**1) write a program to demonstrate the difference between global,function and block scope ?**

// Global scope

let globalVar = "I am a global variable";

function functionScopeDemo() {

// Function scope

let functionVar = "I am a function-scoped variable";

if (true) {

// Block scope

let blockVar = "I am a block-scoped variable";

console.log(blockVar); // Accessible inside the block

}

console.log(functionVar); // Accessible inside the function

}

functionScopeDemo();

console.log(globalVar);

**O/p:**

I am a block-scoped variable

I am a function-scoped variable

I am a global variable

**2) create a closure that adds a number to a predefined value.test it with different values ?**

function createAdder(predefinedValue) {

return function (numberToAdd) {

return predefinedValue + numberToAdd;

};

}

const add5 = createAdder(5);

console.log(add5(10));

console.log(add5(20));

const add10 = createAdder(10);

console.log(add10(15));

console.log(add10(38));

**o/p:**

15

25

25

48

**3)wrire a program to create a counter using closure . The counter should have two function**:

**increment and decrement**

function createCounter() {

let count = 0;

return {

increment: function () {

count++;

return count;

},

decrement: function () {

count--;

return count;

}

};

}

// Create a counter instance

const counter = createCounter();

console.log(counter.increment());

console.log(counter.increment());

console.log(counter.decrement());

console.log(counter.decrement());

console.log(counter.increment());

console.log(counter.increment());

console.log(counter.increment());

**o/p:**

1

2

1

0

1

2

3