**-:JAVA SCRIPT NOTES:-**

/\*console.log("Hello JavaScript");

console.log(`Hai Madhu`);

window.alert('this is an alert');

window.alert('Do you like my webpage');\*/

//document.getElementById("MyH1").textContent='Helloworld';

//document.getElementById("MyP").textContent='Helloworld This is javascript';

// this is a comment

/\* a

b

c

d

\*/

// Variable = A container that stores a value.

              //  Behaves as if it were the value it contains.

// 1. Declaration  let x;

// 2. Assignment   x=100;

/\*let x;

x = 120;

console.log(x , typeof(x));

let age = 25;

let price = 10.99;

let gpa = 6.97;

console.log(age);

console.log(price);

console.log(gpa);

console.log(`You are ${age} years old`);

console.log(`Your price is $${price} `);

console.log(`Your gpa is ${gpa}`);

console.log(typeof(age));

console.log(typeof(price));

console.log(typeof(gpa));

let firstName = "Madhuyadav";

let favFood = "Chicken";

let email = "madhuyadav60082@gmail.com";

console.log(typeof(firstName));

console.log(`YOur name is ${firstName}`);

console.log(`YOur fav food is ${favFood}`);

console.log(`YOur email is ${email}}`); \*/

/\*

let online = true;

let forSale = false;

let isStudent = true;

console.log(typeof(online));

console.log(typeof(forSale));

console.log(`Bro is Online : ${online}`)

console.log(`Is this car for sale : ${forSale}`)

console.log(`Enrolled : ${isStudent}`);  \*/

/\*

let fullName = "Madhu";

let age = 19;

let student = true;

document.getElementById("P1").textContent = `Your name is ${fullName}`;

document.getElementById("P2").textContent = `Your age is ${age}`;

document.getElementById("P3").textContent = `You are a student:${student}`;

\*/

// Arthematic operators = operands (values, variables, etc...)

//          Operators(+ - \* / %)   -> eg: 3+5=8

//let students = 30;

 //students = students+1;

 //students = students-1;

//students = students\*2;

//students = students/2;

//students = students\*\*2;

//students = students\*\*3;

//students = students%1;

//students += 1;

//students -= 1;

//students \*= 2;

//students /= 2;

//students %= 2;

//students++;

//students--;

//console.log(students);

/\*

Operator Precedence

1) Parenthesis ()

2) Exponents (\*) or (\*\*)

3) Multiplication or Division or Modulus

4) Addition or Substraction

\*/

//let result = 1+2\*3+4\*\*2  // 4\*\*2=16+2\*3=6 , +1 => 16+6+1=23

//console.log(result)

//let result = 12%5+8/2; // 2+4=> 6

//console.log(result)

//let result = 6/2\*\*(2+5); // 7=> 2\*\*7=128=> 6/128=>0.046875

//console.log(result)

/\* How to accept user input

    1) EASY WAY = window prompt

    2) PROFESSIONAL WAY = HTML textbox

\*/

/\* 1) let userName;

      userName = window.prompt("What's Your name:");

      console.log(userName); \*/

/\*

let username;

document.getElementById("mySubmit").onclick = function() {

    username = document.getElementById("myText").value;

    console.log(username);

    document.getElementById("myH1").textContent=`Hello ${username}`;

}(HTML changes)  <h1 id="myH1">Welocme</h1>

  <label>UserName : </label>

  <input id="myText"><br><br>

  <button id="mySubmit">submit</button>

\*/

// Type Conversion = Change the datatype of a value to another

//                        (Strings, numbers , booleans)

