HackerYou Course Syllabus
Full-Stack Master Class

CLASS 1

PROJECT

The State of Single Page Applications & Intro to React

We'll start with an in-depth overview of today's most popular front-end libraries and frameworks for building single-page applications, including Angular, React, and Vue, before taking a deep dive into our framework of choice: React. We'll also introduce the criteria for the project you'll work on throughout the course.

CLASS 2

The Core Pillars of React

This is a hands-on class: we'll continue architecting our applications by focusing on each of the four core pillars of React: components, state, props, and the lifecycle methods.

Supplementary Lesson #1: Functional Programming

Throughout the course, we'll be joined by Nascent CTO Simeon de Dios and members of his team as they lead us through the principles of computer science in a series of lectures and hands-on challenges and examples. The Nascent team will also provide additional support as you work on your web application. In this first lesson, Simeon will discuss the key tenets of functional programming.

CLASS 3

Advanced React

In this class, you'll apply advanced React patterns to your project, including the stateless/container component pattern, implementing React Router, and working with external/asynchronous data.

CLASS 4

Bridging the Gap into Full Stack with NodeJS

Now that you've carved out the front-end of your app, we'll turn your project into a fully-fledged full-stack application through the power of NodeJS. You'll learn how to build your first fully functional API using the server-side framework Express, and how to manage the flow of data through HTTP requests and responses.

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Supplementary Lesson #2: Data Structures

Simeon de Dios and the Nascent team will be back with us again to help level-up your understanding of how to traverse complex data structures. He'll be bringing some historical case studies as a helpful touchpoint to understand the importance of managing data. The Nascent team will continue to provide support as you develop your class project.

CLASS 5

Databases 101

We'll continue to build out your application's back-end by learning about the database ecosystem, and we'll examine the differences between relational vs non-relational databases. You will start working with MongoDB to create schemas and models with Mongoose, hooking the back end of your application up to a database and populating it with meaningful data.

CLASS 6

Putting the Pieces Together

The moment we've been waiting for: in this class, you'll connect your application's front- and back-ends together, creating a fully functional full-stack application!

We'll also dig deeper into advanced Mongoose, focusing on linking documents inside your database and strengthening the reliability of your app's data through server-side validation.

Supplementary Lessom #3: Performance/Complexity

In this supplementary lesson, Simeon will discuss the nature of speed in terms of computer programming - what makes something fast and what makes something slow, and how you can measure this. We'll be talking about big O notation and algorithmic complexity. Simeon and the team will be on-hand to help you continue developing your application.

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CLASS 7

Security & Deployment

With our full-stack application ready to launch, you'll learn how to secure your application from any malicious misuse, as well as implement authentication/login flow similar to what you might see on Facebook or Twitter. Finally, you'll learn how to deploy your application onto the web so that others can start using it.

CLASS 8

Testing, Review, and Feedback

This class will be devoted to creating a production build of your application: stripping away any unnecessary code, debugging any warnings and errors, and best practices for app optimization. Your app will also be participating in a round of user testing, where you'll get to see how real people interact with your app, get feedback on your project, and learn how to prioritize and fix errors. We'll also offer some time to delve deeper into core concepts of full-stack application development and architecture that relate specifically to the app that you're building. Finally, you'll receive additional supervised project work time to fine tune and polish your project.

Supplementary Lesson #4: Architecture

In this final supplementary lesson, Simeon will discuss how to architect applications that will scale to enterprise level, outlining out some of the make-or-break decisions that lead to applications being able to support thousands (or tens of thousands) of users at once. As always, members of Nascent's team will be on-hand to help you continue to work on your project.

CLASS 9

Final Project Presentations, Scaling our Application, & Beyond

As we wrap up the course, we'll talk about the reality of being a professional application developer, how to make our applications scale, why testing is important, and what the next steps are for those who want to keep learning.