

# Monitoring and Performance Tuning T-SQL Queries

Course code: GOC631

The primary audience for this course is individuals who develop and optimize SQL Server database solution and queries.

## Who the course is for

- The primary audience for this course is individuals who develop and optimize SQL Server database solution and queries

## After completing this course, students will be able to:

- Describe query lifecycle
- Monitor queries and analyze performance problems
- Design and optimize index strategy
- Understand query plans
- Describe transactions and concurrency

## Required skills

- Basic knowledge of the Microsoft Windows operating system and its core functionality
- Working knowledge of Transact-SQL
- Experience with database design

## Course Outline

### Query lifecycle

- SQL Server architecture
- Query lifecycle
- Query optimization process
- SQLOS, Memory, CPU, Threads
- Performance killers

### Monitor queries and analyze performance problems

- Performance Monitor
- SQL Profiler
- Dynamic Management Views
- Activity monitor
- Data Collector
- Extended Events
- Performance problem analysis

### Index strategy

- Deep index description
- Index design
- Statistics
- Index maintenance
- Index monitoring

### Execution plans

- What is execution plan ?
- Plan reading and analysis
- Plan caching
- Adhoc and procedure plans

### Concurrency control

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- Transactions and concurrency control
- Locks
- Transaction Isolation Level

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