console.log( )

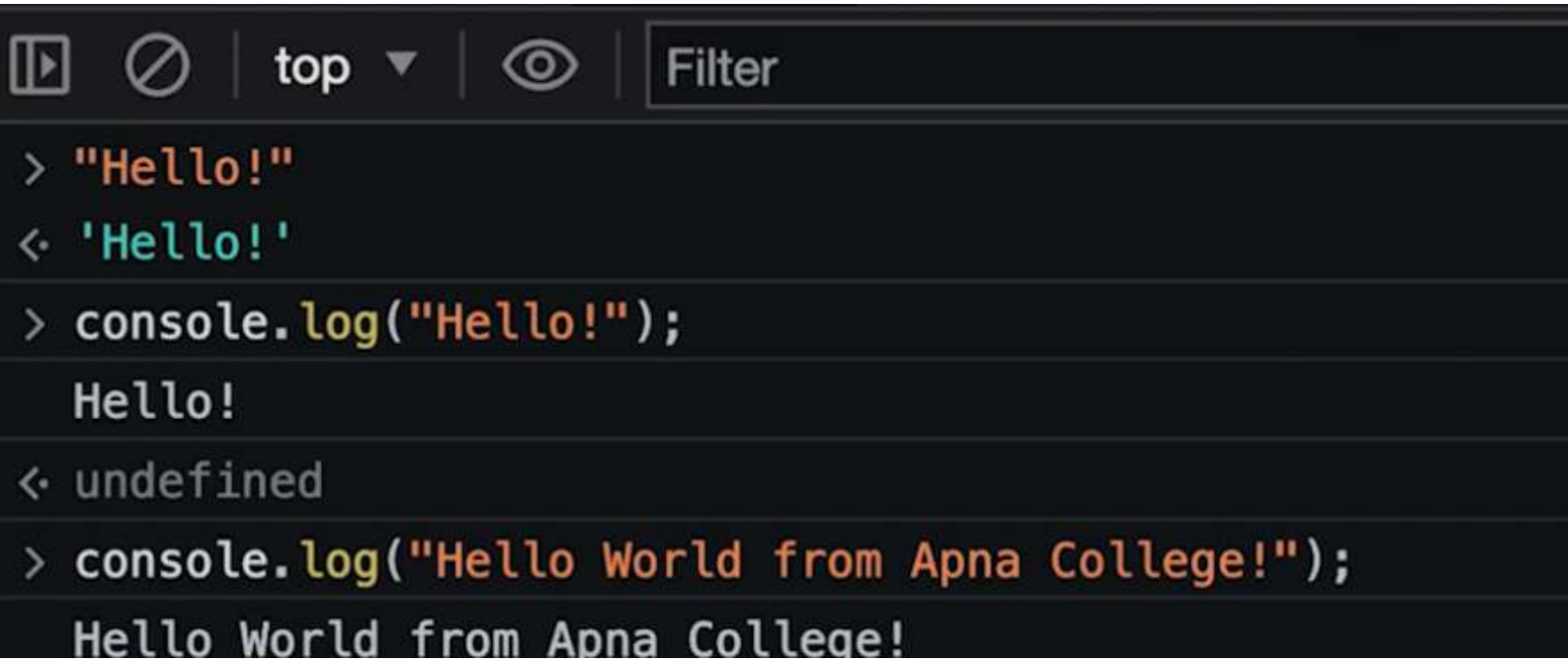
To write (log) a message on the console

```
console.log("Apna College");

console.log(1234);

console.log(2+2);

console.log("Apna", "College", 123);
```


top
Filter
> "Hello!"
< 'Hello!'
> console.log("Hello!");
Hello!
< undefined
> console.log("Hello World from Apna College!");
Hello World from Apna College!

```
<· undefined
> console.log("num");
  num
<· undefined
> console.log(num);
  123
<· undefined
> console.log(1+2);
  3
<· undefined
>
```

Template Literals

They are used to add embedded expressions in a string.

```
let a = 5;

let b = 10;

console.log(`Your pay ${a + b} rupees`);

// console.log("Price is", a+b, "rupees");
```

app.js > ...

```
1   let pencilPrice = 10;
2   let erasorPrice = 5;
3   let output = "The total price is : " + (pencilPrice + erasorPrice) + " Rupees.";
4   console.log(output);
5
```

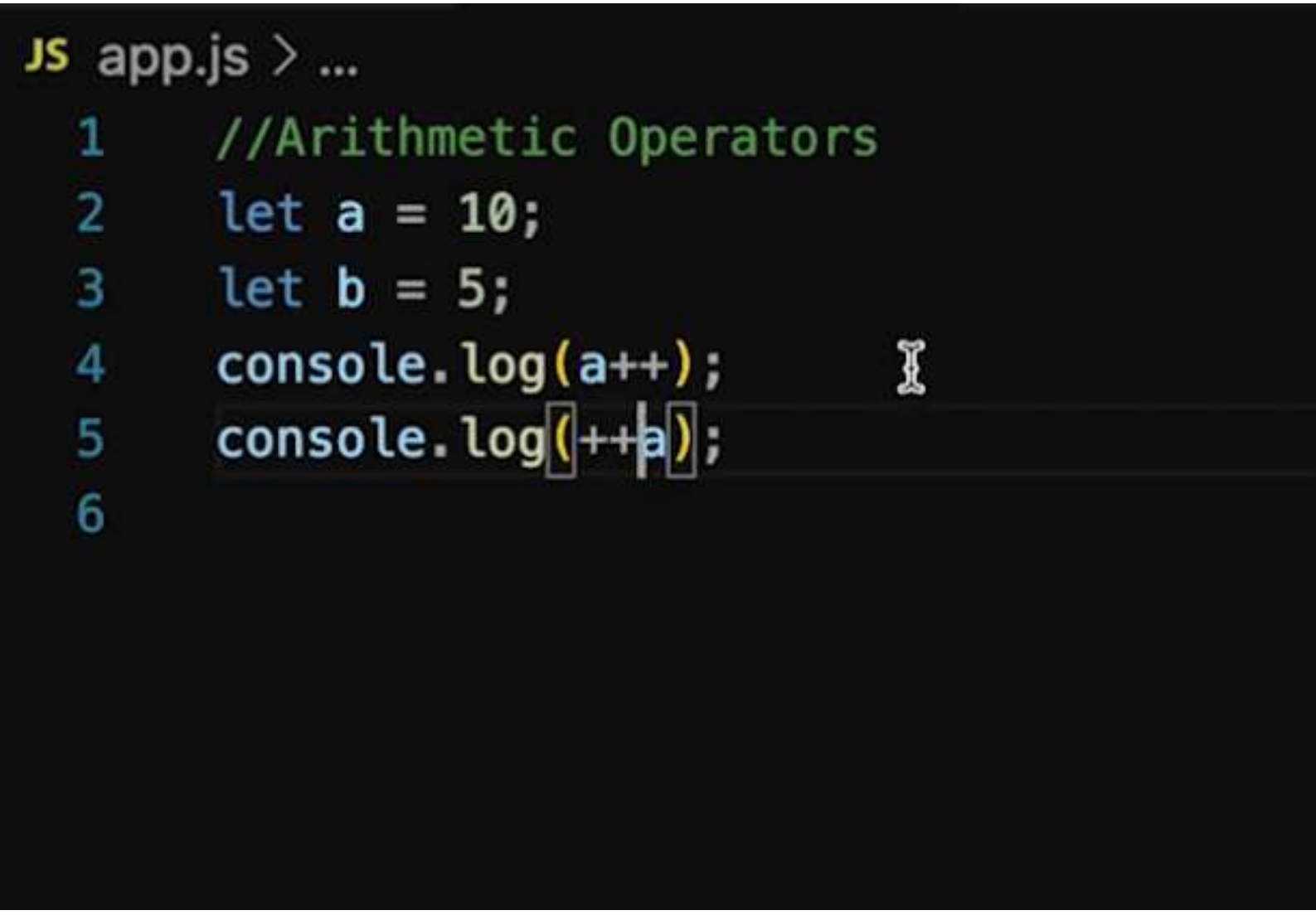

JS app.js > ...
1 let pencilPrice = 10;
2 let erasorPrice = 5;
3 // let output = "The total price is : " + (pencilPrice + erasorPrice) + " Rupees.";
4 let output = `The total price is : ${pencilPrice} Rupees.`;
5 console.log(output);
6

