

K. J. Somaiya College of Engineering, Mumbai-77
(A Constituent College of Somaiya Vidyavihar University)

Batch :- B-2

Roll No:- 16010122151

Exp No:- 4

TITLE: Develop and demonstrate JavaScript with POP-UP boxes and functions

AIM: To demonstrate the functionalities of JavaScript using HTML and CSS

Expected Outcome of Experiment: Design static web pages using various HTML tags.

Books/ Journals/ Websites referred:

1. Geekforgeeks
2. W3schools

Describe and utilize Javascript programming concepts such as variables, arrays, conditionals, and loops.

Write and deploy Javascript code to solve practical web design problems.

Problem Statement: Description of the application implemented with output:

a) Input: Click on Display Date button using onclick() function

Output: Display date in the textbox

Code :

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Display Date Button</title>
  <script>
    function displayDate() {
      var currentDate = new Date();
      var dateString = currentDate.toString();
      alert('Current Date: ' + dateString);
    }
  </script>
```

K. J. Somaiya College of Engineering, Mumbai-77
(A Constituent College of Somaiya Vidyavihar University)

</head>

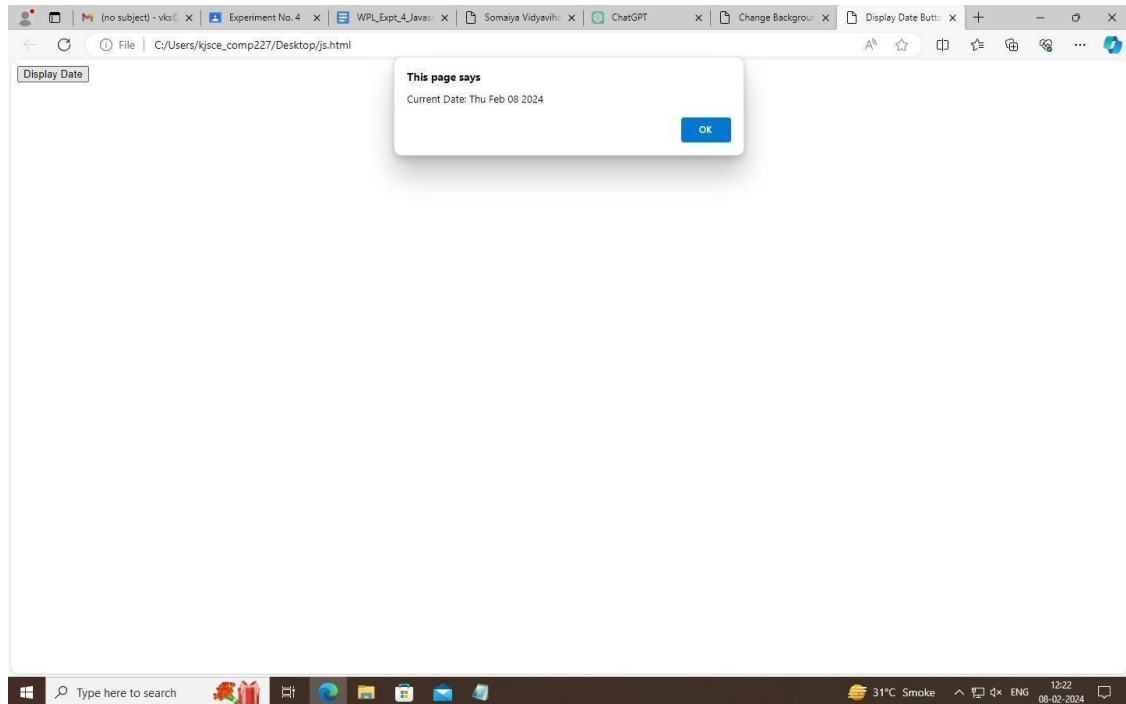
<body>

<button onclick="displayDate()">Display Date</button>

</body>

</html>

Output:



b) Input: A number n obtained using prompt

Output: Factorial of n number using alert

Code:

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
  <meta charset="UTF-8">
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
  <title>Factorial Calculator</title>
```

```
  <script>
```

```
    var userInput = prompt('Please enter a number:');
```

```
    var n = parseInt(userInput);
```

```
    if (!isNaN(n)) {
```

```
      var factorial = 1;
```

