TriveraTech®
TECHNOLOGY TRAINING

Full Stack Web Developer Journey

Introduction to GraphQL with React

Gain the Skills Required to Build a Complete Full Stack Web Project Leveraging Apollo, GraphQL and React

Course Snapshot

- **Course: Introduction to GraphQL with React (TT4203)**
- **Duration: 3 days**
- **Audience** & **Skill Level:** This is an introduction to GraphQL and related technologies for intermediate skilled web developers
- **Pre-Requisites:** Attendees should have prior hands-on experience working with React and Node.js, as well as experience with working from the command line.
- **Hands-on Learning:** This course is approximately 50% hands-on lab to lecture ratio, combining engaging expert lessons, demos and group discussions with real-world, skills-focused machine-based labs and exercises. Student machines are required.
- **Delivery Options**: This course is available for **onsite private classroom presentation**, **live online virtual presentation**, or can be presented in a **blended learning format**. Please also ask about our **Self-Paced / Video / QuickSkills** or **Mini-Camp / Short Course** flexible delivery options.
- **Public Schedule**: This course has active dates on our live-online open enrollment **Public Schedule**.
- **Customizable**: This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

Overview

React, one of the most widely used JavaScript frameworks, allows developers to build fast and scalable front-end applications for any use case. GraphQL is the modern way of querying an API. It represents an alternative to REST and is the next evolution in web development. Combining these two revolutionary technologies will give you a future-proof and scalable stack you can start building your business around.

Introduction to GraphQL with React is a hands-on course that guides you through implementing applications leveraging React, Apollo, and Node.js. Throughout the course, you will learn how to solve complex problems with GraphQL, such as abstracting multi-table database architectures. You will work with the client and server powered by Apollo and learn how to build a complete full-stack GraphQL project. While building the app, you will also explore the tricky parts of connecting React and maintaining and synchronizing state within React and synchronizing with the MySQL database. By the end of the course, you will be proficient in using GraphQL, Apollo and React.

Learning Objectives

This hands-on course combines engaging expert lessons, demos, and group discussions with real-world, productivity-focused machine-based labs and exercises. Working in a hands-on learning environment, led by a Full-Stack Web Development expert instructor, students will learn about and explore:
- Building full stack applications with modern APIs using GraphQL, React, MySQL and Apollo
- Integrating Apollo into React and build front-end components using GraphQL
- Building a GraphQL API by implementing models and schemas
- Writing React components and share data across them and utilizing the MySQL database

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. Our **Full Stack Web Developer Journey** includes a wide variety of courses in core web development, React, React Native, design and security which may be blended with this course for a track that best suits your development objectives.

Audience & Pre-Requisites

This course is geared for attendees with Web development skills who wish to explore using GraphQL, React, Apollo, Node, and Express to build a scalable, production ready application.

Students should have:
- Practical web development/ programming experience. This course is not for non-developers.
- Prior hands-on experience working with React
- Experience working with Windows and should be able to navigate the Windows command line.
- An understanding of database concepts
- Solid foundational mathematics and logic skills.

Take Before:
- TT4190   Introduction to React | React Essentials – 3 days
- TT4195   Mastering React Developer Camp | With Redux, Flux, Unit Testing, JSX & More – 5 days (TT4190 superset)

Take After:
- TT4205   Advanced GraphQL

Enhanced Learning Services: Please also ask about our **Pre-Training Class OnRamp & Prep / Primer** offerings, **Skills Gap Assessment Services**, **Case Studies**, **Knowledge Check Quizzes**, **Skills Immersion Programs & Camps**, **Collaborative Mentoring Services** and **Extended Learning Support** & **Post Training** services.

Course Topics / Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We will work with you to tune this course and level of coverage to target the skills you need most. Course agenda, topics and labs are subject to adjust during live delivery in response to student skill level, interests and participation.