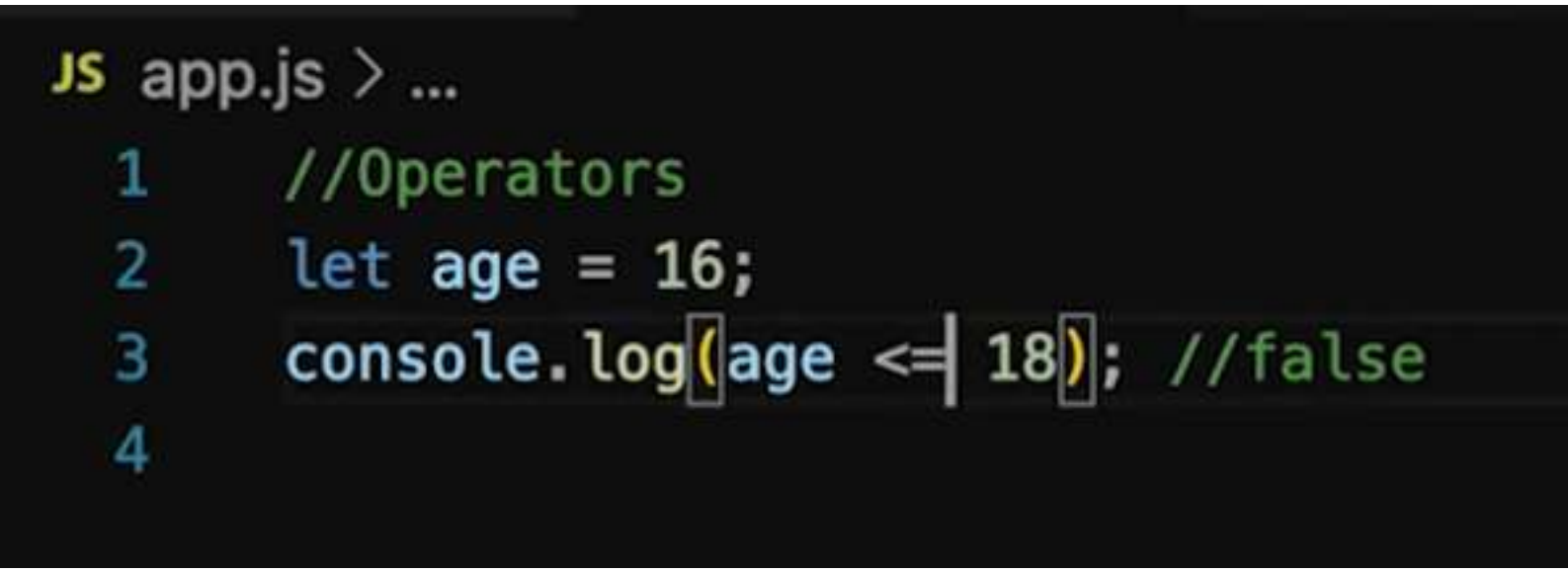
Operators in JS

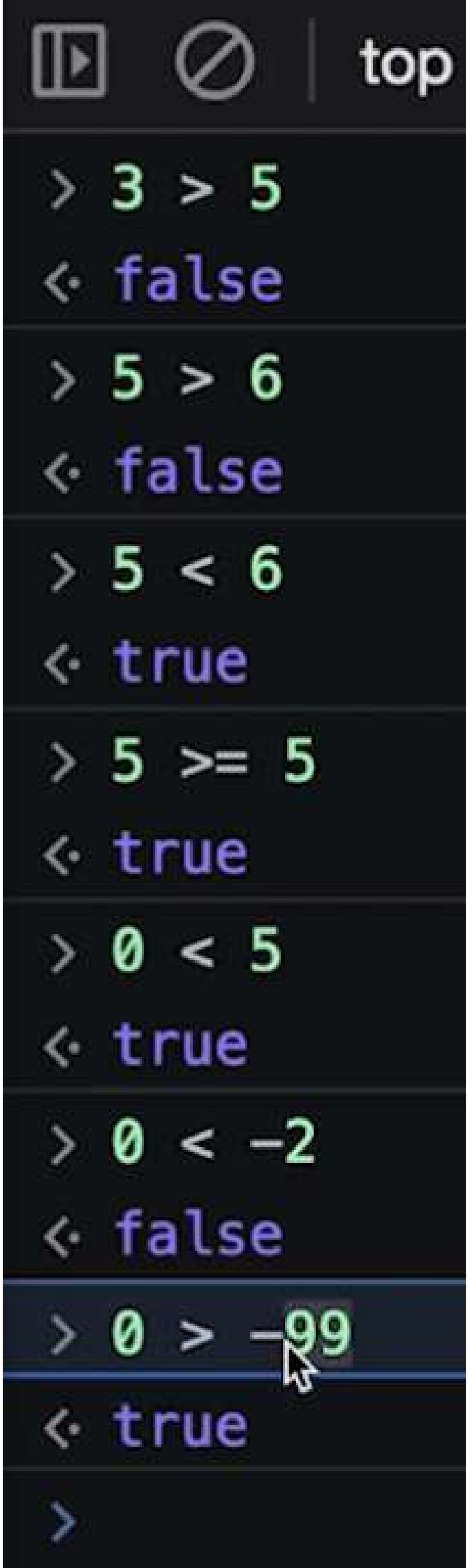
- Arithmetic (+, -, *, /, %, **)
- Unary (++, --)
- Assignment (=, +=, -=, *=, /=, %= etc.)
- Comparison
- Logical

JS app.js > ...

```
1    //Arithmetic Operators
2    let a = 10;
3    let b = 5;
4    console.log(a + b);
5    console.log(a - b);
6    console.log(a * b);
7    console.log(a / b);
8    console.log(a % b);
9    console.log(a ** b);
10
```


JS app.js > ...
1 //Arithmetic Operators
2 let a = 10;
3 let b = 5;
4 console.log(a++);
5 console.log(++a);
6


JS app.js > ...
1 //Operators
2 let age = 16;
3 console.log(age <= 18); //false
4


top
> 3 > 5
false
> 5 > 6
false
> 5 < 6
true
> 5 >= 5
true
> 0 < 5
true
> 0 < -2
false
> 0 > -99
true
>

