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CLASS 02 JAVASCRIPT.

Javascript Introduction.

1) Javascript was invented by Brendan Eich in 1995
2) It was developed for Netscape 2, and became the ECMA-262 standard in 1997.
3) European Computer Manufacturers Association ECMA International (formally European Computer Manufacturers Association) is an organization that develops standards in computer and technology.
4) ES1 to ES5 (1997 to 2009).
5) After that in 2015 (major changes to follow the rules and regulations) that is called Ecma Script / Es2015/ES
6) ES6 is standard for Javascript after that every years new changes came ES7, ES8, ES10 Etc.
7) JS is a light weight object oriented programming language.
8) Use in form submit.
9) in client side validation.
10) popup / events on click.

Uses:

1) client side execute / browsers (JS query, React, angular JS)
2) website server side (node JS, Express JS)
3) Mobile Development (Hybrid App / framework for mobile app react native, phone gap etc).
4) Software Development (Electron JS, Ex-vs code, frame work etc).

JAVASCRIPT IN VS CODE:

JS code is written in body or head tag. (pop-up msg).

```
<script>
    alert("hello");
</script>.
```

Recommended to create a JS file seperately.

How to link JS file?

< script src = "file name eg script.JS" > </script>.

Recommended to link file in before closing body tag

<script defer src="script.JS"> </script>
attribute.
by give attribute JS file execute after the html file.

CONSOLE :

All the errors in html or any file are seen in console.

You can execute or write code in console.

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CLASS 02
(Variable and Data types).

VARIABLES :

How to declare Variables.

1. Var. (before 2015 var is used) old version.
2. let.
3. Const.

Var: Var is old version, var is used before 2015 in ECMA script, var can be declared again and again without giving any error.

In modern JS we used let and const.

let: let cannot be re-declared again and agai
(its value can change anytime in programming language
declare & assign in 2 steps.
e.g let name; (declare)
name = "hello"; (assignme

const: const cannot be re-declared and updated
its value must be assign at the time of declaration)
e.g const name = "kulsum"; (declare & assign in same

(= assign operator).

DATA TYPE:

1) Number (Digits)
2) String (Name)
3) boolean (True or false) (Yes or NO).
4) null (Empty space).
5) undefined.
6) Array
7) Object.
8) Functions.

fullName = CamelCase.

COMMENTS IN JS:

Single line: // let name = "kulsum";
Multi line: /* */

Variables Rules:

1) Case-sensitive (abc — AB
both are =
different va

2) Received words cannot be
variable names.

3) letters, numbers, _
underscore or $ is allowed

4) Variable name should b
starts from alphabet, _, $

2nd

CLASS 03:

Variable Scope:

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

2) Global scope variable: these variables used globally in whole program.

PRINT / DISPLAY IN JS:

1) On Browser: window.document.write("Kulsum");
2) In Console: Console.log("Kulsum");
3) pop up: window.alert("Kulsum");

Taking Input from Users in JS:

1) prompt: In JS, 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 reply");
In answer variable value will be store and you can print

VARIABLES AND DATATYPES In JS:

Primitive	Composite / Non-Primitive Type
numbers	objects
Strings	arrays.
boolean	
null, undefined	Also known as Trivial / other Data types.

Arrays:

Store multiple value in single variable.
values written in square bauckets [ ]

Syntax:

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

print:

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

Object:

1) store multiple value in single variable.
2) value written in curly brackets { } in pairs with keys

Syntax:

```
let student = {
    name : 'kulsum';
    rollno : 020;
    class : "Javascript"
    }
```

function.

1) to define function used function keyword.

Print:

```
document.write (student);
document.write (student.rollno);
```

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CLASS 4

OPERATORS IN JS:

Task peform in any data is called operators.

1) Arithmetic Operator a+b, 4+5.
(4)(5) are operand (+) is operator.
1) Add 2) Sub 3) multiplication / Division %(modulus/remainder) exponentation.

ARITHMETIC OPERATORS:

Addition +
Subtraction -
Multiplication x
Division ÷
Modulus/remainder %
Exponent $2^{(3)}$ ← power. (* *)
Increment (++) Decrement (--)

Unary Operators:
Post increment a++
Pre increment ++a
Post decrement a--
Pre decrement --a

ASSIGNMENT OPERATORS:

= a=2; left side = right.
+= a+=4/a=a+4;
-= a-=4/a=a-4;
x= a*=4/a=a x 4;
%= a%=4/a=%4;
** = a**=4/a=a**4;

a = a+b
a += b.

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CLASS 05

COMPARISON OPERATORS: (result true or false).

= = (equal to) = = = (equal to + same data type)
! = (not equal to) ! = = (not equal to + same data type).
> greater than
> =
< less than.
< =

LOGICAL OPERATORS:

logical AND && (condition 1 and 2 both are rig
logical OR || (one condition must be true)
logical NOT !

CONDITIONAL OPERATORS:

if statement
if-else statement
if-else if statement.

TERNARY OPERATOR: (logical Operator)

about to one line code

condition ? true output : false output;

e.g

age > 18 "adult" : "not adult";

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CLASS 06:

ASSIGNMENT MARKSHEET.

