JavaScript SKILLS Self-Assessment

1. JavaScript core language programming
2. JavaScript Object Oriented Programming (OOP)
3. Using browser extensions and HTML API’s
4. Using JavaScript development tools and related technologies
5. Employing JavaScript libraries and frameworks
6. Professional development standards and testing
7. Advanced JavaScript design patterns
8. Developing with JavaScript on the server and in enabled devices
9. Application performance measurement and optimization
10. Professional JavaScript application development and security

This document has two purposes. First, it lays out a set of criteria that allow a developer to assess his/her skill level using a 1-to-5 scale. Each level is defined by a set of baseline requirements. Secondly, it provides a kind of roadmap for developers who want to learn JavaScript development.

# JavaScript Level 1: Developing Core Language Competency

**JavaScript, Level 1** is the beginning of the developer’s journey toward mastery. It requires nothing more than willingness to learn JavaScript. The moment you commit to learning JavaScript you have reached level one.

# Javascript Level 2: Understanding Objects and Application Structure

**JavaScript, Level 2** signifies that the developer has expertise with the core JavaScript language constructs, a solid understanding of how JavaScript functions in the browser, and the ability to work with browser objects that extend the language. Here is a detailed list of baseline requirements.

|  |  |
| --- | --- |
| **JavaScript Level 2, Baseline Requirements** | |
| **JS Skills** | **Related Skills** |
| Create and include scripts in a web page | Use the Browser Console |
| Use variables, statements and loops | Have basic understanding of HTML 5 elements |
| Able to create and use array data | Have basic understanding of CSS3 |
| Can create and use functions |  |
| Have a basic understanding of Scope |  |
| Understand and work with Objects and object Methods |  |
| Access, validate and submit form data |  |
| Access and manipulate the DOM |  |

### Learning Objectives forJavaScript, Level 2 Developers

* Develop fluency with built in JavaScript objects and object methods (e.g., String, Date, Array, Math).
* Create, manipulate and persist JSON data.
* Work with HTML 5 APIs for Geolocation, Session Storage & Local Storage.
* Familiarity with reading and writing cookies.
* Implement AJAX with native JavaScript Objects.
* Implement error handling using Try-Catch-Finally code blocks.
* Develop mastery of data type and the concepts of Truthy, Falsey and Equality.
* Create and utilize object literals and constructor objects.
* Develop fluency with prototypes and inheritance.
* Understand the significance of “First-Class Functions” and utilize functions as a variable, an argument and a return value.
* Understand the four JavaScript Invocation Patterns: method, function, constructor, and apply
* Understand how encapsulation and closures work and how they are used
* Understand what Immediately Invoked Function Expressions are and implement them using the Module Pattern.
* Use jQuery or similar library (e.g., Ext, Dojo Toolkit, Moo Tools, etc.) to manage cross-browser issues and add functionality.
* Work with API’s to integrate publically available data into your application.

# Javascript Level 3: Working with API’s, framewoeks, design patterns & Optimization

**JavaScript, Level 3**

|  |  |
| --- | --- |
| **JavaScript Level 3, Baseline Requirements** | |
| **JS Skills** | **Related Skills** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

### Learning Objectives forJavaScript, Level 3 Developers

* Develop mastery with AJAX as a means of consuming and manipulating data from web services, using JSONP and CORS.
* Demonstrate mastery with cross-browser support issues using a variety of techniques including polyfills or webshims, graceful degradation, and JavaScript libraries.
* Demonstrate mastery of jQuery and jQuery Mobile libraries

# Javascript Level 4:

|  |  |
| --- | --- |
| **JavaScript Level 4, Baseline Requirements** | |
| **JS Skills** | **Related Skills** |
|  |  |
|  |  |
|  |  |

3 Levels of Engagement: Familiarity, Competency, Mastery

**3-4**

* Frameworks and Libraries
* JavaScript outside of the browser -- Node.js
* Application Architecture and Design Patterns
* Optimization -- analysis and performance tuning
* Style Guides
* Unit Testing
* Web Workers
* Polyfills
* Implementing rich UI interactions and effects
* Implementing JS Widgets
* recursion

**4-5**

* Application Security
* Creating jQuery Plugin
* NoSQL Data Modeling
* Regular Expressions
* Active collaboration on open source project

**5+**