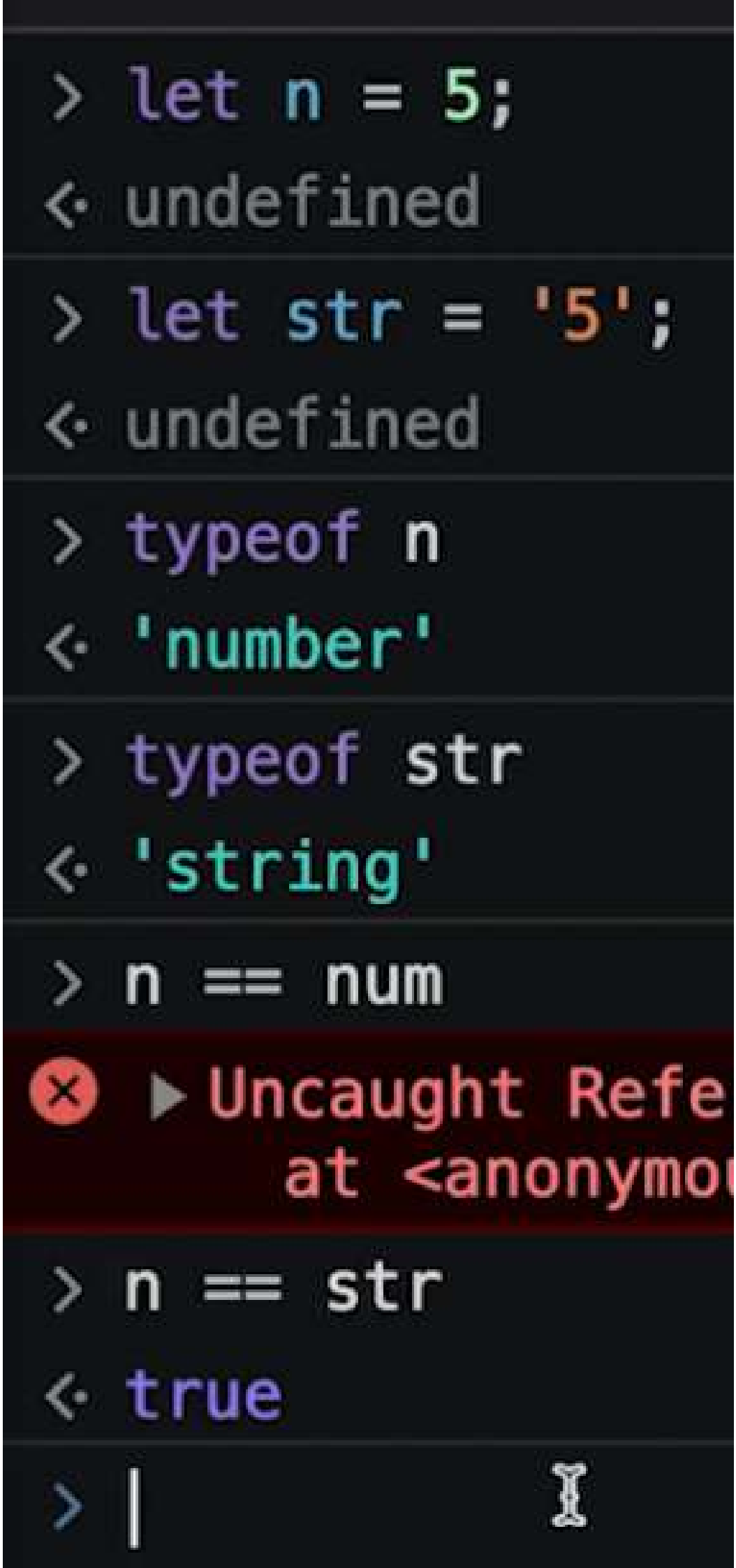
Comparison Operators

Comparison Operators to compare 2 values

`>`	→	Greater than
`>=`	→	greater than or equal to
`<`	→	lesser than
`<=`	→	lesser than or equal to
`==`	→	equal to
`!=`	→	not equal to

```
> 5 == 5
<· true
> 5 === 4
<· false
> 5 != 5
<· false
> 5 !== 4
<· true
>
```


> 5 == '5'
< true


> let n = 5;
undefined
> let str = '5';
undefined
> typeof n
'number'
> typeof str
'string'
> n == num
Uncaught Refe
at <anonymou
> n == str
true
>

Comparison Operators

==

- compares value, not type

```
> "123" == 123
< true
> 1 == '1'
< true
> 0 == ' '
< true
> 0 == false
< true
> null == undefined
< true
```

===

- compares type & value

```
> "123" === 123
< false
> 1 === '1'
< false
> 0 === ' '
< false
> 0 === false
< false
> null === undefined
< false
```

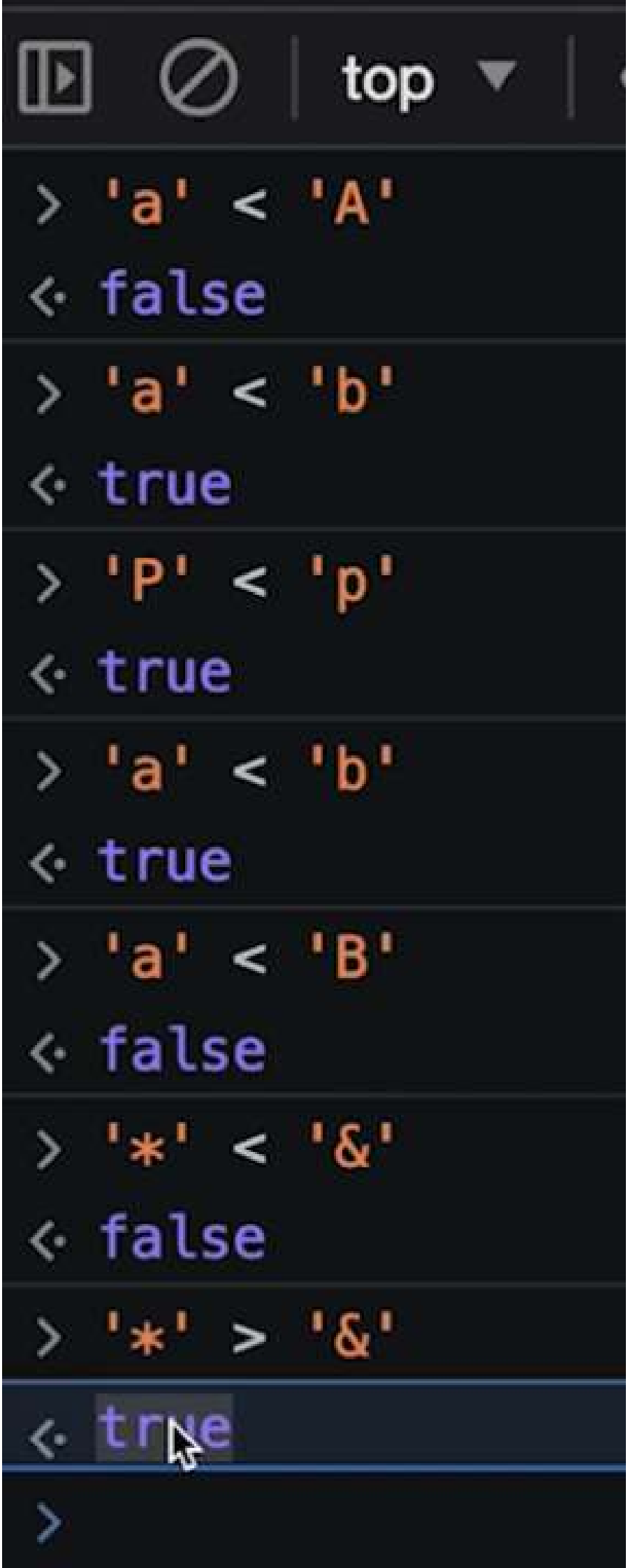

```
> n == str
<· true
> n === str
<· false
> 0 == ' '
<· true
> 0 === ' '
<· false
>
```

Comparison for non-numbers

```
> 'a' > 'A'
< true
> 'a' > 'b'
< false
> 'b' < 'c'
< true
> 'B' < 'C'
< true
> '*' < '&'
< false
```

'a' -> 61, 'b' -> 62 ...

