



Thapa Technical JavaScript Complete Course

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COURSE TOPICS

JS

BASICS

- How Website Works?
- What is JavaScript?
- History of JavaScript
- Values & Variables
- Data Types in JavaScript
- Concat & Type Coercion
- Operators & Expression
- If Statements & Loops
- Functions in JavaScript
- Arrays in JavaScript
- Strings in JavaScript
- Math Object
- Date & Time in JavaScript

ADVANCED

- EcmaScript 2015 - 2024
- Window Objects -
- BOM vs DOM
- Events Objects in JavaScript
- localStorage in JavaScript
- Timing Based Events
- Objects in JavaScript
- OOPs in JavaScript
- Event Propagations
- Advanced Functions
- JSON & FETCH API & other APIs
- Promises, Async-Await
- Error Handling in JavaScript

PRO LEVEL

- How JavaScript *Works* ?
- 100+ Interview Questions
- 50+ Tips & Tricks
- Notes + List of
- Deprecated properties
- 150+ Animated Slides

PROJECT -
ECOM WEBSITE WITH
HTML, CSS &
JAVASCRIPT 🍷

How to get Most from Our JavaScript Course?

Code Along: Avoid passively watching the videos. You'll learn **zero JavaScript skills** by just observing.

Code along with me! Get your hands dirty and practice coding yourself.

Use the Timeline: Utilize **YouTube's timeline** feature to skip sections or revisit topics as needed.

Problem-Solving Practice: Attempt coding **challenges independently before watching** the solutions.

Play and Learn: Don't be afraid to mess around with code to understand it better.

Find Help: If you're stuck, look up explanations or ask for help online (**Comment Section / Discord**).

Think Back and Practice: Look back on what you've learned and practice it again (**After 5days**).

Set Targets: Decide what you want to achieve and take small steps to get there. Don't rush.



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My recommendation - JavaScript Course

Make a Plan: Consider how much time you can dedicate each day. For instance, watching 1 hour daily will finish the course in 12 days, while 3 hours daily will complete it in 4 days. Adjust your schedule to fit your learning pace.

What I want: You could aim to watch 2 hours of videos and practice for 1 hour each day.

In just 6 days, you'll have a basic understanding of JavaScript.

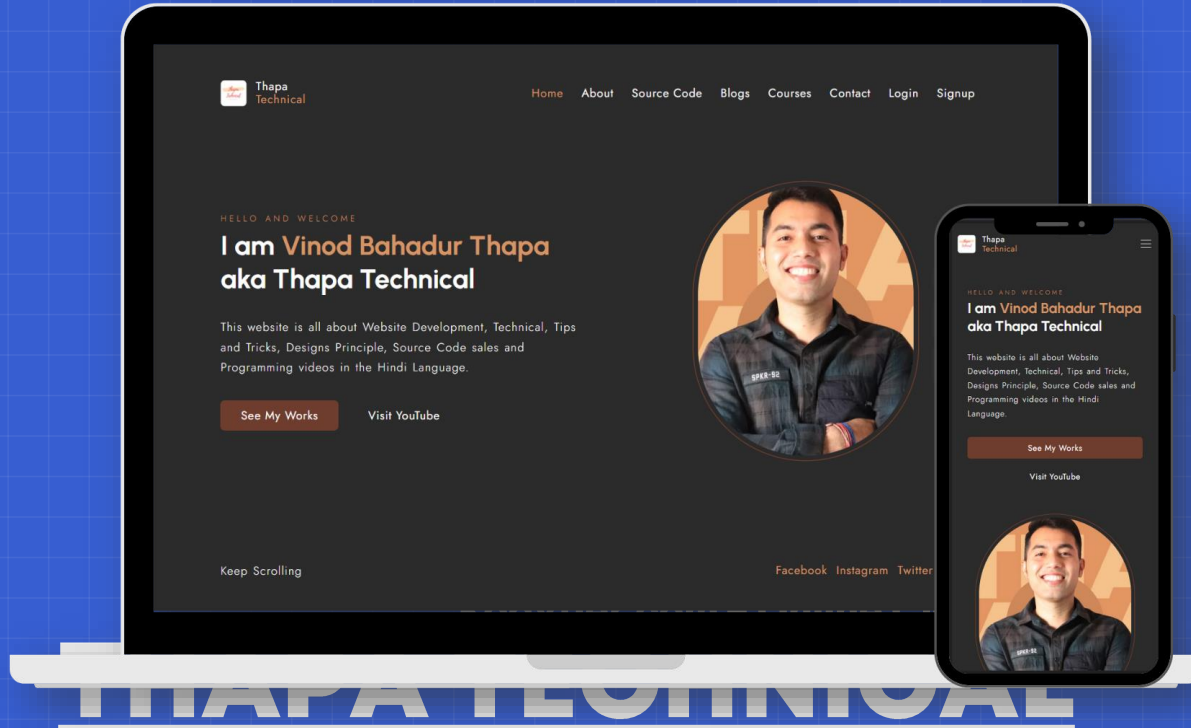
Bonus: I added JS quizzes in my website, you can go there and see how much you learned.

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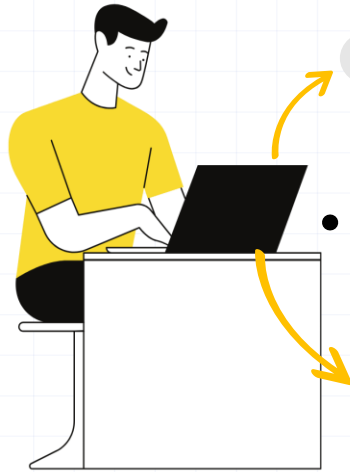
01

HOW WEBSITE WORKS?

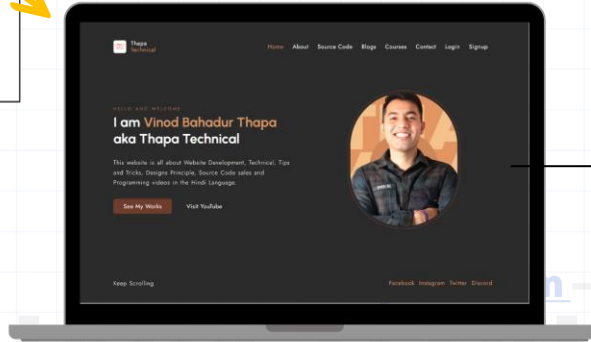
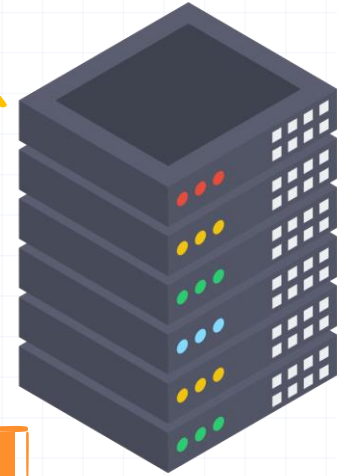


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CLIENT VS SERVER



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HTML

CSS

JAVASCRIPT

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BUILDING BLOCK OF **WEBSITE**



HTML

Provides the structure and content of a webpage.

CSS

Styles and designs the appearance of the webpage

JS

Adds interactivity and dynamic behavior to the webpage.

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REAL LIVE

EXAMPLE



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What is JavaScript?

JavaScript improves the user experience of the **web page** by converting it from a static page into an **interactive** one.

OR

JavaScript is used to update and change both HTML and CSS. It adds **behavior** to web pages.

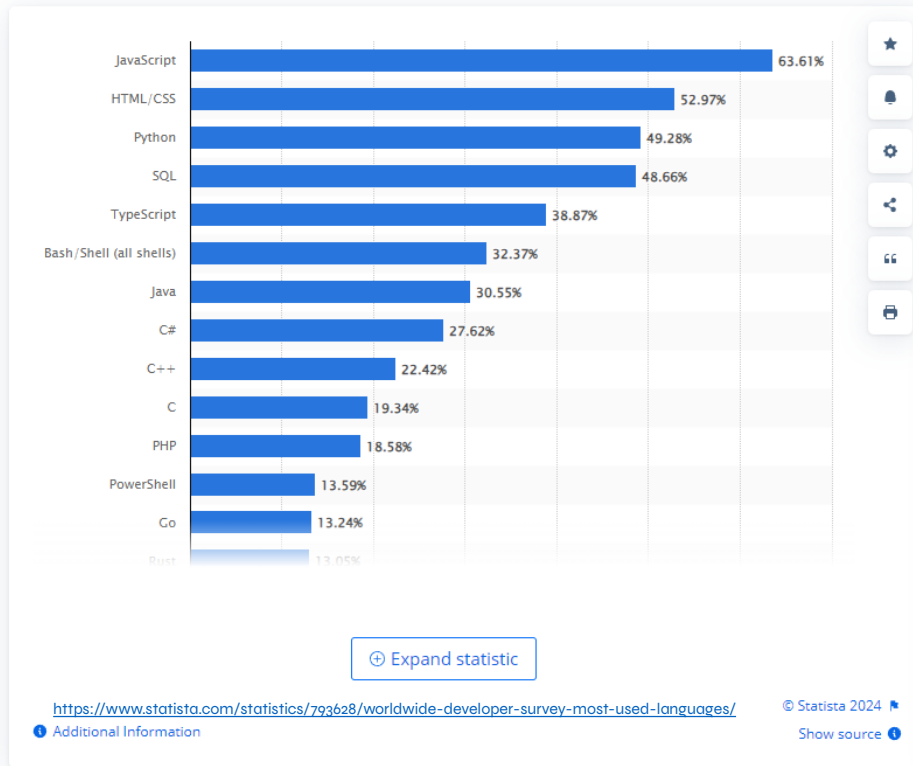
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Why JavaScript?

Most used programming languages among developers worldwide as of 2023



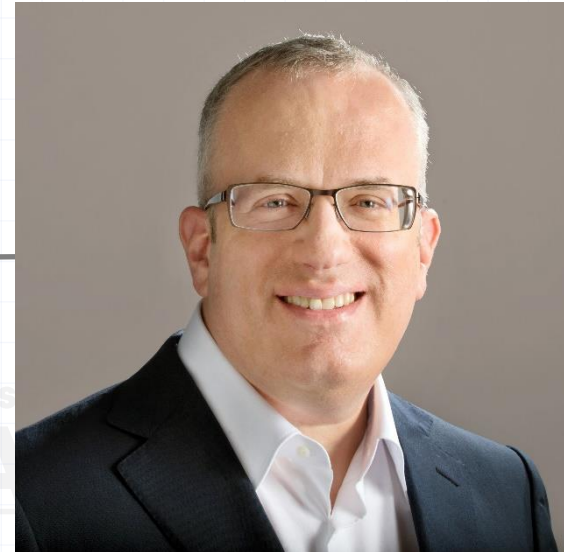
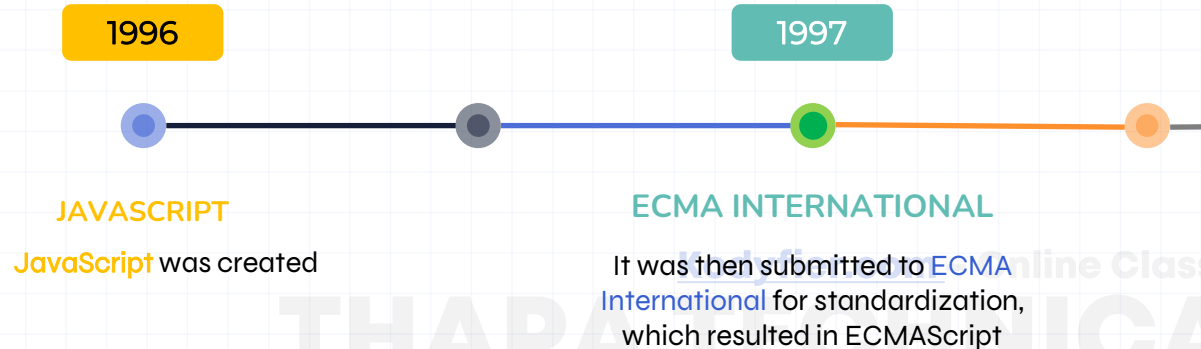
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History of JavaScript

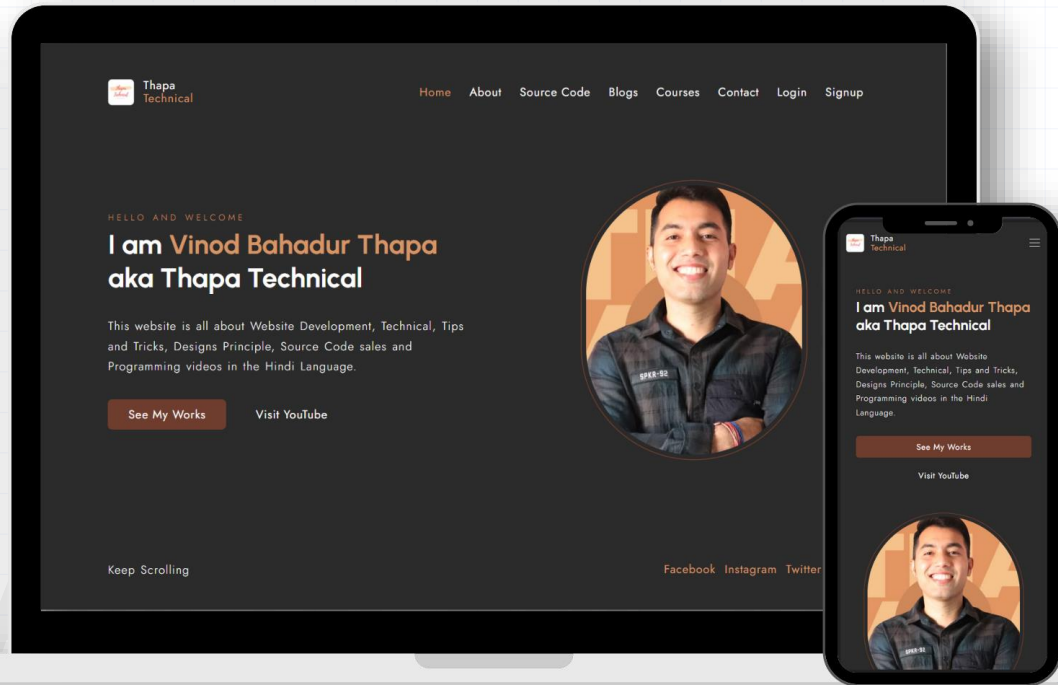
In 1995 - Created by **Brendan Eich** at **Netscape** in just 10 days.



