

# Exam 98-382: Introduction to Programming using JavaScript

Candidates should be able to recognize and write syntactically correct JavaScript code, use data types supported by JavaScript, and be able to recognize and write JavaScript code that will logically solve a given problem.

Candidates are expected to have had, at minimum, instruction and/or hands-on experience of approximately 150 hours with the JavaScript programming language, be familiar with its features and capabilities, and understand how to write, debug, and maintain well-formed, well documented JavaScript code.

*Prerequisite Skills for this exam are:*

*Core Algebra (Algebra 1) (Typical US 9th/10th grade level) and Fundamental knowledge of HTML*

**Microsoft**  
Technology Associate

## Objective Domain

### Program with JavaScript Operators, Methods, and Keywords

- **Complete or debug code that uses assignment and arithmetic operators.**
  - Assignment; increment; decrement; addition; subtraction; division; multiplication; modulus; compound assignment operators
- **Apply JavaScript best practices.**
  - Comments; indentations; naming conventions; noscript; constants; reserved keywords; debugger keyword; setting breakpoints; console.log
- **Evaluate the use of inline and external scripts.**
  - When to use, how to use, and what happens when both are used
- **Implement exception handling.**
  - try; catch; finally
- **Complete and debug code that interacts with the Browser Object Model (BOM)**
  - Manage state; display dialogs; determine screen size



## Program with Variables, Data Types, and Functions

- **Declare and use variables of primitive data types.**
  - Number; Boolean; String; Null; Undefined; typeof operator; type checking functions; use strict; converting between data types; formatting numbers; string operations; single quote vs double quote (nesting); initialization
- **Declare and use arrays.**
  - Single-dimensional: iteration; initialization; array definition; sorting and searching; push and pop; shift/unshift; length; accessing an element; understanding multi-dimensional array
- **Complete and debug code that uses objects.**
  - Properties; methods; instantiation; Date object: time; retrieving date parts; localization (MM/DD vs DD/MM); adding and subtracting dates
- **Complete and debug code that uses built-in Math functions.**
  - Random; round; abs; floor; ceiling; min/max; pow; sqrt
- **Complete and debug a function that accepts parameters and returns a value.**
  - Reusable code; local vs global scope, redefining variables, passing parameters, value vs. reference, return values

## Implement and Analyze Decisions and Loops

- **Evaluate expressions that use logical and comparison operators.**
  - ==; !=; <, >; <=, >=; !; &&; ||
- **Complete and debug decision statements.**
  - if; else if; switch; nested if
- **Complete and debug loops.**
  - for; while; do; break; continue

## Interact with the Document Object Model

- **Identify and construct the Document Object Model (DOM) tree.**
  - window; document; body; other HTML elements
- **Identify and handle HTML events.**
  - onchange; onmouseover; onload; onclick; onmouseout; onkeydown
- **Complete and debug code that outputs to an HTML document.**
  - innerHTML; document.write
- **Complete and debug code that locates, modifies, and adds HTML elements and attributes.**
  - getElementById; getElementsByTagName; getElementsByClassName; setAttribute; createElement

## Interact with HTML Forms

- **Complete and debug code that retrieves input from forms and sets form field values.**
  - Retrieving form values; the DOM path to form field and then to the value property; getting values from different types of elements; prepopulating values; masking values
- **Complete and debug code to perform input validation.**
  - Case (upper and lower); string comparisons; validation; NaN
- **Describe the form submission process.**
  - onsubmit; understand post vs get; understand potential targets for submission