/\*let age = window.prompt("How old are you?");

age +=1;

console.log(age); // result=> 191

let age = window.prompt("How old are you?");

age = Number(age);

age +=1;

console.log(age, typeof(age)); // result=> 20\*/

/\*

let x = 'pizza';

let y = 'pizza';

let z = 'pizza';

x = Number(x);

y = String(y);

z = Boolean(z);

console.log(x,typeof(x)); // NaN 'number'

console.log(y,typeof(y)); // pizza string

console.log(z,typeof(z)); // true 'boolean'\*/

/\*

let x = '0';

let y = '0';

let z = '0';

x = Number(x);

y = String(y);

z = Boolean(z);

console.log(x,typeof(x)); // 0 'number'

console.log(y,typeof(y)); // 0 string

console.log(z,typeof(z)); // true 'boolean'\*/

/\*

let x = '';

let y = '';

let z = '';

x = Number(x);

y = String(y);

z = Boolean(z);

console.log(x,typeof(x)); // 0 'number'

console.log(y,typeof(y)); //  string

console.log(z,typeof(z)); // false 'boolean'\*/

// Constants = A variable that cannot be changed.

//const PI = 3.14159; // for Constant we use variable UPPERCASE for only primitive data types.

//let radius;

//let circumference;

//PI = 4.20;    // result => 84

/\*radius = window.prompt(`Enter the radius of a circle`);

radius = Number(radius);

circumference = 2\*PI\*radius;\*/

//console.log(circumference);// result =>62.8318

/\*

const PI = 3.14159

let radius;

let circumference;

//PI = 4.20; program can't run.

document.getElementById("mySubmit").onclick = function() {

radius = document.getElementById("myText").value;

radius = Number(radius);

circumference = 2\*PI\*radius;

document.getElementById("myH3").textContent= circumference + "CM";

}

(HTML code)

 <h1 id="myH1">Enter the radius of a circle:</h1>

<input type="text" id="myText">

<button id="mySubmit">submit</button>

<h3 id="myH3"></h3> \*/

/\*

const decreaseBtn = document.getElementById("decreaseBtn");

const resetBtn = document.getElementById("resetBtn");

const increaseBtn = document.getElementById("increaseBtn");

const countLabel = document.getElementById("countLabel");

let count = 0;

increaseBtn.onclick = function() {

    count++;

    countLabel.textContent = count;

}

decreaseBtn.onclick = function() {

    count--

    countLabel.textContent = count;

}

resetBtn.onclick = function() {

    count=0;

    countLabel.textContent = count;

}(HTML CODE)

 <label id="countLabel">0</label>

  <div id="btnContainer">

    <button id="decreaseBtn" class="buttons">decrease</button>

    <button id="resetBtn" class="buttons">reset</button>

    <button id="increaseBtn" class="buttons">increase</button>

  </div>

  (CSS CODE)

  #countLabel{

    display:block;

    text-align: center;

    font-size: 10em;

    font-family: Helvetica;

}

#btnContainer{

    text-align: center;

}

.buttons{

    padding: 10px 20px;

    font-size: 1.5em;

    color: white;

    background-color: hsl(214, 100%, 74%);

    border-radius: 5px;

    cursor: pointer;

    transition: background-color 0.25s;

}

.buttons.hover{

    background-color: hsl(214, 100%, 56%);

}

\*/

/\* Math = built-in object that provides a collection

//          a collection of properties and methods.

Math.PI

console.log(Math.PI) // 3.14159

console.log(Math.E)  // 2.71828

let x=3;

let y =2;

let z = 1;

z=Math.round(x);

z=Math.floor(x);

z=Math.ceil(x);

z=Math.trunc(x);

z=Math.pow(x, y);

z=Math.pow(y, x);

z=Math.sqrt(x);

z=Math.log(x);

z=Math.sin(x);

z=Math.cos(x);

z=Math.tan(x);

z=Math.abs(x);

z=Math.sign(x);

let max = Math.max(x,y,z)

let min = Math.min(x,y,z)

console.log(min)\*/

// RANDOM NUMBER GENERATOR:-

/\*const min =50;

const max = 100;

let randomNum =Math.floor(Math.random()\*(max-min)+min);

console.log(randomNum);

const myButton = document.getElementById("myButton");

const Label1= document.getElementById("Label1");

const Label2= document.getElementById("Label2");

const Label3= document.getElementById("Label3");

const min = 1;

const max = 6;

let randomNum1;

let randomNum2;

let randomNum3;

myButton.onclick = function() {

    randomNum1 = Math.floor(Math.random() \* max)+min;

    randomNum2 = Math.floor(Math.random() \* max)+min;

    randomNum3 = Math.floor(Math.random() \* max)+min;

