Assignment-7

/\* 1.Write a program that checks if a number entered by the user is positive. If it is, print "The number is positive.  \*/

let num=3;

if(num >0)

    {

     console.log("The number is positive")

    }

    else{

     console.log("The number is negative")

    }

/\* 2.Write a program that checks if a number entered by the user is even or odd. Print "Even" if the number is even and "Odd" if the number is odd.  \*/

let number=2;

if(number % 2 === 0)

    {

        console.log("Even")

    }

    else{

        console.log("Odd")

    }

/\* 3.Write a program that takes a number as input and prints "Negative" if it is less than 0, "Zero" if it is 0, and "Positive" if it is greater than 0.  \*/

let Num=0;

if(Num < 0)

    {

     console.log("nagative")

    }

    else if(Num == 0)

    {

     console.log("Zero")

    }

    else{

        console.log("positive")

    }

/\* 4.Write a program that takes three numbers as input and prints the largest of the three. Use nested if statements to determine the largest number.  \*/

let num1=12;

let num2=39;

let num3=31;

if(num1,num2,num3 > 0)

    {

       if(num1 > num2)

        {

            console.log(num1 + " is the largest number")

        }

        else if(num2 > num3)

            {

                console.log(num2 + " is the largest number")

            }

            else{

                console.log(num3 + " is the largest number")

             }

    }

/\* 5.Write a program that takes a grade as input (A, B, C, D, F) and prints a message: "Excellent" for A, "Good" for B, "Average" for C, "Poor" for D, and "Fail" for F. Use a switch statement to handle this.  \*/

let grade = "F";

switch(grade)

{

    case "A": console.log("Exellent")

    break;

    case "B": console.log("Good")

    break;

    case "C": console.log("Average")

    break;

    case "D": console.log("Poor")

    break;

    case "F": console.log("Fail")

    break;

    default: console.log("Not Attended")

}

/\* 6.Write a program that prints the first 10 natural numbers using a for loop.  \*/

let natur=10;

for(let i=1;i<=natur;i++)

    {

        console.log(i);

    }

/\* 7.Write a program that prints numbers from 1 to 5 using a do-while loop.  \*/

let j=1;

while(j<=5)

    {

        console.log(j);

        j++;

    }

/\* 8.Write a program that prints the multiplication table of 5 using a while loop.  \*/

let k=1;

while(k<=10)

    {

        console.log(5\*k)

        k++;

    }

/\* 9.Given an object {name: "John", age: 25, city: "New York"}, write a program that uses a for-in loop to print all the properties and their values. \*/

const details={name:"john",age:"25",city:"New York"};

for (let property in details) {

  console.log(property + ": "+details[property])

}

/\*10.Write a program that checks if a number entered by the user is greater than 100. If it is, print "The number is large. \*/

function larger(x)

{

 if(x >100)

    {

        console.log("The number is large")

    }

}

larger(10)

/\*11.Write a program that checks if a person is eligible to vote. If the person's age is 18 or older, print "Eligible to vote." Otherwise, print "Not eligible to vote."  \*/

let age=18;

if(age>=18)

    {

        console.log("Eligible to vote.")

    }

    else

    {

        console.log("Not eligible to vote.")

    }

/\* 12.Write a program that takes a temperature value and prints "Cold" if the temperature is below 0, "Warm" if the temperature is between 0 and 25, and "Hot" if the temperature is above 25.  \*/

let tempj=-10;

if(tempj<0)

    {

        console.log("Cold")

    }

    else if(tempj>0 && tempj<25)

        {

            console.log("Warm")

        }

        else if(tempj > 25){

           console.log("Hot")

        }

/\* 13.Write a program that takes a number as input and checks if it is divisible by 2 and 3. If it is, print "Divisible by both 2 and 3." Otherwise, check if it is divisible by only 2 or only 3 and print the appropriate message.  \*/

let inp=12;

if(inp > 0){

            if(inp % 2 === 0 && inp % 3 === 0)

                {

                console.log("Divisible by both 2 and 3")

                }

                else if(inp % 2 === 0)

                    {

                        console.log("Divisible by only 2 ")

                    }else{

                    console.log("Divisible by only 3 ")

                    }

           }

/\* 14.Write a program that takes a day of the week as input (1 for Monday, 2 for Tuesday, etc.) and prints the name of the day using a switch statement. \*/

function Find\_day(input)

{

    switch(input)

    {

     case 0:console.log("Sunday")

     break;