'A' -> 41 'B' -> 42 ...


top
> 'a' < 'A'
false
> 'a' < 'b'
true
> 'P' < 'p'
true
> 'a' < 'b'
true
> 'a' < 'B'
false
> '*' < '&'
false
> '*' > '&'
true
>

Conditional Statements

- if-else
- nested if-else
- switch

if Statement

```
// some code before if

if (some condition) {

  // DO SOMETHING

}

// some code after if
```

```
//Conditional Statements
console.log("before my if statement");
let age = 23;
if (age >= 18) {
  console.log("you can vote");
}

console.log("after my if statement");
```

```
//Conditional Statements
console.log("before my if statement");
let age = 14;
if (age >= 18) {
  console.log("you can vote");
  console.log("you can drive");
  let a = 5;
  console.log(5 * a);
}
console.log("after my if statement");
```

JS app.js > ...

```
1    //Conditional Statements
2    console.log("before my if statement");
3    let age = 14;
4    if (age >= 18) {
5      console.log("you can vote");
6    }
7    if (age > 20) {
8      console.log("you are in your 20s");
9    }
10   console.log("after my if statement");
11
```


//Conditional Statements
let firstName = "shradha";
if (firstName == "shradha") {
console.log(`Welcome ${firstName}`);
}

Practice Qs

Qs. Create a traffic light system that shows what to do based on color.

red

yel

```
let color = "red";

//Traffic Light System
if (color === "red") {
  console.log("Stop! light color is red");
}
if (color === "yellow") {
  console.log("Slow down. light color is yellow");
}
if (color === "green") {
  console.log("Go. light color is green");
}
```

else if Statement

```
if (condition1) {
  // DO SOMETHING
}
else if (condition2) {
  // DO SOMETHING ELSE
}
else if (condition3) {
  // DO SOMETHING ELSE
}
```

```
let age = 14;
if (age >= 18) {
  console.log("you can vote");
} else if (age >= 18) {
  console.log("you cannot vote");
} else if (age < 18) {
  console.log("you cannot vote2");
}
```

```
let marks = 75;

if (marks >= 80) {
    console.log("A+");
} else if (marks >= 60) {
    console.log("A");
} else if (marks >= 33) {
    console.log("B");
} else if (marks < 33) {
    console.log("F");
}
```

```
let month = "april";

if (month === "january") {
  console.log("winter is here");
} else if (month === "april") {
  console.log("summer is here");
}
```

else Statement

```
if (condition1) {

  // DO SOMETHING

}


else {

  // DO SOMETHING ELSE

}
```

```
let age = 18;
if (age >= 18) {
  console.log("you can vote");
} else {
  console.log("you cannot vote");
}
```

```
let color = "white";

if (color === "red") {
  console.log("stop");
} else if (color === "yellow") {
  console.log("slow down");
} else if (color === "green") {
  console.log("go");
} else {
  console.log("traffic light is broken");
}
```

Practice Qs

Qs. Create a system to calculate popcorn prices based on the size customer asked for :

if size is 'XL', price is Rs. 250

if size is 'L', price is Rs. 200

if size is 'M', price is Rs. 100

if size is 'S', price is Rs. 50

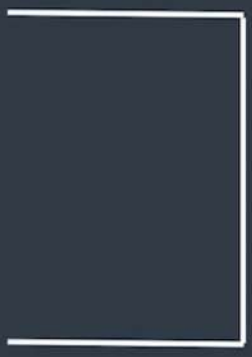
```
let size = "XL";

if (size === "XL") {
  console.log("price is Rs. 250");
} else if (size === "L") {
  console.log("price is Rs. 200");
} else if (size === "M") {
  console.log("price is Rs. 100");
} else {
  console.log("price is Rs. 50");
}
```

Nested if-else

Nesting is writing if-else inside if-else statements. It can have many levels.

```
if marks >= 33
        if marks >= 80
                print "O"
        else
                print "A"
else
        print "better luck next time!"
```



```
let marks = 45;

if (marks >= 33) {
  console.log("Pass");
  if (marks >= 80) {
    console.log("Grade : O");
  } else {
    console.log("Grade : A");
  }
} else {
  console.log("Better luck next time!");
}
```

