Full Stack Web and Mobile Web Development

Learn front-end and hybrid mobile development, with server-side support, for implementing a multi-platform solution.

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Overview

The three courses in this Bootcamp cover **JavaScript** and the front end framework **React**. You'll also learn to create hybrid mobile applications, using the **React Native** framework.

On the server side, you'll learn to implement NoSQL databases using **MongoDB**, work within a **Node.js** environment and **Express** framework, and communicate to the client side through a RESTful API.

Learners enrolling in this Bootcamp are expected to have prior working knowledge of HTML and CSS.

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4 Courses

At a structured pace, with the support of a dedicated Instructor and classroom environment.

Project Portfolio

Develop a campground website throughout the bootcamp, and work on your own project in groups or 2-3 students.

Certificate

Showcase your accomplishment after each course and the end of the Bootcamp.

Recommended Resources

1. Successful completion of all assignments
2. Passing grade on all quizzes
3. Active participation in all workshops and project-related activities
4. Successful deployment of the team project

Academic Integrity

All students are expected to abide by the Nucamp Community Code of Conduct. Plagiarism will not be tolerated and may result in dismissal from the bootcamp.

Student Support

Office hours are held at least weekly or by appointment. Students are encouraged to attend and ask questions related to lessons, exercises, and projects. Students also have access to a class forum, a dedicated class chat channel and cohort chat channel, and are encouraged to use these channels to help others and seek help from classmates and mentors. Additionally, students can access online resources at any time for additional support.

JavaScript Fundamentals

Javascript

JavaScript is used to make dynamic webpages interactive and provide online programs, including video games.

Google Cloud

Google Cloud is a suite of cloud computing services that runs on the same infrastructure that Google uses internally for its end-user products, such as Google Search, Gmail, file storage, and YouTube.

About the Course

This course will give you an overview of the JavaScript programming language, and help you build a solid foundation of core JavaScript, which you will continue to build upon in subsequent courses.

You will learn about the fundamental concepts of programming, which are similar in every programming language and apply them to the JavaScript ES6 syntax. You will learn the basics of Application Programming Interfaces (APIs), and how to make a call to a third-party API to get external data.

During this course, you will work on a group project with your classmates that uses an API to create a fully functioning web application.

At the end, you will be able to

1. Understand and apply fundamental JavaScript concepts
2. Leverage JavaScript to interact with and modify the Document Object Model, which forms the basis for web page manipulation
3. Create interactive web applications that respond to user input through effective event handling
4. Understand object-oriented programming and be able to work with JavaScript objects and JSON, including handling data requests and errors.
5. Implement asynchronous programming using APIs to fetch data and integrate it into a web application
6. Collaborate in a team environment to develop and deploy a JavaScript-based web application, learning project management, version control, teamwork, and collaborative coding skills
7. Showcase your work by adding to your professional portfolio and demonstrating your ability to present and share your work in a professional context

WEEK 1

JavaScript Foundations

Begin your journey with JavaScript by learning about some of the most foundational concepts in programming: variables, data types, operators, functions, and logic. By the end of this week, you'll be able to write some basic functions and create small applications that can perform calculations or play simple games.

At the end of this week, you'll complete your first assignment, learn about your project requirements, select your teammates, and begin brainstorming project ideas.

WEEK 2

Loops, Arrays, And Manipulation Methods

This week, you'll continue exploring programming concepts by learning about loops, arrays, and manipulation methods, as well as explore the more advanced syntax and nuances of functions, including arrow functions, scope, and hoisting. By the end of this week, you'll be able to write more complex functions and create more advanced applications.

You'll complete your second assignment this week and start working on your project with your teammates.

WEEK 3

JavaScript Document Object Model

This week, you'll learn about the JavaScript Document Object Model (DOM), and how JavaScript can manipulate the DOM to change the elements on a web page. You'll also learn event handling, which is how your applications respond to user input. By the end of this week, you'll be able to create interactive web applications.