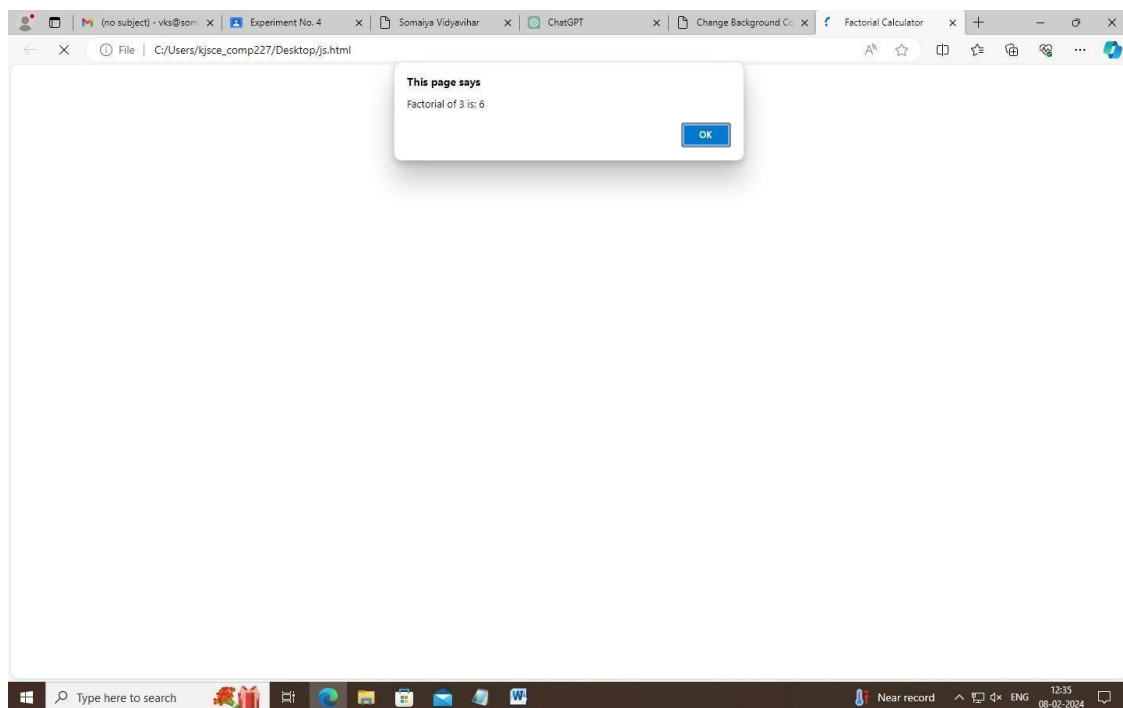
```
      for (var i = 1; i <= n; i++) {
```

K. J. Somaiya College of Engineering, Mumbai-77

(A Constituent College of Somaiya Vidyavihar University)

```
factorial *= i;
}
alert('Factorial of ' + n + ' is: ' + factorial);
} else {
  alert('Invalid input. Please enter a valid number.');
```

Output:



c) **Input:** A number n obtained using prompt

Output: A multiplication table of numbers from 1 to 10 of n using

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

K. J. Somaiya College of Engineering, Mumbai-77

(A Constituent College of Somaiya Vidyavihar University)

<title>Multiplication Table</title>

<script>

var userInput = prompt('Please enter a number:');

var n = parseInt(userInput);

if (!isNaN(n)) {

var tableOutput = 'Multiplication Table for ' + n + ':\n\n';

for (var i = 1; i <= 10; i++) {

var result = n * i;

tableOutput += n + ' * ' + i + ' = ' + result + '\n';

}

alert(tableOutput);

} else {

alert('Invalid input. Please enter a valid number.');

