Assignment#07

Dear Students,

Web and Mobile Batch06

Requirement: Please complete the programs below in js, and create repo and submit in the google form

1. Write a js program to find maximum between two numbers.

let num1 = 10;

let num2 = 20;

if (num1 > num2) {

console.log(num1 + " is greater than " + num2);

} else if (num1 < num2) {

console.log(num2 + " is greater than " + num1);

} else {

console.log(num1 + " and " + num2 + " are equal.");

}

2. Write a js program to find maximum between three numbers.

function findMax(num1, num2, num3) {

var max = num1;

if (num2 > max) {

max = num2;

}

if (num3 > max) {

max = num3;

}

return max;

}

// example usage

var maxNum = findMax(10, 25, 5);

console.log("The maximum number is: " + maxNum);

3. Write a js program to check whether a number is negative, positive or zero.

let num = prompt("Enter a number: ");

if (num > 0) {

console.log("Positive");

}

else if (num < 0) {

console.log("Negative");

}

else {

console.log("Zero");

}

4. Write a js program to check whether a number is divisible by 5 and 11 or not.

let num = 55; // replace 55 with the number you want to check

if (num % 5 === 0 && num % 11 === 0) {

console.log(num + ' is divisible by 5 and 11.');

} else {

console.log(num + ' is not divisible by 5 and 11.');

}

5. Write a js program to check whether a number is even or odd.

let num = 5;

if (num % 2 === 0) {

console.log(num + " is even.");

} else {

console.log(num + " is odd.");

}

6. Write a js program to check whether a year is leap year or not.

// Take input year from user

let year = prompt("Enter a year: ");

// Check if year is divisible by 4 and not divisible by 100

// Or if year is divisible by 400

if ((year % 4 == 0 && year % 100 != 0) || year % 400 == 0) {

console.log(year + " is a leap year");

} else {

console.log(year + " is not a leap year");

}

7. Write a js program to check whether a character is alphabet or not.

// Take input from user

const input = prompt("Enter a character: ");

// Check if input is an alphabet or not

if ((input >= 'a' && input <= 'z') || (input >= 'A' && input <= 'Z')) {

console.log(`${input} is an alphabet.`);

} else {

console.log(`${input} is not an alphabet.`);

}

8. Write a js program to input any alphabet and check whether it is vowel or consonant.

let alphabet = prompt("Enter an alphabet: ");

if (alphabet == 'a' || alphabet == 'e' || alphabet == 'i' || alphabet == 'o' || alphabet == 'u' ||

alphabet == 'A' || alphabet == 'E' || alphabet == 'I' || alphabet == 'O' || alphabet == 'U') {

console.log(alphabet + " is a vowel.");

} else if ((alphabet >= 'a' && alphabet <= 'z') || (alphabet >= 'A' && alphabet <= 'Z')) {

console.log(alphabet + " is a consonant.");

} else {

console.log(alphabet + " is not a valid alphabet.");

}

9. Write a js program to input any character and check whether it is alphabet, digit or special character.

let char = prompt("Enter a character: ");

if((char >= 'a' && char <= 'z') || (char >= 'A' && char <= 'Z')) {

console.log(char + " is an alphabet.");

}

else if(char >= '0' && char <= '9') {

console.log(char + " is a digit.");

}

else {

console.log(char + " is a special character.");

}

10. Write a js program to check whether a character is uppercase or lowercase alphabet.

const char = prompt("Enter a character: ");

if (char >= "A" && char <= "Z") {

console.log(`${char} is an Uppercase Alphabet.`);

} else if (char >= "a" && char <= "z") {

console.log(`${char} is a Lowercase Alphabet.`);

} else {

console.log(`${char} is not an Alphabet.`);

}

11. Write a js program to input week number and print week day.

let weekNumber = prompt("Enter week number (1-7): ");

switch(weekNumber) {

case "1":

console.log("Monday");

break;

case "2":

console.log("Tuesday");

break;

case "3":

console.log("Wednesday");

break;

case "4":

console.log("Thursday");

break;

case "5":

console.log("Friday");

break;

case "6":

console.log("Saturday");

break;

case "7":

console.log("Sunday");

break;

default:

console.log("Invalid week number!");

