DP-420T00: Build AI applications with Azure Cosmos DB

Course Description

This course teaches developers how to create application using the NoSQL API and SDK for Azure Cosmos DB. Students will learn how to design, build, and optimize high-performance, scalable AI applications with Azure Cosmos DB.

Course Duration

4 days

Prerequisites

- Experience with C#, Python, Java, or JavaScript
- Experience writing code that interacts with SQL or NoSQL databases
- Basic understanding of cloud application development
- Familiarity with Azure services is recommended
- Basic knowledge of NoSQL concepts and database design is beneficial.

Course Outline

- Explore Azure Cosmos DB for NoSQL
- Configure resources, throughput, and consistency
- Connect to Azure Cosmos DB with the SDK
- Implement Azure Cosmos DB operations with the SDK
- Query data in Azure Cosmos DB for NoSQL
- Design a data modeling and partitioning strategy
- Process the Azure Cosmos DB for NoSQL change feed
- Implement AI-assisted development tools for Azure Cosmos DB
- Secure an Azure Cosmos DB solution
- Configure backup and restore in Azure Cosmos DB
- Design multi-region availability and failover in Azure Cosmos DB
- Design and optimize an indexing strategy in Azure Cosmos DB
- Analyze and tune query and operation performance in Azure Cosmos DB
- Monitor and troubleshoot Azure Cosmos DB
- Manage Azure Cosmos DB at scale with fleets
- Implement full-text and vector search in Azure Cosmos DB for NoSQL
- Implement hybrid search and optimize AI retrieval in Azure Cosmos DB for NoSQL
- Build RAG applications with Azure Cosmos DB for NoSQL
- Design and implement agent memory stores in Azure Cosmos DB
- Implement operational analytics with Microsoft Fabric

Who Should Attend

Software engineers tasked with authoring cloud-native solutions that leverage Azure Cosmos DB for NoSQL and its various SDKs. They are familiar with C#, Python, Java, or JavaScript. They also have experience writing code that interacts with a SQL or NoSQL database platform.