uCertify

Course Outline

NoSQL Distilled

21 May 2024

1. Course Objective
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3. Exercises, Quizzes, Flashcards & Glossary

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4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
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Here's what you get

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Here's what you get

1. Course Objective

Embark on an exciting journey into the world of NoSQL databases with our immersive and comprehensive course NoSQL-Distilled. Explore core concepts, understand different data models, and learn how to distribute and maintain consistency in dynamic NoSQL systems. It includes interactive lessons, fun quizzes, glossaries, flashcards, and practical hands-on labs featuring popular databases like Riak, MongoDB, Cassandra, and Neo4J. Embrace the future of computer science today and join us on an extraordinary adventure to unlock endless possibilities in the realm of NoSQL databases.

2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

3. Exercises

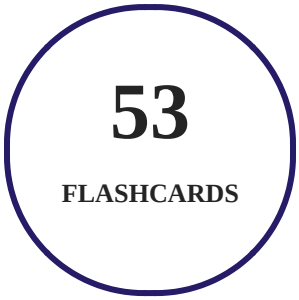
There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

4. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.

5. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



6. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.

7. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

8. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

9. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

10. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been

recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
    1. Best Postsecondary Learning Solution

- **2015**
    1. Best Education Solution
    2. Best Virtual Learning Solution
    3. Best Student Assessment Solution
    4. Best Postsecondary Learning Solution
    5. Best Career and Workforce Readiness Solution
    6. Best Instructional Solution in Other Curriculum Areas
    7. Best Corporate Learning/Workforce Development Solution

- **2016**
    1. Best Virtual Learning Solution
    2. Best Education Cloud-based Solution
    3. Best College and Career Readiness Solution
    4. Best Corporate / Workforce Learning Solution
    5. Best Postsecondary Learning Content Solution
    6. Best Postsecondary LMS or Learning Platform
    7. Best Learning Relationship Management Solution

- **2017**
    1. Best Overall Education Solution
    2. Best Student Assessment Solution
    3. Best Corporate/Workforce Learning Solution
    4. Best Higher Education LMS or Learning Platform

- **2018**
    1. Best Higher Education LMS or Learning Platform

2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**
  1. Best Virtual Learning Solution
  2. Best Content Authoring Development or Curation Solution
  3. Best Higher Education Learning Management Solution (LMS)

- **2020**
  1. Best College and Career Readiness Solution
  2. Best Cross-Curricular Solution
  3. Best Virtual Learning Solution

11. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Preface

- Why Are NoSQL Databases Interesting?
- What’s in the Course
- Who Should Read This course

- What Are the Databases
- Acknowledgments

Chapter 2: Why NoSQL?

- The Value of Relational Databases
- Impedance Mismatch
- Application and Integration Databases
- Attack of the Clusters
- The Emergence of NoSQL
- Key Points

Chapter 3: Aggregate Data Models

- Aggregates
- Key-Value and Document Data Models
- Column-Family Stores
- Summarizing Aggregate-Oriented Databases
- Further Reading
- Key Points

Chapter 4: More Details on Data Models

- Relationships
- Graph Databases
- Schemaless Databases
- Materialized Views
- Modeling for Data Access
- Key Points

Chapter 5: Distribution Models

- Single Server
- Sharding
- Master-Slave Replication
- Peer-to-Peer Replication
- Combining Sharding and Replication
- Key Points

Chapter 6: Consistency

- Update Consistency

- Read Consistency
- Relaxing Consistency
- Relaxing Durability
- Quorums
- Further Reading
- Key Points

Chapter 7: Version Stamps

- Business and System Transactions
- Version Stamps on Multiple Nodes
- Key Points

Chapter 8: Map-Reduce

- Basic Map-Reduce
- Partitioning and Combining
- Composing Map-Reduce Calculations
- Further Reading
- Key Points

Chapter 9: Key-Value Databases

- What Is a Key-Value Store
- Key-Value Store Features
- Suitable Use Cases
- When Not to Use

Chapter 10: Document Databases

- What Is a Document Database?
- Features
- Suitable Use Cases
- When Not to Use

Chapter 11: Column-Family Stores

- What Is a Column-Family Data Store?
- Features
- Suitable Use Cases
- When Not to Use

Chapter 12: Graph Databases

- What Is a Graph Database?
- Features
- Suitable Use Cases
- When Not to Use

Chapter 13: Schema Migrations

- Schema Changes
- Schema Changes in RDBMS
- Schema Changes in a NoSQL Data Store
- Further Reading
- Key Points

Chapter 14: Polyglot Persistence

- Disparate Data Storage Needs
- Polyglot Data Store Usage
- Service Usage over Direct Data Store Usage
- Expanding for Better Functionality
- Choosing the Right Technology

- Enterprise Concerns with Polyglot Persistence
- Deployment Complexity
- Key Points

Chapter 15: Beyond NoSQL

- File Systems
- Event Sourcing
- Memory Image
- Version Control
- XML Databases
- Object Databases
- Key Points

Chapter 16: Choosing Your Database

- Programmer Productivity
- Data-Access Performance
- Sticking with the Default
- Hedging Your Bets
- Key Points

- Final Thoughts

12. Practice Test

Here's what you get

Features

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

13. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations

- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Aggregate Data Models

- Building the Sample Data in MongoDB

Document Databases

- Using the find Query in MongoDB
- Using db.runCommand() in MongoDB

Column-Family Stores

- Creating a Super Column Family in Cassandra
- Creating a Column Family in Cassandra
- Inserting and Reading Data in CQL
- Using the DELETE Query in Cassandra
- Using the SELECT Command in Cassandra
- Using the UPDATE Query in Cassandra

Graph Databases

- Indexing Nodes in a Graph in Neo4j
- Creating a Graph in Neo4j
- Using the Cypher Query Language

Schema Migrations

- Writing and Reading Document in MongoDB

Here's what you get

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LIVE LABS

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VIDEO TUTORIALS

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