}

</script>

</head>

<body>

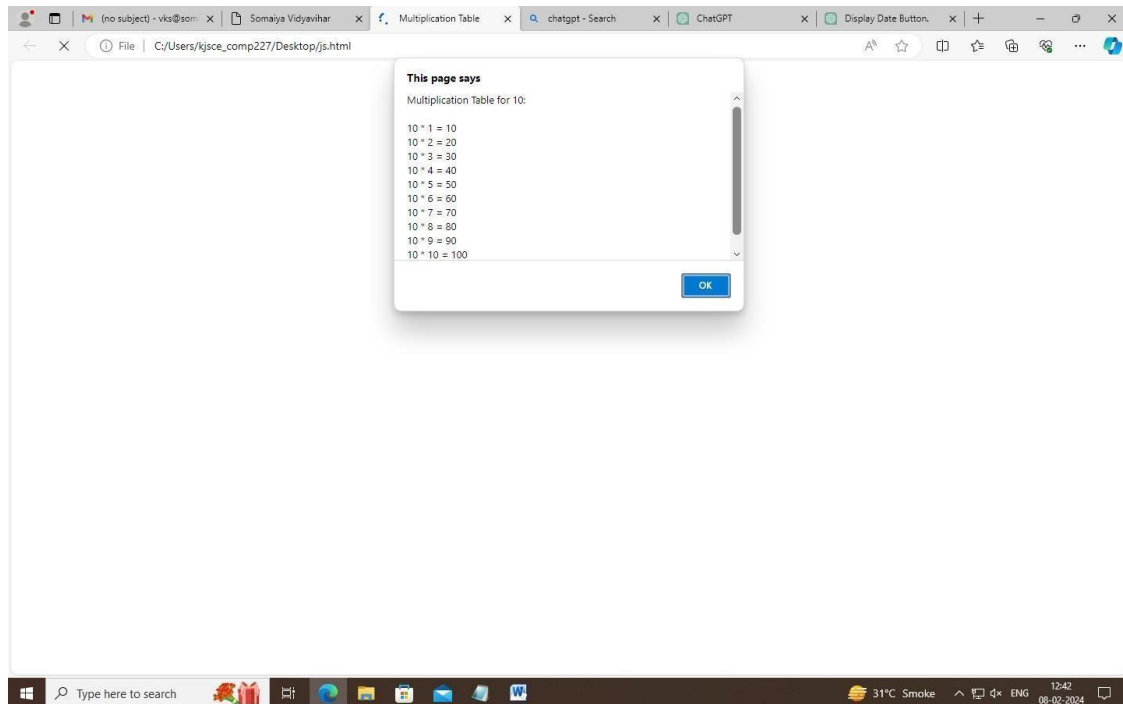
<!-- This example does not require any HTML interaction as it uses prompt directly
-->

</body>

</html>

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(A Constituent College of Somaiya Vidyavihar University)

Output:



d) Write JavaScript to validate the following fields for the registration page.

Name (Name should contain alphabets and the length should not be less than 6 characters).

Password (Password should not be less than 6 characters length).

E-mail id (should not contain any invalid and must follow the standard pattern name@domain.com)

Phone number (Phone number should contain 10 digits only).

Code:

```
<!DOCTYPE html>
<html>
```

```
<head>
  <title>Registration Form</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 0;
      display: flex;
      justify-content: center;
      align-items: center;
      height: 100vh;
```

```
      background-image:
url('https://images.unsplash.com/photo-1503376780353-7e6692767b70?w=500&au
```

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(A Constituent College of Somaiya Vidyavihar University)

to=format&fit=crop&q=60&ixlib=rb-4.0.3&ixid=M3wxMjA3fDB8MHxzZWFFyY2h8OHx8Y2FyfGVufDB8fDB8fHww');
background-size: cover;
background-repeat: no-repeat;
}

.registration-container {
background-color: rgba(255, 255, 255, 0.8); /* Updated to use rgba for transparency */
padding: 20px;
border-radius: 8px;
box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
width: 300px;
text-align: center;
transition: background-color 0.3s ease; /* Added hover transition effect */
}

.registration-container:hover {
transform: scale(1.1);
}

.registration-container input,
.registration-container textarea {
width: calc(100% - 20px); /* Adjusted width to account for padding */
padding: 10px;
margin-bottom: 10px;
box-sizing: border-box;
}

.registration-container pre {
margin: 0;
font-family: 'Courier New', Courier, monospace;
}

.registration-container button {
width: calc(100% - 20px); /* Adjusted width to account for padding */
padding: 10px;
background-color: #7cb9e8;
color: #fff;
border: none;
border-radius: 4px;
cursor: pointer;
}

