

Price: R8,400.00 excl. VAT
Duration: 3 days
Delivery: Virtual classroom or
on-site training

Advanced JavaScript Programming

Description

If you want to build robust web applications, you need to master the more advanced features of JavaScript. These features will make your code more efficient and scalable. They are also used extensively in popular frameworks like React and Node.js.

This course will address topics such as keyed collections, asynchronous programming, object-oriented features, decorators and closures. It will also cover the differences between TypeScript and JavaScript.

Objectives

After you have completed the Advanced JavaScript Programming course, you will be able to:

- Use the Symbol type, indexed and keyed collections.
- Write advanced functions and use decorators.
- Understand and use object-oriented concepts in JavaScript.
- Use promises and asynchronous functions.
- Understand and use the event model.
- Understand the differences between TypeScript and JavaScript.

Intended Audience

You should attend the Advanced JavaScript Programming course if:

- You are a JavaScript programmer and you want or need to learn more advanced concepts.
- You need to be able to support JavaScript code that uses more advanced concepts.

Prerequisites

Before you attend the Advanced JavaScript Programming course:

- You must have attended our HTML and CSS course or have experience using HTML and CSS.
- You must have attended our JavaScript Programming course or already be comfortable programming in JavaScript.

Course Contents

Introduction

- Recap of JavaScript concepts.
- JavaScript outside the browser.

Data Types

- The Symbol type.
- Indexed collections: ArrayBuffer and binary arrays.
- Keyed collections: Map, Set, WeakMap, and WeakSet.

- Destructuring assignment.

Objects

- Object references and copying.
- Garbage collection.
- Optional chaining.
- Object to primitive conversion.
- Property flags and descriptors.
- Property getters and setters.

Classes

- Class syntax.
- Inheritance with the prototype chain.
- Static properties and methods.
- Private and protected properties and methods.
- Extending built-in classes.
- Mixins.

Advanced Functions

- Variable scope and closures.
- Recursion and stack.
- Rest parameters and spread syntax.
- Named function expressions.
- Decorators and forwarding.
- Function binding.
- Arrow functions revisited.

Generators and Advanced Iteration

- Generators.
- Async iteration and generators.

Asynchronous Processing

- Callbacks.
- Promises and promisification.
- Async and await.

Events

- Concurrency model and the event loop.
- Browser events.
- Bubbling and capturing.
- Event delegation.
- Dispatching custom events.

- Scripts: async and defer.
- Resource loading: onload and onerror.
- Mutation observer.

Network Requests

- XMLHttpRequest.
- Fetch.
- FormData.
- WebSocket.
- URL objects.
- Resumable file upload.

Modules

- Introduction to modules.
- Export and Import.
- Dynamic imports.

TypeScript

- JavaScript versus TypeScript.
- Polyfills and transpilers.
- Syntax of types.
- Classes and interfaces.
- Custom types.
- Generics.
- Decorators and attributes.

*** The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*