**Introduction to Functions**

1. Write a function that returns the sum of all arguments passed to it (without using arguments.length directly in the loop).
2. Create a function that checks whether a given **number is a prime number**.
3. Write a function that reverses a string **without** using built-in **.reverse()**.
4. Write a function that takes a number **n** and returns the factorial using recursion.

**Regular Functions**

1. Write a regular function greet that prints "Hello, <name>" and call it with different arguments.
2. Create a regular function **isPalindrome** that checks if a string is palindrome or not.
3. Write a regular function that accepts another function as a parameter and executes it (higher-order function).
4. Write a regular function that demonstrates **function hoisting** in JavaScript.

**Function Expressions**

1. Write a function expression that returns the maximum of three numbers.
2. Create a function expression that takes an array and returns a new array with only odd numbers.
3. Write a function expression assigned to a variable that calculates the power of a number (x^y).
4. Demonstrate the difference between a function declaration and function expression by calling both before and after they are defined.

**Arrow Functions**

1. Write an arrow function that returns the square of a number.
2. Convert the following into an arrow function:

function add(a, b) {

return a + b;

}

1. Write an arrow function that filters out negative numbers from an array.
2. Demonstrate that arrow functions do not have their own arguments object (try logging arguments inside an arrow function).

**Usage of this Keyword**

1. Write a program with an object that has a method using this to print its own property.
2. Demonstrate how this behaves differently in regular functions vs. arrow functions inside an object.
3. Write a function that loses its this context when assigned to a variable. How can you fix it using .bind()?
4. Create a constructor function and use this to assign properties. Then create an object using new keyword.