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CLASS 07:

STRING:

1. String is a sequence of characters used to repre a text
2) It is primitive data type.

double cotation

single cotation.

Template literal

template literal: document.write(`my roll no is ${var} ...`);

Use of Template literal:

1) for next line. \n
2) for tab(space). \t
3) for print \ in string. \\
4) for write variable in string ${variable name}.
5) for double quotation "hello" 'hello'

String Properties and Methods.

Position/index start with 0 in string.

to find length str.length.

to join string

document.write(str1+" "+str2) //(str1," ",str

by concat.

~~function~~ newvar = str.concat(str2, str3);

document.write(newvar);

TRIM:

variablename.trim() (remove space from start and end

variablename.trimStart()(remove space from start).

variablename.trimEnd()(remove space from end).

variablename.~~trim~~toUpperCase()(Capitalize).

variablename.toLowerCase() (small).

variablename.replace("replace word", "word you want")

variablename.replaceAll(" ", " ")

variablename.slice(5) //ould(5,2)//(or)

0 1 2 3 4 5
Hello would

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CLASS 08:

if else and switch ca
are same

SWITCH STATEMENT:

let (variable = A).

```
switch (variable name) {
    case "A";
        console.log (     );
    break
    case "B"
        console.log
    break.
```

case sy bahir nikalny k liye break lagana hota h.

default

default case me break ki need nae.

STRING:
TEMPLATE LITERAL / BACKTICK:
by the help of $ and {} without using
ntation.

for example:
console.log("The number of "+num1+" and "+num2+
" is " + result).

with using template literal and backtick.
console.log(`The number of ${num1} and ${num2}
is ${result}`);

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CLASS 09: LOOP AND ARRAY.

There are 5 type of loops
1. for loop
2. do while
3. while.
4. for in
5. for of

length
push (Add item in end).
unshift (Add item in start)
shift (remove item from start).
pop (remove item from end).
tostring

indexof (find any word position).
slice (starting + ending index) // return a piece array.

splice (change original array add, remove or replace).
(index, remove, add).

FOR LOOP:

increament or decrement.

for (initialization ; condition ; expression) {
}

1) Initialization is done (one time) before the execution of the code block.
2) Condition for executing the code block and exit loop
3) Expression is excuted (everytime) after the code block has been executed.

ARRAY: (NON PRIMITIVE DATATYPE):

Can be store multiple value in single variable
Value must be written in square brackets [ ].
value seperated by commas.
Each position is called Index.
Each value call through index number start with 0
for eg: arr [0], arr [1]

Syntax:

```
let info = [16, "kulsoom", "HTML"];
    Console.log (info);
    info = [ ]; // to empty any array
```

loop is use for repetation.

14/feb **FUNCTIONS:**

1) function have two ()

```
document.write("kulsum".toUppercase());
```

to execute a function you have to call function name.

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

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

1 function definition (define)

```
function fname(P1, P2)
        ↓
      parameters.
{
  block of code.
}
```

function call
fname (arg1, arg2)
↓
argument.

Arrow function:

```
const fname = () =>
Return
function functionName (P1, P2){
  Statements
  return value.
}
var a = functionname (argu1, argu2).
```

(Arrow function is the shorthand form to write function) invented in ES6

FUNCTIONS:

A function is a block of code that perfo a specific task. Dividing a complex problem into sma chunks makes your program easy to understand a reusable. The syntax of functions is as follows.

Syntax:

```
function name(parameter1, parameter2){
// code to be executed.
return something
};
```

Syntax:

```
abc (5,7);
function abc (P1, P2){
    document.write (P1 * P2);
}
```

Object

OBJECT:

1. Store multiple value in single variable
2. Values written in curly brackets { } in pair with keys

Syntax:

```
let student = {
        name : "kuburn",
keys <  rollno : 23,
        class : "HTML"
      }
```

for in: (for in loop object ki keys ko print kr

```
for (let key in student)
{
  document.write(key, "<br>", student[key])
}
```

```
document.write(student.keyname);
```

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OBJECT:

1. Store multiple value in single variable.
2. Values written in curly brackets { } in pairs with keys.

Syntax:

```
let student = {
        name : "Kulsum",
keys <  rollno : 23,
        class : "HTML".
      }
```

for in: (for in loop object ki keys ko print kr

```
for (let key in student).
{
  document.write(key, "<br>", student[key])
```

```
document.write(student.keyname);
```

for of loop:

for of loop array ki ek ek value ly k wy print krygy.

Syntax:

```
let arr = [1,2,3,4,5];
for (i of arr)
{
    document.write(i);
}
```

WHILE LOOP:

while is like if and else condition similar to while loop.

Syntax:

```
let i = 1
while (i <= 10)
{
    document.write(i)
```

(4) **DO WHILE LOOP:**

false condition me b ek time execute krta h.

Syntax:

```
let i = 21;
do
{
  document.write (i, "kulsum" <br"");
  i++;
} while (i <= 10);
```

A One time false condition execute kryga phr condi check kryga agr condition false hue to doban print nae kryga agr time true to wapis print kryga.