</style>
</head>

<body>
<div class="registration-container">
<h2>Registration Form</h2>

K. J. Somaiya College of Engineering, Mumbai-77

(A Constituent College of Somaiya Vidyavihar University)

```
<form action="Vedant login page.html" method="post"
id="registration-form">
  <label>Full Name:</label>
  <input type="text" name="full_name" />

  <label>User ID:</label>
  <input type="text" name="user_id" />

  <label>Password:</label>
  <input type="password" name="password" />

  <label>Email:</label>
  <input type="text" name="email" />

  <label>Phone number:</label>
  <input type="text" name="phone" />

  <button type="submit" name="submit">Submit</button>
</form>
</div>

<script>
  // Function to validate full name
  function validateFullName(fullName) {
    // Check if full name contains only alphabets and length is at least 6
    characters
    return /^[a-zA-Z\s]{6,}$/ .test(fullName);
  }

  // Function to validate password
  function validatePassword(password) {
    // Check if password length is at least 6 characters
    return password.length >= 6;
  }

  // Function to validate email
  function validateEmail(email) {
    // Check if email follows standard pattern
    return /^[^\s@]+@[^\s@]+\.[^\s@]+$/ .test(email);
  }

  // Function to validate phone number
  function validatePhoneNumber(phone) {
    // Check if phone number contains 10 digits only
    return /^[d]{10}$/ .test(phone);
  }

  // Function to handle form submission
  function validateForm(event) {
    event.preventDefault(); // Prevent form submission
```

K. J. Somaiya College of Engineering, Mumbai-77

(A Constituent College of Somaiya Vidyavihar University)

```
// Get form elements
const fullName = document.getElementsByName('full_name')[0].value;
const userId = document.getElementsByName('user_id')[0].value;
const password = document.getElementsByName('password')[0].value;
const email = document.getElementsByName('email')[0].value;
const phone = document.getElementsByName('phone')[0].value;

// Validate full name
if (!validateFullName(fullName)) {
    alert('Full name should contain alphabets only and should be at least 6
characters long. ');
    return;
}

// Validate password
if (!validatePassword(password)) {
    alert('Password should be at least 6 characters long. ');
    return;
}

// Validate email
if (!validateEmail(email)) {
    alert('Please enter a valid email address. ');
    return;
}

// Validate phone number
if (!validatePhoneNumber(phone)) {
    alert('Phone number should contain 10 digits only. ');
    return;
}

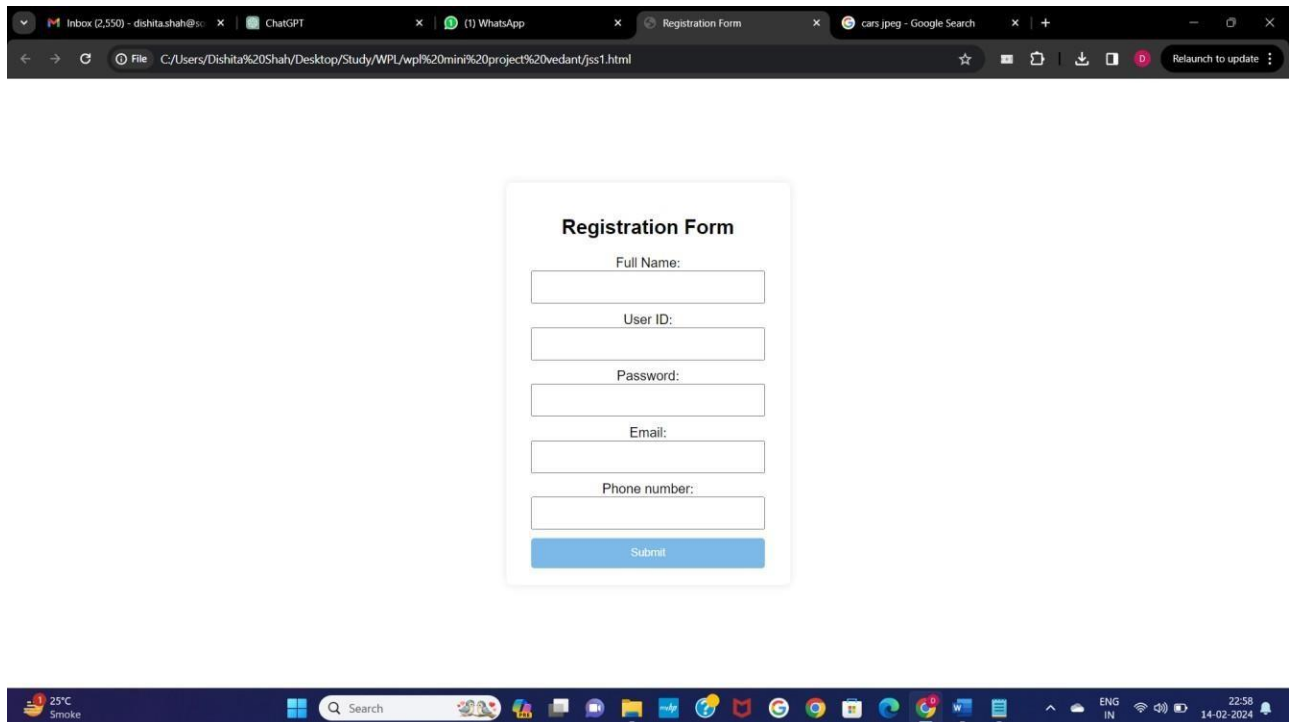
// If all validations pass, submit the form
alert('Form submitted successfully! ');
    // Uncomment the next line if you want to submit the form
programmatically
    // event.target.submit();
}

// Attach form submission event listener
document.getElementById('registration-form').addEventListener('submit',
validateForm);
</script>
</body>

</html>
```