    Label1.textContent = randomNum1;

    Label2.textContent = randomNum2;

    Label3.textContent = randomNum3;

}  (HTML CODE)

   <button id="myButton">roll</button><br>

<label id="Label1" class="myLabels"></label><br>

<label id="Label2" class="myLabels"></label><br>

<label id="Label3" class="myLabels"></label><br>

(CSS CODE)

body{

    font-family: Verdana;

    text-align: center;

}

#myButton{

    font-size: 3em;

    padding: 5px 25px;

    border-radius: 5px;

}

.myLabels{

    font-size: 3em;

}

\*/

// IF STATEMENTS

// if - conditition is true -> executecode

// else - execute something.

/\*let age;

age = Number(age);

age = window.prompt(`Enter your age:`);

if(age>=18)

{

    console.log("Eligible");

}

else{

    console.log("NOT eligible");

}\*/

/\*

let age =25;

let hasLicense = false;

if(age>=16)

{

    console.log("You are old enough to drive");

    if(hasLicense){

        console.log("You have your license");

    }

    else

    {

        console.log("You do not have your license yet!");

    }

}

else

{

    console.log("You must be 16+ to have license");

}\*/

/\*

const myText = document.getElementById("myText");

const mySubmit = document.getElementById("mySubmit");

const resultElement = document.getElementById("resultElement");

let age;

mySubmit.onclick = function() {

age = myText.value;

age = Number(age);

if(age>=100)

{

    resultElement.textContent = "You are too old";

}

else if(age==0)

{

    resultElement.textContent = "You can't enter";

}

else if(age>=18)

{

    resultElement.textContent = "You are eligible to enter";

}

else if(age<0)

{

    resultElement.textContent = "Your age can't be below '0'";

}

else

{

    resultElement.textContent = "You are not eligible!";

}

}

(HTML CODE)

    <label>Enter your age:</label><br>

    <input type="text" id="myText"><br>

    <button type="submit" id="mySubmit">submit</button>

    <p id="resultElement"></p>

\*/

// Checked = property that determines the checked state of an

//           HTML checkbox on radio button element.

/\*

const myCheckBox = document.getElementById("myCheckBox");

const visaBtn = document.getElementById("visaBtn");

const masterCardBtn = document.getElementById("masterCardBtn");

const payPalBtn= document.getElementById("payPalBtn");

const mySubmit= document.getElementById("mySubmit");

const subResult= document.getElementById("subResult");

const paymentResult= document.getElementById("paymentResult");

mySubmit.onclick = function() {

    if(myCheckBox.checked){

        subResult.textContent = `You are Subscribed!`;

    }

    else{

        subResult.textContent = `You are NOT Subscribed!`;

    }

    if(visaBtn.checked){

        paymentResult.textContent = `You are paying with visa`;

    }

    else if(masterCardBtn.checked)

    {

        paymentResult.textContent = `You are paying with Mastercard`;

    }

    else if(payPalBtn.checked)

    {

        paymentResult.textContent = `You must select a payment type`;

    }

}   (HTML CODE)

      <input type="checkbox"id="myCheckBox">

    <label for="myCheckBox">subscribe</label><br>

    <input type="radio" id="visaBtn" name="card">

    <label for="visaBtn">Visa</label><br>

    <input type="radio"id="masterCardBtn" name="card">

    <label for="massterCardBtn">masterCard</label><br>

    <input type="radio" id="payPalBtn" name="card">

    <label for="payPalBtn">PayPal</label><br>

    <button type="submit" id="mySubmit">submit</button>

    <p id="subResult"></p>

    <p id="paymentResult"></p>

    (CSS CODE)

    body{

    font-family: Verdana, Geneva, Tahoma, sans-serif;

    font-size: 2em;