Switching from **LiveScript** to **JavaScript** was a smart move to make it sound cooler and piggyback on **Java's** fame, while also cozying up to Sun Microsystems.

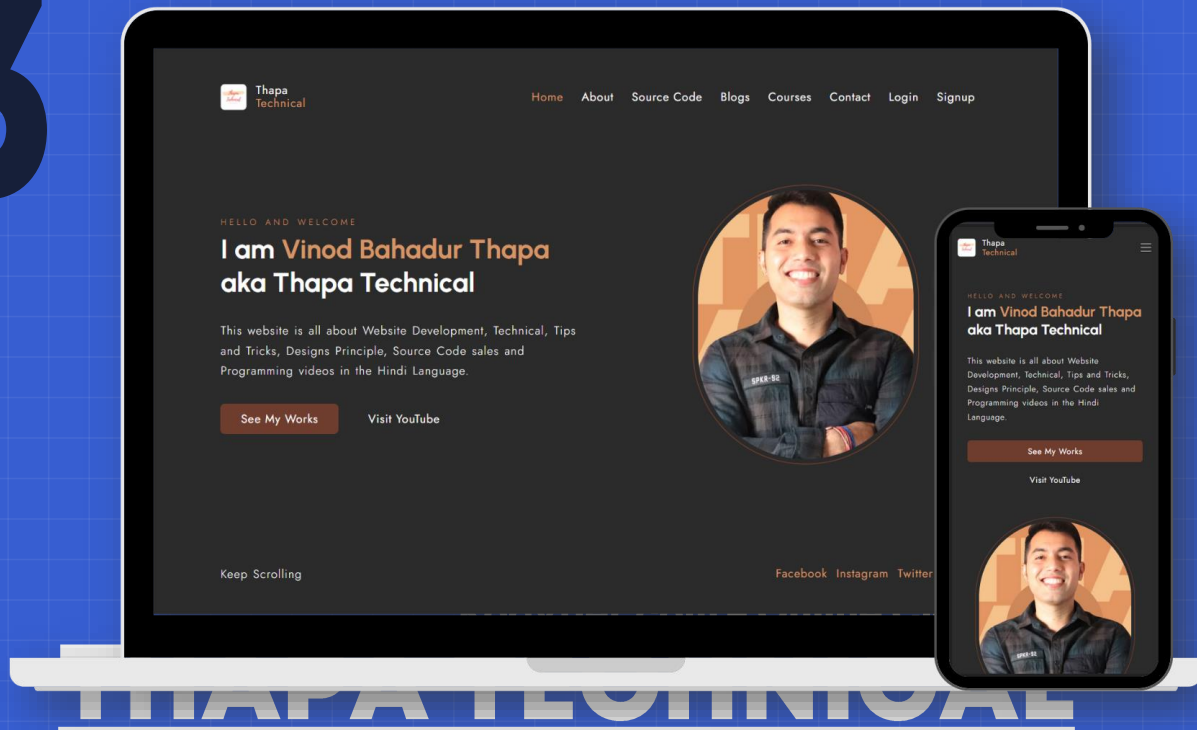


Let's write Our First JavaScript Code in Console



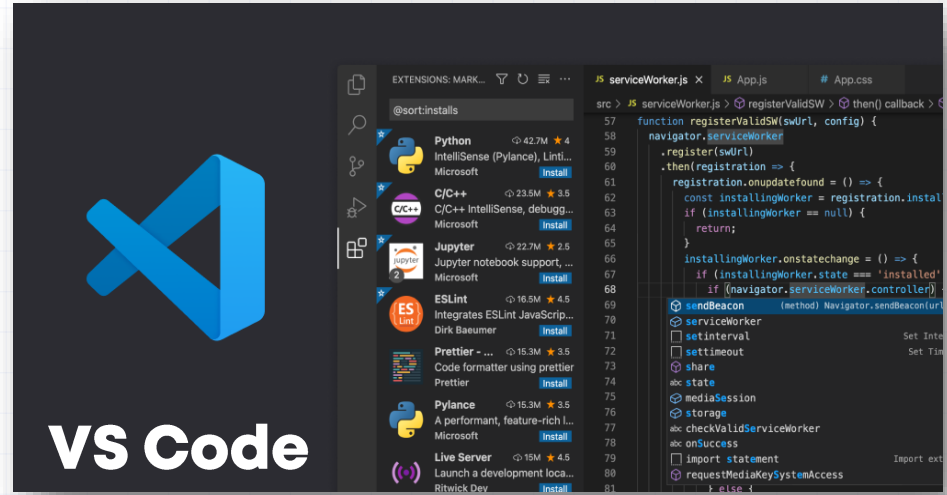
WAYS TO WRITE JAVASCRIPT

03



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We need a Code Editor



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Inline JavaScript

```
<button onclick="alert('Hello')">Click me</button>
```

Internal JavaScript

```
<script> console.log('Hello, world!'); </script>
```



External JavaScript

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

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JAVASCRIPT

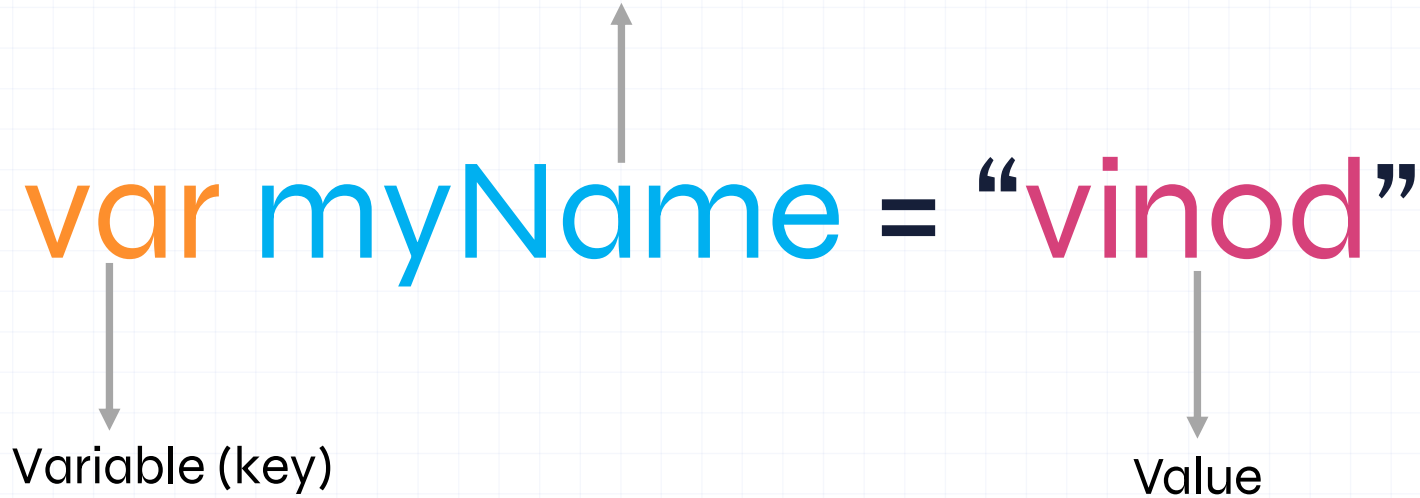
* Values & Variables

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Variable Name

A variable is a container(box) that holds a value.



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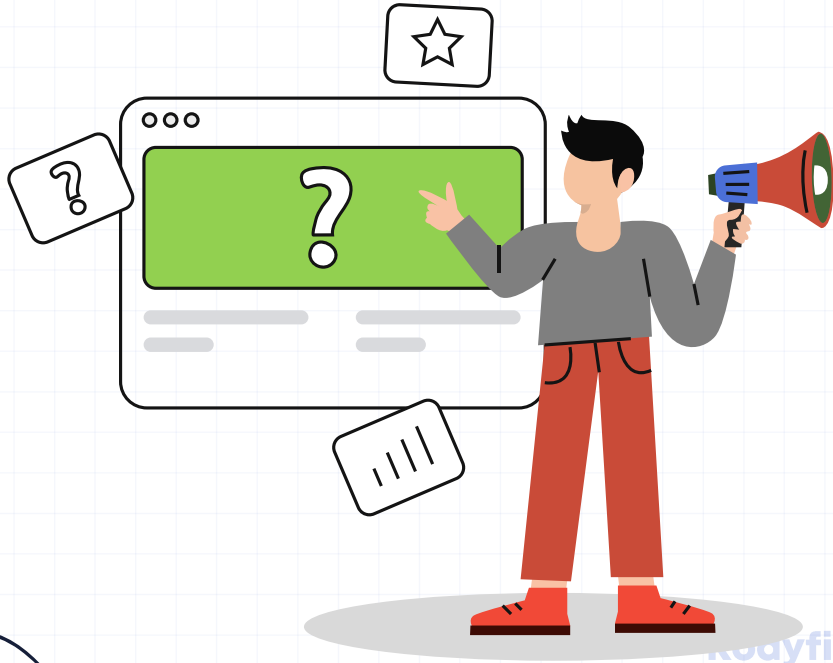
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Naming Variables: Rules and Best Practices

- * Variable names must start with a letter, an **underscore** (`_`) or a **dollar sign** (`$`).
- * Variable names cannot contain spaces.
- * By convention, JavaScript variable names are written in **camelCase**.
- * Variables cannot be the same as **reserved keywords** such as `if` or `const`.
- * Variable names are **case sensitive**.
- * Variable names can be as long as you need

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Challenge Time?

Are you ready for the challenge.



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Pause the video & try yourself

Questions



```
var my_firstName = "John";
```

```
var __myLastName$ = "Doe";
```

```
var 123myAge = 25;
```

```
var $cityName = "New York";
```

```
var my@Email = "Thapa@me.com";
```

Answers

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Pause the video & try yourself

Questions

```
var my_firstName = "John";
```

```
var _myLastName$ = "Doe";
```

```
var 123myAge = 25;
```

```
var $cityName = "New York";
```

```
var my@Email = "Thapa@me.com";
```

Answers

 This is a valid variable name.

 This is a valid variable name.

 This is not a valid variable name.

 This is a valid variable name.

 This is not a valid variable name.

Kodyfier

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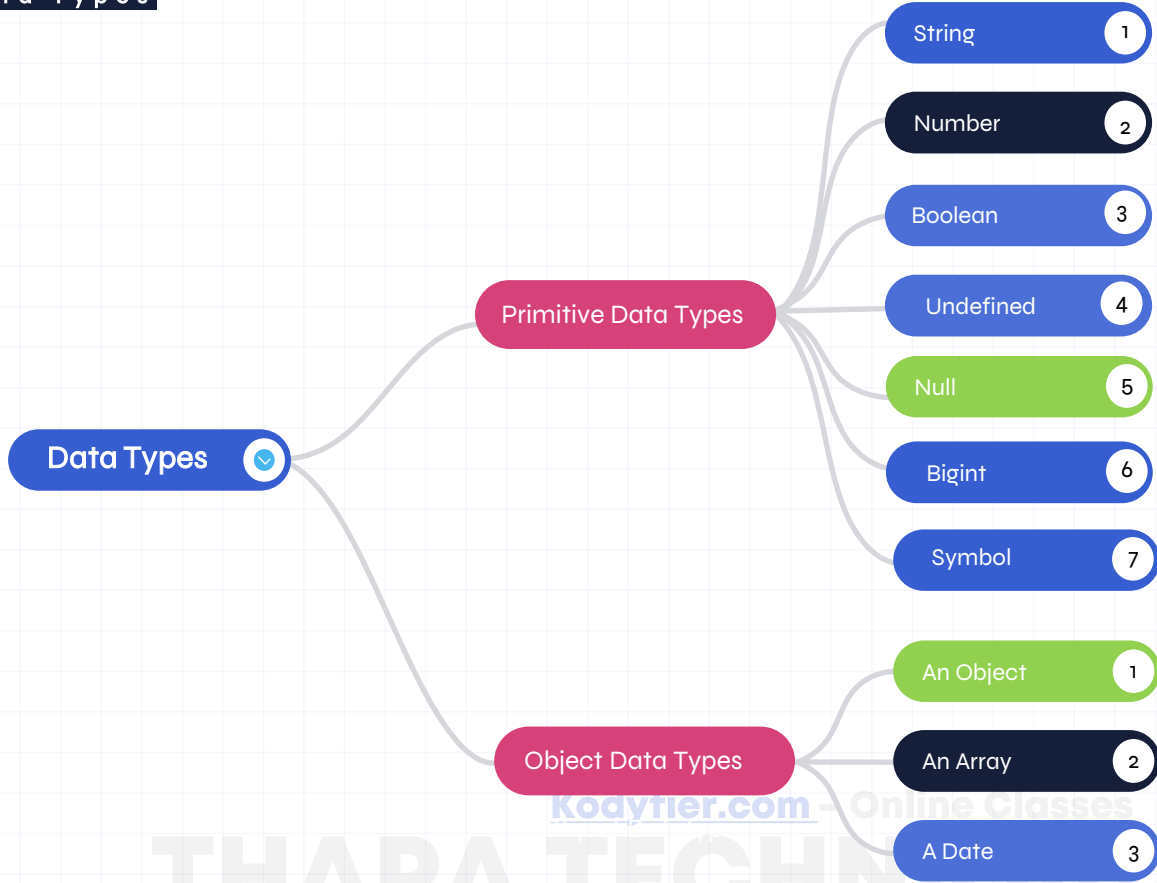
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* Data Types