You'll complete your third assignment this week and build the user interface of your project with your teammates.

JavaScript Objects & Object-Oriented Programming

This week, you'll learn about JavaScript objects and the basics of object-oriented programming, including, properties, classes, inheritance, and syntax. You'll also learn about JavaScript Object Notation (JSON) and how to handle errors in data requests. By the end of the week, you'll be able to use the sample JSON output from your API endpoints to design the rest of your project.

You'll complete your fourth assignment this week and begin building the display elements for your project.

Asynchronous Programming & APIs

In the final week of this course, you'll learn the basics of asynchronous programming and application programming interfaces (APIs), including promises, async/await, and fetch. By the end of the week, you'll be able to send requests to fetch data from an API and display the results in your applications.

You finish the week with your final assignment and use your project time to connect your application to real-time data from an API.

You will have a 1-week break from lessons before the next module, which is dedicated time for you to meet with your teammates, test and complete your project, deploy your finished application, update your GitHub repository, and add the project to your portfolio website.

Recommended Resources

1. Eloquent JavaScript
2. Mozilla Developer Network
3. JavaScript.info

Front-End JavaScript Frameworks: React

React

JavaScript is the most popular language for Web Development. React is the most popular JavaScript library that will make your applications more dynamic.

At the end, you will be able to

1. Be familiar with client-side Javascript application development and the React library
2. Be able to implement single page applications in React
3. Be able to use various React features including components and forms
4. Be able to implement a functional front-end web application using React
5. Be able to use Reactstrap for designing responsive React applications
6. Be able to use Redux to design the architecture for a React-Redux application
7. Deploy a React web app using Google Cloud and Firebase.

About the Course

This course explores Javascript based front-end application development, and in particular the React library.

This course will use JavaScript ES6 for developing React application.

You will also get an introduction to the use of Reactstrap for Bootstrap 4-based responsive UI design.

You will be introduced to various aspects of React components.

You will learn about React router and its use in developing single-page applications

You will also learn about designing controlled forms.

You will be introduced to the Flux architecture and Redux.

You will explore various aspects of Redux and use it to develop React-Redux powered applications.

You will then learn to use Fetch for client-server communication and the use of REST API on the server side.

A quick tour through React animation support and testing rounds off the course.

You must have preferably completed the previous course in the specialization on Bootstrap 4, or have a working knowledge of Bootstrap 4 to be able to navigate this course.

Also a good working knowledge of JavaScript, especially ES 5 is strongly recommended.

WEEK 1

Introduction to JavaScript ES 6

This week, we will discuss more advanced topics in JavaScript in preparation for our dive into React.js. You'll learn about how to instantiate objects from classes, the concept of class inheritance, and the iteration-based array methods map, filter, and reduce.

WEEK 2

Introduction to React

In this module we get a quick introduction to front-end JavaScript frameworks and libraries, followed by an introduction to React. We will also learn about React components and JSX.

WEEK 3

React Router and Single Page Applications

In this week, you will learn about various component types. You will learn about React router and its use in designing single page applications. You will also learn about single page applications and use React Router to design single page applications.

WEEK 4

React Forms, Flow Architecture and Introduction to Redux

In this module you will be introduced to uncontrolled and controlled forms and briefly examine form validation in React applications. You will get an overview of the Flux architecture and introduced to Redux as a way of realizing the flux architecture.

More Redux and Client-Server Communication

In this module you will explore Redux further including Redux action, combining reducers, and Redux thunk, client-server communication using Fetch and the REST API. You will get a brief introduction to animation in React. You will also learn about testing, building and deploying React applications.

Multiplatform Mobile App Development with React Native

React Native

JavaScript is the most popular language for Web Development. React is the most popular JavaScript library that will make your applications more dynamic.

