

## Practical 7: JavaScript Objects and Regular Expression

**Aim:** To demonstrate JavaScript Object using DOM and Regular Expression in JavaScript

### Questions:

Q1. Demonstrate the JavaScript Objects like Date, Math, Navigator and Location.

Q2. Write a JavaScript program to demonstrate Regular Expression.

- Write a JavaScript program to validate Aadhaar card number.
  - 12 digits
  - Only Numbers
  - Cannot start with 0 or 1
- Write a JavaScript program to validate Email expression.

### Concepts:

Object / Feature	Property / Method	Purpose / Usage
<b>Date</b>	getDate(), getFullYear(), getDay(), getTime()	Gets current date info, year, weekday, and timestamp
	setDate()	Sets the date value and reflects changes
<b>Math</b>	PI, sqrt(), pow(), floor(), ceil()	Performs mathematical calculations using constants and functions
<b>Navigator</b>	appName, appVersion, userAgent, language	Provides browser-specific information
<b>Location</b>	href, protocol, hostname, pathname	Displays the current URL and its components
	assign(), reload()	Used to redirect to a new page or reload the current one
<b>document.write()</b>	—	Used to dynamically write object data to the web page

## Code:

date.html

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

  <body>
    <p id="time"></p>
    <p id="year"></p>
    <p id="day"></p>
    <p id="setday"></p>
    <p id="date"></p>

    <script>
      var d = new Date();
      document.getElementById("time").innerHTML = "The time is: " +
d.getTime();
      document.getElementById("year").innerHTML =
        "The Year is: " + d.getFullYear();
      document.getElementById("day").innerHTML = "The Day is: " + d.getDay();
      document.getElementById("setday").innerHTML =
        "The time is: " + d.setDate(d.getDate() + 50);
      document.getElementById("date").innerHTML = "The Date is: " + d;
    </script>
  </body>
</html>
```

math.html

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

  <body>
    <p id="pi"></p>
    <p id="sqrt2"></p>
    <p id="ln2"></p>
    <p id="ln10"></p>
```

```

<p id="pow"></p>
<p id="sqrt"></p>
<p id="ceil"></p>
<p id="floor"></p>

<script>
    document.getElementById("pi").innerHTML = "Math.PI = " + Math.PI;
    document.getElementById("sqrt2").innerHTML = "Math.SQRT2 = " +
Math.SQRT2;
    document.getElementById("ln2").innerHTML = "Math.LN2 = " + Math.LN2;
    document.getElementById("ln10").innerHTML = "Math.LN10 = " + Math.LN10;
    document.getElementById("pow").innerHTML =
        "Math.pow(8,2) = " + Math.pow(8, 2);
    document.getElementById("sqrt").innerHTML =
        "Math.sqrt(36) = " + Math.sqrt(36);
    document.getElementById("ceil").innerHTML =
        "Math.ceil(4.1) = " + Math.ceil(4.1);
    document.getElementById("floor").innerHTML =
        "Math.floor(5.9) = " + Math.floor(5.9);
</script>
</body>
</html>

```

navigator.html

```

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

  <body>
    <p id="cookie"></p>
    <p id="appname"></p>
    <p id="appcodename"></p>
    <p id="product"></p>
    <p id="appversion"></p>
    <p id="useragent"></p>

    <script>
      document.getElementById("cookie").innerHTML =
        "navigator.cookieEnabled = " + navigator.cookieEnabled;
      document.getElementById("appname").innerHTML =
        "navigator.appName = " + navigator.appName;
      document.getElementById("appcodename").innerHTML =

```

```

        "navigator.appCodeName = " + navigator.appCodeName;
document.getElementById("product").innerHTML =
    "navigator.product = " + navigator.product;
document.getElementById("appversion").innerHTML =
    "navigator.appVersion = " + navigator.appVersion;
document.getElementById("useragent").innerHTML =
    "navigator.userAgent = " + navigator.userAgent;
document.writeln(
    "navigator.hardwareConcurrency = " + navigator.hardwareConcurrency
);
</script>
</body>
</html>