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Data Types



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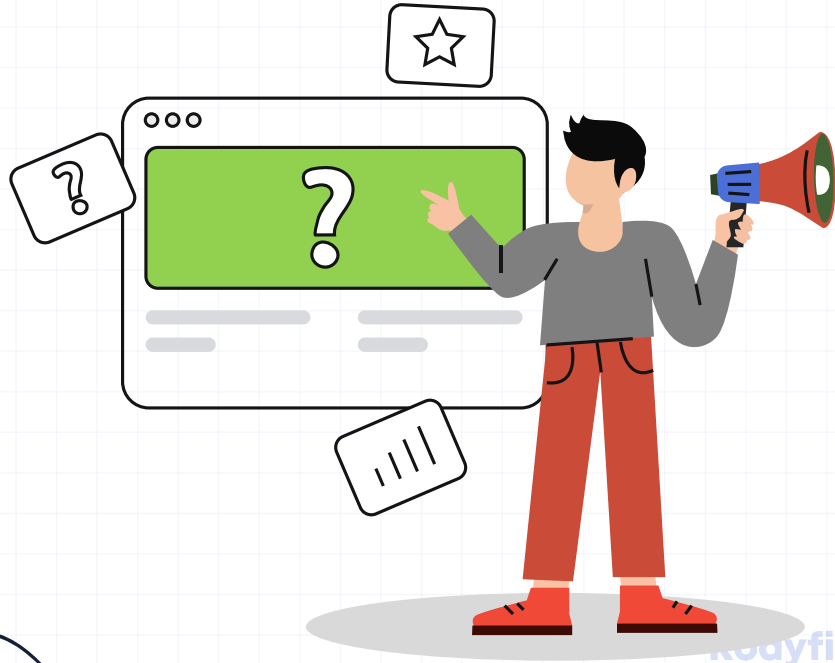
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Interview Questions – Data Types

- 1: What is the difference between **null** and **undefined** in JavaScript ?
- 2: What is the purpose of typeof operator in JavaScript ?
- 3: What is the result of `typeof null` in JavaScript ?
- 4: What are **primitive data types** in JavaScript ?
- 5: Explain the concept of **truthy and falsy** values in JavaScript. Provide examples ?

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Are you ready for the challenge.



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Wait!!!



Explore more
for a solid
understanding

I want you to understand it thoroughly.



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a. 10 + "20"

b. 9 - "5"

c. "Java" + "Script"

d. " " + " "

e. " " + 0

f. "vinod" - "thapa"

g. true + true

h. true + false

i. false + true

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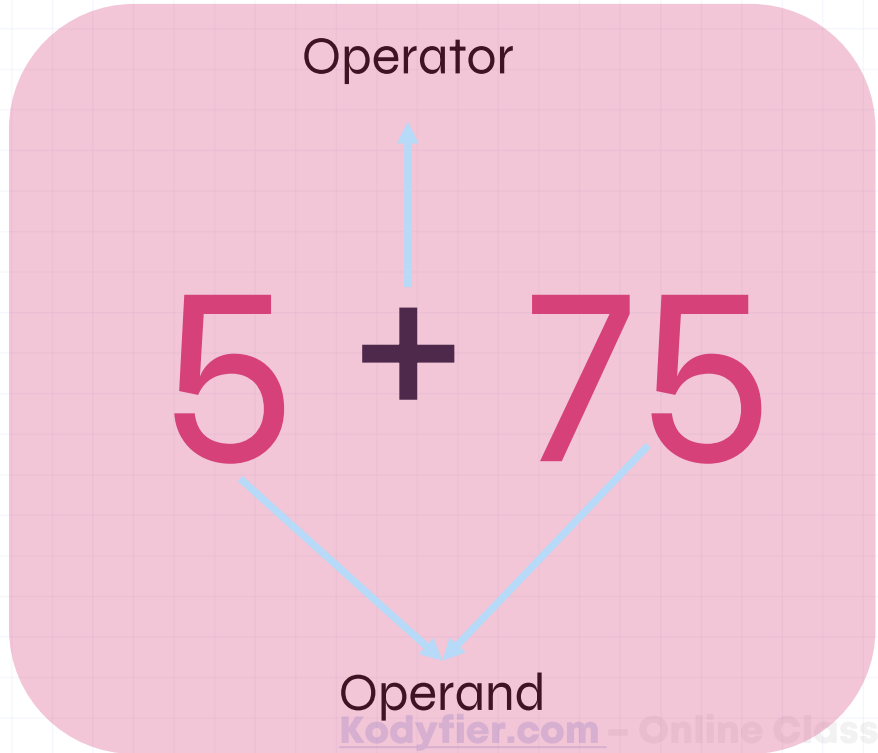
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* Expressions & operators

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Expression

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Types of Operators

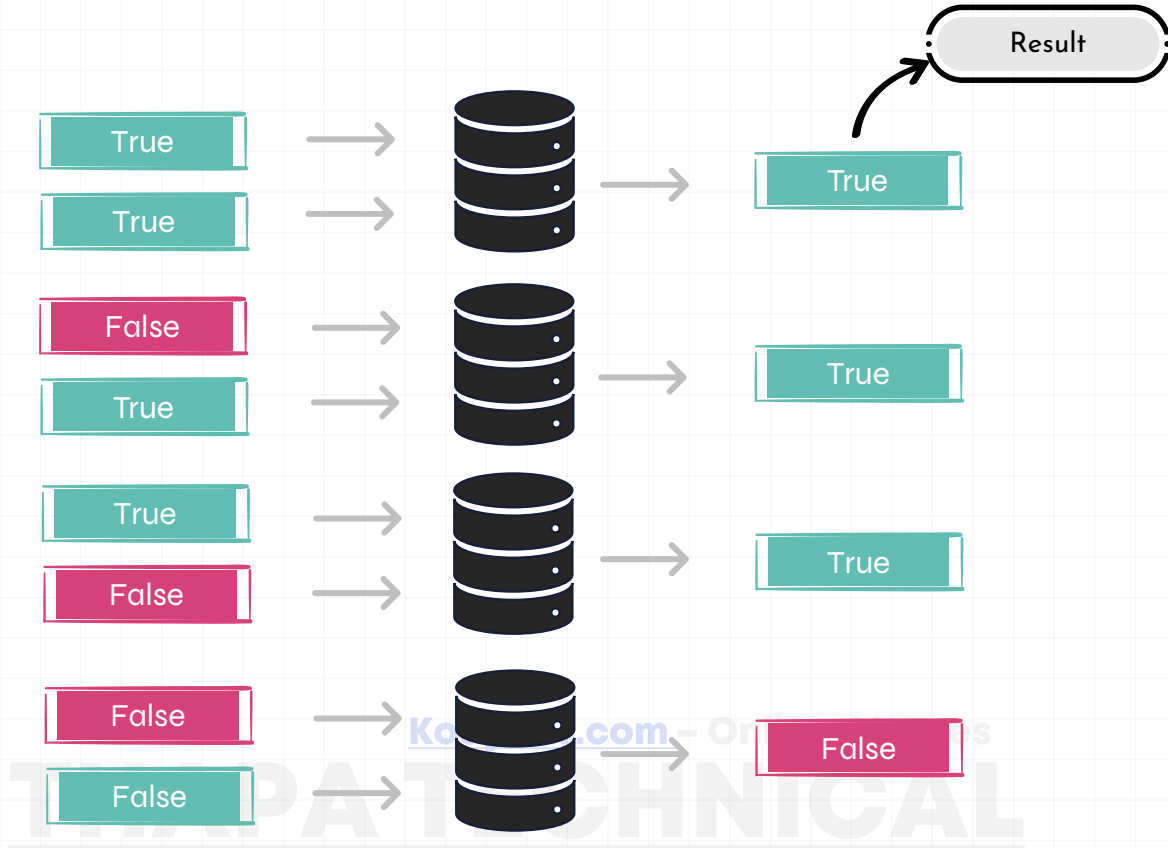


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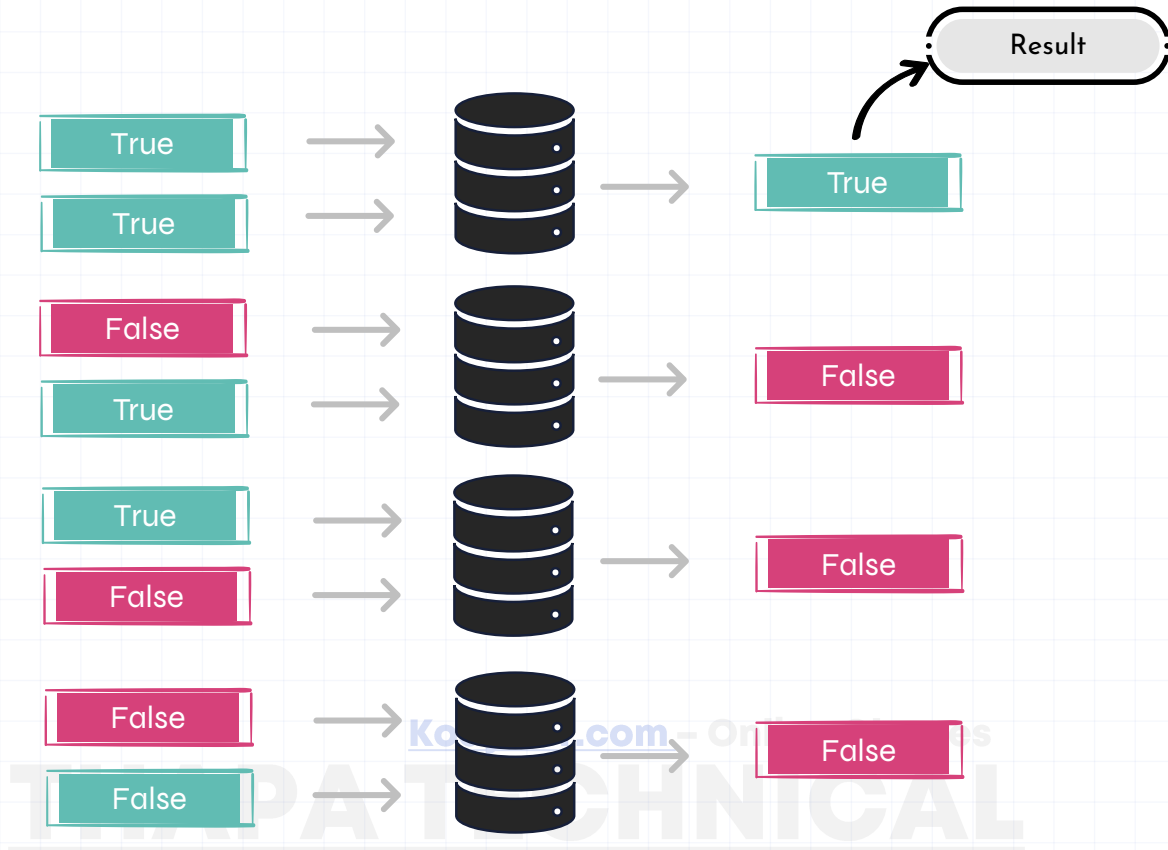
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How Logical OR Operator Works?



How Logical AND Operator Works?



Ternary Operator

Syntax:

condition ? **expressionIfTrue** : **expressionIfFalse**;

↓
We get the output, If
condition is true

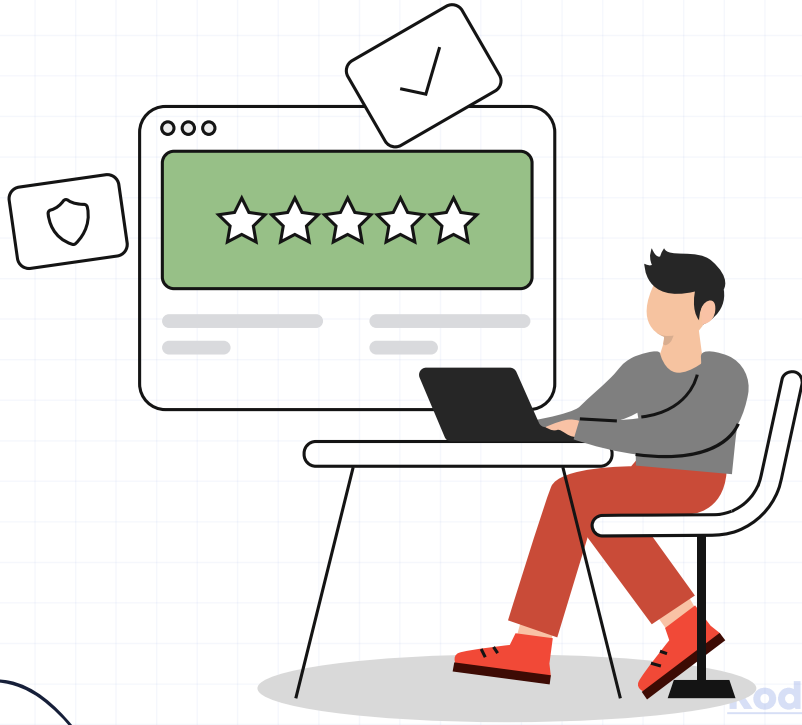
↑
We get the output, If
condition is false

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Wait!!!