At the end, you will be able to

1. Build mobile applications targeting multiple platforms with a single codebase,
2. Leverage your HTML5, CSS, JavaScript and React skills, and
3. Use various features of the React Native and Expo SDK to build hybrid mobile applications
4. Use Redux to design the architecture for a React-Redux application
5. Connect your React Native web app to a REST API hosted on Google Cloud.

About the Course

This course focuses on developing truly cross-platform, native iOS and Android apps using React Native and the Expo SDK.

React Native uses modern JavaScript to get truly native UI and performance while sharing skills and code with the web.

You will learn about UI development with React Native UI and layout support and access the native mobile platform's capabilities from Javascript using the Expo SDK.

You should have already completed the Bootstrap 4 and the React courses in this specialization before proceeding with this course.

WEEK 1

Hybrid Mobile App Development Frameworks: An Introduction

This module introduces you to hybrid mobile application development. You will learn about React Native and explore some of the features of React Native to implement a mobile app based on the React application that was implemented in the previous course on React.

WEEK 2

React Native UI Elements and Redux

This module introduces you to various React Native UI elements. We will look at how we can make use of these elements in designing the various views of our application. You will get an overview of the Flux architecture and introduced to Redux as a way of realizing the Flux architecture.

WEEK 3

React Native Alerts, Animations, Gestures, and Persist Redux Store

In this module we look at enhancing the user experience through the use of animations and support for gesture-based interaction. We also look at persisting the redux state, and alerting the users.

WEEK 4

Accessing Native Capabilities of Devices: The Expo SDK

In this module you will explore the Expo SDK that enables you to access the native capabilities of the mobile devices. You will use a few SDK APIs in order to understand the general concepts and the patterns for using these APIs within your React Native application.

Server-side Development with NodeJS, Express and MongoDB

NodeJS

You'll move on to a back-end language that will handle things like database operations, user authentication, and application logic. Node.js is a great option as it is just a JavaScript environment.

Express

You'll be able to develop complex applications: how to structure your code, where to host your large media files, how to structure the data in your database, where to perform certain computational tasks (client-side vs server-side), and much more.

MongoDB

When learning to build web applications, at some point you'll need to store data somewhere and then access it later. You'll learn how to use MongoDB database and access it via Node.js.

About the Course

This course deals with all things server-side. We base the entire course around the NodeJS platform.

 We start with a brief overview of the Web protocols: HTTP and HTTPS. We examine NodeJS and NodeJS modules: Express for building web servers. On the database side, we review basic CRUD operations, NoSQL databases, in particular MongoDB and Mongoose for accessing MongoDB from NodeJS.

We examine the REST concepts and building a RESTful API. We touch upon authentication and security. Finally, we review backend as a service (BaaS) approaches, including mobile BaaS, both open-source and commercial BaaS services.

At the end, you will be able to

1. Demonstrate an understanding of server-side concepts, CRUD and REST
2. Build and configure a backend server using NodeJS framework
3. Build a RESTful API for the front-end to access backend services
4. Publish your NodeJS and Express Rest API routes as serverless Google Cloud Functions
5. Manage cloud file storage and authentication via Google Cloud Storage and Firebase Authentication
6. Leverage the Google Cloud Firestore NoSQL service for your website and app data and perform CRUD operations

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WEEK 1

Introduction to Node and Express

In this module you will be introduced to Node, Node modules and the Node HTTP server. You will learn about the Express framework and how to set up a REST API using Express.

WEEK 2

Introduction to MongoDB

This module looks in detail at data storage with MongoDB, the popular NoSQL database. You will learn first about Express generator for scaffolding an Express application. Then you will learn about MongoDB. You will learn how to interact with MongoDB from a Node application. Then you will learn the Mongoose ODM to create schemas and models, and interact with MongoDB server.

WEEK 3

Authentication

This module is dedicated to user authentication. We first develop a full-fledged REST API server with Express, Mongo and Mongoose. Thereafter we examine basic authentication and session-based authentication briefly. We then develop token-based authentication with the support of JSON web tokens and the Passport module.

