CITY ST GEORGE'S UNIVERSITY OF LONDON

STEM Digital Academy

School of Science & Technology

JavaScript Example

Web Technologies

Lecture by

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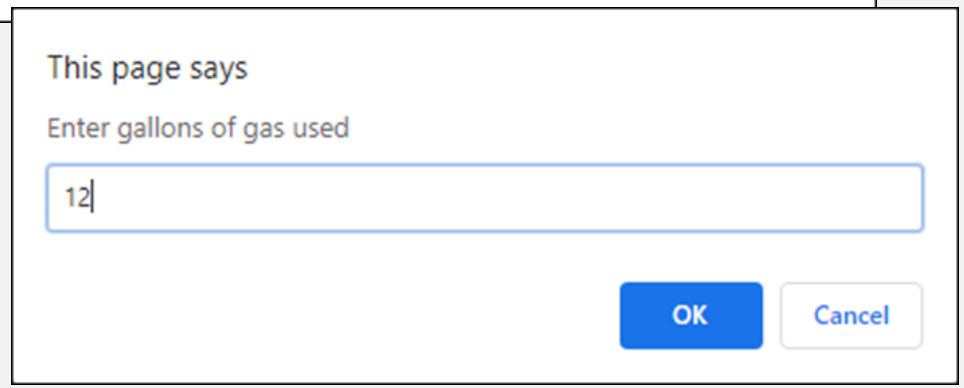
```
<!doctype html>
<html>
    <head>
      <title>
        Web Technologies
      </title>
      <style>
        p {
          color: blue;
        }
      </style>
      <script>
      console.log("client-side");
      </script>
    </head>
    <body>
        <p>
            Welcome!
        </p>
    </body>
</html>
```

What we will cover

- MPG application
- Test Score application

MPG Application



The Miles Per Gallon Calculator

400 miles on 12 gallons = 33.33 MPG

350 miles on 9 gallons = 38.89 MPG

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The HTML Code for MPG Application

```
<body>
    <main>
        <h1>The Miles Per Gallon Calculator</h1>
        <script src="mpg.js"></script>
    </main>
</body>
```

The JavaScript Code for MPG Application

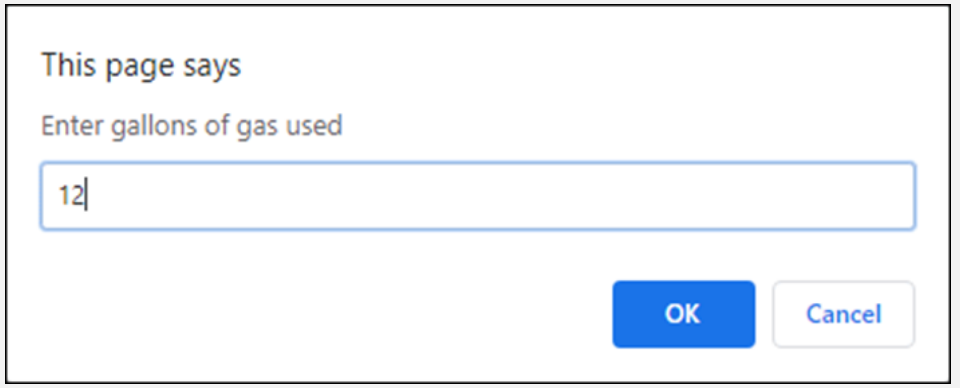
```
"use strict";
let again = "y";
do {
    // get miles and gallons from user
    const miles = parseInt(prompt("Enter miles driven"));
    const gallons = parseInt(prompt("Enter gallons of gas used"));

    // if user entries are valid...
    if (miles > 0 && gallons > 0) {···
    }
    else {···
    }
    again = prompt("Repeat entries? (y/n)", "y");
}
while (again == "y");
```

const

Inside the do-while loop

```
const miles = parseInt(prompt("Enter miles driven"));
const gallons = parseInt(prompt("Enter gallons of gas used"));
```



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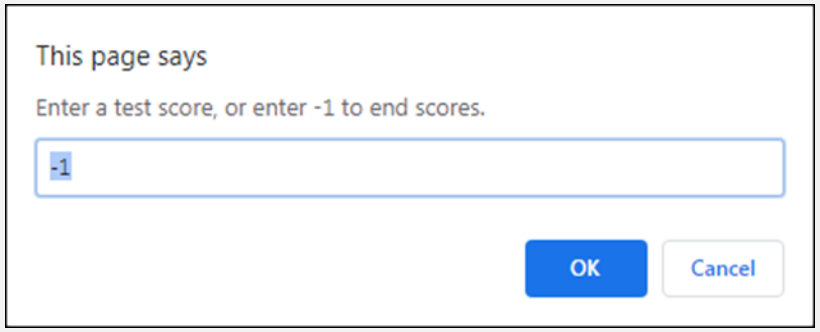
The If-Else Statement

```
if (miles > 0 && gallons > 0) {
    const mpg = parseFloat(miles/gallons);
    const html = `<p>${miles} miles on ${gallons}
        gallons = ${mpg.toFixed(2)} MPG</p>`;
    document.write(html);
}
else {
    alert("One or both entries are invalid");
}
```

The Final Stage

```
        again = prompt("Repeat entries? (y/n)", "y");
    }
    while (again == "y");
```

Test Score Application



The Test Scores App

Score 1: 89

Score 2: 99

Score 3: 78

Score 4: 91

Average score is 89

The HTML Code

```
<head>
    <link rel="stylesheet" href="test_scores.css">
</head>
<body>
    <main>
        <h1>The Test Scores App</h1>
        <script src="test_scores.js"></script>
    </main>
</body>
```

The JavaScript Code

```
"use strict";
let total = 0;
let count = 0;
let score = 0;
do {
    score = parseInt(
        prompt("Enter a test score, or enter -1 to end scores.", -1));
    if (score >= 0 && score <= 100) {···
    }
    else if (score != -1){···
    }
}
while(score != -1);
const average = parseInt(total/count);
document.write(`<p>Average score is ${average}</p>`);
```

If and Else if

```
if (score >= 0 && score <= 100) {
    total = total + score;
    count++;
    document.write(`<p>Score ${count}: ${score}</p>`);
}
else if (score != -1){
    alert("Score must be a valid number from 0 through 100.");
}
```

Try It Yourself

In this activity, you can practice creating web application using both HTML and JavaScript.

So, use the HTML code in slide 5 and JavaScript codes in slides 6-9 to create the MPG web application.