

Introduction to JavaScript

- * Invented by Brendan Eich in 1995.
- * Developed for Netscape-2 and became the ECMA-262 standard in 1997.
- * ECMA stand for European Computer Manufacturers Association

- مل کر بعد نہیں جلوں

- وہ major changes کے درمیان 2015

Ecma script major hai is my.

Isko Ecma script / Es2015 / ES6. کہا جاتا ہے

- مل رہا ہے ES6 پر

* ES6 is standard for javascript after that every year new changes came ES7, ES8, ES10 etc.

* Js is a light weight object oriented Programming language

* Use in form submit

* in client side validation

* Popup / events on click

Uses:- Client side execute / browsers.

(Js query, React Js, angular Js)

* Website Server side (node js, Expressjs)

* Mobile Development (Hybrid App) Framework for mobile app need native phone gap etc.)

* Software development (Electron js, Ext vs code,

JavaScript my hm <script> ka tag use
kry hain or ya tag hm kulin bh
likh skty hain head my ya body my.

```
</head>  
<body>  
<script>  
    alert("hello");  
</script>  
</body>  
</html>
```

file link kony ka tariqa

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

پھر link file کو head میں اور body میں
بھی آر سٹاٹس سے -
آر سٹاٹس file میں link file (head) میں گئے لوگوں
کی وجہ سے load کر پڑتے ہو جاتے ہیں۔ اس لیے
پھر یہ دلچسپی body ka tag بند ہو رہا ہے
(سے سے میں کر دیں -)

defer attribute aisa haik agn hm
my head my bh link kr di file to
show last my hi ~~show~~ ho gi-

=> Console my hm js ka code likh yha
=> Error ko find krya k liya console window
open karne hoti hai

22/1/2024

~~before~~ ~~2015~~ Acma Script sy phly var use
nota hoi.

Variables

- var
- let
- Const

in 3 keywords sy hm variable declare
ka skty hain

let my a ko declare kro diya

a = 67; → assign operator hain -

Variables Rules

- ① Variable ~~case~~ sensitive hoty hain -
- ② Variable ka name keyword s ni hong chahiye (abc) (small or big)
- ③ Variable ke ander hm (let), underscore dollar sign and numbers ya sb ho skta hoi -

④ Agr hm koi variables likhty hain jo hm kisi bh variable ko number sy start ni
kr skty -

⇒ Var ko hm bs bs declare kro skty hain

⑤ Variables dollar sign underscore(-) ya number sy start kr skty hain -

Data types

Number → Type of Age
String → Type of Full Name
Boolean → Type of boolean hair or ("at y hair")
Boolean → Type of ispass Boolean.

null

Undefined

Alway

Objects

functions

Camel Case fullName /

اے سماں میں نہ فکار کو Capital letter سے لمحے اور دھناتیں میں نہ فکار کو Small alphabet Starting سے سرگزتی

4 Chzn Rules w/rn Variables

- ① K sensitive hai Capital letter ka alag variable hogा or small letter ka alag

② Hmari variables key words ni ho skty Jan in ke matchsoos words hoty hain jo hmari javascript my use hoty hain jaisy let hai constant hai var hai console hai alert ya hmain words hm apny variables ka nam nikalte hain

③ 4 chzyn hmari variables ke andar ho skte hain alphabet, underscores, dollar signs, number.

④ Number sy hm apny variable ko start n kte skte hain

24/1/2024

Types of Variables

- Var (used before EcmaScript). This type of variable can be declare again and again in JS. After ES6 modern or advance javascript there are 2 keywords use for declaration variables.
- let / its value can change any time in programming language and can declare and assign in 2 steps.
eg let name; (declare)
`name = "Hello"; (assignment)`

const (it's use for constant value eg pi value) its value can't be changed, its value must be assigned at the time of declaration.

Naming Variables in JavaScript | eg: const Name
Rules:
Final declare
Assignment in same sentence

- Variable's name can't be any keyword.
eg alert prompt etc.
- Variable is case sensitive. Same name in Capital and small letters are different
eg Name or name. (both are 2 different variables)
- Variables can be consist of alphabet, number, dollar sign and underscore.
- Variable name cannot be start with digits (number) its first letter.
- no space allowed.

As a Good Programmer

- Your variable name should match with its contents.
- When you want 2 words join in variable name so first word start with small letter and 2nd word start with capital letter.
eg full Name, rollNumber etc.

Variable Scope

1) Block scope variable: If variable declared in block of codes (in curly braces {}). It will alive only in block and will not be accessible after curly braces.

2) Global Scope Variable: These variables used globally in whole program.

Comments in JS

- Single line: // let name = "hina";
- Multi line: /* */
Comments ke milte kline execute nahi hoga.

