



# SQL For Everybody

(Website: [www.aiquest.org](http://www.aiquest.org), Cell: +8801704265972)

*A Comprehensive Course Covering Fundamentals to Advanced Skills. Acquire Practical SQL Proficiency Applicable in Real-World Scenarios.*

## About Course:

**Course Duration:** 40 to 42 Hours

**Total No. Of Classes:** 20-21

**Class Per Week:** 02 at 9:00 - 11:00 P.M.

**Class Duration:** 2 Hours (Approx)

**Course Fees:** 5000 Taka / 50\$

## Course Instructor:

**Mr. Shoaib Rahman Shuvo** [\[LinkedIn\]](#)

Data Engineer, V2 Technologies Ltd

Instructor, SQL for Everybody at aiQuest Intelligence

M.Sc. in Data Science

Demo Class: [Link!](#)

Student Feedback: [Link!](#)

### **Module 1: Introduction to Database Engineering (2 hours)**

- Understanding Data & its Importance
- Introduction to Databases and their Significance
- What is Database Engineering
- Database Engineering vs Other Data Related Jobs
- Database Engineer Job Description, Roles & Responsibilities
- Importance of SQL
- Q&A Session

### **Module 2: Database Fundamentals (4 hours)**

- Installing PostgreSQL
- Introduction to different IDEs
- Understanding Database Management Systems (DBMS)
- Exploring Database Keys
- Database Structure
- ACID Properties
- Row-oriented & Columnar Databases / OLTP & OLAP
- Database Design and Normalization
- Database Denormalization / Data Warehousing

### **Module 3: SQL Fundamentals (8 hours)**

- Introduction to SQL and How it Works
- Background of SQL
- Working with Different Data Types
- SQL CRUD Operations
- Understanding SQL Joins
- Implementing Constraints
- Working with Arrays and JSON
- Handling Null Values

### **Module 4: Advanced Querying (6 hours)**

- SQL Subqueries
- Analytical Functions
- Common Table Expressions (CTEs)
- Data Transformation with SQL

### **Module 5: AWS & Cloud Database Management (4 hours)**

- Installing Databases on AWS Cloud Platforms
- Cloud Security Management
- Understanding Security Groups
- Database Replication
- Working with Snapshots
- Cloud Database Backup and Recovery
- Database Monitoring

### **Module 6: Database Administration (4 hours)**

- Role Management
- Data Security Management
- User Management
- Data Backup Strategies
- Data Recovery Techniques

### **Module 7: Advanced SQL Concepts (6 hours)**

- Introduction to PL/pgSQL
- Transaction Control in SQL
- Working with Temporary Tables
- Creating and Using Functions
- Stored Procedures
- Triggers in SQL
- Custom Data Types
- Function Overloading
- Database Locks

### **Module 8: Database Optimization (6 hours)**

- Creating and Utilizing Views
- Indexing for Performance
- Partitioning Data in Databases
- Triggers for Optimizing Workflows
- Stored Procedures for Efficiency
- Query Tuning Strategies

### **Module 9: Bonus Topics (4 hours)**

- Cost Optimization in Database Management
- Problem Solving with SQL
- Understanding Over-Optimization and Its Drawbacks
- Strategies for Resolving Over-Optimization
- Data Migration Concepts
- Basics of Reporting from Databases

### **Module 10: Project, Final Assignment, and Job Guidelines (4 hours)**

- Practical Project involving Database Design and Querying
- Hands-on Assignments for Practice
- Course Review and Recap
- Q&A Session
- Course Conclusion and Next Steps

## **To Enroll in Course:**

Contact: +8801704265972 (Call/WhatsApp)

[Sohan Khan](#), Course Coordinator at aiQuest Intelligence

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