Interview Questions

I want you to understand it thoroughly.



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```
console.log("5" - 3);
```

2 (Type Coercion)

```
console.log(2 < 12 < 5);
```

True (Exp. evaluates from Left to Right)

```
console.log("20" + 10 + 10);
```

'201010' (same as 2nd)



JAVASCRIPT Control Statement & loops

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Control Statements & Loops

- 1 If.. Else Statement
- 2 Switch Statement
- 3 While Loop
- 4 Do While Loop
- 5 For Loop
- 6 For In / For Of Loop
(Later in Arrays)

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Syntax – If Else

```
if (condition) {  
    // Code to be executed if the condition is true  
} else {  
    // Code to be executed if the condition is false  
}
```

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Example – If Statement

```
var temp = 40;  
  
if (temp > 30) {  
    console.log("Let's go to Beach 🏄♂️ ")  
} else {  
    console.log("Watch TV at Home 😊")  
}
```

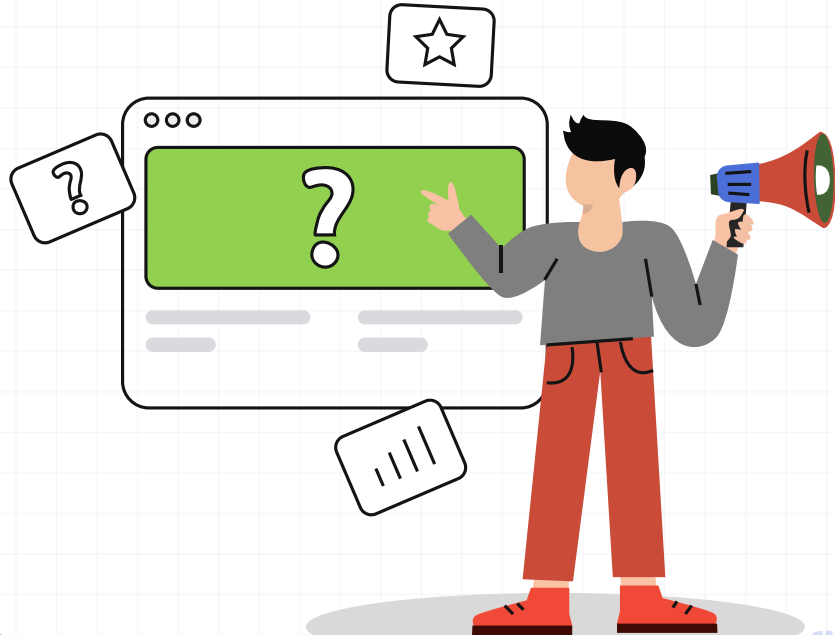


If Else Statement

- 1: Write a program to check if a **number is even or odd**.
- 2: Write a program to check if a **number is prime**.
- 3: Write a program to check if a **number is positive, negative, or zero**.

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Challenge Time?

Are you ready for the challenge.



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Switch Statement

Q: Write a JavaScript **switch statement** that takes a variable **areaOfShapes** representing different shapes, and based on its value, calculates and logs the area of the corresponding shape. Consider three shapes: **'Rectangle,' 'Circle,' and 'Square.'** For **'Rectangle,'** use variables **a and b** as the sides; for **'Circle,'** use a variable **r** as the radius; and for **'Square,'** use variable **a** as the side length. If the provided shape is not recognized, log a message saying, **'Sorry the shape is not available.'** Test your switch statement with **areaOfShapes** set to **'Square'** and sides **a and b** set to **5 and 10**, respectively. Ensure that the correct area (**25** in this case) is logged to the console.

Syntax - While Loop

```
while (condition) {  
    // Code to be executed as long as the  
    condition is true  
}
```

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Syntax – Do-While Loop

```
do {  
    // Code to be executed at least once  
} while (condition);
```

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Syntax - For Loop

var num = 10;

num < 10

num++

```
for(initializer; condition; iteration)
{
    // Code to be executed
}
```

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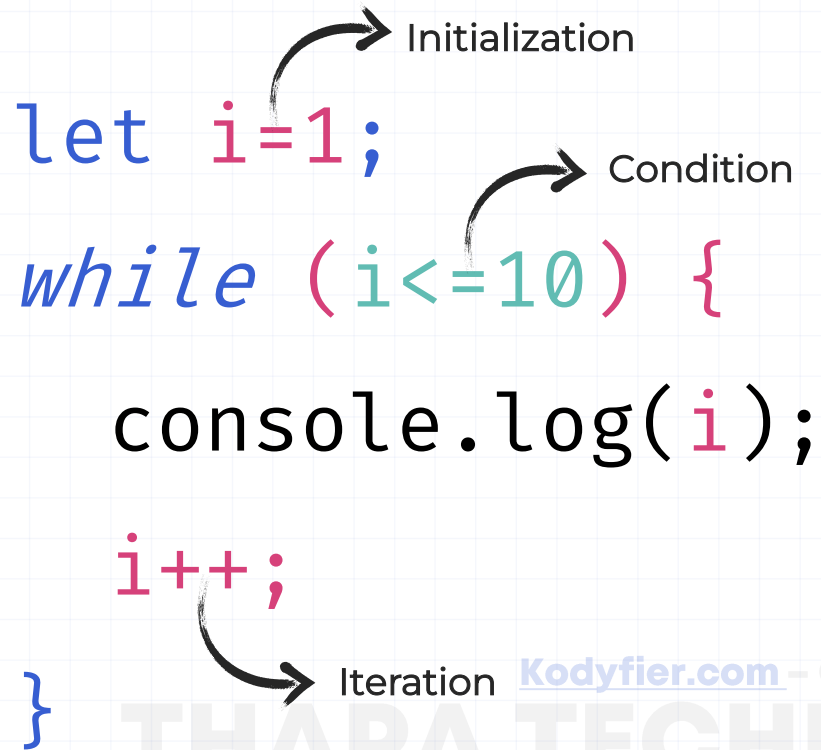
Syntax – While Loop

```
let i=1;
while (i<=10) {
  console.log(i);
  i++;
}
```

Initialization

Condition

Iteration



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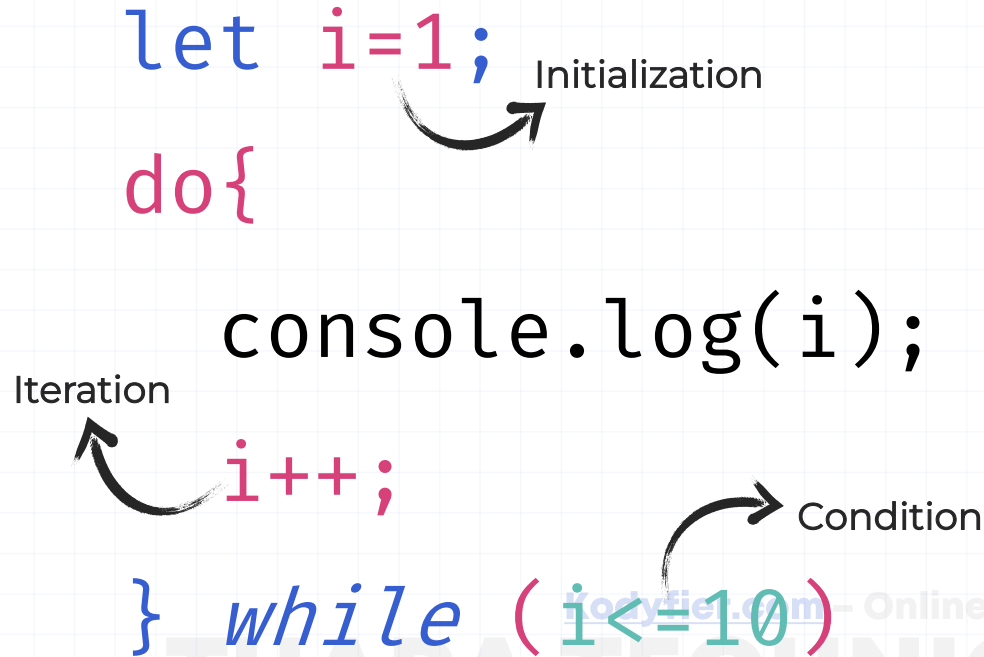
Syntax – Do-While Loop

```
let i=1;
do{
    console.log(i);
    i++;
} while (i<=10)
```

Initialization

Iteration

Condition

The diagram illustrates the syntax of a Do-While loop. It shows the code: 'let i=1;', 'do{', 'console.log(i);', 'i++;', and '} while (i<=10)'. Annotations include: 'Initialization' with an arrow pointing to 'i=1'; 'Iteration' with an arrow pointing to 'i++'; and 'Condition' with an arrow pointing to 'i<=10'. A watermark 'THAPA TECHNICAL' and 'rodyle.com - Online Classes' are visible in the background.

Syntax – For Loop

initializer condition iteration

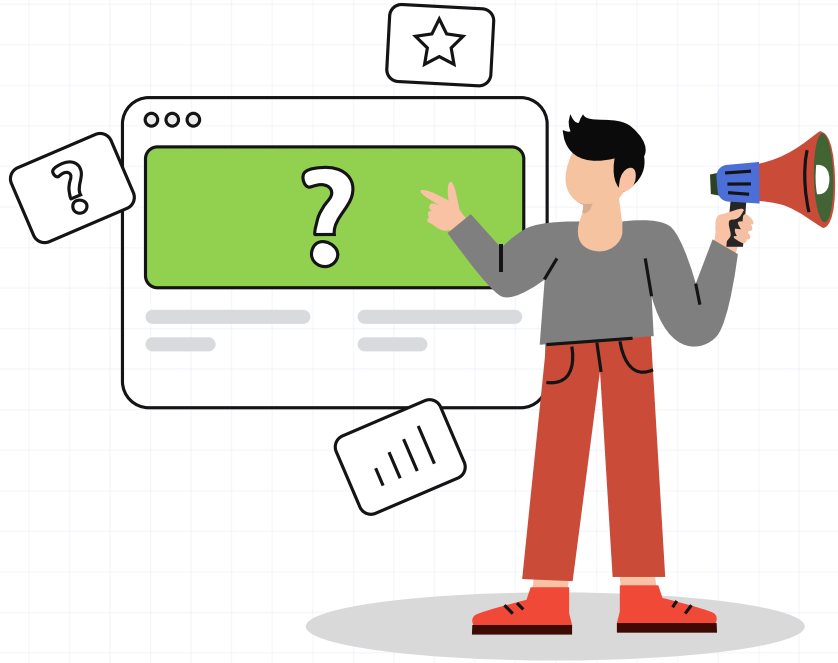
↑ ↑ ↑

```
for (let i=1; i<=10; i++){  
    console.log(i);  
}
```

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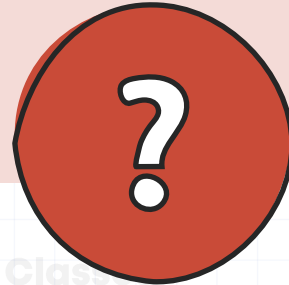
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Are you ready for the challenge.



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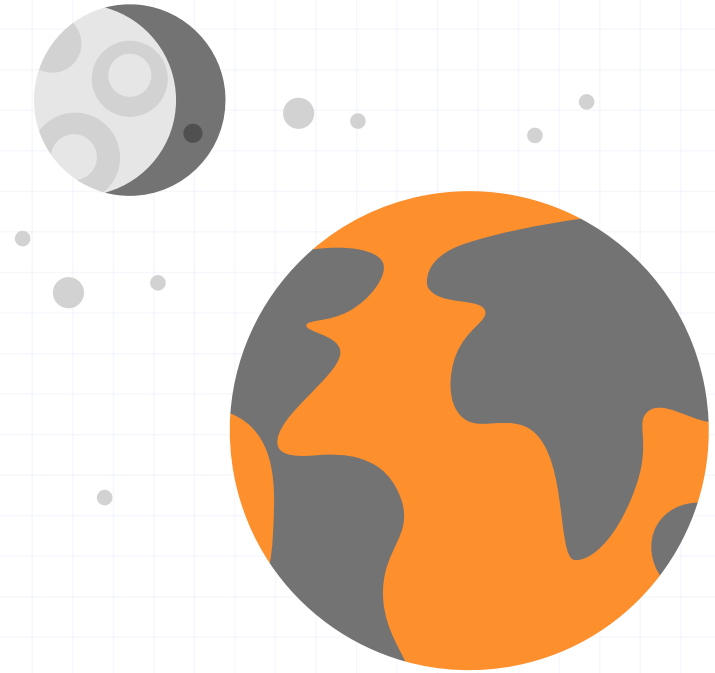
For Loop

Program To check if a year is a **leap year**, 

If a year is **divisible by 4** and not **divisible by 100**, or

If a year is **divisible by 400**, then it is a leap year.

Otherwise, it is not a leap year.



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Challenge Time?

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For Loop

	J=1	J=2	J=3	J=4	J=5
I=1	*				
I=2	*	*			
I=3	*	*	*		
I=4	*	*	*	*	
I=5	*	*	*	*	*
logic	I == J	=>	print *		

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For Loop

	J=1	J=2	J=3	J=4	J=5
I=1	*				
I=2					
I=3					
I=4					
I=5					
logic	I == J	=>	print *		

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For Loop

	J=1	J=2	J=3	J=4	J=5
I=1	*				
I=2	*	*			
I=3					
I=4					
I=5					
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For Loop

	J=1	J=2	J=3	J=4	J=5
I=1	*				
I=2	*	*			
I=3	*	*	*		
I=4					
I=5					
logic	I == J	=>	print *		

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For Loop

	J=1	J=2	J=3	J=4	J=5
I=1	*				
I=2	*	*			
I=3	*	*	*		
I=4	*	*	*	*	
I=5					
logic	I == J	=>	print *		

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For Loop

	J=1	J=2	J=3	J=4	J=5
I=1	*				
I=2	*	*			
I=3	*	*	*		
I=4	*	*	*	*	
I=5	*	*	*	*	*
logic	I == J	=>	print *		

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JAVASCRIPT

* Functions

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JavaScript Function

In JavaScript, a **function is a block of reusable code** that performs a specific task or set of tasks. Functions are used to **organize code into modular** and manageable pieces, promote **code reuse**, and make programs **more readable**.