     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;

     default:console.log("Invalid")

    }

}

Find\_day(1)

/\* 15.Write a program that calculates the factorial of a number entered by the user using a for loop.  \*/

let fact\_Num=15;

var result=1;

for(let i=fact\_Num;i>=1;i--)

    {

      result=result\*i;//use result \*= i;

    }

    console.log(result)

/\* 16.Write a program that asks the user to guess a predefined number. Keep asking until the user guesses the number correctly, and then print "Correct!" Use a do-while loop to implement this.  \*/

let predef\_Num=35;

var rand\_Num=15;

do

{

  if(predef\_Num === rand\_Num)

    {

        console.log("Correct!")

        break;

    }else{

        console.log("Try again !")

    }

}while(predef\_Num == rand\_Num)

/\*17.Write a program that takes a number as input and prints all the even numbers from 1 to that number using a while loop.  \*/

function Even\_Numbers(number)

{

    let m=1;

    while(m<=number)

        {

          if(m%2===0)

            {

                console.log(m);

            }

            m++;

        }

}

Even\_Numbers(20)

/\*18.Given an object {title: "Book", author: "John Doe", year: 2020}, write a program that uses a for-in loop to print the keys and values in the format "key: value".  \*/

const Detail= {title: "Book", author: "John Doe", year: 2020};

for (let property in Detail) {

  console.log(`"${property}  ${": "}${Detail[property]}"`)

}

/\*19.Write a program that checks if a character entered by the user is a vowel. If it is, print "The character is a vowel.  \*/

 const arr=["a","e","i","o","u"];

 let chara="k"

 if(arr.includes(chara))

    {

      console.log("The character is vowel")

    }

/\*20.Write a program that checks if a string entered by the user is empty. If it is, print "The string is empty." Otherwise, print "The string is not empty. \*/

let input="hello";

let outcome="";

if(input===outcome)

    {

        console.log("The string is Empty")

    }

    else{

      console.log("The string is not Empty")

    }

/\*21.Write a program that takes a person's age as input and prints "Child" if the age is less than 13, "Teenager" if the age is between 13 and 19, "Adult" if the age is 20 or older.  \*/

let person\_age=12;

if(person\_age < 13)

    {

      console.log("Child")

    }

    else if(person\_age >13 && person\_age < 19)

        {

            console.log("Teenager")

        }

        else if(person\_age >=20)

        {

            console.log("Adult")

        }

/\*22.Write a program that takes a number as input and prints whether it is positive, negative, or zero. Use nested if statements to check these conditions.  \*/

let numb=0;

if(numb<=0)

    {

        if(numb<0)

            {

                console.log("Negative")

            }

            else{

                console.log("Zero")

            }

    }

    else{

        console.log("Positive")

    }

/\*23.Write a program that takes a month number (1 for January, 2 for February, etc.) and prints the number of days in that month. Use a switch statement to handle this, considering leap years for February.  \*/

 let month\_number=2;

 switch(month\_number)

 {

    case 1: monthName="January",NumberOfDays=31;

    break;

    case 2: monthName="February",NumberOfDays=29;

    break;

    case 3: monthName="March",NumberOfDays=31;

    break;

    case 4: monthName="April",NumberOfDays=30;

    break;

    case 5: monthName="May",NumberOfDays=31;

    break;

    case 6: monthName="June",NumberOfDays=30;

    break;

    case 7: monthName="July",NumberOfDays=31;

    break;

    case 8: monthName="August",NumberOfDays=31;

    break;

    case 9: monthName="September",NumberOfDays=30;

    break;

    case 10: monthName="October",NumberOfDays=31;

    break;

    case 11: monthName="November",NumberOfDays=30;

    break;

    case 12: monthName="December",NumberOfDays=31;

    break;

 }

 if(month\_number>=1 && month\_number<=12)

    {

        console.log(monthName);

        console.log(NumberOfDays);

    }

    else{

        console.log("Invalid")

    }

/\*24.Write a program that prints the Fibonacci series up to a given number using a for loop.  \*/

var given\_number=6;

let a=0;

let b=1;

var result=0;

for(let l=0;l<given\_number;l++)

    {

        console.log(a)

       result= (a+b);

        a=b;

        b=result;

    }

/\*25.Write a program that repeatedly asks the user to enter a number until they enter a negative number. Then print the sum of all entered numbers (excluding the negative number) using a do-while loop.  \*/