1. **Introduction to GraphQL**
- What is GraphQL?
- Why GraphQL?
- GraphQL problems

2. **Exploring GraphQL APIs**
- The GraphiQL editor
- The basics of the GraphQL language
- Examples from the GitHub API

3. **Preparing Your Development Environment**
- Technical requirements
- Understanding the application architecture
- Installing and configuring Node.js
- Setting up React
  - Preparing and configuring webpack
  - Rendering your first React component
  - Rendering arrays from React state
  - CSS with webpack
  - Event handling and state updates with React
  - Controlling document heads with React Helmet
  - Production build with webpack
- Useful development tools

4. **Setting Up GraphQL with Express.js**
- Technical requirements
- Getting started with Node.js and Express.js
  - Setting up Express.js
  - Running Express.js in development
- Routing in Express.js
  - Serving our production build
- Using Express.js middleware
  - Installing important middleware
  - Express Helmet
  - Compression with Express.js
  - CORS in Express.js
- Combining Express.js with Apollo
  - Writing your first GraphQL schemas
  - Implementing GraphQL resolvers
  - Sending GraphQL queries
  - Using multiple types in GraphQL schemas
  - Writing your first GraphQL mutation
- Backend debugging and logging
  - Logging in Node.js
  - Debugging with Postman

5. **Connecting to the Database**
- Technical requirements
- Using databases in GraphQL
  - Installing MySQL for development
  - Creating a database in MySQL
- Integrating Sequelize into our Node.js stack
  - Connecting to a database with Sequelize
  - Using a configuration file with Sequelize
- Writing database models
  - Your first database model
  - Your first database migration
  - Importing models with Sequelize
- Seeding data with Sequelize
- Using Sequelize with GraphQL
  - Global database instance
  - Running the first database query
- One-to-one relationships in

Sequelize
- Updating the table structure with migrations
- Model associations in Sequelize
- Seeding foreign key data
- Mutating data with Sequelize
- Many-to-many relationships
- Model and migrations
- Chats and messages in GraphQL
- Seeding many-to-many data
- Creating a new chat
  - Creating a new message

6. Hooking Apollo into React
- Technical requirements
- Installing and configuring Apollo Client
  - Installing Apollo Client
  - Testing Apollo Client
  - Binding Apollo Client to React
- Using Apollo Client in React
  - Querying in React with Apollo Client
- Mutating data with Apollo Client
  - Apollo useMutation Hook

- Updating the UI with Apollo Client
- Implementing chats and messages
  - Fetching and displaying chats
  - Fetching and displaying messages
  - Sending messages through mutations
- Pagination in React and GraphQL
- Debugging with the Apollo Client Devtools

Student Materials & Lab Environment

All course software (limited versions, for course use only), digital courseware files or course notes, labs / data sets and solutions (as applicable) are provided for you in our "easy access / no install required" high-speed remote lab environment. Our tech team works with every student to ensure everyone is set up with working access and ready to go prior to every course start date, ensuring a smooth delivery and great hands-on experience. Please ask for details.

TriveraTech's React Training Suite | Full Stack Developer Journey
- TT4190   Introduction to React | React Essentials – 3 days
- TT4193   Redux Deep Dive – 3 days
- TT4194   React Testing Deep Dive – 3 days
- TT4195   Mastering React Developer Camp | With Redux, Flux, Unit Testing, JSX & More – 5 days (TT4190 superset)
- TT4196   Intermediate React | Working with React Hooks
- TT4197   Advanced React – 2 days
- TT4199   Introduction to React Native – 3 days
- TT4203   Introduction to GraphQL with React – 3 days
- TT4205   Advanced GraphQL – 2 days
- Please visit our site for the most current list of full stack / modern web development course titles, learning paths and programs.

For More Information

For more information about our dedicated training services, collaborative coaching services, courseware licensing options, public course schedule, training management services, partner programs, or to see our complete list of course offerings and special offers please visit us at **www.triveratech.com**, email **Info@triveratech.com** or call us toll free at **844-475-4559.** Our pricing and services are always satisfaction guaranteed.