}

#mySubmit {

    font-size: 1em;

}

    \*/

/\*Ternary Operator = a shortcut to if{} and else{} statements

//                   helps to assign a variable based on a condition

//                   condition? codeIfTrue : codeIfFalse;

let age = 12;

let message =age>=18 ? "You are an adult" : "You are a minor";

console.log(message);

let time =16;

let greeting = time<12 ? "Good Morining" : "Good afternoon";

console.log(greeting)

let isStudent = false;

let message = isStudent? "You'r student " : "Your not student";

console.log(message)

let purchaseAmount = 125;

let discount = purchaseAmount>=100? 10 : 0;

console.log(`Your total is $ ${purchaseAmount-purchaseAmount\*(discount/100)}`); \*/

// SWITCH = can be an efficient replacement to many else if statements

/\*let day =8;

switch(day){

    case 1:

        console.log("It is Monday");

        break;

    case 2:

        console.log("It is Tuesday");

        break;

    case 3:

        console.log("It is Wednesday");

        break;

    case 4:

        console.log("It is Thursday");

        break;

    case 5:

        console.log("It is Friday");

        break;

     case 6:

        console.log("It is Saturday");

        break;

    case 7:

         console.log("It is Sunday");

        break;

    default:

        console.log("Invalid");

}

let testScore = 80;

let Grade;

switch(true)

{

    case testScore >= 90:

        Grade = 'A';

        break;

    case testScore >= 80:

        Grade = 'B';

        break;

     case testScore >= 70:

        Grade = 'C';

        break;

    case testScore >= 60:

        Grade = 'D';

        break;

    default:

        Grade = 'F';

}

console.log(Grade) \*/

// String methods = allow you to manipulate and work with text (strings)

/\*let userName = 'Bro code ';

console.log(userName)

console.log(userName.charAt(0));

console.log(userName.charAt(1));

console.log(userName.charAt(2));

console.log(userName.charAt(3));

console.log(userName.charAt(4));

console.log(userName.charAt(5));

console.log(userName.charAt(6));

console.log(userName.indexOf(`B`));

console.log(userName.indexOf(`r`));

console.log(userName.indexOf(`o`));

console.log(userName.indexOf(`c`));

console.log(userName.lastIndexOf(`o`));

console.log(userName.indexOf(`d`));

console.log(userName.indexOf(`e`));

console.log(userName.length);

console.log(userName.trim());

console.log(userName.toUpperCase());

console.log(userName.toLowerCase());

console.log(userName.repeat(3));

let userName = "Brocode";

let result1 = userName.startsWith(" ");

let result = userName.endsWith("");

let result2 = userName.includes("");

if(result){

    console.log("Your username can't begin with ' ' ");

}

else

{

    console.log(userName);

}

console.log(result);

let phoneNumber = "123-456-7890";

//phoneNumber=phoneNumber.replaceAll("-","");

//phoneNumber=phoneNumber.replaceAll("-","/");

//phoneNumber=phoneNumber.padStart("20","0");

phoneNumber=phoneNumber.padEnd("20","0");

console.log(phoneNumber)\*/

// String slicing = creating a substring from a portion of

//                          another string.

//        =>  string.slice(start, end)

/\*const fullName = "Broseph Code";

let firstName = fullName.slice(0, 1);

let firstName1 = fullName.slice(0, 2);

let firstName2 = fullName.slice(0, 3);

let firstName3 = fullName.slice(0, 4);

let firstName4 = fullName.slice(0, 5);

let firstName5 = fullName.slice(0, 6);

let firstName6 = fullName.slice(0, 7);

let firstName7 = fullName.slice(0, 8);

let firstName8 = fullName.slice(0);

let firstName9 = fullName.slice(-1);

console.log(firstName);

console.log(firstName1);

console.log(firstName2);

console.log(firstName3);

console.log(firstName4);

console.log(firstName5);

console.log(firstName6);

console.log(firstName7);

console.log(firstName8);

console.log(firstName9);

const fullName = "Broseph Code";

let firstName = fullName.slice(0, fullName.indexOf(" "));

let lastName = fullName.slice(fullName.indexOf(" ") +1);

console.log(firstName);

console.log(lastName);

const email = "Bro1@gmail.com";

let userName = email.slice(0, email.indexOf("@"));

let userNam = email.slice(email.indexOf("@"));

console.log(userName);

console.log(userNam);  \*/

// Method Changing = Calling one method after another

//                    in one continous line of code.