//This is actually input is taking at runtime below is the default one

function sumUntilNegative() {

    let sum = 0;

    let numbers = [10, 20, 30, -5, 40, 50];

    let i = 0;

    do {

        if (numbers[i] < 0) {

            break; // Exit the loop if a negative number is entered

        }

        sum += numbers[i];

        i++;

    } while (i < numbers.length);

    console.log("The sum of all entered numbers (excluding the negative number) is: " + sum);

}

sumUntilNegative();

/\*26.Write a program that calculates the sum of all numbers from 1 to a given number using a while loop.  \*/

function calculateSum(num) {

    let total = 0;

    let i = 1;

    while (i <= num) {

        total += i;

        i++;

    }

    console.log(total)

}

calculateSum(12)

/\*27.Given an object {product: "Laptop", price: 999.99, quantity: 10}, write a program that uses a for-in loop to print each property and its value in the format "property: value" \*/

const Details= {product: "Laptop", price: 999.99, quantity: 10};

for (let property in Details) {

  console.log(`"${property}  ${": "}${Details[property]}"`)

}

/\*28.Write a program that checks if a user-provided string contains the letter "a". If it does, print "The string contains 'a'.  \*/

let name1="bhanu"

for(let j=0;j<=name1.length;j++)

    {

        if(name1.charAt(j)==="a")

            {

                console.log("The String ontains a")

            }

    }

/\*29.Write a program that checks if a given year is a leap year. Print "Leap Year" if it is, otherwise print "Not a Leap Year.  \*/

let year=2025;

if(year%4==0 && year%100 !== 0)

    {

      console.log("leap year")

    }

    else{

        console.log("Not a Leap Year")

    }

/\*Write a program that takes a number grade (0-100) and prints the corresponding letter grade: "A" for 90-100, "B" for 80-89, "C" for 70-79, "D" for 60-69, and "F" for below 60.  \*/

let Chech\_num=7;

if(Chech\_num >=90 && Chech\_num <=100)

    {

        console.log("grade:A")

    }

    else if(Chech\_num >=80 && Chech\_num <=89)

        {

            console.log("grade:B")

        }

        else if(Chech\_num >=70 && Chech\_num <=79)

            {

                console.log("grade:C")

            }

            else if(Chech\_num >=60 && Chech\_num <=69)

                {

                    console.log("grade:D")

                }

                else if(Chech\_num < 60 && Chech\_num >=0)

                    {

                        console.log("F")

                    }

/\*31.Write a program that checks if a user-provided number is divisible by 4 and 6. Print appropriate messages if the number is divisible by only one, both, or neither.  \*/

 let div\_Num=89;

 if(div\_Num % 4===0 && div\_Num % 6 ==0)

    {

        console.log("The number is  divisible by 4 and 6")

    }

    else if(div\_Num % 4===0)

        {

            console.log("The number is divisble by 4 only")

        }

        else if(div\_Num % 6===0)

            {

                console.log("The number is divisble by 6 only")

            }else{

                console.log("The number which is not divisible by both 4 and 6")

            }

/\*32.Write a program that takes an integer representing a month (1 for January, 2 for February, etc.) and prints the season ("Winter", "Spring", "Summer", "Autumn") for that month using a switch statement.  \*/

let integ=3;

switch(integ)

{

    case 1:month="january",season="Winter";

    break;

    case 2:month="february",season="Winter";

    break;

    case 3:month="March",season="Cold";

    break;

    case 4:month="April",season="Summer";

    break;

    case 5:month="May",season="Summer";

    break;

    case 6:month="june",season="Summer";

    break;

    case 7:month="july",season="Rainy";

    break;

    case 8:month="August",season="Rainy";

    break;

    case 9:month="september",season="Rainy";

    break;

    case 10:month="October",season="Rainy";

    break;

    case 11:month="November",season="Winter";

    break;

    case 12:month="january",season="Winter";

    break;

}

if(integ >0 && integ <=12)

    {

      console.log(month);

      console.log(season)

    }

    else{

        console.log("Invalid ")

    }

/\*33.Write a program that prints the squares of the first 15 natural numbers using a for loop.  \*/

let Square\_num=15;

for(let h=1;h<=Square\_num;h++)

    {

        let result = h\*h;

        console.log("Square of "+h+" is "+result)

    }

/\*34.Write a program that keeps asking the user for a password until the correct password "letmein" is entered. Once the correct password is entered, print "Access Granted." \*/

let password="letmein"

if(password === "letmein" )