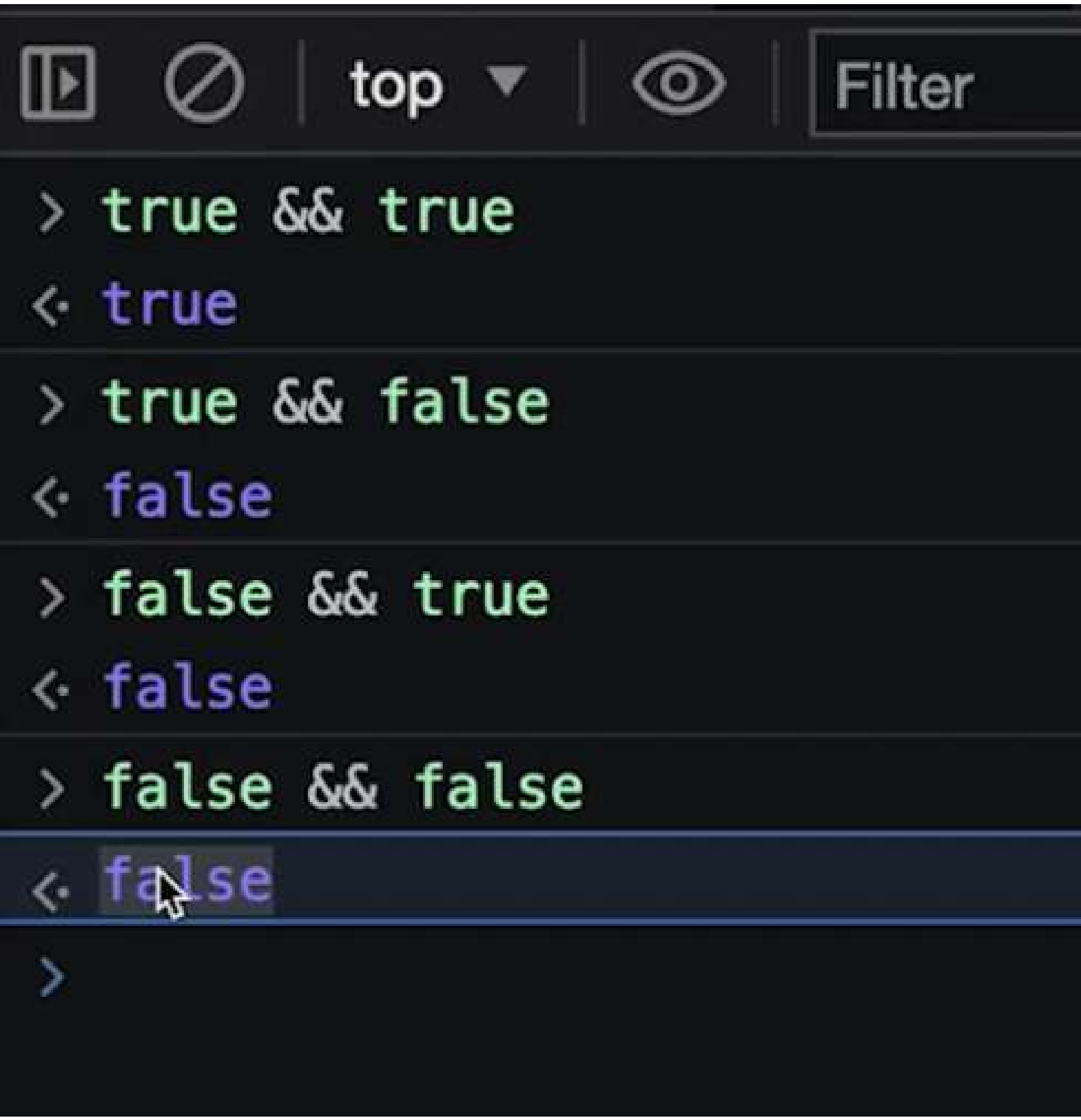
Logical Operators

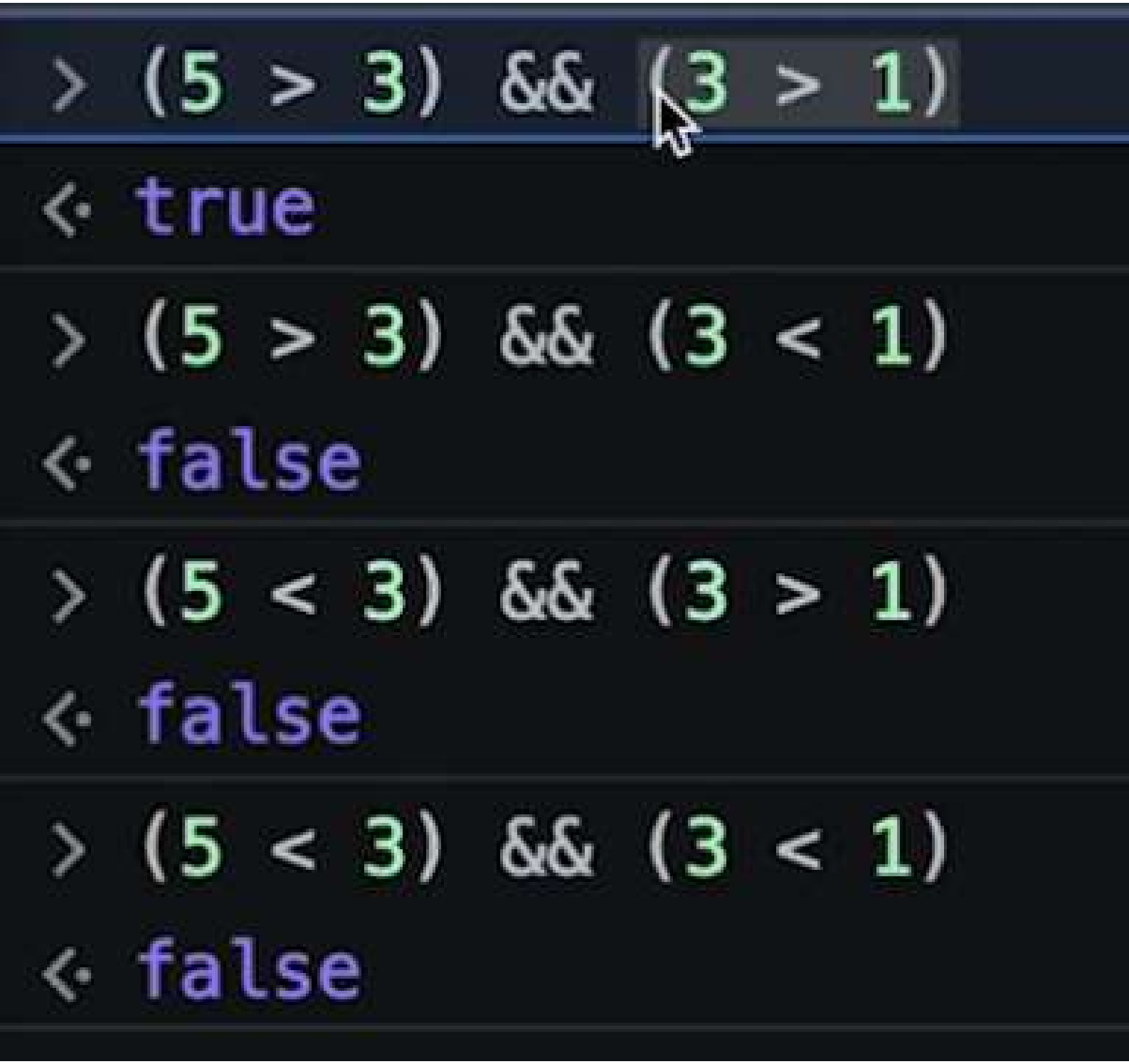
Logical Operators to combine expressions

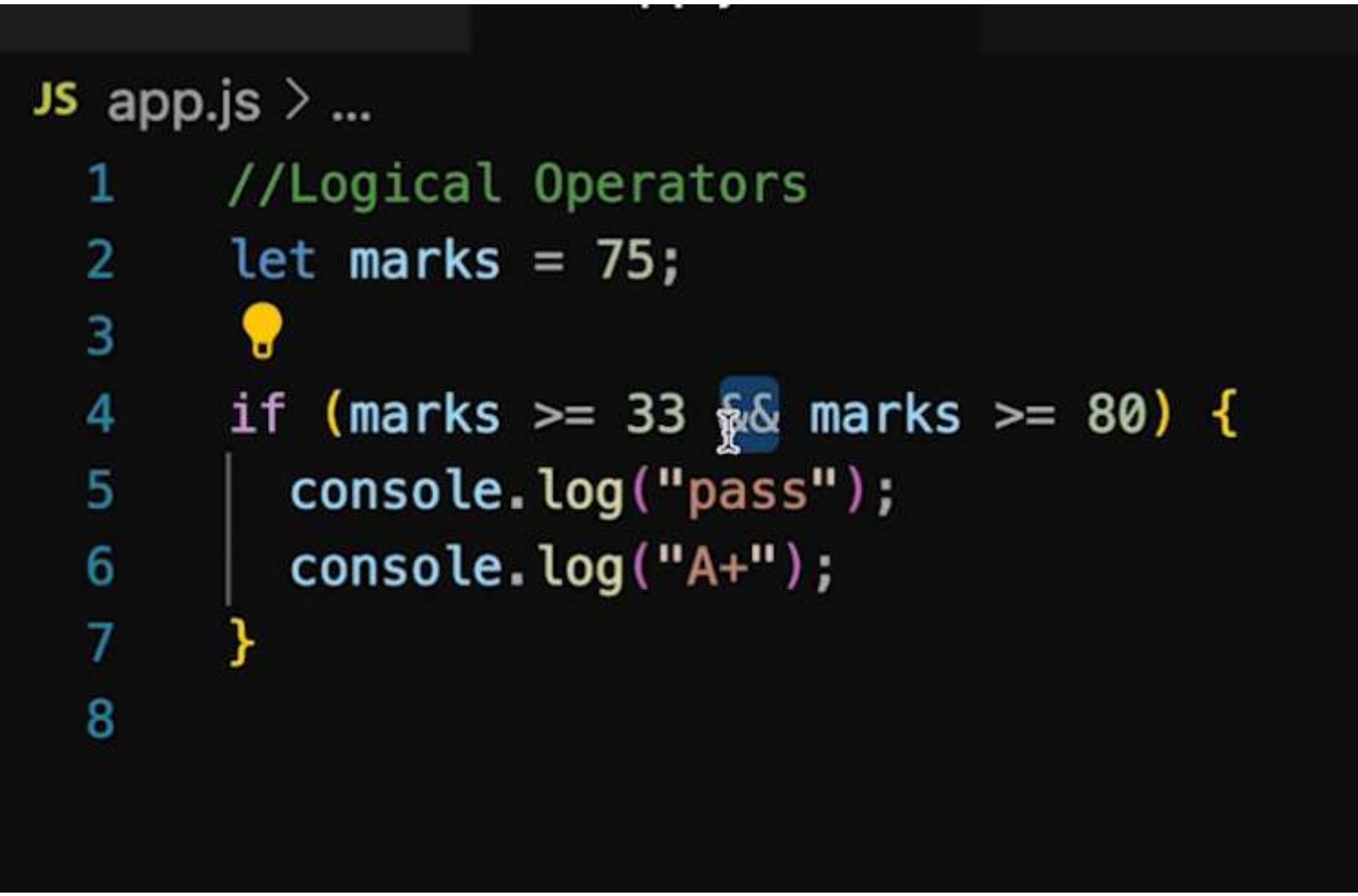
&& Logical AND (exp1) && (exp2)