//   ----NO METHOD CHANGING----

/\*let userName = window.prompt("Enter user name:");

userName = userName.trim();

let letter = userName.charAt(0);

letter = letter.toUpperCase();

let extra = userName.slice(1);

extra = extra.toLowerCase();

userName = letter + extra;

console.log(userName);

//   ----METHOD CHANGING----

userName = userName.trim().charAt().toUpperCase()+userName.trim().slice(1).toLowerCase();

console.log(userName); \*/

// logical operators = used to combine or manipulate boolean values

//    (True or false) and = && , or = || , not = !

/\*const temp = 50;

if(temp > 0 && temp<=30){

    console.log("the weather is GOOD!");

}

else if(temp<=40 || temp<=50){

    console.log("the weather is OK!");

}

else

{

    console.log("The weather is BAD!");

}

const isSunny = false;

if(!isSunny){

    console.log("It is cloudy");

}

else{

    console.log("It is sunny");

}  \*/

// = assignment operator

// == comparison operator(compare if values are equal)

// === strict equality operator(compare if values & datatype are equal)

// !=  inequality operator

// !==  strict inequality operator

/\*const  PI = "3.14";

if(PI!=="3.14"){

    console.log("This is NOT pi");

}

else{

    console.log("This is  PI.")

}

// WHILE LOOP = repeat some code While some condition is TRUE

let username = "";

while(username===""){

    username = window.prompt("Enter ur name:");

}

console.log(`Hello ${username}`);

// DO WHILE LOOP

do{

    username = window.prompt("Enter ur name:");

}

while(username===""||username===null)

    console.log(`Hello ${username}`);  \*/

// FOR LOOP = repeat some code a LIMITED amount of items

/\*for(let i =10;i<=20;i++){

    if(i==13){

        break;

    }

    console.log(i);

}

console.log("Happy New Year!"); \*/

/\* NUMBER GUESSING GAME

const minNum = 1;

const maxNum = 100;

const answer = Math.floor(Math.random() \* (maxNum-minNum +1)) + minNum;

let attempts = 0;

let guess;

let running = true;

while(running){

    guess = window.prompt(`Guess a number b/w ${minNum} - ${maxNum}`);

    guess = Number(guess);

    if(isNaN(guess)){

        window.alert("Please enter valied number");

    }

    else if(guess<minNum || guess>maxNum){

        window.alert("please enter valid number");

    }

    else{

        attempts++;

        if(guess<answer){

            window.alert("Too Low!");

        }

        else if(guess>answer){

            window.alert("Too High!");

        }

        else{

            window.alert(`Correct! The answer was ${answer}.It took you ${attempts}`);

            running = false;

        }

    }

} \*/

/\* FUNCTION = A section of reusable code.

//           Declare code once, use it whenever you want.

//           call the function to execute the code.

function happyBirthday(userName , age) {

    console.log("Happy Birthday to you!");

    console.log("Happy Birthday to you!");

    console.log("Happy Birthday to you!");

    console.log("Happy Birthday to you!");

    console.log(`Happy Birthday to ${userName}!`);

    console.log("Happy Birthday to you!");

    console.log(`You are ${age} years old`);

}

happyBirthday("Madhu",19);

happyBirthday("Chinnu",19);

happyBirthday("Mottu",19);

happyBirthday("Charan",19);

function add(x,y){

    return x+y;

}

function sub(a,b){  // a,b are parameters

    return a-b;

}

function mul(n,m){

    return m\*n;