```
function functionName(parameters) {  
    // code to be executed  
    return result; // optional return statement  
}
```

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JavaScript Function

In JavaScript, a **function is a block of reusable code** that performs a specific task or set of tasks. Functions are used to **organize code into modular** and manageable pieces, promote **code reuse**, and make programs **more readable**.

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```

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What we will cover

- 1 Function Declaration
- 2 Function Invocation
- 3 Function Parameter
- 4 Function Argument
- 5 Function expressions
- 6 Anonymous Function
- 7 Return Keyword
- 8 **IIFE** (Immediately Invoked Function expression)
- 9 More we will see in advanced

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Syntax – Function Declaration

function
Keyword

function Name

```
function greet() {
```

```
  console.log("Welcome to Thapa Technical JS  
  Course ");
```

```
}
```

function Body

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Syntax – Function Invocation

```
function greet() {  
    console.log(" Welcome to Thapa Technical JS Course ");  
}
```

`greet()`

We need to call the function name




```
Welcome to Thapa Technical JS Course
```


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Syntax – Function Parameter

 We need to add values here (parameter)

```
function greet(parameter1) {  
  console.log(" Best JS Course ");  
}
```

 We need to call the function name

```
greet()
```

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Syntax – Function Parameter

```
function greet(parameter1, parameter2) {  
    console.log(" Best JS Course ");  
}
```

`greet()`


 We need to call the function name

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Syntax – Function Parameter

```
function greet(parameter1, parameter2, ...)  
{  
  console.log(" Best JS Course ");  
}
```

 We need to call the function name

`greet()`

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Syntax – Function Argument

```
function greet(parameter1, parameter2, ...)  
{  
  console.log(" Best JS Course ");  
}
```

 We need to call the function name

`greet(argument1)`

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Syntax – Function Argument

```
function greet(parameter1, parameter2, ...)  
{  
  console.log(" Best JS Course ");  
}
```



We need to call the function name

```
greet(argument1, argument2)
```

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Syntax – Function Argument

```
function greet(parameter1, parameter2, ...)  
{  
  console.log(" Best JS Course ");  
}
```

We need to call the function name

`greet`(argument1, argument2, ...)

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Interview Questions – Function

- 1: **Reverse a String**: Write a function to reverse a given string **without** using built-in reverse methods.
- 2: **Palindrome Check**: Create a function to determine if a given string is a **palindrome** (reads the same backward as forward).
- 3: **Calculator Function**: Write a JavaScript function calculator that takes two numbers and an operator as parameters and returns the result of the operation. The function should support addition, subtraction, multiplication, and division.

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World Best JavaScript

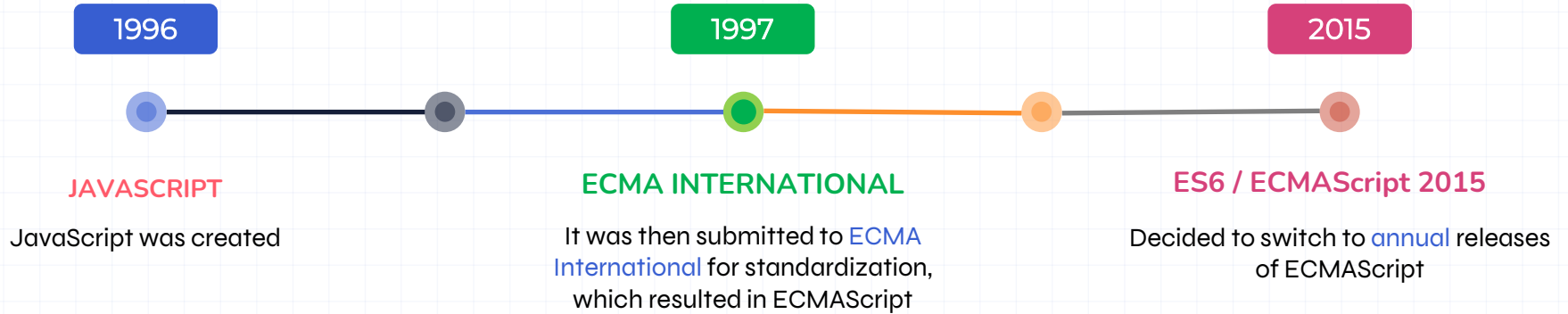
JAVASCRIPT

* ECMAScript

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EcmaScript Timeline



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Timeline



2015

ECMAScript 2015

Which is also known as
ES6 OR ECMAScript 6



2017

ECMAScript 2017

Which is also known as
ES8 OR ECMAScript 8



2019

ECMAScript 2019

Which is also known as
ES10 OR ECMAScript 11

2015

2016

2017

2018

2019



2016

ECMAScript 2016

Which is also known as
ES7 OR ECMAScript 7



2018

ECMAScript 2018

Which is also known as
ES9 OR ECMAScript 9

Timeline



2020

ECMAScript 2020

Which is also known as
ES12 OR ECMAScript 12



2022

ECMAScript 2022

Which is also known as
ES14 OR ECMAScript 14



2024

ECMAScript 2024

Which is also known as
ES16 OR ECMAScript 16

2020

2021

2022

2023

2024



2021

ECMAScript 2021

Which is also known as
ES13 OR ECMAScript 13



2023

ECMAScript 2023

Which is also known as
ES15 OR ECMAScript 15

THAPA TECHNICAL

ECMAScript 2015 / ES6



LET AND CONST



DESTRUCTURING



TEMPLATE STRINGS



OBJECT PROPERTIES



DEFAULT ARGUMENTS



REST OPERATORS



ARROW FUNCTION



SPREAD OPERATORS

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Interview Questions – Function

- 1: **Reverse a String**: Write a function to reverse a given string **without** using built-in reverse methods.
- 2: **Palindrome Check**: Create a function to determine if a given string is a **palindrome** (reads the same backward as forward).
- 3: **Calculator Function**: Write a JavaScript function calculator that takes two numbers and an operator as parameters and returns the result of the operation. The function should support addition, subtraction, multiplication, and division.

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JAVASCRIPT

* ARRAYS

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JavaScript Array



Ram



Hari



Sita



Bishal





Gita


Imagine you want to store collection of people names.


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const person1 = Ram 

const person2 = Hari 

const person3 = Sita 

const person4 = Bishal 

const person5 = Gita 

You will think of doing something like this. [Kodyfier.com](https://www.kodyfier.com) - Online Classes

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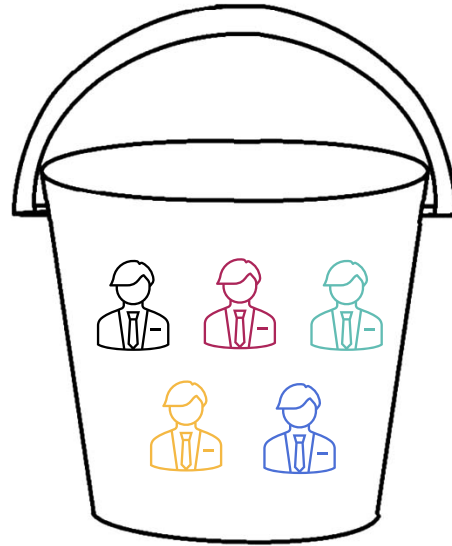
const person1 = Ram

const person2 = Hari

const person3 = Sita

const person4 = Bishal

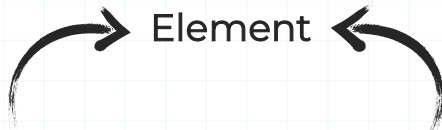
const person5 = Gita




What if we could store all of these into a bucket?

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```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



The diagram illustrates an array of five elements. Above the array, the word "Element" is centered, with two curved arrows pointing from it to the first and last elements of the array. Below each element of the array is a simple line-art icon of a person's head and shoulders, representing that element.

That's what array is for.

JavaScript array is an object that represents a collection of similar type of elements.

Each value(name) will be called as an Element.

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Index Number

0

1

2

3

4

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



In arrays, each element is represented by an index which starts with zero.

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THAPA TECHNICAL

Index Number

0

1

2

3

4

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



```
persons[0]; // Ram
```

```
persons[1]; // Hari
```

And we can access each element by using indexes

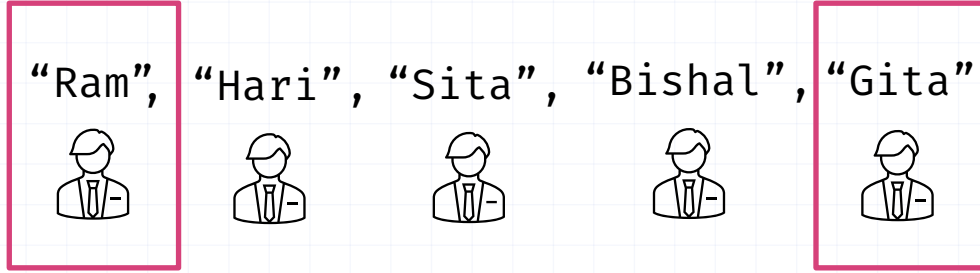
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THAPA TECHNICAL

Lower Index/
Lower Boundary

Upper Index/
Upper Boundary

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



First element or head: Refers to the element at index 0.

Last element or tail: Refers to the element at the last index, which can be obtained using `array.length - 1`.

Lower Index/
Lower Boundary

Upper Index/
Upper Boundary

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



```
persons[-1] // ERROR
```

```
persons.at(-1) // Gita
```

```
persons.at(-2) // Bishal
```

ECMAScript 2022 also introduces new `.at()` method in arrays which helps to index from last elements too easily.

What we will cover

* Creating Arrays / Accessing Elements / Modifying Elements

* Array Traversal / Iterating Over Arrays

* How to Insert, Add, Replace and Delete Elements in Array(CRUD)

* Searching in an Array

* Filter in an Array

* How to Sort and Compare an Array

* Very Very Important Array Methods

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THAPA TECHNICAL

Index Number

0

1

2

3

4

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



In arrays, each element is represented by an index which starts with zero.

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THAPA TECHNICAL

Push()

Push Method: The **Push** Method that adds one or more elements to the end of an array.

Syntax: `push(Element)`

```
persons.push('Gita')
```

Index Number = 0 1 2 3

```
const persons = [ "Ram", "Hari", "Sita", "Bishal" ];
```



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THAPA TECHNICAL

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Push()

Push Method: The **Push** Method that adds one or more elements to the end of an array.

Syntax: `push(Element)`

Gita added at the end of the array

`persons.push('Gita')`

Index Number

0

1

2

3

4

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



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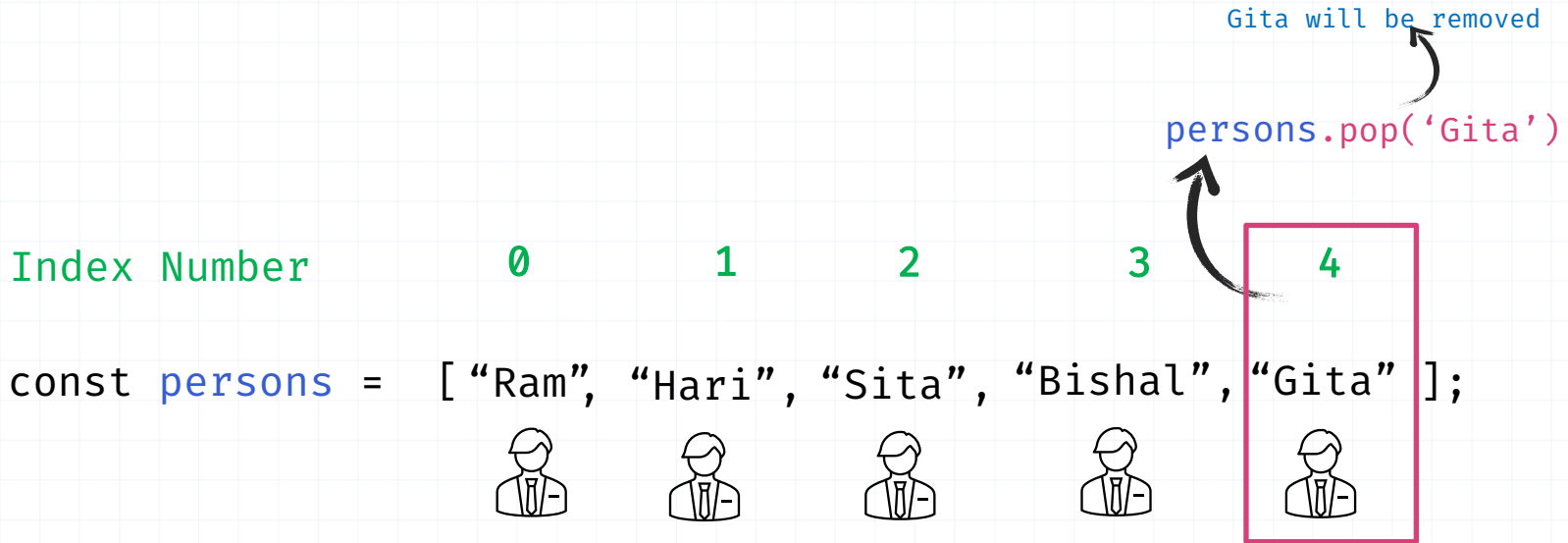
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Pop()

Pop Method: Method that **removes** the last element from an array.

Syntax: `pop(Element)`



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Pop()

Pop Method: Method that **removes** the last element from an array.

Syntax: `pop(Element)`

Index Number = 0 1 2 3

