Javascript Cheatsheet

① Datatypes :

```
var age = 8; // number
var a = true; // boolean
var a; // undefined
var b = null; // null
var name = "Vishwas"; // string
var name = { first: "Vishwas", last: "Mark" }; // object
```

Operators:

+, -, /, %, *, ++, --

Bitwise Operators →

&	AND	5 & 1	(0101 & 0001 = 1)
|	OR	5 | 1	(0101 & 0001 = 5(101))
~	NOT	~5	(~0101 = 10 (1010))
^	XOR	2 ^ 1	(0010 ^ 0001 = 0011)
<<	Left shift	5<<1	(0101 << 1 = 10 (1010))
>>	right shift	5>>1	(0101>>1 = 2(10))

Strict Equal → a===b

Strict Unequal → a!==b

typeof → typeof b // type (string, object, ...)

Loops :

```
for (var i=0; i<10; i++){
}
var i=0;
while (i<10){
    i++;
}
var i=0;
do {
    i++;
} while (i<10);
```

Strings:

```
var name = "Tushar";
var len = name.length;  // 6
name.indexOf("sh");  // 2 , if absent -> -1
name.slice(1,4);  // ush
name.substring(1,4);  // ush
name.substr(1,4);  // usha , 4 -> length
name.toLowerCase();  // tushar
name.toUpperCase();  // TUSHAR
name.replace("s","t");  // Tuthar
var a = "Hello World";
a.split(" ");  // ["Hello","World"]
a.trim();  // removes whitespace from both ends of string
```

Arrays:

```
let arr = [];
let fruits = ["apple","banana"];
let numbers = [1,2,3,4,5];
console.log(fruits[0]);  // apple
console.log(numbers.length);  // 5
fruits.push("apple");  // ["apple","banana","apple"]
numbers.unshift(0);  // 0,1,2,3,4,5
fruits.pop();  // Removes last element
fruits.shift();  // Removes first element
```

splice() -> array.splice(start, deletecount, item1, item2);
if 0, no element removed

Removing elements:

```
let fruits = ["apple","banana","cherry"];
fruits.splice(1,2);
console.log(fruits);  // ["apple"]
```

Adding elements:

```
fruits.splice(2,0,"grapes","Kiwi");
console.log(fruits); // ["apple","banana","grapes","Kiwi","cherry"]
```

Replacing elements:

```
fruits.splice(1,2,"mango","pineapple");
console.log(fruits); // ["apple","mango","pineapple"]
```

Store removed elements:

```
let removed = fruits.splice(1,2);
console.log(removed); // ["banana","cherry"]

fruits.forEach(function(a){
    console.log(a);
});

fruits.reverse();
numbers.sort();
numbers.sort(function(a,b){return b-a}); // descending
         (function(a,b){return a-b}); // ascending

fruits.join("-"); // apple-banana-cherry

var a = arr1.concat(arr2,arr3);   [arr1,arr2,arr3]
```

Multidimensional Array: `let mat = [[1,2,3],[4,5,6],[7,8,9]];`
`console.log(mat[0][1]); // 2`

Copying Array:

```
let a1 = fruits.slice(); // shallow copy, copies reference
let a2 = [...fruits]; // shallow copy
let dup = JSON.parse(JSON.stringify(fruits));
                                  // deep copy
                                  completely new
```

Math :

```
Math.round(4.5); //5
Math.pow(2,3); //8
Math.sqrt(49); //7
Math.abs(-3); //3
Math.ceil(1.2); //2
Math.floor(1.2); //1
Math.sin(0); //0
Math.log(1); //0, natural log
Math.min(0,3,1,5) //0
Math.max(0,3,1,5) //5
Math.random(); //btw 0 & 1
var e = Math.E;
var pi = Math.PI;
```

Errors :

RangeError → Out of range
ReferenceError → illegal reference has occured
SyntaxError → some syntax error ⇒ console.log("Hi")
TypeError → type mismatch
URIError → An encodeURI error occured