K. J. Somaiya College of Engineering, Mumbai-77
(A Constituent College of Somaiya Vidyavihar University)

Output:



Javascript Basic Concepts Learned With Syntax

- **for loop:**

```
for (let i = 0; i < 5; i++) {  
    console.log(i);  
}
```

- **if statement:**

```
let num = 10;  
if (num > 0) {  
    console.log("Number is positive");  
} else if (num < 0) {  
    console.log("Number is negative");  
} else {  
    console.log("Number is zero");  
}
```

- **Alert statement:**

```
alert("Hello, World!");
```

- **Prompt parseInt function :**

K. J. Somaiya College of Engineering, Mumbai-77

(A Constituent College of Somaiya Vidyavihar University)

const userInput = prompt("Please enter a number:");

K. J. Somaiya College of Engineering, Mumbai-77

(A Constituent College of Somaiya Vidyavihar University)

```
const number = parseInt(userInput);
```

```
if (!isNaN(number)) {
  console.log("You entered: " + number);
} else {
  console.log("Invalid input. Please enter a valid number.");
}
```

- **On click function :**

```
const button = document.getElementById('myButton');
```

```
function onClickFunction() {
  console.log('Button clicked!');
}
```

```
button.addEventListener('click', onClickFunction);
```

2)

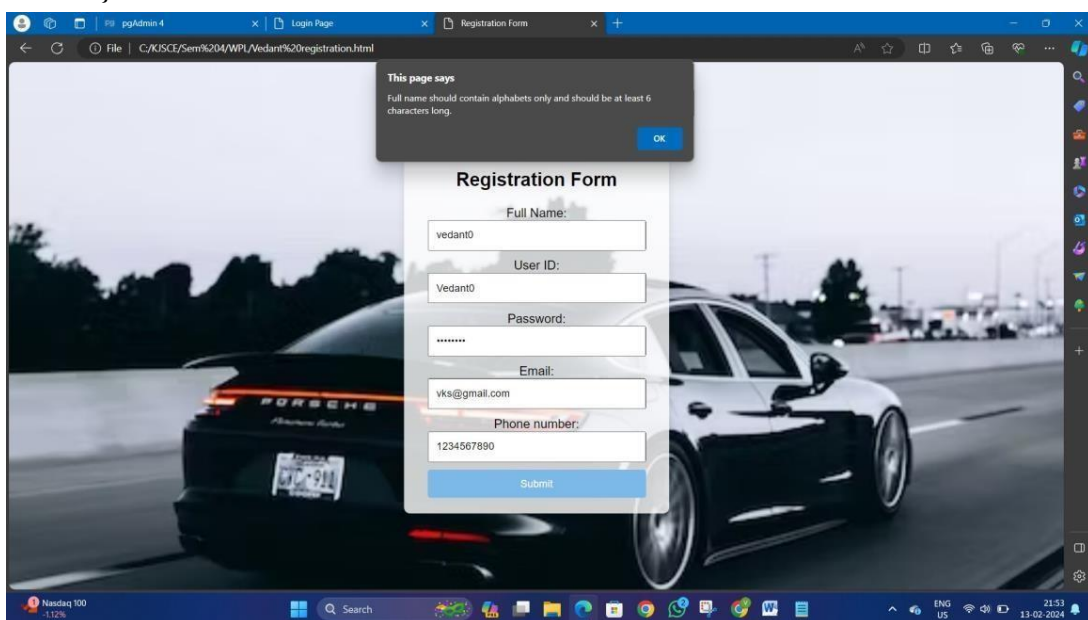
Description of the application implemented with output:

// Validate full name

```
if (!validateFullName(fullName)) {
  alert('Full name should contain alphabets only and should be at least 6
characters long.');
```

```
return;
```

```
}
```