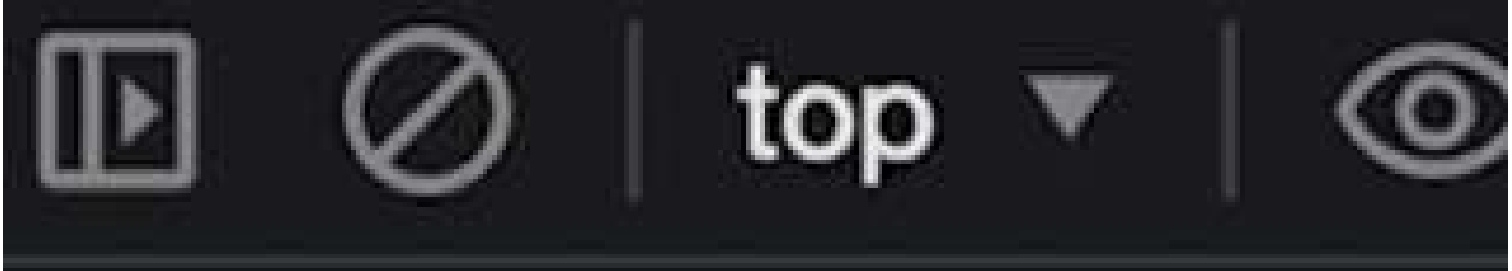
```
> true && true
< true
> true && false
< false
> false && true
< false
> false && false
< false
```

a < b b < c

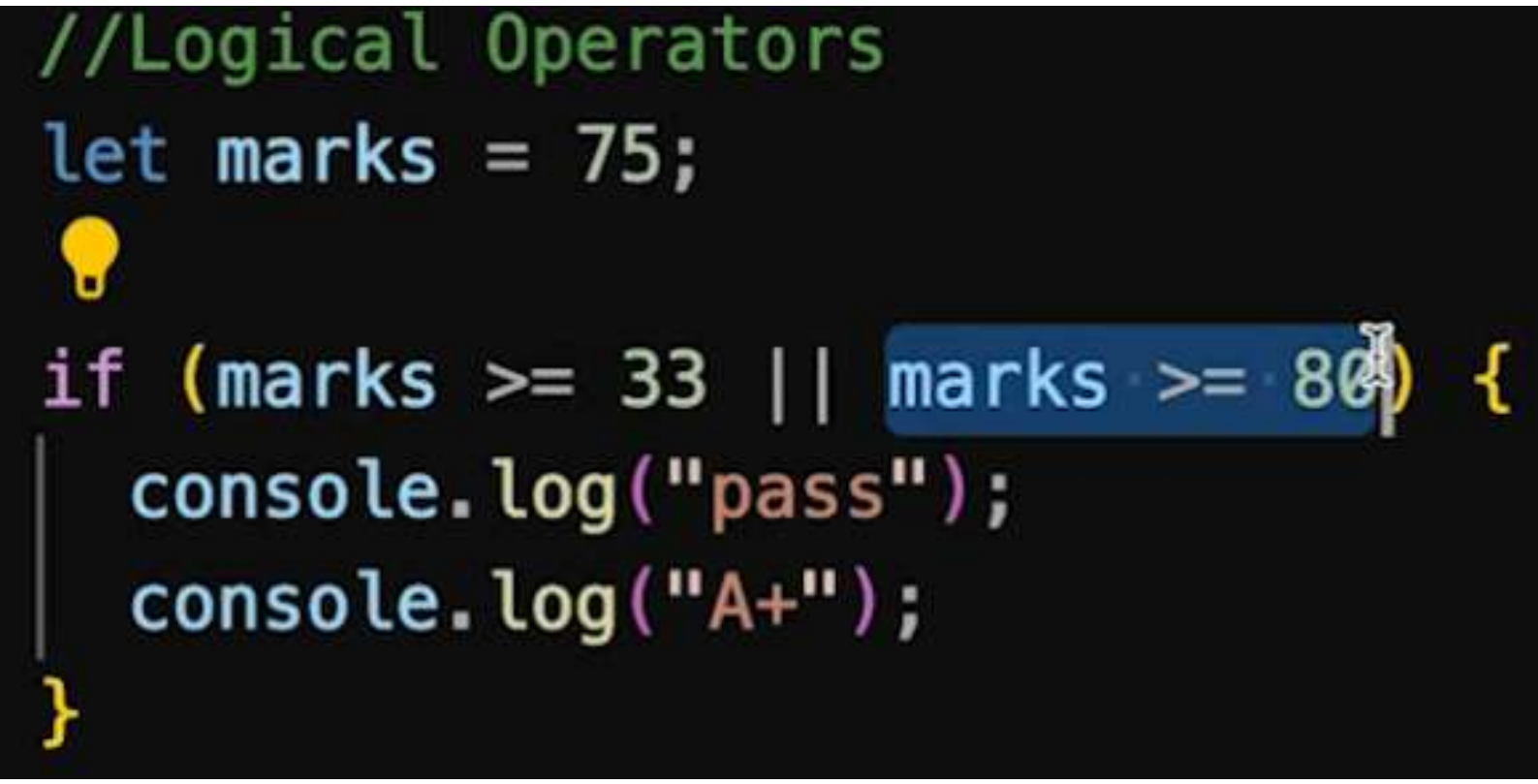

top
Filter
> true && true
<· true
> true && false
<· false
> false && true
<· false
> false && false
<· false
>


> (5 > 3) && (3 > 1)
<· true
> (5 > 3) && (3 < 1)
<· false
> (5 < 3) && (3 > 1)
<· false
> (5 < 3) && (3 < 1)
<· false


JS app.js > ...
1 //Logical Operators
2 let marks = 75;
3
4 if (marks >= 33 && marks >= 80) {
5 console.log("pass");
6 console.log("A+");
7 }
8