Backend Services

In this module we learn about Mongoose population, a way of cross-referencing documents and populating the documents from other documents.

We then review secure communication using HTTPS. We look at Backend as a Service (BaaS) and take a brief look at Loopback.

Project Portfolio

Commitment: Self-driven or in groups, 4-8 hours/week for the duration of the bootcamp.

About the Project Portfolio

This Bootcamp offers a structured path for you to develop a fully functional and feature rich project portfolio.

You will be asked to start with identifying the project you would like to build, based on a market analysis of needs, and will quickly move to a prototyping phase.
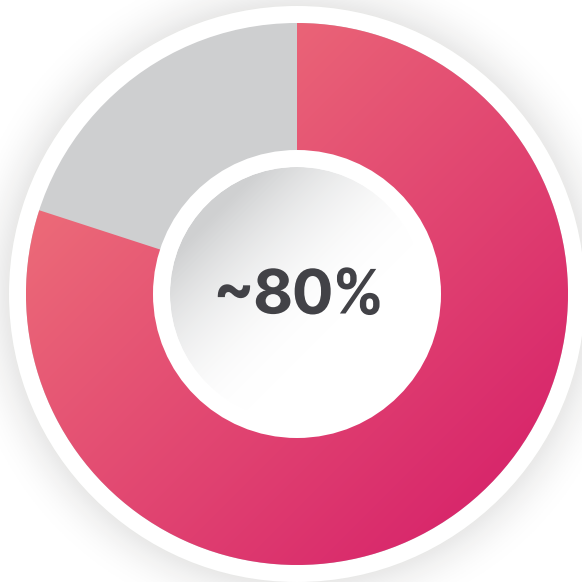
With every new course and technology, you will improve your project to make it more responsive, data-driven, mobile-friendly and finally connect it with a back-end and host it on a cloud platform.

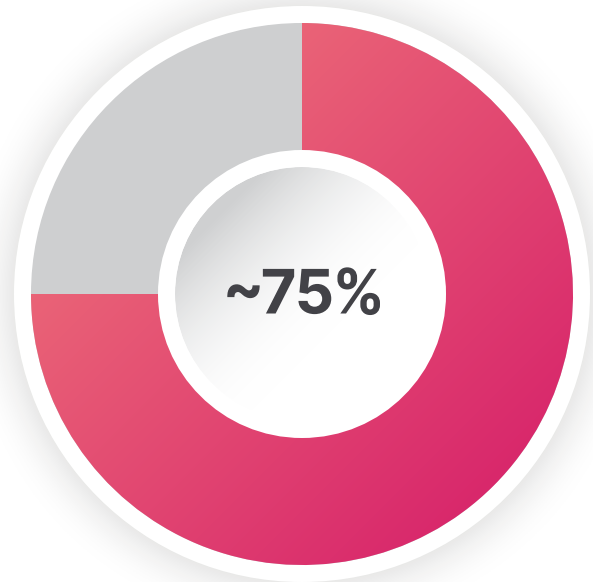# Authentic, trustworthy graduate outcomes

So you can have fair expectations.
Data is **updated daily online** from our graduate survey responses.

Job Skills Rate

~80%

~80% of graduates are applying their tech skills in their jobs or on side projects after 9 months.

Graduation Rate

~75%

~75% of students graduate

Career Services

You'll receive unmatched career support after you graduate so you can focus on your learning today.

About the Project Portfolio

Once you graduate from a Nucamp Bootcamp, we'll connect you with a Career Coach to guide you through the job search process. Our Career Coaches are also Nucamp Instructors who have the expertise and knowledge to help with your career preparation. You'll receive ongoing best practices, answers to common questions, and a valuable one-on-one coaching session to help you land the job that's right for you.
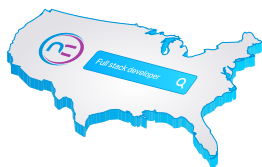
Establish a winning career search plan by joining the Career Development program

Nucamp graduates have access to a Career Development Course that guide them in the job-seeking process, with activities and assignments to help get on track toward a career in development.