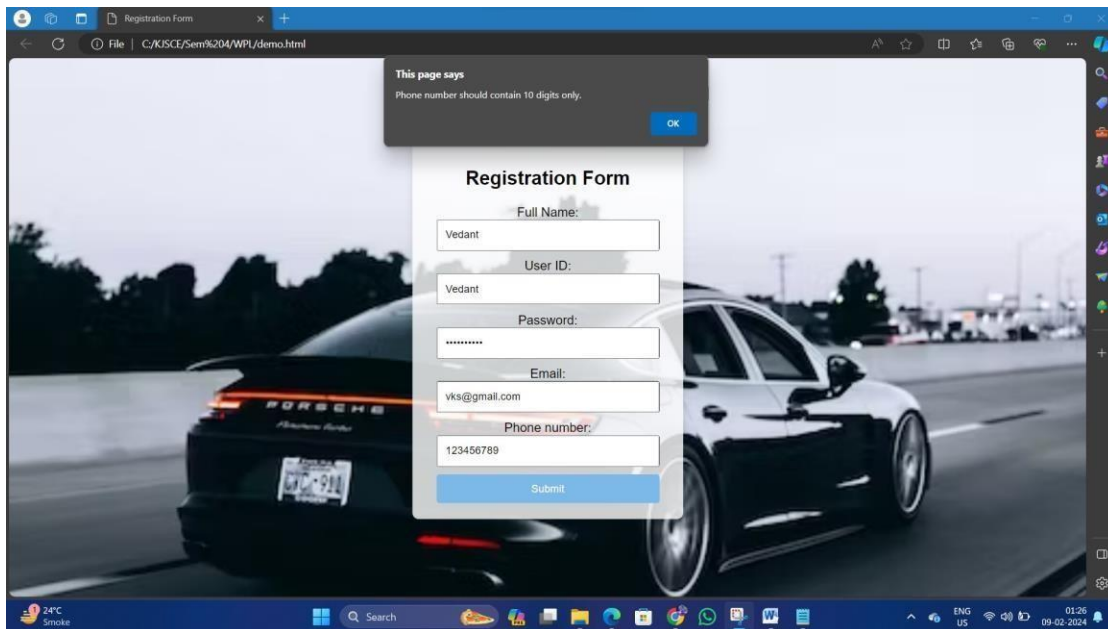
K. J. Somaiya College of Engineering, Mumbai-77
(A Constituent College of Somaiya Vidyavihar University)

// Validate phone number

```
if (!validatePhoneNumber(phone)) {  
    alert('Phone number should contain 10 digits only.');
```

```
    return;
```

```
}
```



Post Lab Objective with Ans :

Q1)What are the possible ways to create objects in JavaScript?

Ans:-

1. **Object Literal:** You can create objects using object literals, which are simply enclosed within curly braces {} and consist of key-value pairs separated by commas.
2. **Constructor Function:** You can create objects using constructor functions. These are functions intended to be used with the new keyword to create new instances.
3. **Object.create() method:** This method creates a new object, using an existing object as the prototype of the newly created object.
4. **Factory Functions:** These are functions that return objects. They can be used to create multiple instances of similar objects.

K. J. Somaiya College of Engineering, Mumbai-77
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Q2)What is the Difference between == and === operators?

Ans:-

==	===
Double equals named as Equality Operator.	Triple equals named as Identity / Strict equality Operator.
Double equals used as Type converting the conversion	Triple equals used as Strict conversion without performing any conversion in operands.
Double equals has syntax for comparison as (a == b)	Triple equals has syntax for comparison as (a === b)
Double equals first convert the operands into the same type and then compare i.e comparison would perform once both the operands are of the same type. This is also known as type coercion comparison.	On the other hand, triple equals do not perform any type of conversion before comparison and return true only if type and value of both operands are exactly the same.

Q3)What is the difference between let and var?

Ans:-

1) Scope:

- Variables declared with var are function-scoped or globally scoped, meaning they are accessible throughout the entire function in which they are declared, or globally if declared outside of any function.
- Variables declared with let are block-scoped, meaning they are accessible only within the block ({}) in which they are declared, including nested blocks.

2) Hoisting:

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(A Constituent College of Somaiya Vidyavihar University)

- Variables declared with `var` are hoisted to the top of their function or global scope. This means that even if you declare a variable later in the function, its declaration is effectively moved to the top during the execution phase.
- Variables declared with `let` are also hoisted, but they are not initialized until the line of code where they are declared is executed. Accessing the variable before its declaration results in a `ReferenceError`.