



# Full Stack boot camp

Name	Duration (Hours)
JavaScript Programming	56
Git	8
Front End Development Basics	24
Typescript	8
React Basics	40
E2E Testing	8
Build & Setup	8
Advanced JavaScript	48
NodeJS	24
Building REST API using NodeJS	24
Advanced Front-End Development	48
Advanced React	40
Working with SQL & NoSQL databases	24
<b>Total</b>	<b>360</b>

## General

JSBOOTCAMP is a new project set to train high quality Full Stack developers who are capable to effectively develop in the latest tools on the web and mobile worlds.

This training is for students that are able to quickly study and internalize the right working methods in the world of software. Major parts of the training are dedicated for writing actual code and through the training the students will build many projects imitating the working environment in the modern software developing market.

The training is set to be 12 weeks, 5 days a week, 8 academic hours per day of intensive studying (theory + hands on) with the best training team in Israel.

## Topics

### JavaScript Programming

Basic JavaScript functions. We will use NodeJS platform and the browser to run and debug the code. We will also get familiar with WebStorm.

conditions	Working with browser	Hello World	NodeJS
strings	Other Flow Control	variables	
Value vs. reference	objects	debug	functions

### Data Structure

Studying the essential data structures: LinkedList, Binary Tree, HashTable and more.

Linked List	Queue	Stack	Array
	Hash Table	B-Tree	Binary Tree

## **Git**

We will teach how to work with the most popular Source Control tool today. We will study how to restart a repository and sync it with a distant repository. We will use GitHub as a GIT Service provider in the cloud and use the power of branches to work on multipack tasks parallel.

Rolling back	Committing changes	Query current status	Initializing a new repo
Creating new branch	Resolve conflicts	Pulling changes	Pushing changes
		Use GitHub	Merging between different branches

## **Front End Development**

In this module we will study how to develop browser user app interface. We will get deep knowledge of DOM API and also with other browser services such as location ,cookies and more.

Creating new elements	Modifying the DOM	Querying the DOM	Basic HTML Tags
Timers	window object	Event object	Event Listeners
Location API	Custom Popup	local Storage	Cookies
AJAX	BOM API	CSS	jQuery
	RegExp	Date API	JSON

## **React Basics**

We will develop applications and components with React. how to open a new project, use JSX. Later on we will focus on more advanced topics related to React such as Redux and HOC.

Components	JSX	Getting started	Why & What
Lists & Keys	Lifecycle	State	Props
Router	Interacting with Server	Styling	Forms
			Developer Tools

## **E2E Testing**

In this module we will study to develop automated tests simulating an end user by using Web Driver API.

Simulate mouse click	Opening a browser	Web Driver API	Selenium
Moving between windows	Forms	Getting text values	Locating UI
			Working with Popups

## **Build & Setup**

Here we will study the build process using NodeJS and preparing the code for Production. We will also deeply get familiar with Webpack.

Introducing WebPack	Differences between development & production builds	Creating build script using NodeJS	package.json scripts
Code Splitting	One config for DEV & PROD	Webpack.config.js	Common Plugins
			Common Loaders

## **Advanced JavaScript**

We will go deeper into JavaScript. Studying topics such as: Prototype, closure, Promise, async/await and more.

Promise API	Prototype based inheritance	Prototype based classes	Memory Profiling
call vs. apply	bind	Event Loop	async/await
Properties	Inheritance	Classes	Modules
Template string	Rest parameter	Spread operator	Arrow Function
Iterators	For of	Let & const	Destructing
			Map & Set

## Typescript

We will study the interesting characteristics that Typescript adds to JavaScript. At the end of this part the students will be able to use the abilities of Refactoring ,Compile time errors and Intellisense.

tsconfig.json	Compiling	Installing	Why use Typescript
generics	interface	Modules	Target
Decorators	enums	Encapsulation	abstract class
		@types	Declaration files

## NodeJS

In this module we will get deep knowledge of NodeJS platform. We will go over NPM , package.json ,streams, buffers and more.

npm	nvm	Installing	Why & What
Stream API	File System API	Why you should never block	Asynchronous IO
Debugging	Process API	Buffers	Package Management
Readline	CJS Modules	Path	Consuming HTTP
		Zlib	Utilities

## **Building REST API**

In this module we will study to develop server side applications based on HTTP protocol. We will focus on ExpressJS that is the most popular framework for building REST API in NodeJS.

Router	Simple REST API	Installing	Why & What
Handling complex URLs	Error Handling	View engines	Middlewares
OAuth	Application events	Body parsers	Request context

## **Advanced Front-End Development**

In this module we will get to know advanced APIs that enable to develop smarter applications. We will focus on browser services that enables to build services such as: IndexedDB, Service Workers, Web Workers and more.

History API	File API	Service Workers	Web Workers	SASS
CSS Animations	Audio/Video	Web Socket	Push Notification	Indexed DB
CORS	JSONP	Same Origin Policy	Geolocation	Responsive Web Design
	Web Messaging	Canvas	Drag & Drop	SVG

## Advanced React

In this module we will focus on design and planning in the world of React. We will use advanced architectures such as Flux and Redux and we will study how React really works under the hood.

Uncontrolled Components	Refs	Typechecking	JSX in Depth
Fragments	Context	Reconciliation	Optimization
Code Splitting	HOC	Error Handling	Portals
		SSR	HMR

## Working with SQL & NoSQL databases

By now the students will be able to build a user interface and REST API. The missing part is working with databases. We will teach them to use SQLite, MySQL, MongoDB. We will study SQL and the pros and cons of NoSQL over the old table based databases.

Introduction to NoSQL databases	MySQL	SQLite	Introduction to Relational Databases
	Sharding	Clustering	MongoDB