}

console.log(mul(12,6));

console.log(sub(10,4)); // 6  10,4 are Arguments

console.log(add(2,3)); // 5

function isEven(number){

   return number%2==0 ? true : false;

}

console.log(isEven(12));

function isEmail(email){

    return email.includes("@")? true: false;

}

console.log(isEmail("Bro@gmail.com"));

console.log(isEmail("Brogmail@.com"));

console.log(isEmail("Brogmail.com"));

console.log(isEmail("@gmail.com"));

// VARIABLE SCOPE = where a variable is recognized and

//                  accessible (LOCAL vs GLOBAL)variable.

let x = 3;

function1();

function function1(){

    let x =1;    // local scope Accesing in inside function.

    console.log(x);

}

function function2() {

    console.log(x); // global scope Accessing at outside function.

}

function2();  \*/

/\* TEMPERATURE CONVERSION PROGRAM

const textBox = document.getElementById("textBox");

const toFahrenheit = document.getElementById("toFahrenheit");

const toCelsius = document.getElementById("toCelsius");

const result = document.getElementById("result");

let temp;

function convert() {

      if(toFahrenheit.checked) {

        temp = Number(textBox.value);

        temp = temp\*9/5+32;

        result.textContent = temp.toFixed(1) +"\*F";

      }

      else if(toCelsius.checked){

        temp = Number(textBox.value);

        temp = (temp-32)\* (5/9);

        result.textContent = temp.toFixed(1) +"\*C";

      }

      else{

        result.textContent = "select a unit";

      }

}  \*/

/\* Array = a variable like structure that can hold more than 1 value.

let fruit = ["Banana","apple","mango","papaya"];

fruit[2] = "coconut";

fruit.push("carry");

fruit.pop();

fruit.unshift("mango");

fruit.shift();

console.log(fruit);

console.log(fruit[0]);

console.log(fruit[1]);

console.log(fruit[2]);

console.log(fruit[3]);

console.log(fruit[4]);

let len = fruit.length;

let index = fruit.indexOf("apple");

console.log(index);

console.log(len);

let fruits = ["Banana", "apple","mango","papaya"];

//for(let i = 0; i<fruit.length;i++){

//for(let i=fruit.length-1;i>=0;i--){

//fruits.sort().reverse();

for(let fruit of fruits){

    console.log(fruit);

    } \*/

/\* Spread operator = ... allows an iterable such as an array or string

//                    to be expanded into seperate elements

//                     (Unpacks the elements.) /\*

let numbers = [1, 2, 3, 4, 5];

let maximum = Math.max(...numbers);

let minimum = Math.min(...numbers);

console.log(minimum);

console.log(maximum);

let username = "Bro Code";

let letters = [...username].join("-");

console.log(letters);

let fruits = ["apple", "Banana", "cherry"];

let vegetables = ["carrot","tomato","potato"];

let foods = [...fruits, ...vegetables,"eggs","milk"];

console.log(foods);

// Rest Parameters = (...rest) allow a function work with a variable

//                    number of arguments by bundling them into an array

//  spread = expands an array into seperate elements

//  rest = bundles seperate elements into an array

function openFridge(...foods){

    console.log(...foods);

}

function getFood(...foods){

    return foods;

}

const food1 = "pizza";

const food2 = "burger";

const food3 = "fries";

const food4 = "coca cola";

const food5 = "egg puff";

// openFridge(food1,food2,food3,food4,food5);

const foods = getFood(food1,food2,food3,food4,food5);

console.log(...foods);

function sum(...numbers){

    let result = 0;

    for(let number of numbers){

        result+=number;

    }

    return result;

}

const total1 = sum(75,100,85,90,95,50);

console.log(total1);

function getAverage(...numbers){

    let result = 0;

    for(let number of numbers){

        result += number;

    }

    return result/numbers.length;

}

const total = getAverage(75,100,85,90,50);

console.log(total);

function combineStrings(...strings){

    return strings.join(" ");