Print/display in JS

- On Browser: window.document.write("hina");
- in Console: console.log("hina");
- Popups: window.alert("hina");

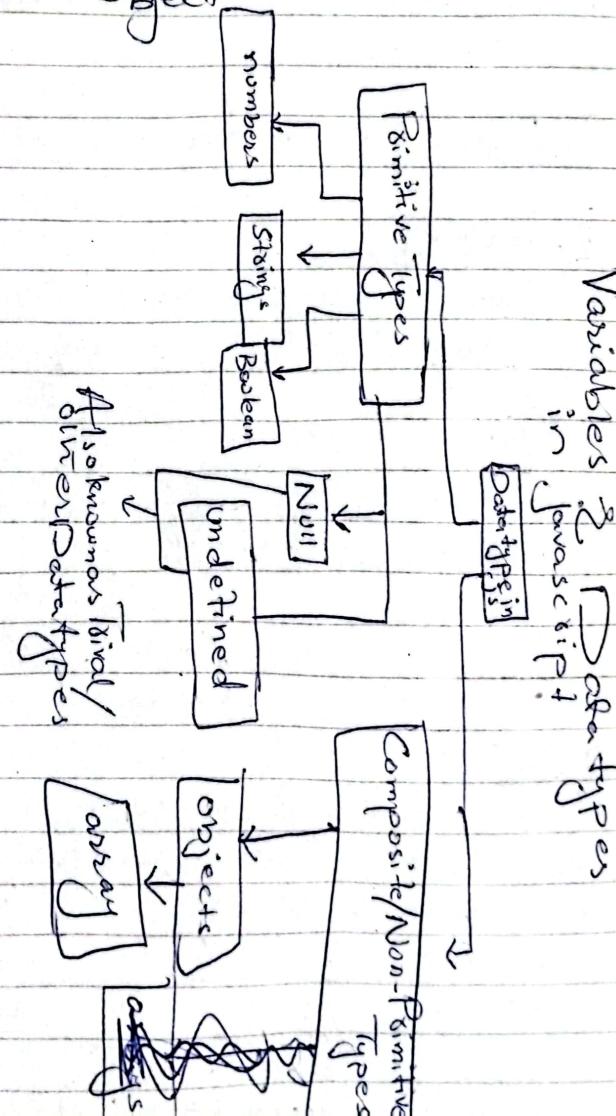
Taking input from User in JS

• Prompts in javascript, we use the prompt function to ask the user for input. As a parameter, we input the text we want to display to the user. Once the user presses "OK", the input value is returned. We typically store user input in a variable so that we can use the information in our program.

`let answer = prompt("Do you want to send payment y/n?");`
in answer variable value will be stored and you can print it.

=> Window object

=> Document Object



Primitive Data types

To check data type
typeof VariableName

- number let rollNo = 56;
- string let name = "Komal";
- boolean let ispass = true;
- Undefined let percentage;
- Object(null) let class = null;

Non Primitive Data Types

1. Array

- Store multiple value in single variable
- values written in Square Brackets []
- Syntax:

```
let info = [5, "hina", Computer];
console.log(info);
```

Point

```
document.write(info);
document.write(info[1]);
```

2 Object

- store multiple value in single variable
- variables written in curly brackets {}
- in pairs with keys
- Syntax:

```
let student = {
  name: "hina",
  document.write(stu
  rollno: 23,
  document.write(stu
  class: "Computer")
```

Class 4th

26/1/2024

kisi bhi task perform k
Operators in js liya state operator
use hota hai

Arithmetic Operators $a+b$, $4+5$ 4 (operand)
 $+ \text{operator}$ \Rightarrow operator

Assignment Operator

Comparison Operator

Logical Operator

Conditional Operator

Arithmetic Operator

+ (Addition) Unary Operators

- (Subtraction) Post increment ++a

* (multiplication) Pre increment ++a

/ (Division) Post decrement a--

% (modulus / remainder) Pre decrement --a

Exponentiation

• increment

• Decrement

Quotation k ander html k tag bh likh
sikhi hain.

Assignment Operator (assign value)

= $a = 2$; left side =

$+ = a + = 4/a = a + 4;$

$- = a - = 4/a = a - 4;$

$*$ $= a * = 4/a = a * 4;$

$\% = a \% = 4/a = 4;$

$** = a ** = 4/a = a ** 4;$

29/1/2024 8th Class

Comparison Operator

$=$ (equal to) $==$ (equal to + same data type)
 $!=$ (not equal to) \neq (not equal to & data type)

