Topics (Click to go to that topic) :-

Spread Operator

```
// ... rest parameter aur spread operator meh kam ata hain
// array meh use hota hain spread operator
// copy karna
//eg
let array1 = [1,3,5];
let array2 = [6,9,7,...array1];
// let array2 = [11,17,...array1,79,21];
let array3 = [...array1,...array2];
console.log(array2);
console.log(array3);
//
// array3 meh array1 ka value aur array2 ka value merge ho gya
```

Rest Operator

```
//suppose sum nam ka function banaya
// usmeh jitna parameter pass karega unsab ko add kareh
function sum(...args){
    let result = 0;
    for(let i=0;i<args.length;i++){
        result += args[i];
    }
    console.log(result);
}
// ismeh ...args jitna parameter milega un sab ko array meh store karega
sum(2,5,4,7); // output will be 18
sum(3,5,20,1,50,100); //output will be 179
```

Template Literals

```
// template literals meh backtick `` use karthe hain
// '' aur "" ismeh multiple line banana ho toh \n use karna partha hain
// `` meh jesa likogeh code wesa hi print hoga
// multile line meh banana ho toh `` use karo
// eg
let str = `
hello
world
Thank You`;
console.log(str);
//
// eg of template literals
```

```
let nam = "Bwn";
console.log(`My Name is ${nam}.`);
```

Default Parameter

```
// agar koi parameter pas na kareh toh default parameter rakh sakthe hain
//
function talk(msg="you forgot to pass message in parameter"){
    console.log(msg);
}
talk();
//
// multiple default parameter vi pas kar saktha hain
```

Callback Function

```
function sum(num1,num2,callback){
    callback();
    console.log(num1+num2);
}

function sayHi(){
    console.log("Hi........");
}

function sayHello(){
    console.log("Hello......")
}

sum(5,8,sayHi);
sum(5,90,sayHello);
```

Arrow Function

```
// arrow function
// eg
let sum = (...arg) => {
    let sum = 0;
    for(let i=0; i<arg.length; i++){
```

```
        sum += arg[i];
    }
    console.log(sum);
}

sum(45,45,90,132);

//
// eg
let sumTwo = (a,b) => a+b;
console.log(sumTwo(567,3));


//
// eg
let double = n => 2*n;
console.log(double(80));
```

Array Destructuring

```
// array ke value meh variable assign karenge ////////////////////////////
// eg
// let book = ["Advance JS",456,"INR 600"];
// let [Name,pages,price] = book;
// console.log(price);
// console.log(Name);
// console.log(pages);
//
// undefined hoga ///////////////////////////////////
//eg
// let book = ["Advance JS",456, ,"INR 600"];
// let [Name,pages,publication,price] = book;
// console.log(publication);
//
//default value ////////////////////////////////////
//eg
// let book = ["Advance JS",456, ,"INR 600"];
// let [Name,pages,publication="RKB",price] = book;
// console.log(publication);
//
//nested array destructuring ///////////////////////////
//eg
```

```
// let book = ["Advance JS",456,"INR 600",["Bwn","2023"]];
// let [Name,pages,price,[publication,year]] = book;
// console.log(publication);
// console.log(year);
//
//
// eg
function book(){
    return ["Advance JS",499];
}
let [book_tittle,price] = book();
console.log(book_tittle);
console.log(price);
```

Object Destructuring

```
// similar as array destructuring
// eg
// let obj = {
//     Name : "Bwn",
//     Age: 21,
//     Gender:"Male"
// }
// let {Name,Age,Gender} = obj;
// console.log(Name);
// console.log(Age);
// console.log(Gender);
//
// variable ka nam change karna ho toh
// eg
// let obj = {
//     Name : "Bwn",
//     Age: 21,
//     Gender:"Male"
// }
// let {Name : userName,Age,Gender} = obj;
// console.log(userName);
//
// default value dena ho toh
// eg
// let obj = {
```

```
//     Name : "Bwn",
//     Age: 21,
// }
// let {Name,Age,Gender = "Male"} = obj;
// console.log(Gender);
//
// nested object destructuring
// eg
let obj = {
    Name : "Bwn",
    Age: 21,
    Gender:"Male",
    location : {
        country : "India",
        state : "Assam"
    }
}
let {Name,Age,Gender,location : {country,state}} = obj;
console.log(country);
console.log(state);
```

for of

```
// aasani seh array aur string ko iterate kartha hain
// array example
let score = [80,39,70,54];
for(let x of score){
    console.log(x);
}
//
//string eg
let nam = "Bwn Bsty";
for(let y of nam){
    console.log(y);
}
```