}

const fullName = combineStrings("madhu","vamshi","uma","daddy","amma");

console.log(fullName); \*/

/\* DICE ROLLER PROGRAM

function rollDice() {

    const numOfDice = document.getElementById("numOfDice").value;

    const diceResult = document.getElementById("diceResult");

    const diceImages = document.getElementById("diceImages");

    const values = [];

    const images = [];

    for(let i=0;i<numOfDice;i++){

        const value = Math.floor(Math.random() \*6)+1;

       values.push(value);

       images.push(`<img src="dice\_images/${value}.jpeg">`);

    }

    diceResult.textContent = `dice: ${values.join(`, `)}`;

    diceImages.innerHTML = images.join('');

} \*/

/\* RANDOM PASSWORD GENERATOR

function generatePassword(length,includeLowercase,includeUppercase,includeNumbers,includeSymbols){

    const lowercaseChars = "abcdefghijklmnopqrstuvwxyz";

    const uppercaseChars = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";

    const numberChars = "0123456789";

    const symbolChars = "!@#$%^&\*()\_+=";

    let allowedChars ="";

    let password="";

    allowedChars += includeLowercase ? lowercaseChars:"";

    allowedChars += includeUppercase ? uppercaseChars:"";

    allowedChars += includeNumbers ? numberChars:"";

    allowedChars += includeSymbols ? symbolChars:"";

    if(length<=0){

        return `(password length must be at least 1)`;

    }

    if(allowedChars.length === 0){

        return `(At least 1 set of character needs to be selected)`;

    }

    for(let i=0;i<length;i++) {

        const randomIndex = Math.floor(Math.random() \*allowedChars.length);

        password += allowedChars[randomIndex];

    }

    return password;

}

const passwordLength = 12;

const includeLowercase = true;

const includeUppercase = true;

const includeSymbols = true;

const includeNumbers = true;

const password = generatePassword(passwordLength,

                                  includeLowercase,

                                  includeUppercase,

                                  includeNumbers,

                                  includeSymbols);

console.log(`Generated password : ${password}`); \*/

// Call back = a function that is passed as an argument to another

/\*                      function.

hello();

goodBye()

function hello() {

    setTimeout(function() {

    console.log("Hello!");

},3000);

}

function goodBye() {

    console.log("Good Bye!!");

}

hello(leave);

function hello(callback){

    console.log("Hello!");

    callback();

}

function leave() {

    console.log("Leave");

}

function goodBye() {

    console.log("GoodBYe");

}

sum(displayPage, 4,4)

function sum(callback,x,y){

    let result = x+y;

    callback(result);

}

function display(result){

    console.log(result);

}

function displayPage(result) {

    document.getElementById("myH1").textContent = result;

}  \*/

/// forEach() = method used to iterate over the elements of an array

//             and apply a specified function (callback) to each element.

//   =>  array.forEach(callback)

/\*let numbers = [1,2,3,4,5];

numbers.forEach(cube);

numbers.forEach(display);

function double(element,index,array) {

    array[index] = element\*2;

}

function triple(element,index,array) {

    array[index] = element\*3;

}

function power(element,index,array) {

    array[index] = Math.pow(element,2);

}

function cube(element,index,array) {

    array[index] = Math.pow(element,3);

}

function display(element) {

    console.log(element);

}

let fruits = ['apple','orange','banana','coconut'];

fruits.forEach(capatil);

fruits.forEach(display);

function upperCase(element,index,array) {

    array[index] = element.toUpperCase();

}

function lowerCase(element,index,array){

    array[index] = element.toLowerCase();

}

function capatil(element,index,array){

    array[index] = element.charAt(0).toUpperCase() + element.slice(1);

}

function display(element) {

    console.log(element);

}  \*/

// .map() = accepts a callback and applies that function to each element

/\*            of an array, then return a new array.

const nums = [2,4,6,8,10];

const squares = nums.map(square);

const cubes = nums.map(cube);

console.log(squares);

function square(element){

    return Math.pow(element,2);

}

function cube(element){

    return Math.pow(element,3);

}

const students = ["RAM","JACK","NULL","FUCK"];