```

location.html

```

<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Location Object</title>
  </head>
  <body>
    <p id="href"></p>
    <p id="hostname"></p>
    <p id="pathname"></p>
    <p id="protocol"></p>
    <p id="port"></p>

    <button onclick="redirect()">Surprise!</button>
    <button onclick="reloadPage()">Reload Page</button>

    <script>
      document.getElementById("href").innerHTML = "Full URL: " +
location.href;
      document.getElementById("hostname").innerHTML =
        "Hostname: " + location.hostname;
      document.getElementById("pathname").innerHTML =
        "Pathname: " + location.pathname;
      document.getElementById("protocol").innerHTML =
        "Protocol: " + location.protocol;
      document.getElementById("port").innerHTML = "Port: " + location.port;

      function redirect() {
        location.assign("https://www.youtube.com/watch?v=xvFZjo5PgG0");
      }
    </script>
  </body>
</html>

```

```

        function reloadPage() {
            location.reload();
        }
    </script>
</body>
</html>

```

regex.html

```

<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>RegEx</title>
    <script>
      document.writeln(
        "<b>-----| Aadhaar | -----"
      </b><br>"
    );
    var aadhaar = prompt("Enter your 12-digit Aadhaar number:");
    document.writeln("<b> You entered: " + aadhaar + "<br>");
    var aadhaarPattern = /^[2-9]{1}[0-9]{11}$/;
    var isValid = aadhaarPattern.test(aadhaar);
    if (isValid) {
      document.writeln("<b style='color:green'> Valid Aadhaar Number </b>");
    } else {
      document.writeln("<b style='color:red'> Invalid Aadhaar Number </b>");
    }
    document.writeln(
      "<br><b>-----| Email | -----"
    </b><br>"
    );

    var email = prompt("Enter your email address:");
    document.writeln("<b> You entered: " + email + "<br>");
    var emailPattern = /^[a-z0-0._%+-]+@[a-z0-9.-]+\.[a-z]{2,}$/i;
    var isEmailValid = emailPattern.test(email);

    if (isEmailValid) {
      document.writeln("<b style='color:green'>Valid Email</b>");
    } else {
      document.writeln("<b style='color:red'> Invalid Email</b>");
    }
  </script>
</head>

```

```
<body></body>  
</html>
```

### Output:

The time is: 1754064029532

The Year is: 2025

The Day is: 5

The time is: 1758384029532

The Date is: Sat Sep 20 2025 21:30:29 GMT+0530 (India Standard Time)

Math.PI = 3.141592653589793

Math.SQRT2 = 1.4142135623730951

Math.LN2 = 0.6931471805599453

Math.LN10 = 2.302585092994046

Math.pow(8,2) = 64

Math.sqrt(36) = 6

Math.ceil(4.1) = 5

Math.floor(5.9) = 5

navigator.cookieEnabled = true

navigator.appName = Netscape

navigator.appCodeName = Mozilla

navigator.product = Gecko

navigator.appVersion = 5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/138.0.0.0 Safari/537.36

navigator.userAgent = Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/138.0.0.0 Safari/537.36

navigator.hardwareConcurrency = 2

Full URL: <https://congenial-sniffle-46xp7qppg55fqp64-5502.app.github.dev/Practical%207%20-%20Objects%20and%20Regex/Q1%20-%20Objects/location.html>  
Hostname: congenial-sniffle-46xp7qppg55fqp64-5502.app.github.dev  
Pathname: /Practical%207%20-%20Objects%20and%20Regex/Q1%20-%20Objects/location.html  
Protocol: https:  
Port:

-----| Aadhaar | -----  
**You entered: 234523452345**  
**Valid Aadhaar Number**  
-----| Email | -----  
**You entered: @wrong.email.com**  
**Invalid Email**

### Conclusion:

Through this practical, I explored core built-in JavaScript objects like Date, Math, Navigator, and Location. I used various properties and methods to retrieve system, browser, and webpage-related information, and displayed it dynamically using document.write(). This hands-on helped me understand how JavaScript interacts with the browser environment and system to access and manipulate real-time data.