



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A’ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING-IOT Including CS&BCT

**COURSE NAME : 19SB602 FULL STACK DEVELOPMENT FOR NEXT
GENERATION IOT**

III YEAR / VI SEMESTER

Unit II- FRONT-END MODULES

Topic : 6.Bootstrap JS. Validation. Introduction to JavaScript



Bootstrap provides a set of JavaScript plugins that enable you to add form validation to your web pages easily.

These plugins leverage HTML5 attributes for form validation.

1. Include Bootstrap JS and jQuery: Make sure you include the Bootstrap JS and jQuery libraries in your HTML file.

```
<!-- jQuery -->  
<script  
src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></sc  
ript>
```

```
<!-- Bootstrap JS -->  
<script  
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js  
></script>
```

2. Create a Form:

Design your HTML form as you normally would, ensuring you include appropriate form controls and attributes.

```
<form id="myForm" class="needs-validation" novalidate>
  <div class="form-group">
    <label for="exampleInputName">Name</label>
    <input type="text" class="form-control" id="exampleInputName"
placeholder="Enter your name" required>
    <div class="invalid-feedback">
      Please provide a valid name.
    </div>
  </div>
  <!-- Add more form fields here -->
  <button type="submit" class="btn btn-primary">Submit</button>
</form>
```



Add Validation Feedback: Use Bootstrap's classes like `is-invalid` and `invalid-feedback` to display validation messages.

Initialize Validation: To enable form validation, add the `novalidate` attribute to your form and include the class `needs-validation`. This class tells Bootstrap to validate the form on submission.

Customize Validation Rules (Optional): You can customize validation rules using JavaScript if needed, by writing custom validation functions or utilizing Bootstrap's data attributes.

Handle Form Submission: You can handle the form submission using JavaScript or jQuery. Bootstrap will automatically prevent form submission if there are validation errors.



```
$(document).ready(function()
{
  $('#myForm').on('submit', function(event)
  {
    if (!this.checkValidity())
    {
      event.preventDefault();
      event.stopPropagation();
    }
    $(this).addClass('was-validated');
  });
});
```



```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Bootstrap Example</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css"
rel="stylesheet">
  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"></scrip
t>
</head>
<body>

<div class="container mt-3">
  <h3>Form Validation</h3>
  <p>Try to submit the form.</p>
```



```
<form action="/action_page.php" class="was-validated">
  <div class="mb-3 mt-3">
    <label for="uname" class="form-label">Username:</label>
    <input type="text" class="form-control" id="uname"
placeholder="Enter username" name="uname" required>
    <div class="valid-feedback">Valid.</div>
    <div class="invalid-feedback">Please fill out this field.</div>
  </div>
  <div class="mb-3">
    <label for="pwd" class="form-label">Password:</label>
    <input type="password" class="form-control" id="pwd"
placeholder="Enter password" name="pswd" required>
    <div class="valid-feedback">Valid.</div>
    <div class="invalid-feedback">Please fill out this field.</div>
  </div>
```



```
<div class="form-check mb-3">
  <input class="form-check-input" type="checkbox"
id="myCheck" name="remember" required>
  <label class="form-check-label" for="myCheck">I agree to
continue.</label>
  <div class="valid-feedback">Valid.</div>
  <div class="invalid-feedback">Check this checkbox to
continue.</div>
</div>
<button type="submit" class="btn btn-
primary">Submit</button>
</form>
</div>

</body>
</html>
```




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Form Validation

Try to submit the form.

Username:

ⓘ

Please fill out this field.

Password:

ⓘ

Please fill out this field.

☐ I agree to continue.

Check this checkbox to continue.



Introduction to JavaScript

JavaScript is a **lightweight, cross-platform, single-threaded, and interpreted compiled programming language.**

It is also known as the **scripting language for webpages.**

It is well-known for the development of **web pages, and many non-browser environments also use it.**

JavaScript is a **weakly typed language** (dynamically typed). JavaScript can be used for **Client-side developments as well as Server-side developments**



Client-side:

It supplies objects to **control a browser** and its **Document Object Model (DOM)**.

Like if client-side extensions allow an application to place elements on an HTML form and respond to user events such as mouse clicks, form input, and page navigation.

Useful libraries for the client side are AngularJS, ReactJS, VueJS



Server-side:

It supplies objects **relevant to running JavaScript on a server.**

For if the server-side extensions allow an application to communicate with a database, and provide continuity of information from one invocation to another of the application, or perform file manipulations on a server.

The useful framework which is the most famous these days is **node.js.**



Link JavaScript File in HTML

JavaScript can be added to HTML file in two ways:

Internal JS:

We can add JavaScript **directly to our HTML file** by writing the code inside the **<script> tag**.

The **<script>** tag can either be placed inside the **<head>** or the **<body>** tag according to the requirement.

External JS:

We can write JavaScript code in another files having an **extension.js** and then link this file inside the **<head>** tag of the HTML file in which we want to add this code.



Syntax:

```
<script>  
    // JavaScript Code  
</script>
```



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

```
<head>
```

```
  <title>
```

Basic Example to Describe JavaScript

```
  </title>
```

```
</head>
```

```
<body>
```

```
  <!-- JavaScript code can be embedded inside  
        head section or body section -->
```

```
  <script>
```

```
    console.log("Welcome to sns");
```

```
  </script>
```

```
</body>
```

```
</html>
```



Features of JavaScript

JavaScript was created in the first place for **DOM manipulation**. Earlier websites were mostly static, after JS was created dynamic Web sites were made.

Functions in **JS are objects**. They may have properties and methods just like other objects. They can be **passed as arguments in other functions**.

Can handle **date and time**.

Performs Form **Validation** although the forms are created using **HTML**.

No compiler is needed.



Applications of JavaScript



1. Web Development
2. Web Applications-APIs
3. Server Applications- Node.js
4. Games-HTML 5 , EaseJS
5. Smartwatches-PebbleJS
6. Art-HTML 5 canvas, p5.js library
7. Machine Learning-JavaScript ml5.js library
8. Mobile Applications-application for non-web contexts



Why JavaScript is known as a lightweight programming language?

JavaScript is considered lightweight due to the fact that it has low CPU usage, is easy to implement, and has a minimalist syntax. Minimalist syntax as in, has no data types.

A lightweight language does not consume much of your CPU's resources.

It doesn't put excess strain on your CPU or RAM.

JavaScript runs in the browser even though it has complex paradigms and logic which means it uses fewer resources than other languages



Is JavaScript Compiled or Interpreted or both?

JavaScript is both compiled and interpreted.

In the earlier versions of JavaScript, it used only the interpreter that executed code line by line and shows the result immediately.



Any Query????

Thank you.....