D15B/37 **Mikil Lalwani** **IP Lab 5**

Aim -

Experiment to study the basics of JavaScript.

Theory-

JavaScript often abbreviated as JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. As of 2022, 98% of websites use JavaScript on the client side for webpage behavior, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on users' devices.

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has dynamic typing, prototype-based object orientation, and first-class functions. It is a multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

The ECMAScript standard does not include any input/output (I/O), such as networking, storage, or graphics facilities. In practice, the web browser or other runtime system provides JavaScript APIs for I/O.

JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications. The most popular runtime system for this usage is Node.js.

Although Java and JavaScript are similar in name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design.

Ways of including Javascript code-

There are 3 ways to include Javascript in HTML:

1. External Javascript, load a Javascript file – <script src="FILE.JS"></script>
2. Internal Javascript, add a block of code in the HTML document itself – <script>DO SOMETHING</script>
3. Inline Javascript, directly add Javascript to an HTML element – <input type="button" value="Test" onclick="FUNCTION()"/>

Functions-

JavaScript functions are used to perform operations. We can call the JavaScript function many times to reuse the code.

Advantages of JavaScript function:

There are mainly two advantages of JavaScript functions.

1. Code reusability: We can call a function several times so it saves coding.
2. Less coding: It makes our program compact. We don't need to write many lines of code each time to perform a common task.

JavaScript Function Syntax

The syntax of declaring a function is given below.

```
function functionName([arg1, arg2, ...argN]){
 //code to be executed
}
```

Arrow Function-

The arrow function is one of the features introduced in the ES6 version of JavaScript. It allows you to create functions in a cleaner way compared to regular functions.

For example,this function

```
// function expression
let x = function(x, y) {
   return x * y;
}
```

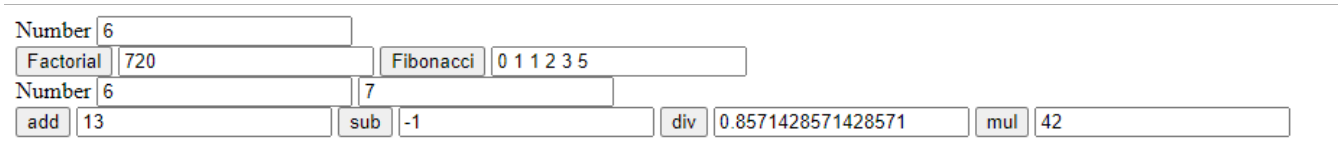
can be written as

```
// using arrow functions

let x = (x, y) => x * y;

using an arrow function.
```

Screenshots



Conclusion-

We have successfully completed the experiment.