BOARD INFINITY

COURSE 2 OF 3 · END-TO-END WEB DEVELOPMENT SPECIALIZATION

Managing Databases - End to End Web Development

Full course syllabus - every module, video lesson, reading and assignment, from SQL and NoSQL fundamentals to secure, front-end-ready APIs.

Board Infinity
Instructor · Offered on Coursera

3	28	12	1 week
Modules	Video lessons	Assignments	At 10 hours a week

INSIDE THE COURSE

01	Introduction to Databases	5 hours to complete
02	Database Management and Administration	4 hours to complete
03	Building and Consuming APIs	4 hours to complete

Enroll on Coursera

https://www.coursera.org/learn/managing-databases---end-to-end-web-development

01 ABOUT THE COURSE

From SQL tables to secure APIs.

Managing Databases - End to End Web Development covers the data layer behind every web application. Across three modules you learn database fundamentals and SQL in depth, manage data hands-on in MongoDB, and build RESTful APIs with authentication and authorization that connect to a front end.

Everything is delivered through short video lectures, coding demos, readings and graded quizzes - 28 videos, 9 readings and 12 assignments in all. It is an intermediate-level course that starts from the fundamentals, for beginners and professionals alike.

WHO IT'S FOR

Aspiring database administrators
Building a structured foundation in SQL, NoSQL and MongoDB.

Full-stack developers
Connecting the database, the API and the front end.

Software engineers
Designing secure endpoints with JWT and role-based access.

Computer science students
Going from database basics to the APIs real apps run on.

WHAT YOU'LL LEARN

01 **Compare SQL and NoSQL** Module 1
Compare SQL and NoSQL databases, apply design principles and normalization, and choose the right fit for a given use case

02 **Perform CRUD in MongoDB** Module 2
Set up MongoDB locally and on Atlas, create connections, and create, read, update and delete documents

03 **Design secure RESTful APIs** Module 3
Design RESTful endpoints with Express and secure them with JWT authentication and role-based access control

04 **Integrate APIs with front ends** Module 3
Fetch data, handle API responses and errors, and integrate APIs into front-end applications

02 SYLLABUS

Three modules, one complete data layer.

1 week to complete at 10 hours a week. Flexible schedule - learn at your own pace.

01 Introduction to Databases

5 hours
10 videos

Database fundamentals, SQL in depth, and an introduction to NoSQL

BY THE END OF THIS MODULE YOU CAN

- ✓ Explain database fundamentals and compare SQL and NoSQL databases
- ✓ Apply database design principles and normalization
- ✓ Write basic and advanced SQL queries
- ✓ Describe the types of NoSQL databases and start working with MongoDB

CONTENTS: 10 videos (78 min) · 3 readings (90 min) · 4 assignments (105 min) · 1 plugin (5 min)

TOPICS: Database Fundamentals · SQL Databases · NoSQL Databases · Quick Course Check-In (plugin)

You'll leave with: a solid grounding in relational and non-relational databases, and the SQL to query and design them.

02 Database Management and Administration

4 hours
9 videos

MongoDB architecture, setup, connections and CRUD operations

BY THE END OF THIS MODULE YOU CAN

- ✓ Explain MongoDB's benefits, use cases, architecture and core concepts
- ✓ Install MongoDB locally and set up MongoDB Atlas in the cloud
- ✓ Create connections to a MongoDB database
- ✓ Create, read, update and delete documents in MongoDB

CONTENTS: 9 videos (54 min) · 3 readings (90 min) · 4 assignments (105 min)

TOPICS: Introduction to MongoDB · Setting Up MongoDB and Creating Connections · Basic CRUD Operations with MongoDB

You'll leave with: a working MongoDB setup, locally or on Atlas, and the CRUD operations to manage its data.

03

Building and Consuming APIs

REST design with Express, authentication and authorization, front-end integration

4 hours
9 videos

BY THE END OF THIS MODULE YOU CAN

- Apply REST principles to design clear, consistent endpoints
- Implement RESTful services with Express
- Secure APIs with JWT authentication and role-based access control
- Fetch data, handle responses and errors, and integrate APIs into front ends

CONTENTS 9 videos (44 min) · 3 readings (90 min) · 4 assignments (105 min)

TOPICS RESTful API Design | Authentication and Authorization | Consuming APIs

You'll leave with: the ability to build a secure RESTful API with Express and wire it into a front-end application.

03 TOOLS & SKILLS

The tools that run through the course.

SQL & relational databases

Core theme

Querying, designing and normalizing relational data.

In this course: Module 1 moves from basic to advanced SQL queries, then design and normalization.

MongoDB & NoSQL

Databases

A document database, run locally or in the cloud with MongoDB Atlas.

In this course: Module 2 covers architecture, setup, connections and CRUD operations.

RESTful APIs with Express

Back end

REST principles, endpoint design and Express services.

In this course: Module 3 designs RESTful endpoints and implements them with Express.

JWT, RBAC & front-end integration

Security

Securing APIs and consuming them from the front end.

In this course: Module 3 closes with JWT, role-based access control and API integration.

SKILLS YOU LEAVE WITH

Database design

- SQL vs. NoSQL selection
- Design principles & normalization
- Basic & advanced SQL queries
- NoSQL data models

MongoDB

- MongoDB architecture
- Local & Atlas setup
- Database connections
- CRUD operations

APIs

- RESTful endpoint design
- Express services
- JWT authentication & RBAC
- Front-end API integration

04 CERTIFICATE & CAREER

Finish with a shareable certificate.

Add it to LinkedIn

Add this credential to your LinkedIn profile, resume, or CV.

Share it anywhere

Share it on social media and in your performance review.

Earned, not attended

Awarded on completion of the graded quizzes in all three modules.

Course 2 of 3

Part of Board Infinity's End-to-End Web Development Specialization.

ROLES THESE SKILLS SUPPORT

Database Administrator · Full-Stack Developer · Back-End Developer · API Developer · MongoDB Developer · Software Engineer

Board Infinity

Instructor · Offered on Coursera

Intermediate level · Taught in English · 6 languages available · Flexible schedule

Ready to build the data layer?

Enrollment, lessons, grading and the certificate all happen on Coursera.

Enroll on Coursera

Course page:
coursera.org/learn/managing-databases---end-to-end-web-development

Want a coach alongside the course?

Board Infinity 1:1 coaching is a separate, optional Board Infinity offering - it is not part of the Coursera course.
Details: https://www.boardinfinity.com/career-coaching/

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