07

Object Models

WHAT YOU WILL LEARN

* Browser Object Model
* Document Object Model
* JavaScript Events
* Exception Handling

Browser Object Model

The Browser Object Model (BOM) is used to interact with the browser.

* The default object of browser is window means you can call all the functions of window by specifying window or directly. For example:
* window.alert("hello Engineer"); or alert("hello DEV");

BOM Hierarchy

Diagram

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We will cover Windows and Document object model

* Window Object
* Document
* History
* Screen
* Navigator
* Location

Window Object

The **window object** represents a window in browser. An object of window is created automatically by the browser.

Window is the object of browser, it is not the object of javascript.

**Methods of window object**

**Graphical user interface, text, application, email

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Document

* The document object represents the whole html document.
* When html document is loaded in the browser, it becomes a document object.
* It is the root element that represents the html document.
* Properties of document object

Diagram

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* Methods of document object

Table

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JavaScript Event

* The change in the state of an object is known as an Event.
* here are various events which represents that some activity is performed by the user or by the browser.
* This process of reacting over the events is called Event Handling.
* js handles the HTML events via Event Handlers.

**Mouse events:**

Table

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Keyboard events:

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Form events

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Window/Document events

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addEventListener()

* The addEventListener() method is used to attach an event handler to a particular element.
* The addEventListener() method is an inbuilt function of JavaScript.

Syntax - element.addEventListener(event, function, useCapture);

Parameter Values -

1. **event**: It is a required parameter. It can be defined as a string that specifies the event's name.
2. function: It is also a required parameter. It is a JavaScript function which responds to the event occur.
3. useCapture: It is an optional parameter. It is a Boolean type value that specifies whether the event is executed in the bubbling or capturing phase.

* onclick event –
  + Example using onclick html attribute

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JavaScript Exception

* When executing JavaScript code, different errors can occur.
* Errors can be coding errors made by the programmer, errors due to wrong input, and other unforeseeable things.

**JavaScript try and catch**

The try statement allows you to define a block of code to be tested for errors while it is being executed.

The catch statement allows you to define a block of code to be executed, if an error occurs in the try block.

The JavaScript statements try and catch come in pairs:

The finally statement lets you execute code, after try and catch, regardless of the result:

**Text, letter

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**JavaScript Throws Errors**

When an error occurs, JavaScript will normally stop and generate an error message.

The throw statement allows you to create a custom error.

Technically you can **throw an exception (throw an error)**.

The exception can be a JavaScript String, a Number, a Boolean or an Object:

The Error Object

* JavaScript has a built in error object that provides error information when an error occurs.
* The error object provides two useful properties: name and message.

Graphical user interface, text, application

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* Graphical user interface, text, application, email

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* A picture containing graphical user interface

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* Text

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