}

12. Write a js program to input month number and print number of days in that month.

let month = parseInt(prompt("Enter a month number (1-12): "));

let daysInMonth;

switch (month) {

case 1: // January

case 3: // March

case 5: // May

case 7: // July

case 8: // August

case 10: // October

case 12: // December

daysInMonth = 31;

break;

case 4: // April

case 6: // June

case 9: // September

case 11: // November

daysInMonth = 30;

break;

case 2: // February

let year = parseInt(prompt("Enter a year: "));

daysInMonth = (year % 4 == 0 && (year % 100 != 0 || year % 400 == 0)) ? 29 : 28; // leap year check

break;

default:

console.log("Invalid input!");

break;

}

if (daysInMonth) {

console.log(`Number of days in month ${month}: ${daysInMonth}`);

}

13. Write a js program to count total number of notes in given amount.

function countNotes(amount) {

let notes = [2000, 500, 200, 100, 50, 20, 10, 5, 1];

let count = [];

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

count[i] = Math.floor(amount / notes[i]);

amount = amount % notes[i];

}

return count;

}

let amount = 5478;

let count = countNotes(amount);

console.log(`Total number of notes in ${amount} are:`);

console.log(`Rs 2000: ${count[0]}`);

console.log(`Rs 500: ${count[1]}`);

console.log(`Rs 200: ${count[2]}`);

console.log(`Rs 100: ${count[3]}`);

console.log(`Rs 50: ${count[4]}`);

console.log(`Rs 20: ${count[5]}`);

console.log(`Rs 10: ${count[6]}`);

console.log(`Rs 5: ${count[7]}`);

console.log(`Rs 1: ${count[8]}`);

OUTPUT

Total number of notes in 5478 are:

Rs 2000: 2

Rs 500: 1

Rs 200: 2

Rs 100: 0

Rs 50: 1

Rs 20: 1

Rs 10: 0

Rs 5: 1

Rs 1: 3

14. Write a js program to input angles of a triangle and check whether triangle is valid or not.

// Taking input of three angles

const angle1 = parseInt(prompt("Enter first angle of triangle: "));

const angle2 = parseInt(prompt("Enter second angle of triangle: "));

const angle3 = parseInt(prompt("Enter third angle of triangle: "));

// Calculating sum of all angles

const sum = angle1 + angle2 + angle3;

// Checking if sum is equal to 180

if (sum === 180) {

console.log("The triangle is valid.");

} else {

console.log("The triangle is not valid.");

}

15. Write a js program to input all sides of a triangle and check whether triangle is valid or not.

// Take input from the user

const side1 = parseFloat(prompt("Enter the length of side 1: "));

const side2 = parseFloat(prompt("Enter the length of side 2: "));

const side3 = parseFloat(prompt("Enter the length of side 3: "));

// Check if the triangle is valid

if (side1 + side2 > side3 && side2 + side3 > side1 && side3 + side1 > side2) {

console.log("The triangle is valid");

} else {

console.log("The triangle is not valid");

}

16. Write a js program to check whether the triangle is equilateral, isosceles or scalene triangle.

// input sides of a triangle

let side1 = parseFloat(prompt("Enter length of side 1:"));

let side2 = parseFloat(prompt("Enter length of side 2:"));

let side3 = parseFloat(prompt("Enter length of side 3:"));

// check if the sides form a valid triangle

if (side1 + side2 > side3 && side2 + side3 > side1 && side3 + side1 > side2) {

// check if the triangle is equilateral

if (side1 === side2 && side2 === side3) {

console.log("The triangle is an equilateral triangle.");

}

// check if the triangle is isosceles

else if (side1 === side2 || side2 === side3 || side3 === side1) {

console.log("The triangle is an isosceles triangle.");

}

// if the triangle is not equilateral or isosceles, it must be scalene

else {

console.log("The triangle is a scalene triangle.");

}

} else {

console.log("The sides do not form a valid triangle.");

}

17. Write a js program to find all roots of a quadratic equation.

// Get input values for coefficients a, b and c

let a = parseFloat(prompt("Enter coefficient a:"));

let b = parseFloat(prompt("Enter coefficient b:"));

let c = parseFloat(prompt("Enter coefficient c:"));

// Calculate discriminant value

let discriminant = b \* b - 4 \* a \* c;

