TechnoMaster

Since 2007, Making IT Experts & Products

Course: CockroachDB

Duration: 30 Hrs (Changeable) | Fees: Individual / Batch

Since 2007, Nestsoft TechnoMaster has been providing training, internships, and services in IT technologies, both online and offline, with the expertise of **over 250 industry experts**. We have delivered internships, training, and seminars to more than 50,000 students, resulting in numerous success stories. **We offer 100% placement support through JobsNEAR.in**

Our Courses/Internship

- Python/Django Fullstack
- Artificial Intelligence
- Machine Learning
- Data Science
- Software Testing (All)
- Wordpress, Woocommerce
- Digital Marketing, SEO
- Php/MySQL, Laravel
- Flutter, Android, IOS
- Asp.net MVC
- Web Design, Javascript
- Angular JS, React JS
- CCNA, MCSA, CCNP
- AWS, GCP, Azure
- Odoo, SalesForce, Sap
- Microsoft Excel
- Ethical Hacking

Attend a FREE Trial Class
1000+ Success Stories

Syllabus on the Next Page ..

Our Head Office: Nestsoft TechnoMaster, Infopark, Cochin - 42, Kerala, India

☎ +91 9895490866   ☎ +91 8301010866   ✉ join@nestsoft.com   🌐 www.nestsoft.com

Training by Industry Experts

Our Placement Website: **JobsNEAR.in**

Module 1: Introduction to CockroachDB (2 hours)

* Overview of Distributed SQL Databases

* What is CockroachDB and why use it?

* Key features: Scalability, Consistency, Resilience

* Comparison with PostgreSQL, MySQL, Google Spanner

* Use Cases and real-world applications

Hands-on Lab:

* Install CockroachDB (Docker, Local, Cloud)

* Set up a single-node cluster

Module 2: Core Architecture and Internals(3 hours)

* How CockroachDB Works(Sharding, Replication, Consensus)

* Raft Protocol and Transaction Consistency

* Data distribution and multi-region architecture

* Survivability and Failover Mechanisms

Hands-on Lab:

* Deploy a multi-node cluster

* Test node failure recovery

Module 3: SQL Basics with CockroachDB(3 hours)

* SQL compatibility with PostgreSQL

* Creating and managing databases

* Tables, indexes, and data types

* Transactions and ACID Compliance

Hands-on Lab:

Training by Industry Experts

Our Placement Website: **JobsNEAR.in**

✳ Create a database and tables

✳ Insert, update, and query data

Module 4: Advanced SQL and Performance Optimization(3 hours)

✳ Indexing and Query Optimization

✳ Joins, Views, Stored Procedures

✳ EXPLAIN ANALYZE for query performance

✳ Row-level locking and isolation levels

Hands-on Lab:

✳ Use EXPLAIN ANALYZE for performance tuning

✳ Optimize queries with indexes

Module 5: Multi-Region Deployment (3 hours)

✳ Geo-partitioning data for global applications

✳ Managing latency and high availability

✳ Using Follow-the-Workload (FTW)

✳ for optimal performance

✳ CockroachDB in Kubernetes & cloud environments

Hands-on Lab:

✳ Deploy a multi-region cluster

✳ Geo-partition a table

Module 6: Security and Access Control (2.5 hours)

✳ Authentication & role-based access control (RBAC)

✳ TLS encryption & data security best practices

✳ Audit logging & monitoring

Hands-on Lab:

✳ Set up RBAC and TLS encryption

✳ Implement security policies

Module 7: High Availability & Disaster Recovery (2.5 hours)

✳ Automatic failover & node recovery

✳ Backups & restoring data

✳ Load balancing & connection pooling

Hands-on Lab:

✳ Simulate node failures & recovery

✳ Perform a backup and restore

Module 8: Developing Applications with CockroachDB(3 hours)

✳ Connecting CockroachDB with Java, Python, Go, Node.js

✳ Using ORMs like Hibernate and Prisma

✳ Managing database migrations

Hands-on Lab:

✳ Build a CRUD API with CockroachDB

✳ Use Flyway for migrations

Module 9: Monitoring & Troubleshooting (3 hours)

✳ Using CockroachDB Web UI and CLI tools

✳ Integrating Prometheus and Grafana

✳ Debugging performance issues

Our Head Office: Nestsoft TechnoMaster, Infopark, Cochin - 42, Kerala, India

☎ +91 9895490866   ☎ +91 8301010866   ✉ join@nestsoft.com   🌐 www.nestsoft.com

Training by Industry Experts

Our Placement Website: **JobsNEAR.in**

Hands-on Lab:

✳ Monitor queries with Prometheus

✳ Analyze logs and metrics

Module 10: Real-World Projects and Case Studies (4 hours)

✳ Build a scalable fintech application

✳ Develop a multi-region e-commerce system

✳ Case study:How companies use CockroachDB in production

(Click on Course for more details)

Course: CockroachDB

Duration: 30 Hrs (Changeable) | Fees: Individual / Batch

- Thank You -

N.B:This syllabus is not final and can be customized as per requirements / updates.