Let const

```
//var global variable ban jata hain
```

```
// var window object ka property ban jata hain
//var window ke sath connect ho jata hain
// var count = 1;
// console.log(window.count);
//output show hoga
// let count = 1;
// console.log(window.count);
// output undefined aayega
//let normal variable hain
//
// var count = 1;
// var count;
// console.log(count);
//run hoga isliyeh ES6 meh let aaya
//
// let count = 1;
// let count;
// console.log(count);
// run nhi hoga
//
// const seh variable bananeh seh program meh ush variable ko change nhi kar
saktha
// const count = 1;
// console.log(count);
```

Object Oriented Programming

```
// object,class,inheritence
// Dry (Don't repeat yourself)
//
// ES6 seh pehele function constructor use hota tha class ke jaga peh
// Eg of function constructor ////////////////////////////////////////
// function Person(first,last,a){
//     this.firstName = first;
//     this.lastName = last;
//     this.age = a;
//     this.fullName = function(){
//         console.log(this.firstName + " " + this.lastName);
//     }
//     this.changeAge = function(newAge){
//         this.age = newAge;
```

```
//     }
// }
// let person_1 = new Person("Bwn","Bsty",21);
// let person_2 = new Person("Bill","Gate",59);
// let person_3 = new Person("Elon","Musk",45);
// console.log(person_1);
// console.log(person_2);
// console.log(person_3);
// person_1.fullName();
// person_1.changeAge(23);
//
// object meh jo function hain usko function nhi method bolo ////////////////
//
// object ko yesa vi bana saktha hain ///////////////////
// eg
// let per = new Object();
// per.Name = "Biswanath";
// console.log(per);

//
// prototype inheritence jesa kam kartha hain
/////////////////////////////////////
// method ko prototype ke undar rakho bether than writing again
// so that dry concept apply
// eg
// function man(first,last,ag){
//     this.first_Name = first;
//     this.last_Name = last;
//     this.age = ag;
// }
// let man1 = new man("Bwn","Bsty",21);
// let man2 = new man("Biswanath","Basumatary",23);
// console.log(man1);
// console.log(man2);

// man.prototype.full_Name = function(){
//     console.log(this.first_Name + " " + this.last_Name);
// }

// man1.full_Name();
// man2.full_Name();


// iss example meh humneh doh function constructor banaya (Man and Creature)
//////////////////
```

```
// doneh ke prototype meh method likha
// aur last meh Man aur Creature ke prototype ko connect kar diya
// eg
function Creature(nam){
    this.creature_Name = nam;
}

Creature.prototype.eat = function (){
    console.log("Eating.......");
}

let Creature1 = new Creature("Dog");
let Creature2 = new Creature("Cat");
console.log(Creature1);
console.log(Creature2);

function Man(first,last,ag){
    this.first_Name = first;
    this.last_Name = last;
    this.age = ag;
}
let man1 = new Man("Bwn","Bsty",21);
let man2 = new Man("Biswanath","Basumatary",23);
console.log(man1);
console.log(man2);

Man.prototype.full_Name = function(){
    console.log(this.first_Name + " " + this.last_Name);
}

man1.full_Name();
man2.full_Name();

Man.prototype.__proto__ = Object.create(Creature.prototype);
man1.eat();
```