```
const persons = [ "Ram", "Hari", "Sita", "Bishal" ];
```



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indexOf()

indexOf Method: The `indexOf` method returns the first index at which a given element can be found in the array, or -1 if it is not present.

Syntax: `indexOf(searchElement, fromIndex)`

Look where Sita is.

Sita index Num = 2

`persons.indexOf('Sita')`

Index Number

0

1

2

3

4

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



THAPA TECHNICAL

Includes()

Includes Method: The includes method checks whether an array includes a certain element, returning true or false.

Syntax: `Includes(searchElement, fromIndex)`

Look where Hari is.
`persons.includes('Hari')`

O/P = true

Index Number

0

1

2

3

4

```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```

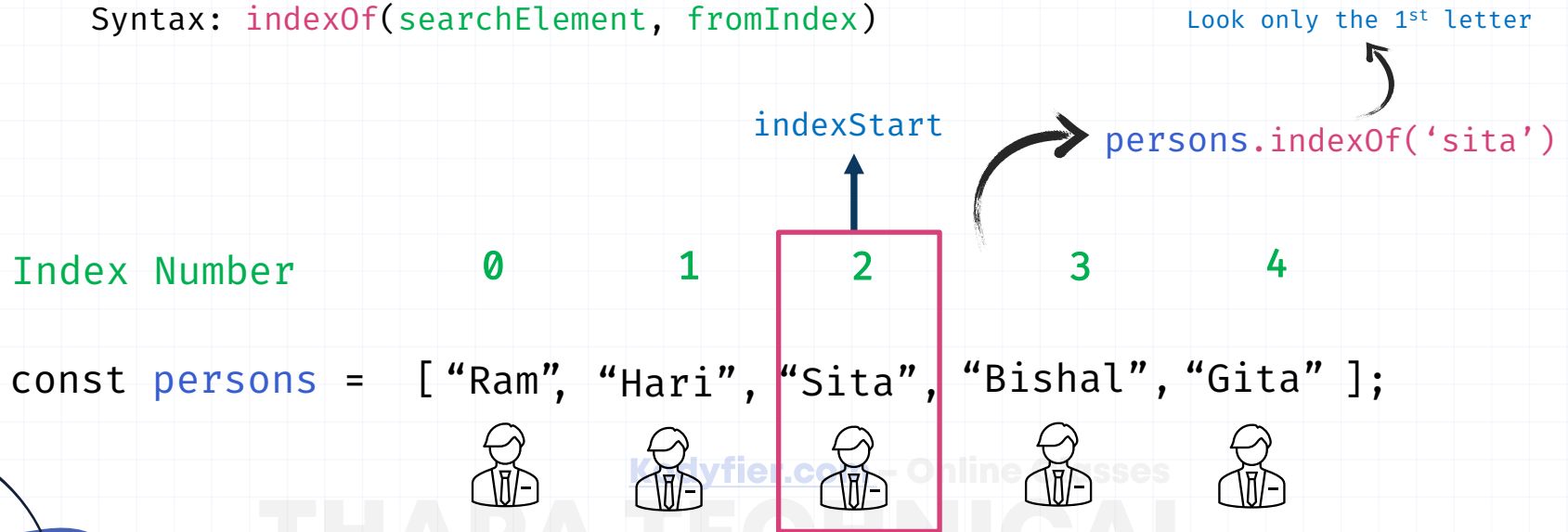


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indexOf()

indexOf Method: The `indexOf` method returns the first index at which a given element can be found in the array, or `-1` if it is not present.

Syntax: `indexOf(searchElement, fromIndex)`



indexOf()

indexOf Method: The `indexOf` method returns the first index at which a given element can be found in the array, or `-1` if it is not present.

Syntax: `indexOf(searchElement, fromIndex)`

Look only the 1st letter

Index Number

0

1

2

3

4

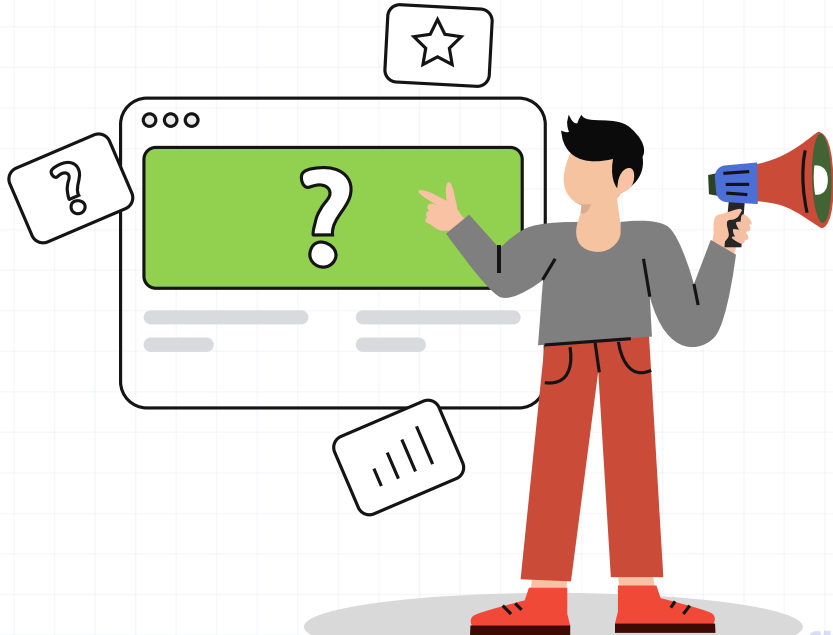
```
const persons = [ "Ram", "Hari", "Sita", "Bishal", "Gita" ];
```



indexStart

`person.indexOf('sita')`

THAPA TECHNICAL



Interview Question

forEach vs Map in JavaScript?



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Syntax – forEach

```
array.forEach(function  
callback(currentValue, index, array) {  
    // Your logic here  
}, thisValue);
```

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Here's a breakdown of each part:

array: The array on which the **foreach method is called**.

callback: A function that will be called once for each element in the array.

currentValue: The **current element being processed** in the array.

index (optional): The index of the **current element** being processed.

array (optional): The array **foreach** was called upon.

thisValue (optional): A value to use as **this** when executing the callback function.

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Syntax – forEach

```
array.forEach((currentValue, index, array)  
=> { // Your logic here }, thisValue);
```

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Syntax – Map()

```
array.map(function callback(currentValue,  
index, array) {  
    // Your logic here  
}, thisValue);
```

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Syntax – Map()

```
array.map((currentValue, index, array) =>
{
    // Your logic here
}, thisValue);
```

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Here's a breakdown of each part:

array: The array on which the **map method** is called.

callback: A function that will be called once for each element in the array.

currentValue: The **current element** being processed in the array.

index (optional): The index of the **current element** being processed.

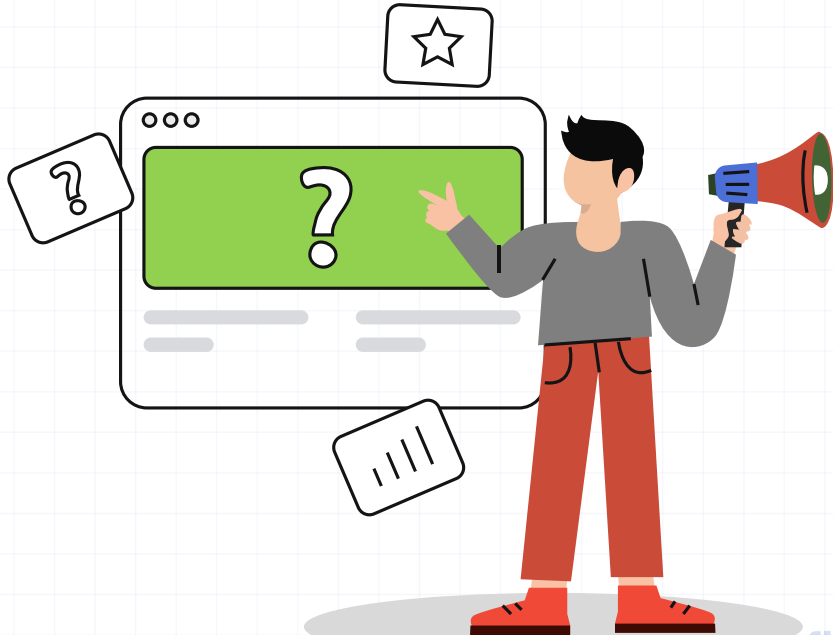
array (optional): The array map was called upon.

thisValue (optional): A value to use as this when executing the callback function.

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Interview Question

Let's test our knowledge.



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Interview Questions – Array CRUD

- 1: Add Dec at the `end` of an array?
- 2: What is the `return` value of splice method?
- 3: `Update` march to March (update)?
- 4: `Delete` June from an array?

```
const months = ['Jan', 'march', 'April', 'June', 'July'];
```

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Interview Questions – Array Filter

Q: Given an array of products where each product has a **name** and a **price**, write a function that uses the **filter method** to return an array containing only the products with a **price less than or equal to 500**.

```
const products = [  
  { name: "Laptop", price: 1200 },  
  { name: "Phone", price: 800 },  
  { name: "Tablet", price: 300 },  
  { name: "Smartwatch", price: 150 },  
];
```

Interview Questions – Array Filter

1: Using the `map` method, write a function that takes an array of strings and returns a new array where each `string is capitalized`.

2: Using the `map` method, write a function that takes an array of numbers and returns a new array where each `number is squared`, but only `if it's an even number`.

3: Using the `map` method, write a function that takes an array of names and returns a new array where `each name is prefixed with "Mr"`.

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Interview Questions – Array Reduce

Write a JavaScript function that `calculates the total price` of items in a shopping cart. The function should take an array of item prices as input and `return the total price`.

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JAVASCRIPT

* STRINGS

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THAPA TECHNICAL

What we will cover

- * String & it's properties
- * Escape Character
- * String Search Methods
- * Extracting String Parts
- * Extracting String Characters
- * Replacing String Content
- * Other Useful Methods

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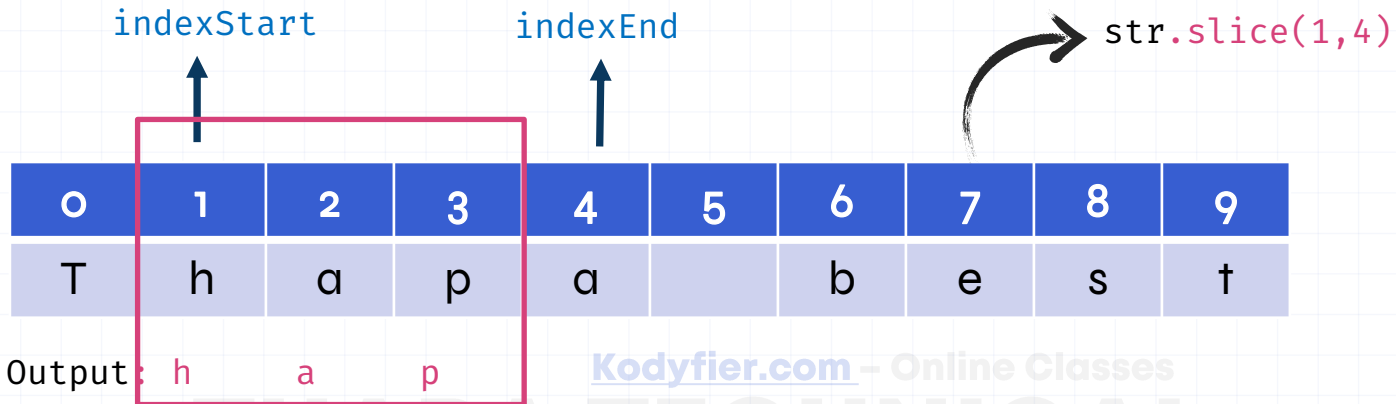
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slice()

`slice()` extracts a part of a string and returns the extracted part in a new string.

1: JavaScript counts **positions from zero**.

2: `slice()` extracts up to but **not including** `indexEnd`.