//const studentUpper = students.map(upperCase);

const studentLower = students.map(lowerCase);

//console.log(studentUpper);

console.log(studentLower);

function upperCase(element){

    return element.toUpperCase();

}

function lowerCase(element){

    return element.toLowerCase();

}

const dates = ["2024-1-10","2025-2-20","2026-3-30"];

const ddates = dates.map(formatDates);

console.log(ddates);

function formatDates(element) {

    const parts = element.split("-");

    return `${parts[1]}/${parts[2]}/${parts[0]}`;

}

// .filter() = creates a new array by filtering out elements

let nums = [1,2,3,4,5,6,7];

let evenNums = nums.filter(isEven);

let oddNums = nums.filter(isOdd);

console.log(evenNums);

console.log(oddNums);

function isEven(element) {

    return element%2==0;

}

function isOdd(element) {

    return element%2!=0;

}

const ages = [16,17,18,19,20,60];

const major = ages.filter(isAdult);

const minors = ages.filter(minor);

console.log(major);

console.log(minors);

function isAdult(element) {

    return element >=18;

}

function minor(element) {

    return element<18;

}

const fruits = ['apple','orange','banana','kiwi','pomegranate','coconut'];

const word = fruits.filter(getshortWords);

const words = fruits.filter(getlongerWords);

console.log(word);

console.log(words);

function getshortWords(element){

    return element.length<=6;

}

function getlongerWords(element) {

     return element.length>6;

}

// .reduce() = reduce the elements of an array to a single value.

const prices = [15,5,30,25,20,10];

const total = prices.reduce(sums);

const totals = prices.reduce(mina);

console.log(total.toFixed(2));

console.log(totals.toFixed(2));

function sums(sum,element){

    return sum+element;

}

function mina(minas,element){

    return minas \* element;

}

const maxs = [12,45,67,98,10,3];

const max = maxs.reduce(maxNum);

const min = maxs.reduce(minNum);

console.log(max);

console.log(min);

function maxNum(num,element){

    return Math.max(num,element);

}

function minNum(num,element) {

    return Math.min(num,element);

}  \*/

// Function declaration = define a reusable block of code

//                            that performs a specific task.

/\* hello(); // give the declaration above the code.

function hello(){

    console.log("Hello");

}

/\* Function expressions = a way to define functions as values or variables.

/\* 1. Callbacks in asynchronous operations

    2. Higher-Order Functions

    3. Closures

    4.Event Listeners

const hello = function() {

    console.log("Hello");

}

hello(); // give declaration below the code

//setTimeout(hello,4000);

setTimeout(function(){

    console.log("Hello");

},3000)

const nums = [1,2,3,4,5,6,7,8,9,10];

const squares = nums.map(function(element){

    return Math.pow(element,2);

});

console.log(squares);

const cubes = nums.map(function(element){

    return Math.pow(element,3);

});

console.log(cubes);

const even = nums.filter(function(element){

    return element%2==0;

});

console.log(even);

const odd = nums.filter(function(element){

    return element%2!=0;

});

console.log(odd);

const total = nums.reduce(function(sum,element){

    return sum+element;

});

console.log(total); \*/

/\* Arrow functions = a concise way to write function expression good

//                     for simple functions that you use only once

//                (parameters) => some code

const hello = (name,age) => {console.log(`Hello ${name}`)

                             console.log(`You are ${age} years old`)};

hello("Madhu",19);

setTimeout(function(){

    console.log("Hello JavaScript!");

},3000);

setTimeout( () => console.log("Hello"),3000);

const nums = [2,3,5,6,7,8,9];

const squares = nums.map((element) => Math.pow(element,2));

console.log(squares);

const cubes = nums.map((element) => Math.pow(element,3));

console.log(cubes);

const even = nums.filter((element) => element%2==0);

console.log(even);

const odd = nums.filter((element) => element%2!=0);

console.log(odd);

const total = nums.reduce((sum,element) => sum+element);

console.log(total); \*/

|| 5 HOURS VIDEO COMPLETED……………………