



COURSE CONTENT for Javascript and Javascript OOP'S  
[www.ui-desk.com](http://www.ui-desk.com)  
Ph : 9100831318  
E-Mail:sai.uidesk@gmail.com

## **1. Introduction**

- What is a JavaScript?
- What is the need of Javascript?
- Javascript history?
- What is ECMAScript?

## **2. Attaching Javascript with HTML page**

- Inline-scripting
- External-scripting
- Importance of position script tag in HTML page

### **3. JavaScript variables and Datatypes**

- What is a variable?
- How to create a variable in Javascript?
- How do variables in Javascript differ with variables in other languages?
- What is a Datatype?
- Types of datatypes in Javascript
- What actually NaN is?
- Why no two NaN's are not equal?
- What actually undefined is?
- Why null is an object?

### **4. Javascript Operators**

- Assignment Operators
- Arithmetic operators
- Comparison or relational operators
- Logical operators
- Logical bitwise operators
- Shift operators
- String operators
- Dot operators
- Comma operators
- Ternary operator

### **5. Control transfer statements**

- If
- If-else
- If-else-if
- Nested if
- Nested if-else
- Switch
- Brower Console debugging
- Breakpoints in Console debugging

### **6. Looping Statements**

- While loop
- Do-While loop
- For loop
- For-in loop

- Improved Native for loop
- Watch variables in Console debugging
- Evaluation of selected code in console

## 7. Functions

- What is a function?
- Function declaration in Javascript?
- Types of function declaration in Javascript
- Types of function invoking in Javascript
- Call by value
- Call by reference
- Call stack in console
- Pre-defined functions in Javascript
- Javascript pop-up boxes
- Console functions in Javascript
- What is a scope of a variable?
- Local scope and global scope
- How to create block scope using ECMAScript6
- Function hoisting and its issues
- Use of strict
- IFI – immediate invoking function
- Problem of using global variables
- Anonymous functions
- Self invoking functions
- Call-back functions and their importance
- Inner functions
- What is a closure?
- What is Lexical scope?
- How to convert minified JS code into un-compressed format in debugger

## 8. Objects

- What is an Object?
- Thinking everything in Object oriented
- Difference between classical and prototypal object oriented programming
- Different ways of creating Objects in Javascript
  - Object Literal method
  - Constructor function method
  - Using Object object
  - Using simple function method
- Altering the properties of Objects
- Constructor property
- InstanceOf operator

- This keyword
- Problem with this keyword
- Comparing Objects

## 9. Inheritance

- What is inheritance?
- How to achieve inheritance in Javascript?
- Prototype property
- `__proto__`
- Implementing different types of inheritance
  - Single inheritance
  - Multi-level inheritance
  - Multiple inheritances
- `hasOwnProperty()` method
- `propertyIsEnumerable()` method
- `isPrototypeOf()` method

## 10. Polymorphism and method overriding

- What is polymorphism?
- What is method overriding?
- Implementing polymorphism in Javascript
- Implementing method overriding in Javascript
- Calling parent method in child object using method overriding (super in java)

## 11. Built in Objects

- Data wrappers Objects
  - Object, function, Number, Boolean, String, Array
- Utility Objects
  - Date Object, Math Object, RegExp Object
- Error Objects
  - Error – (try/catch)

## 12. Browser Object Model (BOM)

- What is a BOM?
- Window Object
- `Window.innerWidth` and `Window.innerHeight` Properties
- `Window.navigator` object
- Example: Find your location using `window.navigator.geolocation`
- `Window.history` Object

- Page navigation using window.history object methods
- Window.history.go()
- Window.history.back()
- Window.history.forward()
- Window.history.length
- Window.history.pushState()
- Window.screen
- Window.open()/close() methods
- Window.moveTo() method
- Window.moveBy() method
- Window.resizeTo() method

### **13. Document Object Model (DOM)**

- What is a DOM?
- How to access HTML elements in Javascript using DOM methods
- Accessing Child nodes and traversing along the DOM
- Difference between XML and HTML child nodes methods in DOM
- Accessing attributes of your HTML elements
- HTML content modifiers
- Text content modifiers
- Creating, Deleting and appending HTML nodes

### **14. Event Handling**

- What is an Event?
- Types of Events in Javascript
- How to Handling Events in Javascript
- Event Propagation
- Event Capturing and Bubbling
- Stopping Event Propagation
- How to remove default behaviours of browser
- Analyzing Event Properties
  - Event basic information
  - Target information
  - Co-ordinate information
  - Key/mouse information

### **15. Exercises on DOM and EVENT handling**

- Image Selection
- Image Zooming
- Mouse followed Image
- Implementation of Overlay

- Introduction to HTML5 APIs
- Implementation of HTML5 APIs (drag and drop, canvas)

## **16. Ajax**

- What is XMLHttpRequest Object?
- Implementation Synchronous and Asynchronous of XMLHttpRequest object
- Importance of Asynchronous of XMLHttpRequest for non-blocking IO applications
- Why do we need Ajax?
- Implementing Ajax using Javascript and XMLHttpRequest

## **17. JSON**

- What is JSON?
- Importance of JSON format of data that XML
- Creating and understanding JSON data
- JSON.parse() method
- JSON.stringify() method

## **18. Design Patterns**

- What are Design Patterns?
- Types of Design Patterns
- Singleton pattern
- Factory method implementation in JavaScript
- Decorator pattern in JavaScript