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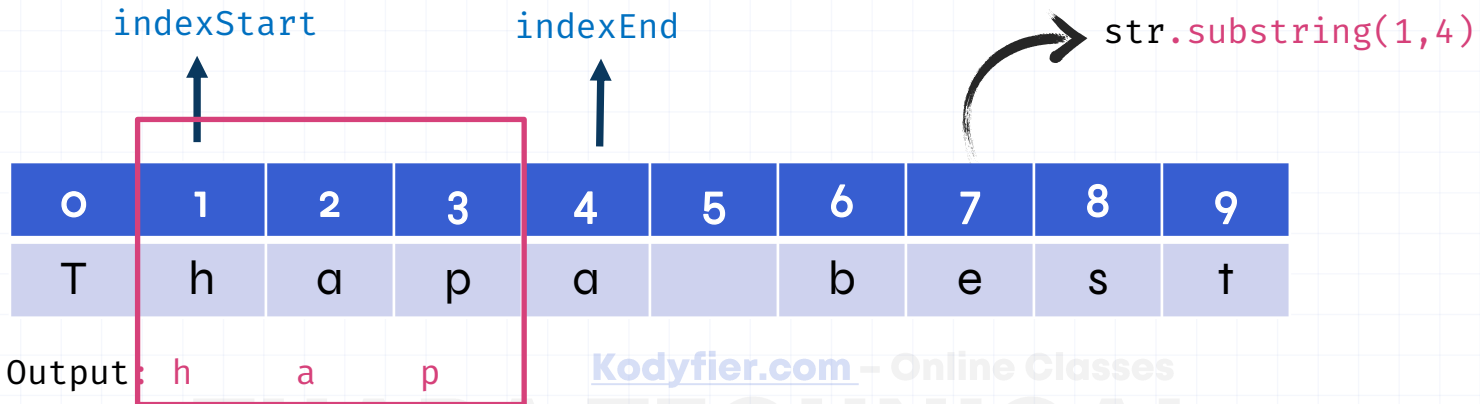
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substring()

`substring()` extracts a part of a string and returns the extracted part in a new string.

1: JavaScript counts **positions from zero**.

2: `substring()` extracts up to but **not including indexEnd**.



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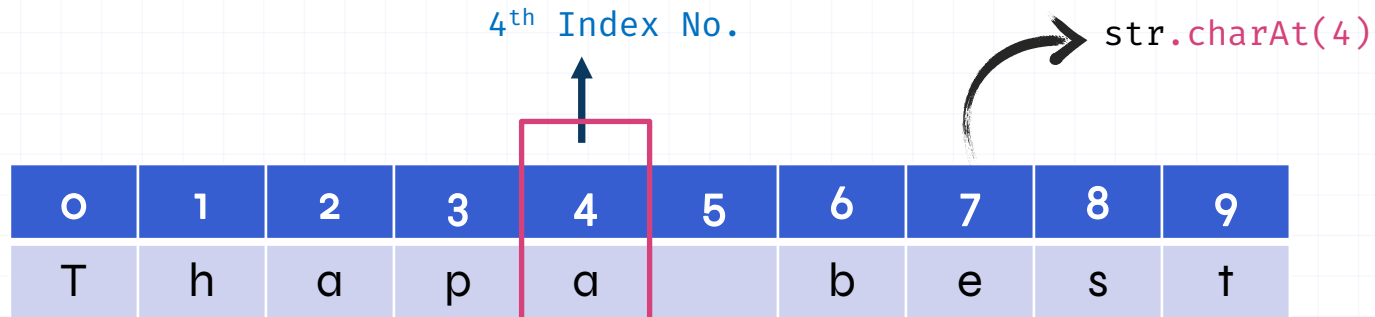
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charAt()

The `charAt()` method returns the character at a specified index (position) in a string

1: JavaScript counts positions from zero.



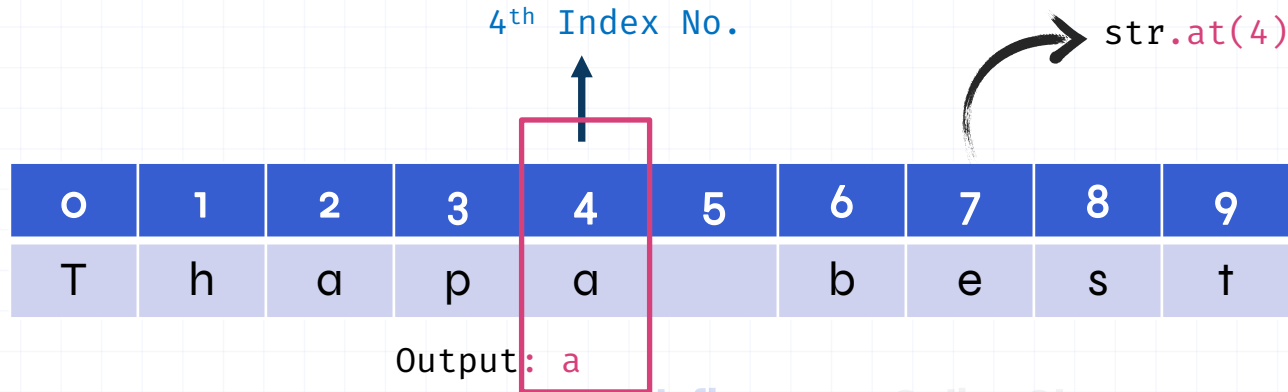
Output: `a` [Kodyfier.com](https://www.kodyfier.com) - Online Classes

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at()

The `at()` method returns the character at a specified index (position) in a string

1: It allows the use of negative indexes while `charAt()` do not.



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at()

The `at()` method returns the character at a specified index (position) in a string

1: It allows the use of negative indexes while `charAt()` do not.

4th Index No. → `str.at(-4)`

0	1	2	3	4	5	6	7	8	9
T	h	a	p	a		b	e	s	t
-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

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Interview Questions – Strings

- 1: Write a JavaScript function that **prints the letters 'a' through 'z'** in the console. You should use a loop to iterate through the letters and print each one on a new line.
- 2: Write a function to **count the number of vowels** in a string?
- 3: Write a function to check if all the **vowels presents** in a string or not?

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Interview Questions – Strings

Write a JavaScript function `isPangram` that takes a string as input and returns true if the string is a pangram (contains all letters of the alphabet) and false otherwise. The function should be case-insensitive and ignore spaces.

Constraints:

- 1: The input string will consist of alphabetic characters and spaces.
- 2: The function should handle both uppercase and lowercase letters.
- 3: Consider the English alphabet with 26 letters.

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JAVASCRIPT



MATH OBJECT

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Difference Between Round, Floor & Ceil

Math.round()

Rounds to the nearest integer.

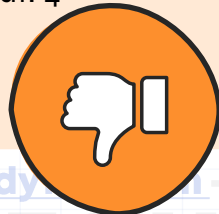
Ex:
`console.log(Math.round(4.5));`
// Output: 5
`console.log(Math.round(4.1));`
// Output: 4



Math.floor()

Always rounds down to the nearest integer.

Ex:
`console.log(Math.floor(4.9));`
// Output: 4
`console.log(Math.floor(4.1));`
// Output: 4



Math.ceil()

Always rounds up to the nearest integer.

Ex:
`console.log(Math.ceil(4.2));`
// Output: 5
`console.log(Math.ceil(4.9));`
// Output: 5



Interview Questions – Strings & Functions

1: Write a JavaScript function that **prints the letters 'a' through 'z'** in the console. You should use a loop to iterate through the letters and print each one on a new line.

2: Write a JavaScript function **isPangram** that takes a string as input and returns true if the string is a pangram (**contains all letters of the alphabet**) and false otherwise. The function should be case-insensitive and ignore spaces.

Constraints:

- 1: The input string will consist of alphabetic characters and spaces.
- 2: The function should handle both uppercase and lowercase letters.
- 3: Consider the English alphabet with 26 letters.

JAVASCRIPT

* Window in JS DOM & BOM

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Window

1: Window is the main container, or we can say the **global Object** and any operations related to entire browser window can be a part of window object.

2: All the members like objects, methods or properties. If they are the part of window object, then **we do not refer the window object**.

3: Window has methods, properties and object. ex setTimeout() or setInterval() are the methods, where as Document is the object of the Window and It also has a screen object with properties describing the physical display.

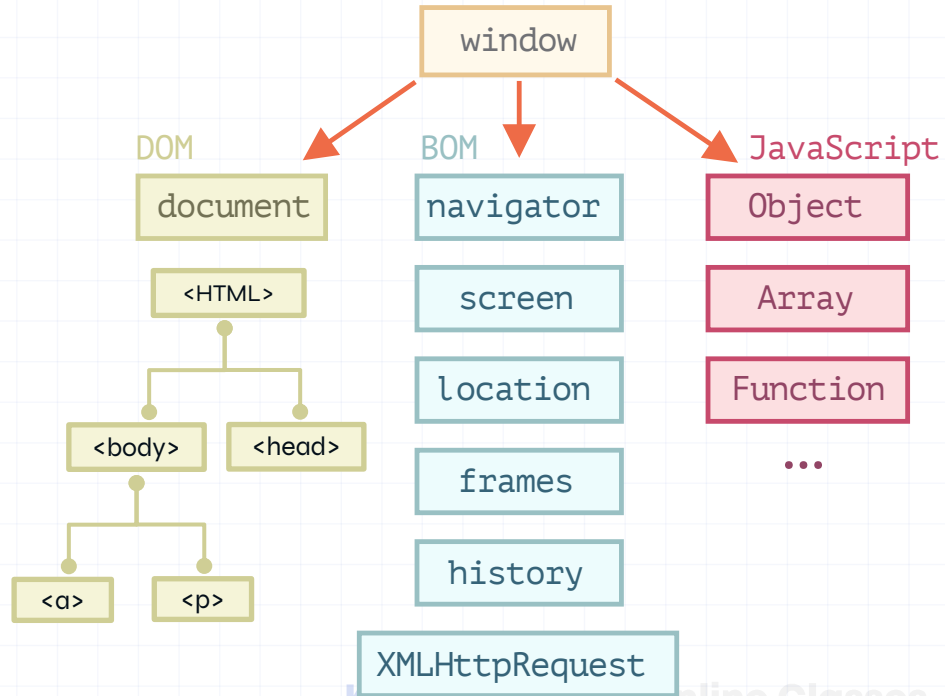
Document

1: Whereas the **DOM is the child of window object**

2: Where in the DOM **we need to refer the document**, if we want to use the document object, methods or properties

3: Document is just the **object of the global object** that is Window, which deals with the document, the HTML elements themselves.

Window Global Object



Window Global Object



The image shows a browser window displaying the homepage of KodyFier, an IT training institute in Pune. The browser's address bar shows the URL 'kodyfier.com'. The website features a navigation menu with 'Home', 'About', 'Courses', and 'Contact'. The main heading reads 'IT TRAINING INSTITUTE IN PUNE'. A paragraph describes the institute as a top IT training center in Pune, offering various IT courses like Web Development and Software classes. A 'Get Started' button is highlighted with a red arrow pointing to a list of features: 'Live Classes', 'Modern Projects', and 'Industry Level'. On the right, there is a photograph of a smiling man with glasses reading a book, set against a circular graphic background.

KodyFier


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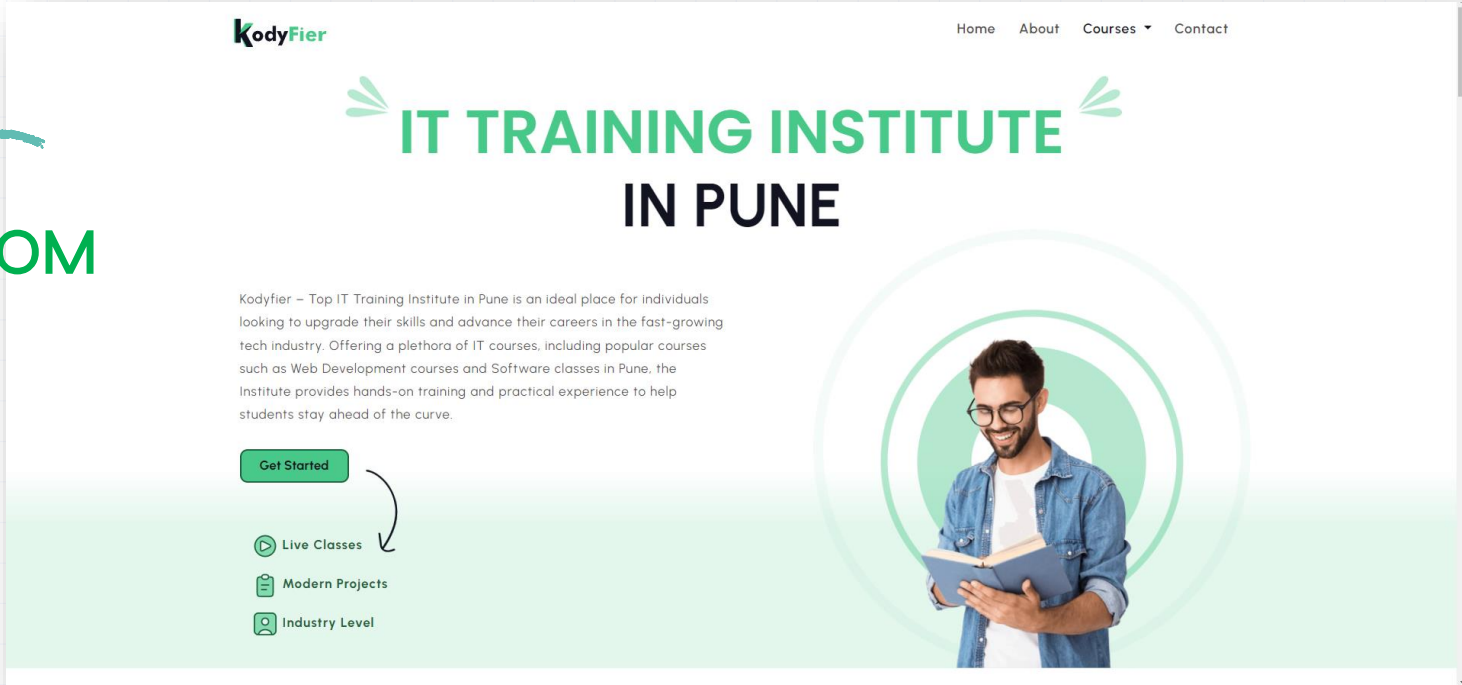
- ▶ Live Classes
- 📁 Modern Projects
- 👤 Industry Level



The BOM



The DOM



Window Object:

The window object represents the global window in a browser.

