// Variables and Data Types

var name = "Alice";

let age = 25;

const isStudent = true;

let greeting = "Hello, World!";

let score = 85.5;

let isActive = false;

let emptyValue = null;

let notAssigned;

let uniqueID = Symbol("id");

// Operators

let x = 10;

let y = 3;

let sum = x + y;

let difference = x - y;

let product = x \* y;

let quotient = x / y;

let remainder = x % y;

let a = 5;

let b = "5";

console.log(a == b);

console.log(a === b);

console.log(a != b);

console.log(a !== b);

console.log(a < 10);

console.log(a > 2);

console.log(a <= 5);

console.log(a >= 6);

let isLoggedIn = true;

let hasPermission = false;

console.log(isLoggedIn && hasPermission);

console.log(isLoggedIn || hasPermission);

console.log(!isLoggedIn);

// Control Structures

let grade = 85;

if (grade >= 90) {

console.log("A");

} else if (grade >= 80) {

console.log("B");

} else {

console.log("C");

}

let day = 3;

let dayName;

switch (day) {

case 1:

dayName = "Monday";

break;

case 2:

dayName = "Tuesday";

break;

case 3:

dayName = "Wednesday";

break;

default:

dayName = "Invalid day";

}

console.log(dayName);

for (let i = 0; i < 5; i++) {

console.log(i);

}

let count = 0;

while (count < 5) {

console.log(count);

count++;

}

let counter = 0;

do {

console.log(counter);

counter++;

} while (counter < 5);

// Functions

function greet(name) {

return "Hello, " + name + "!";

}

console.log(greet("Alice"));

const add = function(x, y) {

return x + y;

};

console.log(add(5, 10));

const multiply = (a, b) => a \* b;

console.log(multiply(4, 5));

// Arrays

let fruits = ["Apple", "Banana", "Cherry"];

console.log(fruits[1]);

fruits.push("Orange");

fruits.unshift("Grapes");

fruits.pop();

fruits.shift();

fruits[1] = "Blueberry";

let colors = ["Red", "Green", "Blue"];

colors.push("Yellow");

colors.pop();

colors.shift();

colors.unshift("Purple");

colors.splice(1, 0, "Pink");

let newColors = colors.slice(1, 3);

// Objects

let person = {

firstName: "John",

lastName: "Doe",

age: 30,

isEmployed: true

};

console.log(person.firstName);

console.log(person["age"]);

person.email = "john.doe@example.com";

person.age = 31;

delete person.isEmployed;