



INTRODUCTORY SQL: ONE-DAY WORKSHOP

Lesson 1: Databases and data analytics

Lesson 2: Coding in SQL

Lesson 3: Sorting & filtering

Lesson 4: Aggregating

Lesson 5: SQL and table joins

Lesson 6: Intermediate joins

Lesson 7: SQL for data analysis

Lesson 8: SQL for data analysis, continued

Learning Objectives

- Student can navigate the SQLiteStudio environment to visually inspect tables in a database
- Student can write style-compliant SQL scripts to retrieve tables from a field
- Student can sort and filter the results of a query
- Student can group and aggregate the results of a SQL query
- Student can join two or more tables from the same database
- Student can use less common techniques to join two or more tables from the same database
- Student can conduct basic data exploration and analysis
- Student can conduct intermediate data exploration and analysis

Lesson plan developed by George Mount. For more resources like this, visit stringfestanalytics.com

Lesson 1: Databases and data analytics

Objective: Student can navigate the SQLiteStudio environment to visually inspect tables in a database

Description:

- The basics of working with a database
- Database parts of speech
- The basics of working with SQLite + SQLiteStudio

Exercises: Retrieve dimensions and database types of a table

Assets needed: Home prices dataset

Time: 50 minutes

Lesson 2: Coding in SQL

Objective: Student can write style-compliant SQL scripts to retrieve tables from a field

Description:

- Styling in SQL
- Working with scripts: opening, saving, executing
- Selecting all fields from a table
- Selecting some fields from a table
- Aliasing a field
- Arithmetic operations on a field
- String operations on a field
- Limiting query results

Exercises: Drills

Assets needed: Home prices dataset

Time: 50 minutes

Lesson 3: Sorting & filtering

Objective: Student can sort and filter the results of a query

Description:

- Conditional operators
- Logical operators
- Filtering one or more fields
- Sorting one or more fields

Exercises: Drills

Assets needed: Home prices dataset

Time: 50 minutes

Lesson 4: Aggregating

Objective: Student can group and aggregate the results of a SQL query

Description:

- Counting and listing distinct records
- Understanding NULL
- Grouping and field arithmetic
- Aggregating and aliasing
- Filtering aggregation results

Exercises: Drills

Assets needed: Home prices dataset

Time: 50 minutes

Lesson 5: SQL and table joins

Objective: Student can join two or more tables from the same database

Description:

- How relational databases work
- JOINS and NULLs
- INNER JOIN
- LEFT OUTER JOIN

Exercises: Drills

Assets needed: Home prices dataset

Time: 50 minutes

Lesson 6: Intermediate joins

Objective: Student can use less common techniques to join two or more tables from the same database

Description:

- RIGHT OUTER JOIN
- FULL OUTER JOIN

Set operators

Exercises: Drills

Assets needed: Home prices dataset

Time: 50 minutes



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Lesson 7: SQL for data analysis

Objective: Student can conduct basic data exploration and analysis in SQL

Description:

- CASE expressions
- Subqueries
- Common table expressions

Exercises: Drills

Assets needed: Home prices dataset

Time: 50 minutes

Lesson 8: SQL for data analysis, continued

Objective: Student can conduct intermediate data exploration and analysis in SQL

Description:

- Window functions
- Correlations
- Regression coefficients

Exercises: Drills

Assets needed: Home prices dataset

Time: 50 minutes



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