**JavaScript Coding Exercise 3:**

1. If...Else Statement

Easy

Check Even or Odd

Write a program to check if a given number is even or odd.

Example Input: 5

Output: Odd

Find Maximum of Two Numbers

Write a program to find the maximum of two numbers entered by the user.

Example Input: 4, 7

Output: 7

Intermediate

Check Leap Year

Write a program to check whether a given year is a leap year.

Example Input: 2024

Output: Leap Year

Pass/Fail Check

Write a program to check if a student has passed or failed based on their marks. (Passing marks are 40.)

Example Input: 35

Output: Fail

Hard

Age Group Categorization

Write a program to categorize a person based on their age:

Below 13: Child

13–19: Teenager

20 and above: Adult

Example Input: 16

Output: Teenager

Traffic Light

Simulate a traffic light system where the user enters a color (red, yellow, green) and the program displays an action (Stop, Ready, Go).

Example Input: yellow

Output: Ready

2. If...Else If...Else Statement

Easy

Grade Calculation

Write a program to calculate grades based on the following rules:

90-100: A

80-89: B

70-79: C

Below 70: Fail

Example Input: 85

Output: B

Number Sign Check

Write a program to check if a number is positive, negative, or zero.

Example Input: -5

Output: Negative

Intermediate

BMI Calculator

Write a program to calculate BMI and determine the category:

Below 18.5: Underweight

18.5–24.9: Normal

25–29.9: Overweight

30 and above: Obese

Example Input: Height: 1.75, Weight: 75

Output: Normal

Electricity Bill

Calculate the electricity bill based on these slabs:

1–100 units: ₹3/unit

101–200 units: ₹5/unit

Above 200 units: ₹10/unit

Example Input: 250 units

Output: ₹1750

Hard

Triangle Type

Write a program to determine the type of triangle based on its sides:

All sides equal: Equilateral

Two sides equal: Isosceles

All sides different: Scalene

Example Input: 3, 3, 5

Output: Isosceles

Tax Calculation

Calculate tax based on income:

Below ₹2,50,000: No tax

₹2,50,000–₹5,00,000: 5% tax

₹5,00,000–₹10,00,000: 20% tax

Above ₹10,00,000: 30% tax

Example Input: ₹6,50,000

Output: ₹65,000

3. Nested Condition Statement

Easy

Voter Eligibility with ID Check

Check if a person is eligible to vote (age >= 18) and has a valid voter ID.

Example Input: Age: 20, Has ID: Yes

Output: Eligible to vote

Number Range Check

Write a program to check if a number is positive, and if so, whether it's even or odd.

Example Input: 4

Output: Positive and Even

Intermediate

Scholarship Eligibility

Check if a student is eligible for a scholarship:

If marks >= 90: Full Scholarship

If marks >= 75 but < 90: Half Scholarship

Else: No Scholarship

Example Input: 80

Output: Half Scholarship

Triangle Validity

Check if three sides can form a triangle. If valid, determine its type (Equilateral, Isosceles, Scalene).

Example Input: 3, 4, 5

Output: Scalene

Hard

Number Classification

Check if a number is:

Positive or Negative

Prime or Not

Example Input: 7

Output: Positive and Prime

Library Fine System

Write a program to calculate library fines:

Return within due date: No fine

Return 1–5 days late: ₹5/day

Return 6–10 days late: ₹10/day

Return after 10 days: Membership canceled

Example Input: 7 days late

Output: ₹70

4. Switch Statement

Easy

Day of the Week

Write a program that takes a number (1–7) and prints the corresponding day of the week.

Example Input: 3

Output: Wednesday

Month Name

Write a program to print the name of the month based on a number (1–12).

Example Input: 5

Output: May

Intermediate

Simple Calculator

Create a calculator using a switch statement for basic operations (+, -, \*, /).

Example Input: 10, 20, "+"

Output: 30

Seasons Based on Month

Print the season based on the month:

3–5: Spring

6–8: Summer

9–11: Autumn

12–2: Winter

Example Input: 6

Output: Summer

Hard

Grade Converter

Convert marks to grades using a switch:

90–100: A

80–89: B

70–79: C

Below 70: Fail

Example Input: 85

Output: B

Menu-Driven Program

Create a menu-based program using switch:

1: Add two numbers

2: Find the square of a number

3: Exit

Example Input: 1, 10, 20

Output: 30

1. For Loop

Easy

Print Numbers from 1 to 10

Write a program to print all numbers from 1 to 10 using a for loop.

Example Output:

1 2 3 4 5 6 7 8 9 10

Sum of First N Numbers

Write a program to calculate the sum of the first N natural numbers.

Example Input: N = 5

Output: 15

Intermediate

Print Multiplication Table

Write a program to print the multiplication table for a given number.

Example Input: 5

Example Output:

5 x 1 = 5

5 x 2 = 10

...

5 x 10 = 50

Print Array Elements

Write a program to print all elements of an array.

Example Input: [3, 5, 7, 9]

Example Output: 3 5 7 9

Hard

Prime Numbers in a Range

Write a program to find all prime numbers between 1 and 100.

Example Output: 2 3 5 7 11 ...

Reverse an Array

Write a program to reverse an array using a for loop.

Example Input: [1, 2, 3, 4]

Example Output: [4, 3, 2, 1]

2. While Loop

Easy

Print Numbers from 1 to N

Write a program to print numbers from 1 to N using a while loop.

Example Input: N = 5

Output: 1 2 3 4 5

Count Digits in a Number

Write a program to count the number of digits in a given number.

Example Input: 12345

Output: 5

Intermediate

Sum of Digits

Write a program to calculate the sum of digits of a number using a while loop.

Example Input: 123

Output: 6

Factorial Calculation

Write a program to calculate the factorial of a number using a while loop.

Example Input: 4

Output: 24

Hard

Fibonacci Sequence

Write a program to print the first N terms of the Fibonacci sequence using a while loop.

Example Input: N = 5

Example Output: 0 1 1 2 3

Reverse a Number

Write a program to reverse a given number using a while loop.

Example Input: 1234

Output: 4321

3. Do-While Loop

Easy

Print Numbers from 1 to N

Write a program to print numbers from 1 to N using a do-while loop.

Example Input: N = 5

Output: 1 2 3 4 5

Check Positive Number

Write a program that keeps asking the user for a positive number until they enter one.

Example Input: -5, -3, 7

Output: 7

Intermediate

Sum of Even Numbers

Write a program to calculate the sum of all even numbers between 1 and N using a do-while loop.

Example Input: N = 10

Output: 30

Guess the Number

Write a program where the user guesses a random number between 1 and 10, and the program keeps prompting until they guess correctly.

Example Input: 5 (random number is 7), 7

Output: Correct!

Hard

Number Palindrome Check

Write a program to check if a number is a palindrome using a do-while loop.

Example Input: 121

Output: Palindrome

Power Calculation

Write a program to calculate base^exponent using a do-while loop.

Example Input: Base = 2, Exponent = 3

Output: 8