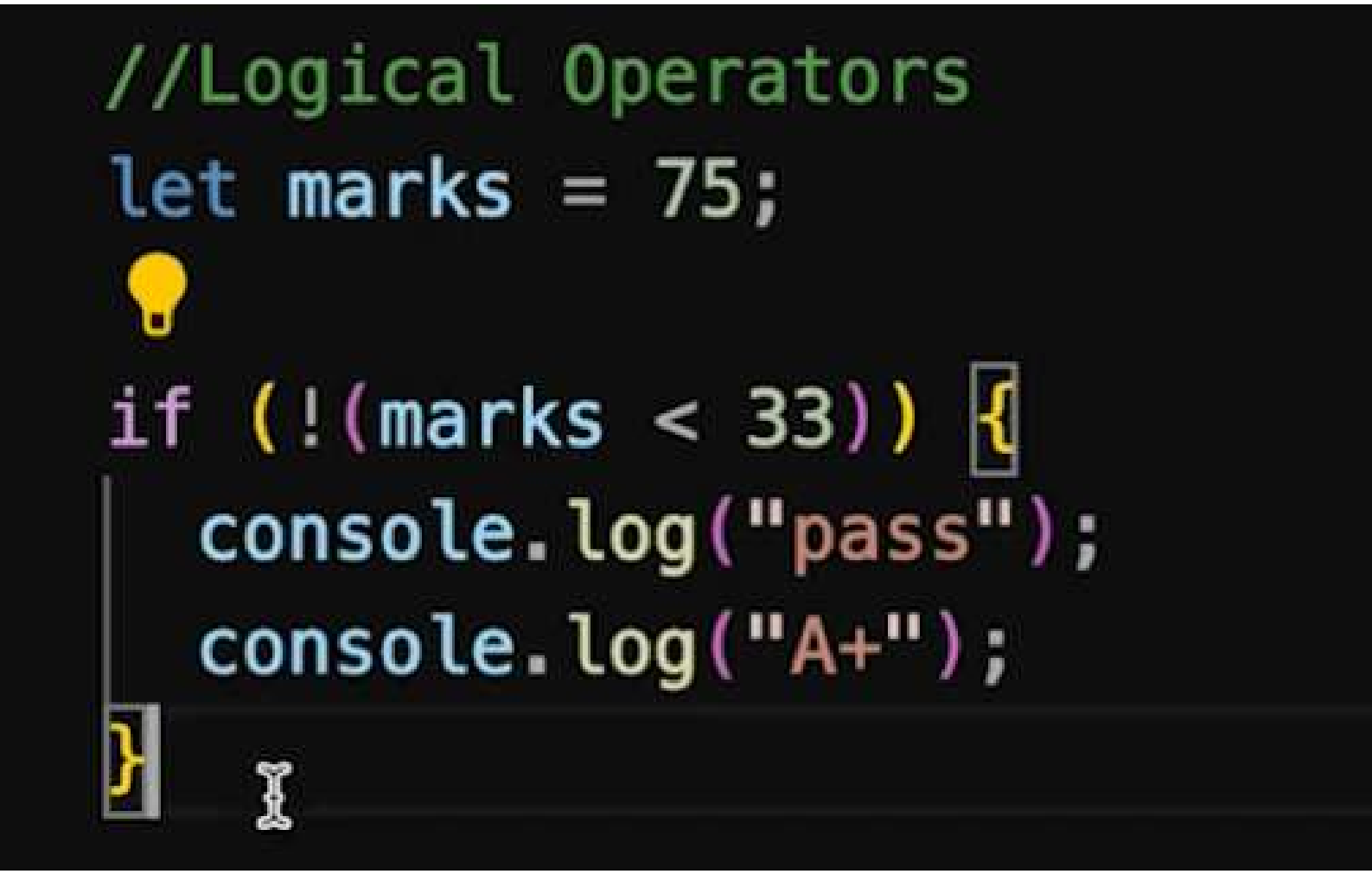

```
> true || true
<· true
> true || false
<· true
> false || true
<· true
> false || false
<· false
>
```

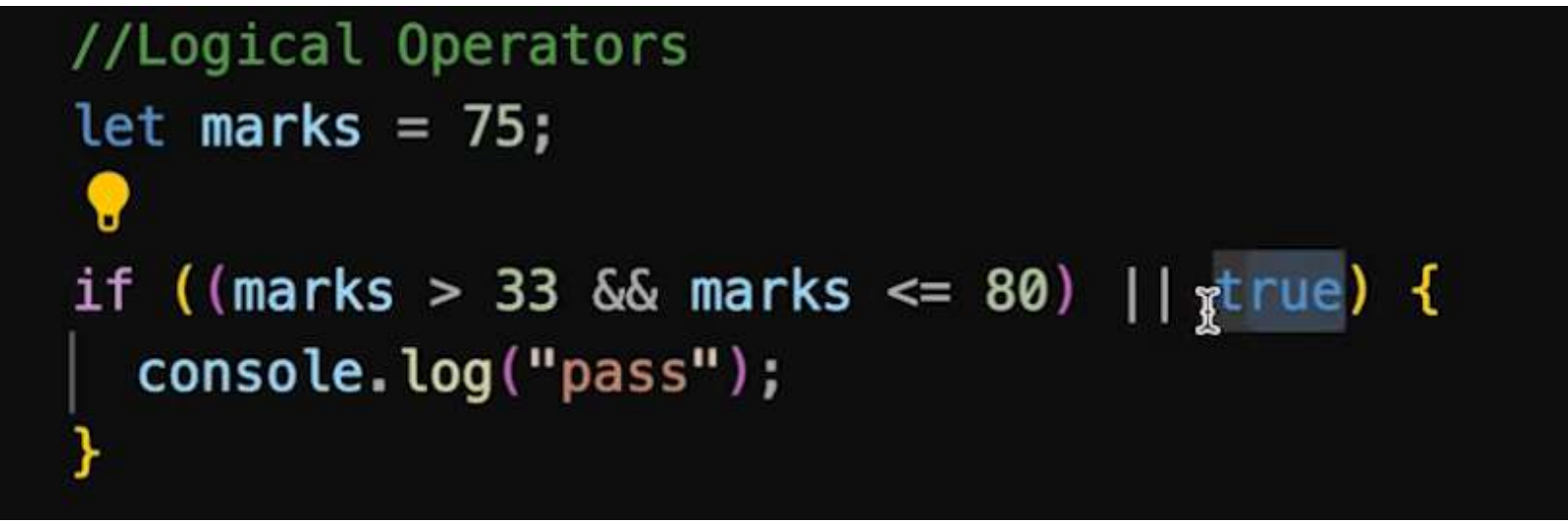

//Logical Operators
let marks = 75;
if (marks >= 33 || marks >= 80) {
console.log("pass");
console.log("A+");
}

Logical Operators

!	Logical NOT	!(exp)

```
> !true
<· false
> !false
<· true
```


//Logical Operators
let marks = 75;
if (!(marks < 33)) {
console.log("pass");
console.log("A+");
}


//Logical Operators
let marks = 75;
if ((marks > 33 && marks <= 80) || true) {
console.log("pass");
}

Practice Qs

Qs. A "good string" is a string that starts with the letter 'a' & has a length > 3. Write a Program to find if a string is good or not.

