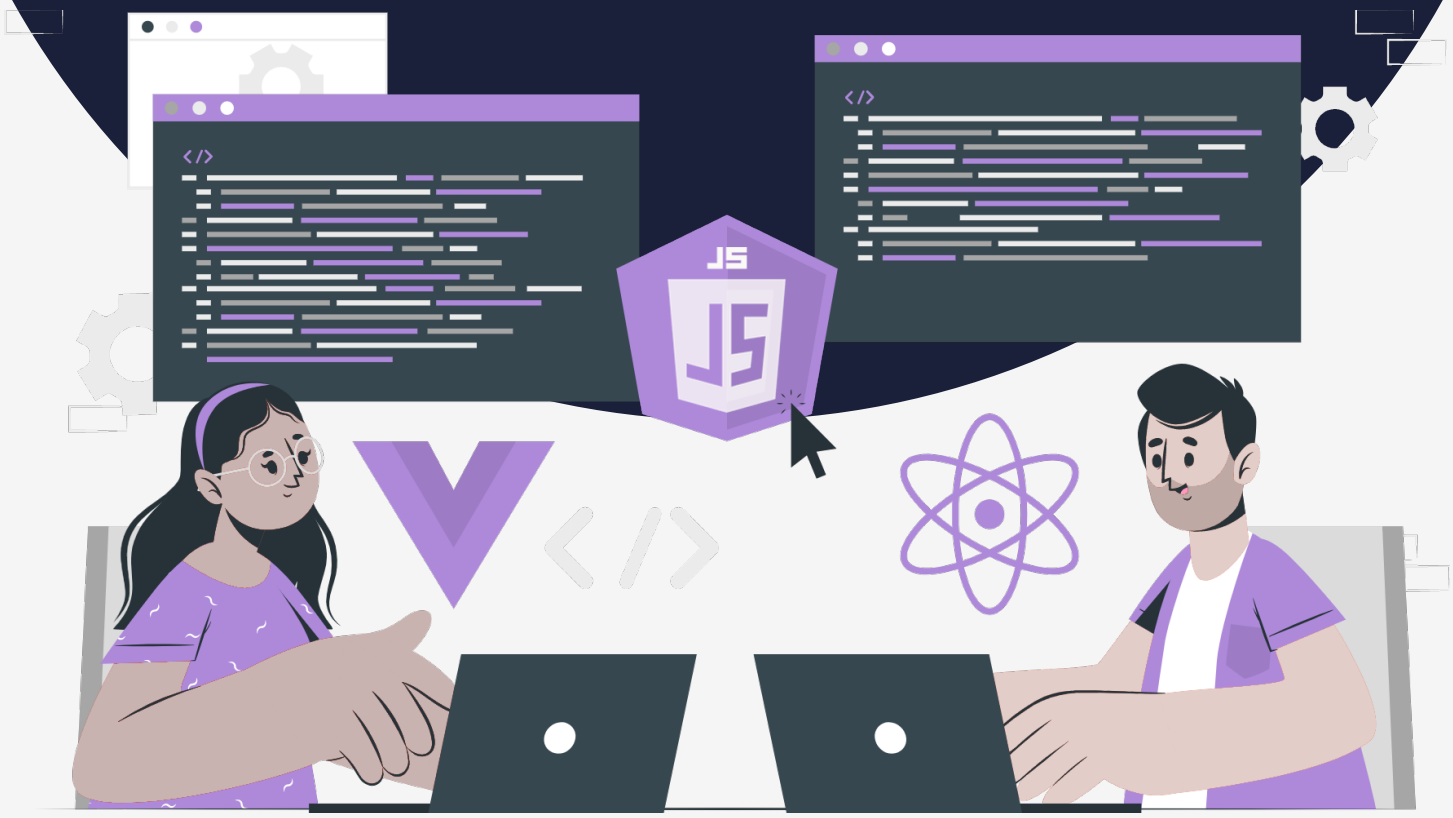
# Lesson:

# Expression Function




PW SKILLS

# Topics Covered:

1. Introduction to function expressions.
2. Syntax.
3. Implementation.
4. Advantages of function expressions.

Functions are usually declared using the syntax which we have discussed in previous lectures. Besides this JavaScript has a function expression which is a way to define a function and assign it to a variable. The syntax is quite different from the function declaration.

In the early days javascript function expressions were declared using function keywords and later when ECMAScript 6 (ES6), also known as ECMAScript 2015, a new syntax for creating function expressions with "arrow functions" was introduced. Arrow functions provide a shorter and more concise way of defining function expressions.

We will be looking into the expression function at the basic level in this lecture and will be exploring arrow functions, anonymous functions, and self-invoking functions in further lectures.

**Syntax:**

```
// Function Expression

let variableName = function () {
  // Function Body
};

// Calling a Function

console.log(variableName());
```

Function expressions can be named too. But to reference that function we must use the variable associated with it. The function's name can be used to refer to the function within its own scope, such as in a recursive call. We will be looking into scope and recursive calls in further lectures.

```
// Named Function Expression

let variableName = function functionName() {
  // Function Body
};

// Calling a Function

console.log(variableName());
```

It is important to note that function expressions are rarely used with names and are generally used with anonymous functions.

Let’s write a function to add two numbers.

```
// Function Declaration

function add(x, y) {
  return x + y;
}

// Function Expression

let addTwoNumbers = function (x, y) {
  return x + y;
};

// Calling the functions

// Function Declaration : Function Name

console.log(add(3, 4)); // OUTPUT: 7

// Function Expression : Variable Name

console.log(addTwoNumbers(10, 20)); // OUTPUT: 30
```

The main advantages of function expressions are:

1. Function expressions can be used as an argument to another function, but function declarations cannot.
2. Function expressions can be anonymous, while function declarations cannot.

**NOTE:**

Function Declarations are processed before the code block is executed. They are visible everywhere in the block. Function Expressions are created when the execution flow reaches them.

We will be looking at this in-depth in further lectures.