    {

        console.log("Access Granted")

    }

    else{

        console.log("Access denied")

    }

/\*35.Write a program that takes a number and prints all the prime numbers less than that number using a while loop. \*/

let upperLimit = 50;

let number6 = 2;

while (number6 < upperLimit) {

    let isPrime = true;//flag statement

    let i = 2;

    while (i < number6) {

        if (number6 % i === 0) {

            isPrime = false;

            break;

        }

        i++;

    }

    if (isPrime) {

        console.log(number6);

    }

    number6++;

}

/\*36.Given an object {movie: "Inception", director: "Christopher Nolan", year: 2010}, write a program that uses a for-in loop to list all the properties and their values in the format "Property: Value".  \*/

const Obj\_Details={movie: "Inception", director: "Christopher Nolan", year: 2010} ;

for (let property in Obj\_Details) {

  console.log(`"${property}  ${": "}${Obj\_Details[property]}"`)

}

/\*37.Write a program that checks if a user-provided string has a length greater than 5. If it does, print "The string is long.  \*/

let User\_String="Bhanu";

if(User\_String.length> 5)

    {

        console.log("The String is Long")

    }

/\*38.Write a program that checks if a given number is a multiple of 10. Print "Multiple of 10" if it is, otherwise print "Not a multiple of 10.  \*/

let Mult\_num=200;

if(Mult\_num % 10===0)

    {

        console.log("Multiple of a 10")

    }

    else{

        console.log("Not a multiple of 10")

    }

/\*39.Write a program that takes a temperature in Celsius and prints "Freezing" if it is below 0, "Cold" if it is between 0 and 10, "Warm" if it is between 10 and 25, and "Hot" if it is above 25.  \*/

   let temparature=41;

    if(temparature<0){

    console.log()

    }

    else if(temparature >0 && temparature<10)

        {

            console.log("Cold")

        }

        else if(temparature>10 && temparature<25)

            {

                console.log("Warm")

            }

            else if(temparature>25)

                {

                    console.log("Hot")

                }

/\*40.Write a program that determines if a character entered by the user is a digit, an uppercase letter, or a lowercase letter. Use nested if statements to check these conditions.  \*/

let input0="c";

if (input0 >= 'A' && input0 <= 'Z') {

    console.log("The character is an uppercase letter.");

} else if (input0 >= 'a' && input0 <= 'z') { {

        console.log("The character is a lowercase letter.");

    }

}else{

    console.log("The character is digit")

}

/\*41.Write a program that takes a number from 1 to 5 and prints the corresponding word ("One" for 1, "Two" for 2, etc.) using a switch statement.  \*/

let Word=2;

switch(Word)

{

    case 1:console.log("One")

    break;

    case 2:console.log("Two")

    break;

    case 3:console.log("Three")

    break;

    case 4:console.log("Four")

    break;

    case 5:console.log("Five")

    break;

    default:console.log("Invalid")

}

/\*42.Write a program that calculates and prints the sum of the first 50 even numbers using a for loop.  \*/

let fact\_num=50;//input

    let te=0;

    for(let k=1;k<=fact\_num;k++)// 1<=5 true

        {

            if(k%2==0){

            te=te+k;

            }

        }

        console.log(te)

/\*43.Write a program that asks the user to enter numbers until the sum of the entered numbers exceeds 100. Print the total sum once it exceeds 100 using a do-while loop.  \*/

//This is actually input is taking at runtime below is the default one

function sumUntilExceeds100() {

    let sum = 0;

    let numbers = [40, 20, 30, 40, 50,90];

    let i = 0;

    do {

        sum += numbers[i];

        i++;

    } while (sum <= 100 && i < numbers.length);

    console.log("The total sum is: " + sum);

}

sumUntilExceeds100();

/\*44.Write a program that takes a number as input and prints the factorial of that number using a while loop.  \*/

let pro\_num=12;

let tempr=1;

let c=1;

while(c<= pro\_num)

    {

        tempr= tempr\*c;

        c++;

    }

  console.log(tempr)

/\*45.Given an object {make: "Toyota", model: "Corolla", year: 2021}, write a program that uses a for-in loop to print each property and its value in the format "Property: Value".  \*/

const Obj\_Detail={make: "Toyota", model: "Corolla", year: 2021};

for (let property in Obj\_Detail) {

  console.log(`"${property}  ${": "}${Obj\_Detail[property]}"`)

}