Qs. Predict the output of following code :

```
let num = 12;

if((num%3 === 0) && ( (num+1 == 15) || (num-1 == 11) ) ) {
    console.log("safe");
} else {
    console.log("unsafe");
}
```

JS app.js > [] str

```
1   let str = "ample";
2   
3   if (str[0] === "a" && str.length > 3) {
4     console.log("good string");
5   } else {
6     console.log("not a good string");
7   }
8
```

APNA COLLEGE

truthy & falsy

Everything in JS is true or false (in boolean context).

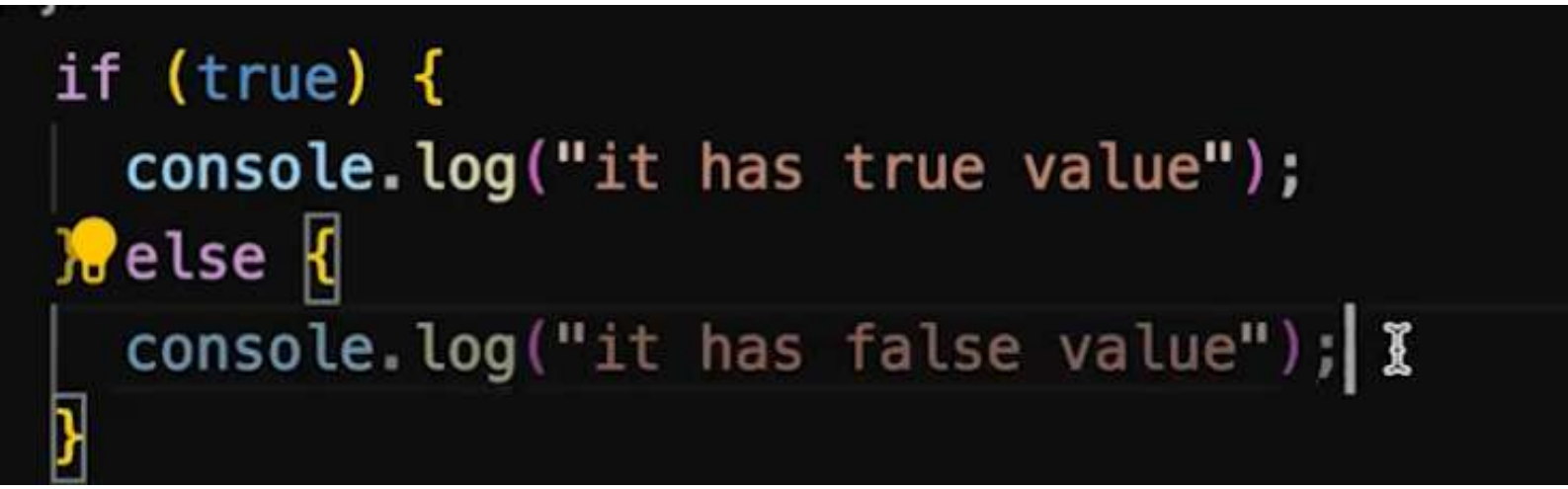
This doesn't mean their value itself is false or true, but they are treated as false or true if taken in boolean context.

Falsy values

false, 0, -0, 0n (BigInt value), "" (empty string) , null, undefined, NaN

Truthy values

Everything else


if (true) {
console.log("it has true value");
} else {
console.log("it has false value");
}

Switch Statement

Used when we have some fixed values that we need to compare to.

```
let color = "red";

switch(color) {
    case "red" :
        console.log("stop");
        break;
    case "yellow" :
        console.log("slow down");
        break;
    case "green" :
        console.log("GO");
        break;
    default :
        console.log("Broken Light");

}
```

Practice Qs

Qs. Use switch statement to print the day of the week using a number variable 'day' with values 1 to 7.

1 = Monday, 2 = Tuesday & so on

app.js > ...

```
let day = 12;

switch (day) {
  case 1:
    console.log("Monday");
    break;
  case 2:
    console.log("Tuesday");
    break;
  case 3:
    console.log("Wednesday");
    break;
  case 4:
    console.log("Thursday");
    break;
  case 5:
    console.log("Friday");
    break;
  case 6:
    console.log("Saturday");
    break;
  case 7:
    console.log("Sunday, fun day");
    break;
  default:
    console.log("wrong day!");
}
```

Alert & Prompt

Alert displays an alert message on the page.

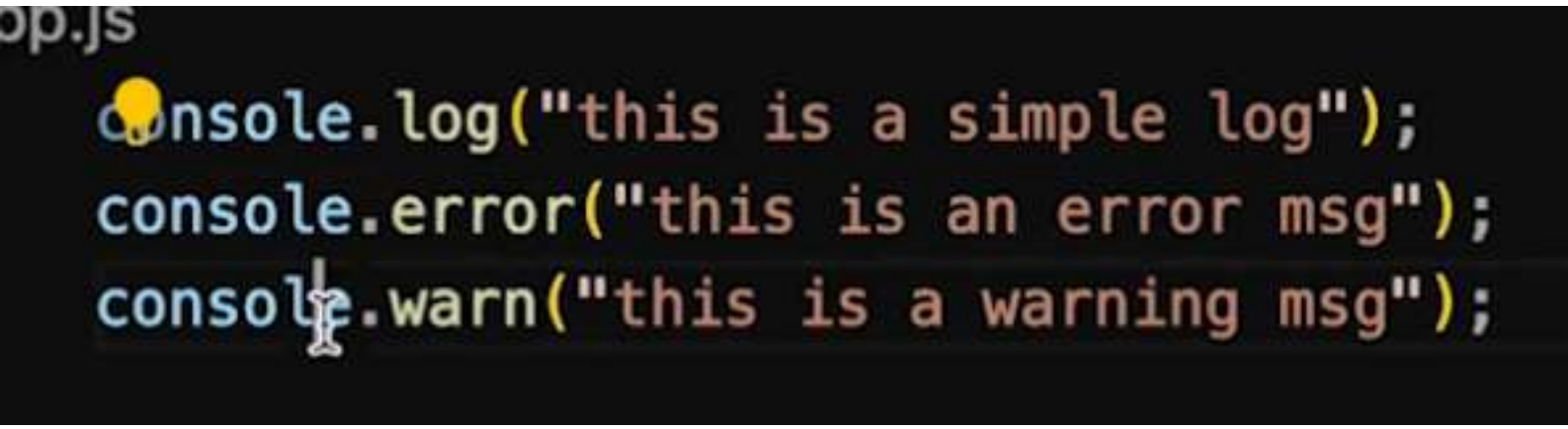
```
alert("something is wrong!");
```

Prompt displays a dialog box that asks user for some input.

```
prompt("please enter your roll no.");
```


op.js
alert("this is a simple alert!");


JavaScript Concepts
File
/Users/shradhakhapra/WebClassroom/JS/index.html
Console
top
Filter
Default levels
No Issues
This page says
something is wrong!
OK


op.js
console.log("this is a simple log");
console.error("this is an error msg");
console.warn("this is a warning msg");


this is a simple log
app.js:1
this is an error msg
app.js:2
this is a warning msg
app.js:3

JS app.js > ...

```
1    let firstName = prompt("enter your name : ");
2    console.log(firstName);
3
```


JS app.js > ...
1 let firstName = prompt("enter first name");
2 let lastName = prompt("enter last name");
3 console.log("Welcome", firstName, lastName, "!");
4

```
let firstName = prompt("enter first name");
let lastName = prompt("enter last name");
let msg = "Welcome" + firstName + lastName + "!";
alert(msg);
```