$>$

\geq

$<$ less than

\leq

Logical Operator

- Logical AND $\&$
- Logical OR $\|$
- Logical Not $!$

Ques/Ans

Conditional Operator

if Statement

if-else statement

if-elif Statement

Ternary Operator
Condition? True Output : False Output

eg:
 $age > 18? "adult": "not a$

if elif ->

elif -> Python

30/1/2024

6th class

1st Assignment Practice

Assignments Using Operators

let rollno = 56;

let name = "Hina";

let fname = "Miss---";

let cla = "8th";

let emarks = prompt("Enter your English's marks");

let umarks = prompt("Enter your Urdu's marks:");

let pmarks = prompt("Enter your Physics's marks:");

let cmarks = prompt("Enter your Computer's marks:");

let imarks = prompt("Enter your Islamiat marks:");

let total = emarks + umarks + pmarks + cmarks + imarks;

let per = total / 500 * 100;

let grade;

document.write(rollno, name, per, ^{total})

Data Type String

- * String is a sequence of characters used to represent a text.
 - * it is a primitive data type.
 - * We can create string by using template literals and in single and double quotes
 - let str = "I am learning js"; //double
 - let str = 'I am learning js'; //single
- let str = `I am learning string template`; //template literal (adjacent to P key in keyboard called back tick.)

String Creation & manipulation

- let str1 = "I am learning js"; //double
- let str2 = `I am learning js`; // Single
- let str3 = `I am learning string template`;
template literal (adjacent to P key in keyboard.)

Template literal / String Template

Template literals are a feature in javascript that were introduced with ES6. They give you a more flexible and maintainable way of working with strings in javascript. We can write variables in string if string is string templated

~~How to use template literal to print~~

Syntax:

- normal string: document.write("my roll no is", variable "hfhf");
- template literal: document.write(`my roll no is \${variable} gkjk`);

Some String Properties and methods

- let str1 = "I am learning js";
- let str2 = "css";
- let str3 = "html";
- Position str[0], str[1] (first index start with 0)
- To find length str.length
- To join strings document.write(str + " " + str2)
document.write(str1, " ", str2)
- By concat() let str4 = str.concat(str)
/ str.concat(str2, str3)
document.write(str4)

let str = "I am learning javascript";

- str.trim() // to remove space from start and end.
- str.trimstart() //
- str.trimend() //
- str.toUpperCase() // change in uppercase
- str.toLowerCase() // change in lowercase
- str.replace("javascript", "html") //
Search word and replace (case sensitive)
- str.includes("is") // Search word is / return boolean.

8th Class

6/2/2024

String manipulation

console pr
Showhota
hai ya

- \n use for print text in new line
- \t use for spaces (tab) more than single space in text.
- \ \ Use for single \ in text
- \" Use double quotations in string.



loops

- * to execute a piece of code again & again
- * finite loop and infinite
 - Finite loop (ending point)
 - Infinite (not end) memory full / computer hang.

for loop

i is block scope variable. use for iteration / counting.
first step initialization

2nd condition check job take condition
true block of code execute

3rd step updation

for (let i = 1; i <= 5; i++) {

 document.write("hello");
}

Array

⇒ info variable hota hai

Array (primitive data types)

- Store multiple value in single variable.
 - Values written in square bracket []
 - Values separated by comma.
 - ~~each~~ position is called index
 - each value call through index number start with 0
 - eg arr[0], arr[1]
- Syntax:
- ```
let info = [5, "Komal", "computer"]; console.log
[info];
info[]; // to empty and array
```

## Properties and Methods in Array

- ```
let book = ["Maths", "English", "Urdu", "Physics", "Computer"];
1 book.length // length of array
2 book.push("Chemistry"); // add word in array in the end
3 book.unshift("Chemistry"); // add in start of array
4 book.shift(); // remove a word from start
5 book.pop(); // to remove word from last and
return updated array
6 book.join("") // convert array in string
7 book.concat(book2) // joins 2 or 3 array in
new array don't change original
array.
```

Click to add title

- book.indexof("word"); // to find any word's position in array
- book.slice(start idx, end idx); // don't change original array // return a slice piece of arr
- book.splice(startidx, delcount, next); // change original array // add, remove and replace

eg

```
let arr = [1,2,3,4,5,6,7];
arr.splice(2,2,55,56); // 2 index per 3 / 3 & 4 items
// replace // them 55 and 56.
```

```
arr.splice(3,0,44); // if you dont want to
delete any item // 3 index per jake or add 44
```

```
arr.splice(2,3); // if you dont want add
only delete items // 2 index and items.
```

Practice Work Questions

- Create an array to store different items (minimum vegetables / fruits / companies etc.)

1 find length of array

2 Point all items of array by using both for / for of

3 Remove first item from array.

4 Remove 3rd item and add 2 items in its place.

5 Add any items in the last of array.

6 Remove item from end.

Object

Object

- store multiple value in single variable
- values written in curly brackets {}
- in pairs with keys

Syntax:

```
let student = {
```

 name: "hina",

 rollno: 23,

 class: computer

document.write(student)

document.write(student.

rollno);

for of loop / for in loop

- Print odd number of this array = {34, 45, 67, 95, 24, 12, 1, 5, 6, 8, 9, 79} by using for of loop.