Class Object ES6

```
// class kese use karthe hain
//
// class meh object ban gaya
// eg
// class person{}
// let person1 = new person();
// console.log(person1);


//
// class ke undar constructor function bana sakthe hain
// eg
// class person{
//     constructor(first,last){
//         this.firstName = first;
//         this.lastName = last;
//     }
// }

// let person1 = new person("Bwn","Bsty");
// console.log(person1);


//
// class meh method banana
//eg
// class person{
//     constructor(first,last){
//         this.firstName = first;
//         this.lastName = last;
//     }
//     fullName(){
//         console.log(this.firstName +" "+ this.lastName);
//     }
// }

// let person1 = new person("Bwn","Bsty");
// console.log(person1);
// person1.fullName();


//
// static method meh deneh seh class nam seh hi call karna partha hain
//eg
```

```
class person{
    constructor(first,last){
        this.firstName = first;
        this.lastName = last;
    }
    fullName(){
        console.log(this.firstName +" "+ this.lastName);
    }
    static sayHello(){
        console.log("Hello..........");
    }
    static job = "Programmer";
}

let person1 = new person("Bwn","Bsty");
console.log(person1);
let person2 = new person("Biswanath","Basumatary");
console.log(person2);
person1.fullName();
person.sayHello();
console.log(person.job);
```

Inheritence

```
// inheritance
// eg
// class emp {
//     constructor (){
//         console.log("class emp called.........");
//     }
// }

// class manager extends emp {
// }

// let manager_1 = new manager();


//
// eg
// class emp {
//     constructor (n){
```

```
//         this.Name = n;
//     }
// }

// class manager extends emp {
// }

// let manager_1 = new manager("Biswanath");
// console.log(manager_1);


// super deneh seh parent class ka constructor func call hota hain
// parameter change vi kar sakthe hain child class meh
// eg
// class emp {
//     constructor (n){
//         this.Name = n;
//     }
// }

// class manager extends emp {
//     constructor (nam,d){
//         super(nam);
//         this.department = d;
//     }
// }

// let manager_1 = new manager("Biswanath","Web Development");
// console.log(manager_1);


//
//eg
// class emp {
//     constructor (n){
//         this.Name = n;
//     }
//     msg(){
//         console.log("Hi.........");
//     }
// }

// class manager extends emp {
//     constructor (nam,d){
//         super(nam);
```

```
//         this.department = d;
//     }
//     msg(){
//         console.log("Hello.........");
//     }
//     info(){
//         super.msg();
//         this.msg();
//         console.log(`${this.Name} is the manager of department`);
//     }
// }

// let manager_1 = new manager("Biswanath","Web Development");
// console.log(manager_1);
// manager_1.info();


//
// eg
// class emp {
//     constructor (n){
//         this.Name = n;
//     }
//     msg(){
//         console.log("Hi.........");
//     }
// }

// class manager extends emp {
//     constructor (nam,d){
//         super(nam);
//         this.department = d;
//     }
//     msg(){
//         console.log("Hello.........");
//     }
//     info(){
//         super.msg();
//         this.msg();
//         console.log(`${this.Name} is the manager of department`);
//     }
// }

// class admin extends manager{
```

```
// }

// let admin_1 = new admin("Bwn","Web Developer");
// console.log(admin_1);


//
// private property in class
// we can access private property only inside class
// we cant call private property directly
// eg
// class emp {
//     #Name = "";
//     constructor (n) {
//         this.#Name = n;
//     }
//     getName() {
//         console.log(this.#Name);
//     }
// }

// let emp_1 = new emp("Biswanath");
// console.log(emp_1);
// console.log(emp_1.Name);
// emp_1.getName();


//
// eg
// class emp {
//     #Name = "";
//     constructor (n) {
//         this.#Name = n;
//     }
//     #getName() {
//         console.log(this.#Name);
//     }
//     pubfunc() {
//         this.#getName()
//     }
// }

// let emp_1 = new emp("Biswanath");
// console.log(emp_1);
// emp_1.pubfunc();
```

```
// mixin
// dusre object ko class meh mix karna/use karna
// eg
// let usefull_M = {
//     sayHi() {
//         console.log("Hi.........");
//     },
//     sayBye() {
//         console.log("Bye.........");
//     }
// }

// class admin {
//     constructor () {
//         this.Name = "Biswanath";
//     }
// }

// Object.assign(admin.prototype,usefull_M);

// let admin_1 = new admin();
// console.log(admin_1);
// admin_1.sayHi();
// admin_1.sayBye();


//
//
// multiple mixin add kar sakthe hain
// eg
let usefull_M = {
    sayHi() {
        console.log("Hi.........");
    },
    sayBye() {
        console.log("Bye.........");
    }
}

let usefull_M11 = {
    gm() {
```

```
        console.log("Good Morning......");
    },
    gn() {
        console.log("Good Night.............");
    }
}

class admin {
    constructor () {
        this.Name = "Biswanath";
    }
}

Object.assign(admin.prototype,usefull_M);

class user extends admin{
}

Object.assign(user.prototype,usefull_M11);

let user_1 = new user();
console.log(user_1);
user_1.sayHi();
user_1.sayBye();
user_1.gm();
user_1.gn();
```

