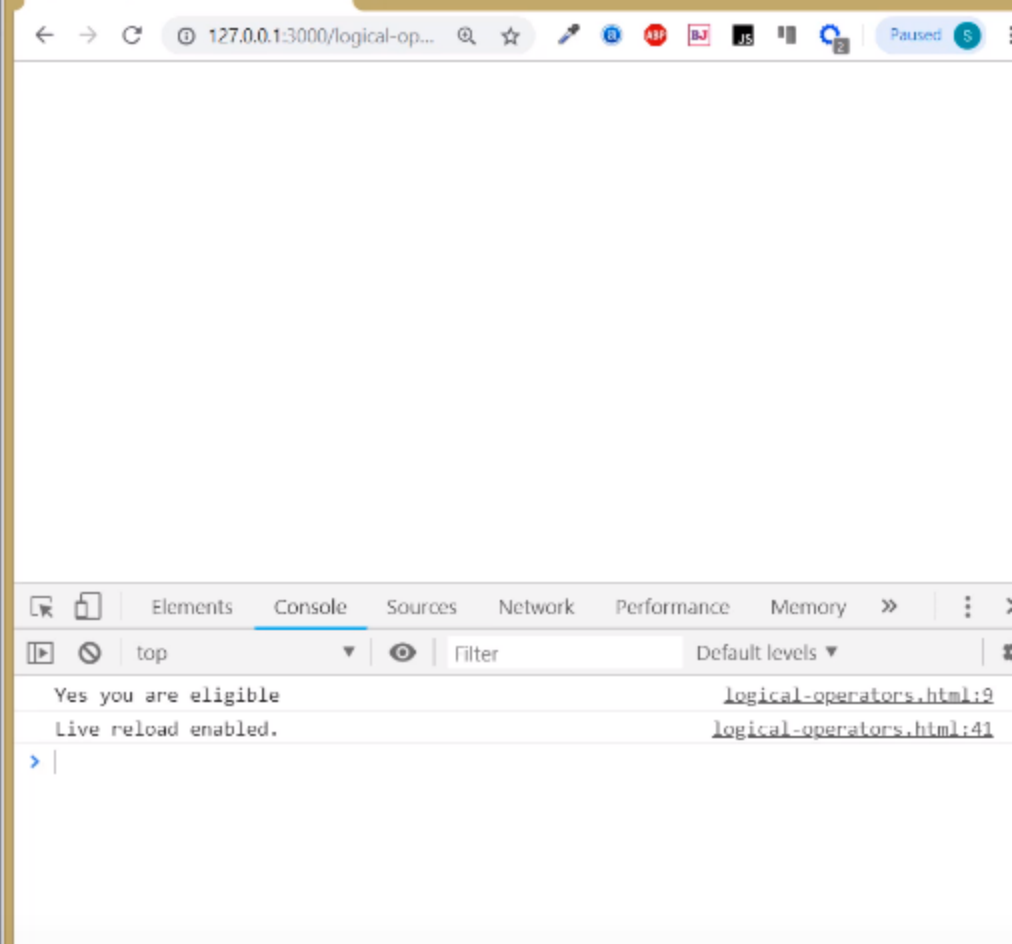
Run only when either one condition must be TRUE

If Statement with Logical NOT :



logical-operators.html

```
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var age = 20;

    if(age >= 18 && age <= 21){
      console.log("Yes you are eligible"
    }
  </script>
</head>
<body>

</body>
```



```html
<!DOCTYPE html>
<html>
<head>
  <title>JavaScript</title>
  <script>
    var a = 30;
    var b = 15;
    console.log(!a >= 12);
    //if (!a >= 12){
    //  console.log("Yes you are eligibl
    //}
  </script>
</head>
<body>

</body>
```