Get hands-on Career Preparation so that recruiters can see the best of what you offer

Your Career Coach will review your resume and GitHub profile and provide feedback so that recruiters can more easily find you and connect your relevant skills to their needs. Coaches will also help you prepare for interviews so that you can present your best and they will review your portfolio projects to help highlight your best skills.

Get exclusive access to a nationwide Job Board tailored to Nucamp graduates

Every month we reach out to 1,000+ companies to gather junior developer positions that are a good fit for Nucamp Graduates. In addition to working with large companies, we've expanded the list of opportunities by also including small-to-medium sized companies who have exciting jobs in smaller cities.

Land your dream job with a free month of LinkedIn Premium

With over 20 Million job listings, LinkedIn Premium helps you get noticed by potential employers, get connected to managers and recruiters, and get an edge with career search insights. You'll also get access to LinkedIn Learning so you can expand your professional skills further.

Stay connected with Nucamp Alumni on LinkedIn

Once you graduate from a Nucamp bootcamp, you are invited to an exclusive LinkedIn Alumni group where you can connect with other graduates and start building your own professional network. Nucamp alumni are a vibrant community that are actively engaged in helping each

Keep your skills sharp with Lifetime Access to Course Content and Community

Can't remember exactly how to implement a specific function or do you just need some more practice? Review specific course subjects or take a course all over again so you can keep your skills sharp. Enrolling in a Nucamp bootcamp gives you lifetime access to course content and the community at no extra cost.
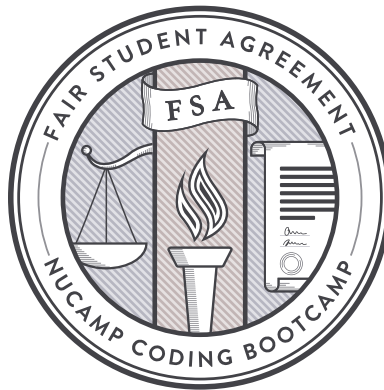
Stand out from other job seekers by participating in a Nucamp Hackathon

Nucamp has collaborated with MintBean to provide Nucamp graduates an opportunity to participate in an online Hackathon every month. Join a hackathon to sharpen your skills and demonstrate to recruiters that you can solve real world coding challenges.

Establish a winning career search plan

Soon after you graduate, you'll receive a employment survey in your email. Once you complete the survey, your career services program will be activated and you can take our 6-week career development course.

Pay $0/month for 5 months with a Fair Student Agreement

Don't give up **15%** of your future salary. Nucamp FSA is the smarter way to join a coding bootcamp.

Write a new chapter in your life story, just like they did

Nucamp Coding Bootcamps provide the **knowledge** and the **structure** to help you switch into a coding career. We're talking to people just like you, every week, who are making the change.

Lori Haffelt
Clearwater, FL

Previous Job:
Retired Nuclear Medicine Tech

Current Job:
Bootcamp Instructor,
Nucamp

Stephanie Raymos
Sacramento, CA

Previous Job:
Affiliate Marketer

Current Job:
Software Engineer,
RL Liquidators

Zach Ballard
Knoxville, TN

Previous Job:
High School Biology Teacher

Current Job:
E-Learning & Development Specialist,
Purdue Global University

Hayat Mohammed
Dallas, TX

Previous Job:
Sales and Management

Current Job:
Web Developer & Funnel Expert,
Oshi Web Solutions

Mecca Adams
Chesapeake, VA

Previous Job:
TV Producer

Current Job:
Software Analyst,
Snap Inc., DoD Agency

Nic Addelia
Des Moines, IA

Previous Job:
High School Band Director

Current Job:
Software Engineering
Principal Financial Group