

# Introduction to SQL

GoSkills online course syllabus

Wednesday, April 16, 2025

**Skill level**

Beginner

**Lessons**

33

**Pre-requisites**

None

**Video duration**

2h 01m

**Estimated study time**

16h 30m for all materials

**Instructor**

John Elder

## Intro to Databases & SQL

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1

### What is a database?

We will discuss what a database is, the different types of databases and what they are used for

2

### An Overview of SQL

We will discuss what SQL(Structured Query Language) is, what it is used for and some of the different systems that use SQL

3

### RDBMS Concepts

We will look at the core concepts and structure of a relational database such as tables, columns, rows, etc

4

### Working With Data Types

We will discuss some of the important data types that may be used in a relational database, including Integer, varchar, text and much more

## Microsoft SQL Server & Management Studio Setup

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### Setting Up Microsoft SQL Server

We will install and setup Microsoft SQL Server

6

### Setting Up Microsoft SQL Server Management Studio

We will install and setup SQL Server Management Studio.

7

### Connecting to a Server

We will connect to a server and look at the Object Explorer

8

### System Databases

We will take a look at the master and model databases as well as the msdb and tempdb Databases

**9** **Creating a New Database**  
We will create a new database within MS SQL Server 2016, and create a new table

**10** **Adding Data to a Table**  
We will add data to our Table

**11** **Backing Up & Restoring a Database**  
You will learn how to backup a database and how to restore a backup

## Selecting & Filtering Data 1

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**12** **Simple SELECT Statements**  
Here we will start to write SQL statements and queries, starting with basic SELECT statements

**13** **WHERE Clause**  
We can target specific columns using the WHERE clause along with a SELECT statement

**14** **AND & OR Clause**  
We can select data based on multiple conditions using the AND & OR clause

**15** **ORDER BY Clause**  
We will look at how we can sort returned data using the ORDER BY clause

**16** **GROUP BY Clause**  
We will look at how we can sort returned data using the GROUP\_BY clause

## Selecting & Filtering Data 2

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**17** **HAVING Clause**  
The HAVING clause is similar to a WHERE clause but can use aggregation

**18** **TOP Clause**  
The TOP clause is used to limit the number of records that will be returned from a SELECT statement

**19** **SELECT DISTINCT**  
We can use DISTINCT to only return distinct or different values in a SELECT statement

**20** UNION  
The UNION operator is used to combine the result-set of two or more SELECT statements

**21** Functions  
We will look at some built in functions for performing calculations on data

## Inserting, Updating & Deleting Data

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**22** INSERT Statement  
We will insert our own records into a database using INSERT INTO

**23** UPDATE Statement  
The UPDATE statement can be used to change data that already exists in the SQL database

**24** DELETE Statement  
We can use DELETE FROM to remove data from the SQL database

**25** ALTER TABLE  
With ALTER TABLE, we can add, remove or change columns, data types and just about anything else

## Combining & Joining Multiple Tables

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**26** Aliases  
Aliases can be used to temporary rename columns and tables

**27** INNER JOIN  
We will discuss and write inner joins to combine more than one table in a specific way

**28** OUTER JOIN  
We will discuss and write outer joins to combine more than one table in a specific way

**29** LEFT JOIN  
We will discuss and write left joins to combine more than one table in a specific way

**30** RIGHT JOIN  
We will discuss and write right joins to combine more than one table in a specific way

# Other SQL Concepts

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**31** Subqueries  
We will discuss combining queries together in a subquery

**32** Indexing  
We will talk about what indexing is and how to do it within MS SQL Server

**33** Primary Key  
We will discuss the Primary Key and why it's so important

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