- Create an object and print key's and value with it by using for in loop

while & do while Loop

- Print sum of 1 to 20 numbers by using while loop → Practice Work

// While loop for (let i = 1; i <= 10; i++)

let i = 1;

let sum = 0;

do

{

document.write(i);

sum = sum + i;

i++;

} while (i <= 10); // false

document.write(sum);

13-02-2024

Recorded Video

Miss Samreen

Civic Sense

Civic Engagement

Service-learning

- You're walking in a park, enjoying the beautiful surroundings and you finish your snack. There's no trash bin nearby, but you notice an empty area. What do you do?

- a) Toss the wrapper on the ground, thinking someone will clean it up later.
- b) Carry the wrapper until you find a trash bin.
- c) Hide the wrapper in the bushes so it's not visible.

2- You are at a busy intersection, and the traffic light turned red. However, the pedestrian signal is still on Do Not Walk. What's the right thing to do?

- a) Cross the road quickly, even if it's against the signal.
- b) Wait patiently on the sidewalk until the pedestrian signal allows you to cross.
- c) Cross the road anyway, as the traffic light

3. You're on a crowded bus, and you notice an elderly person standing while you're sitting. What should you do?

- a) Pretend not to see them and continue sitting.
- b) Offer your seat to the elderly person.
- c) Wait for someone else to offer their seat first.

4. Your community is organizing a cleanup day to keep the streets clean. What's your response?

- a) Ignore the event; it's not your responsibility.
- b) Volunteer your time to help clean up the neighborhood.
- c) Attend but only to socialize, not actively participate in the cleanup.

5. You come across a public wall covered in graffiti. What's your reaction?

- a) Add your own graffiti as an artistic expression.
- b) Report it to the local authorities or community group for cleanup.
- c) Ignore the graffiti and walk away without doing anything.

You have recyclable items at home. What do you do with them?

- " Throw them in the regular trash; it's too much effort to separate.
- " Place them in a separate recycling bin for proper disposal.
- " Leave them outside, assuming someone else will take care of it.

- You have to visit your relative's home.
What do you do?

- " Go without informing.
- " Ask them before visiting and take something for them.
- " Inform them before visiting.

Scoring

Give one point for each "b" answer
Subtract one point for each 'a' or 'c' answer.

Interpretation

7 points: Excellent civic sense! You are a responsible and considerate citizen.

4-6 points: Good Effort! There's room for improvement, but you are on the right

0-3 points: Consider reflecting on your civic responsibilities and making positive changes in your behavior.

What is Civic Sense ???

CIVIC SENSE (الضمير العام)
It refers to the awareness and consideration of one's responsibilities and duties towards society. It involves behaviors and attitudes that contribute to the well-being of the community as a whole.

Why civic Sense is Important?

These are the social Ethics

IMPORTANCE OF CIVIC SENSE

- * A society with a strong civic sense is more likely to be peaceful, clean, and cooperative.
- * It enhances the overall quality of life for everyone.
- * We need to be a good listener.
- *

How to Promote Civic Sense ???

- * Optimistic people → مفهوم المفهوم
- * We need to teach it from early childhood.
- * Much commitment by us as parents.

Be the main of action

BE THE CHANGE

- * Hungry ho rahi hain to khud ko kisi or kaam my engage krya.
- * Hr negative kaam try bh positivity dhoondhi ki koshish krya.
- * Koi chaotic bh effort karta hai only appreciate krya.
- * hm jo bh kaam krya ga us ka impact hindari society pr nazar aiy ga.
- * agr hr person apny attitude my change ly kr aiy ga to usy khud hi apni society my change nazar auy ga.
- * JQ responsibilities hm khud fulfil kr skte hain wo hq khud hi kar chahiya.

THANK YOU

Functions in JS

A javascript function is a block of code designed to perform a particular task.

A javascript function is executed when "something" invokes it (calls it).

functions	Function invoker
definition (define)	(call)
function fname()	- fname();
{	
block of codes	
}	
(argument)	
↑ Parameter	
function definition	function call
function fname(p1,p2)	fname(arg1,arg2)
{	
document.write(p1+p2)	fname(2,3)
}	
- function sum(p1,p2)	let ans = sum(2,
{	console.log(ans);
ans = p1 + p2;	
return ans;	
}	

جب کوئی function کا حال ہے میں کوئی اس وقت جو پاس values کرے سو اس کے argument کے میں اور function کے میں کوئی دوسرے values کے نہ اسے اپنے arguments کے میں کھینچتے ہیں۔

Arrow functions (ES6)

```
const fname = () => {     fname()  
    block  
    of  
    code  
}
```

Practice Question using both functions

- Create a function
- Pass string as parameter
- Print vowels in it
- and return counting number of vowels in string.

Class 19th

Only Practice Questions Solve
in this class