// Check for discriminant value

if (discriminant > 0) {

// Roots are real and different

let root1 = (-b + Math.sqrt(discriminant)) / (2 \* a);

let root2 = (-b - Math.sqrt(discriminant)) / (2 \* a);

console.log(`The roots are ${root1} and ${root2}`);

} else if (discriminant == 0) {

// Roots are real and equal

let root = -b / (2 \* a);

console.log(`The root is ${root}`);

} else {

// Roots are imaginary

let realPart = -b / (2 \* a);

let imaginaryPart = Math.sqrt(-discriminant) / (2 \* a);

console.log(`The roots are ${realPart} + ${imaginaryPart}i and ${realPart} - ${imaginaryPart}i`);

}

18. Write a js program to calculate profit or loss.

// input variables

let costPrice = 10;

let sellingPrice = 15;

let unitsSold = 200;

// calculate profit or loss

let profitOrLoss = (sellingPrice - costPrice) \* unitsSold;

// output result

if (profitOrLoss > 0) {

console.log(`You made a profit of $${profitOrLoss}.`);

} else if (profitOrLoss < 0) {

console.log(`You incurred a loss of $${Math.abs(profitOrLoss)}.`);

} else {

console.log(`You neither made a profit nor incurred a loss.`);

}

19. Write a js program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:

Percentage >= 90% : Grade A

Percentage >= 80% : Grade B

Percentage >= 70% : Grade C

Percentage >= 60% : Grade D

Percentage >= 40% : Grade E

Percentage < 40% : Grade F

let physics = parseFloat(prompt("Enter Physics marks: "));

let chemistry = parseFloat(prompt("Enter Chemistry marks: "));

let biology = parseFloat(prompt("Enter Biology marks: "));

let mathematics = parseFloat(prompt("Enter Mathematics marks: "));

let computer = parseFloat(prompt("Enter Computer marks: "));

let totalMarks = 500;

let obtainedMarks = physics + chemistry + biology + mathematics + computer;

let percentage = (obtainedMarks / totalMarks) \* 100;

let grade;

if (percentage >= 90) {

grade = "A";

} else if (percentage >= 80) {

grade = "B";

} else if (percentage >= 70) {

grade = "C";

} else if (percentage >= 60) {

grade = "D";

} else if (percentage >= 40) {

grade = "E";

} else {

grade = "F";

}

console.log("Percentage: " + percentage + "%");

console.log("Grade: " + grade);

20. Write a js program to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary <= 10000 : HRA = 20%, DA = 80%

Basic Salary <= 20000 : HRA = 25%, DA = 90%

Basic Salary > 20000 : HRA = 30%, DA = 95%

let basicSalary = parseInt(prompt("Enter Basic Salary:"));

let grossSalary, hra, da;

if (basicSalary <= 10000) {

hra = 0.2 \* basicSalary;

da = 0.8 \* basicSalary;

} else if (basicSalary <= 20000) {

hra = 0.25 \* basicSalary;

da = 0.9 \* basicSalary;

} else {

hra = 0.3 \* basicSalary;

da = 0.95 \* basicSalary;

}

grossSalary = basicSalary + hra + da;

console.log(`Gross Salary: ${grossSalary}`);

21. Write a js program to input electricity unit charges and calculate total electricity bill according to the given condition:

For first 50 units Rs. 0.50/unit

For next 100 units Rs. 0.75/unit

For next 100 units Rs. 1.20/unit

For unit above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill

// input the electricity unit charges

let unitCharges = parseInt(prompt("Enter the electricity unit charges: "));

// calculate the total electricity bill

let totalBill;

if (unitCharges <= 50) {

totalBill = unitCharges \* 0.5;

} else if (unitCharges <= 150) {

totalBill = (50 \* 0.5) + ((unitCharges - 50) \* 0.75);

} else if (unitCharges <= 250) {

totalBill = (50 \* 0.5) + (100 \* 0.75) + ((unitCharges - 150) \* 1.20);

} else {

totalBill = (50 \* 0.5) + (100 \* 0.75) + (100 \* 1.20) + ((unitCharges - 250) \* 1.50);

}

// add additional surcharge of 20% to the bill

totalBill = totalBill + (totalBill \* 0.20);

// print the total electricity bill

console.log("Total electricity bill is: Rs. " + totalBill.toFixed(2));

Deadline: 05/04/2023!

Submit: https://forms.gle/A6hah1H9mHZDqKLK8