Both the [Browser Object Model \(BOM\)](#) and the [Document Object Model \(DOM\)](#) are part of the window object.

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Window Object:

The window object represents the global window in a browser. Both the **Browser Object Model (BOM)** and the **Document Object Model (DOM)** are part of the window object.

Browser Object Model (BOM):

The BOM represents the browser as an object and provides methods and properties for interacting with the browser itself (not directly related to the content of a web page).

Examples of BOM features include `window.navigator` for browser information, `window.location` for URL manipulation, and `window.alert` for displaying alerts.

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Window Object:

The window object represents the global window in a browser.

Both the **Browser Object Model (BOM)** and the **Document Object Model (DOM)** are part of the window object.

Document Object Model (DOM):

The DOM represents the structured document as a tree of objects, where each object corresponds to a part of the document (such as elements, attributes, and text).

The DOM is primarily concerned with the content of the web page and allows JavaScript to interact with and manipulate the HTML elements.

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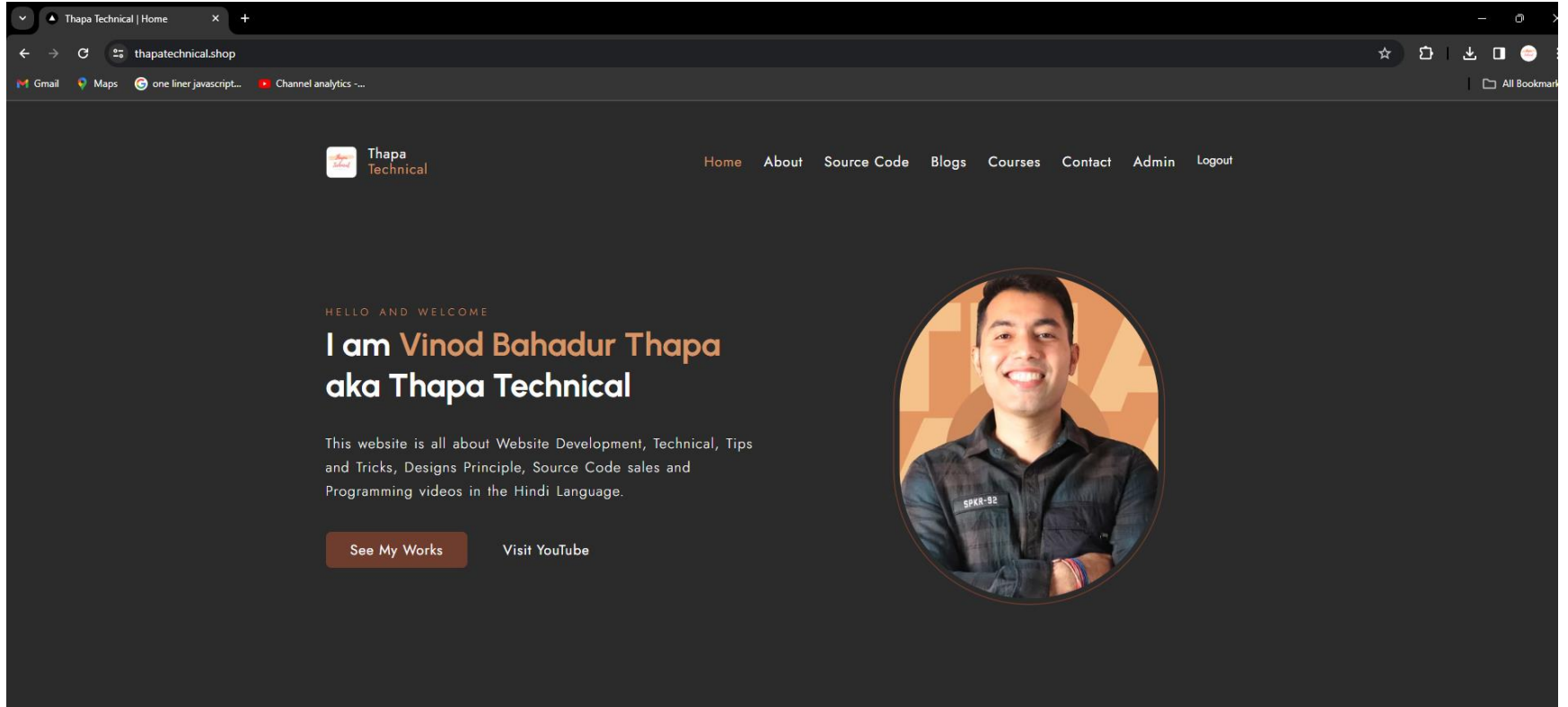
So, while the DOM is focused on the content of the page, the BOM is focused on the browser environment. The window object serves as the global object that encompasses both the BOM and the DOM when working in a browser environment.

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The Window Object



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The BOM



`window.location.href`

The DOM



```
$0.style.color = "blue"
```

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```
<body>
  <!-- /comment -->
  <div>
    Hello
    <span>World</span>
  </div>
  <script></script>
</body>
```

```
> document.body.childNodes
```

```
< ▼ NodeList(7) [text, comment, text, div, text, script, text] ⓘ
```

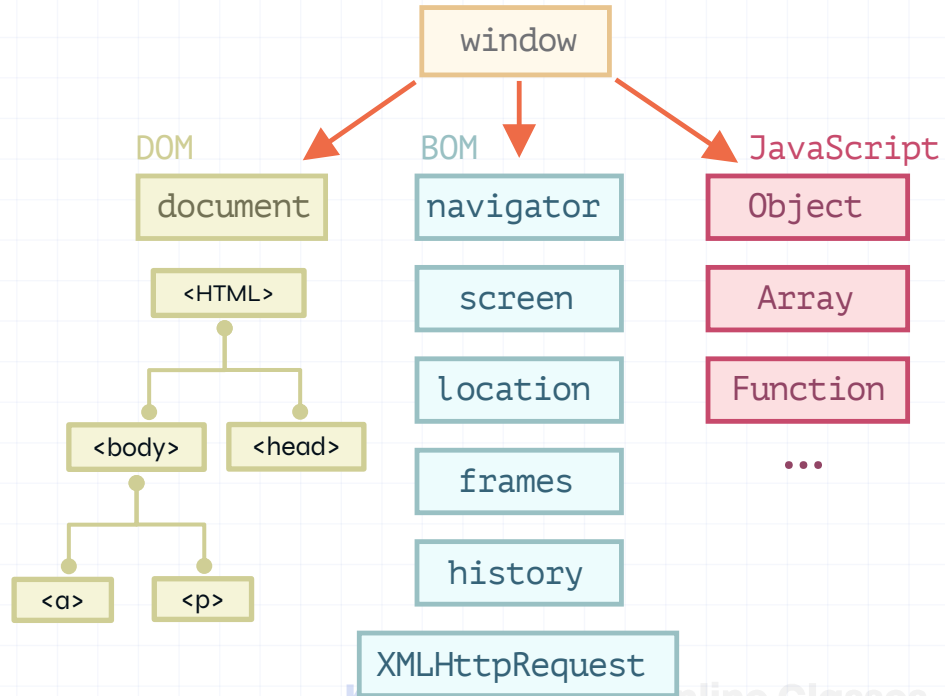
```
innerHTML: "\n    Hello\n    <span>World</span>\n  "
innerText: "Hello World"
```

```
textContent: null
```

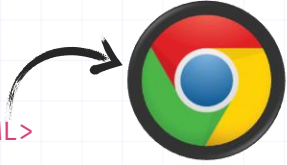
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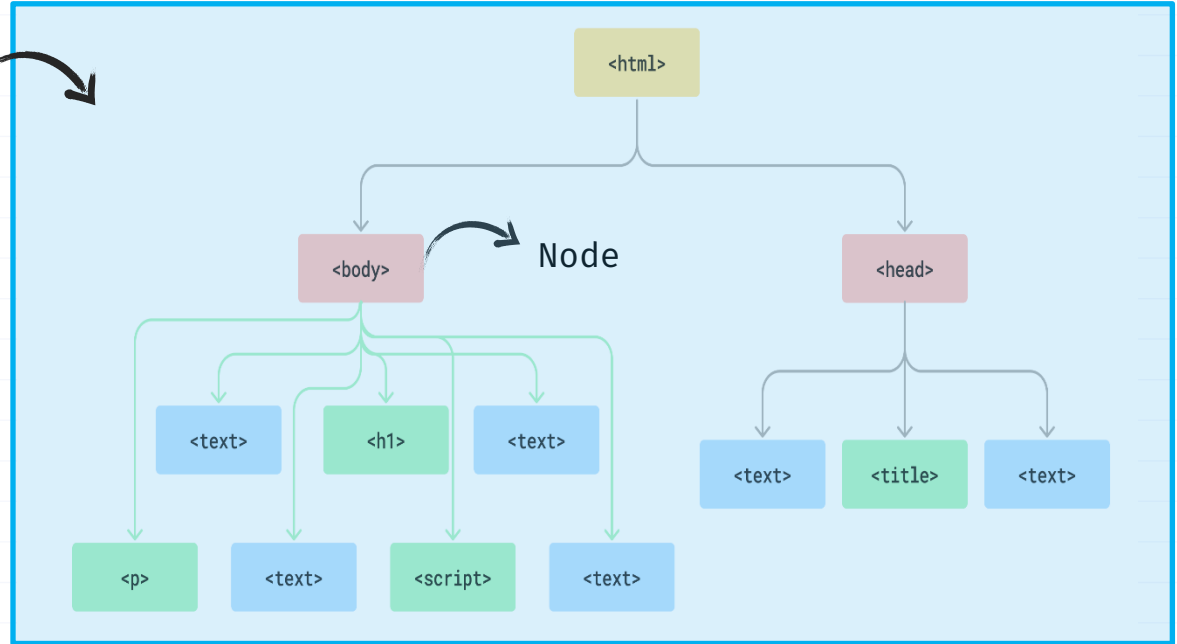
Window Global Object



BROWSER - DOM TREE

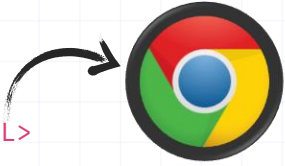


```
<!DOCTYPE HTML>
<html>
<head>
  <title>JavaScript</title>
</head>
<body>
  <h1>Best JS Course</h1>
  <p> DOM Tree Structure</p>
<script> </script>
</body>
</html>
```



This entire DOM tree is then accessible to JavaScript as an object.

Window Global Object



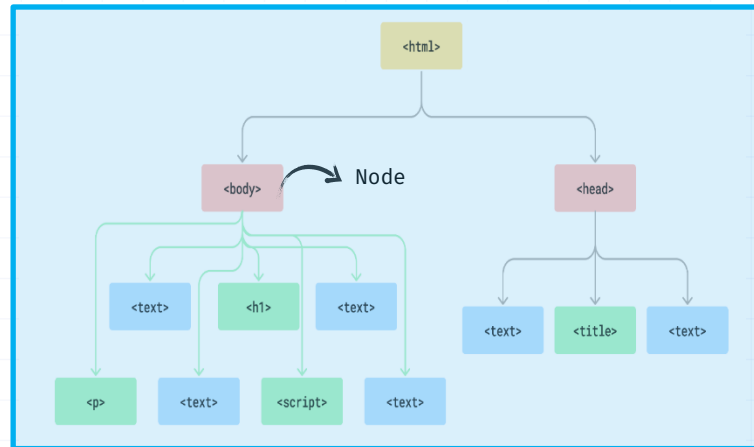
```
<!DOCTYPE HTML>
<html>
<head>
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</head>
<body>
  <h1>Best JS Course</h1>
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</body>
</html>
```

```
> document.body.childNodes
< ▼ NodeList(5) [text, h1, text, p, text] ⓘ
  ▶ 0: text
  ▶ 1: h1
  ▶ 2: text
  ▶ 3: p
  ▶ 4: text
  length: 5
  ▶ [[Prototype]]: NodeList
> document.head.childNodes
< ▼ NodeList(3) [text, title, text] ⓘ
  ▶ 0: text
  ▶ 1: title
  ▶ 2: text
  length: 3
  ▶ [[Prototype]]: NodeList
```

This entire DOM tree is then accessible to JavaScript as an object.

The Document Object Model (DOM) is a **tree-like representation** of the HTML document. It provides a way **to interact with the HTML** document **using JavaScript**. The DOM provides **multiple properties** and **methods** to dynamically change the content of the HTML document using JavaScript

```
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```



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DOM Properties

document

getElementById(id)

getElementsByClassName(className)

getElementsByTagName(tagName)

querySelector(selector)

querySelectorAll(selector)

innerHTML

textContent

style

DOM Methods

createElement(tagName)

appendChild(node)

removeChild(node)

addEventListener(event, function)

removeEventListener(event, function)

setAttribute(name, value)

getAttribute(name)

parentNode / parentElement

childNodes / children

firstChild / firstElementChild

lastChild / lastElementChild

nextSibling / nextElementSibling

previousSibling / previousElementSibling

closest(selector)

forEach (Array.from)

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