JSON Js

```
// JSON
// Javascript Object Notation
// is a text format for storing and transporting data
// commonly used for API and config files


// JSON file bananeh ke liyeh .json use karo
// we cant use single quatation
// json object ke jesa hota hain
// key ko vi double quatation meh rakho
```

```
// how to parse/access json
// eg
let one = `{
    "Name" : "Biswanath",
    "Age" : 21,
    "is_student" : true,
    "passport_num" : null,
    "pro_lang" : ["javascript","c","python","java","c++"],
    "address" : {
        "town" : "kokrajhar",
        "state": "assam",
        "country":"india",
        "pin" : 783346
    }
}`

let data = JSON.parse(one);
console.log(data);
console.log(data["Name"]);
console.log(data["Age"]);
console.log(data["is_student"]);
console.log(data["passport_num"]);
console.log(data["pro_lang"][0]);
console.log(data["address"]["country"]);



// JSON stringify
let student = {
    Name : "Bwn",
    Age : 21,
    Address : "India"
}

let x = JSON.stringify(student);
console.log(x);
```

Example_1.json

```
{
```

```
    "Name" : "Biswanath",
    "Age" : 21,
    "is_student" : true,
    "passport_num" : null,
    "pro_lang" : ["javascript","c","python","java","c++"],
    "address" : {
        "town" : "kokrajhar",
        "state": "assam",
        "country":"india",
        "pin" : 783346
    }
}
```

Example_2.json

```
{
    "person" : [
        {
            "Name" : "Bwn Bsty",
            "Age" : 21
        },
        {
            "Name" : "Elon Musk",
            "Age" : 48
        },
        {
            "Name" : "Bill Gate",
            "Age" : 54
        }
    ]
}
```

Map function

```
// let arr = [2,3,4,5,6,7,];
// let arr1 = [];
// for(let i = 0; i < arr.length; i++){
//     arr1[i] = arr[i] * 3;
// }
```

```
// console.log(arr1);


// now using map function
// eg
// let arr = [2,3,4,5,6,7,];
// let arr1 = arr.map(function(val){
//     return val * 3;
// });
// console.log(arr1);


// now using arrow function in map
// eg
let arr = [2,3,4,5,6,7,];
let arr1 = arr.map(val => val * 3);
console.log(arr1);
```

cookies

```
// cookies dekh neh ke liyeh inspect meh jakeh application meh daba
//
// make cookies
// eg
document.cookie = "item=laptop; expires=wed, 28 Jun 2023 12:00:00:00 UTC";
document.cookie = "cart=shoe";

// delete karna hain toh past date do
// eg
document.cookie = "item=laptop; expires=Mon, 26 Jun 2023 12:00:00:00 UTC";

// read karna hain toh
// eg
let x = document.cookie;
console.log(x);
```

web storage

```
// local storage
// eg
// set
localStorage.setItem("Name","Biswanath");
localStorage.setItem("Location","Assam");

// get
let x = localStorage.getItem("Location");
console.log(x);

// remove
localStorage.removeItem("Name");


// session storage
// eg
sessionStorage.setItem("Name","Bwn");
sessionStorage.setItem("Location","Kokrajhar");

let y = sessionStorage.getItem("Name");
console.log(y);

sessionStorage.removeItem("Location");
```