



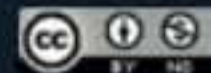
Unit 02.01

Basic Structured Query Language: Database Introduction

USING DATABASES WITH PYTHON

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SQLite Browser



The screenshot shows the official website for the SQLite Database Browser. The header is blue with the title "DB Browser for SQLite" in white. Below the title, it says "The Official home of the DB Browser for SQLite". In the top right corner, there is a GitHub logo and a link to "View project on GitHub". The main content area is white and features a "News" section with three entries: "2015-07-07 - Added PortableApp version of 3.7.0. Thanks John. :)", "2015-06-14 - Version 3.7.0 released. :)", and "2015-05-09 - Added PortableApp version of 3.6.0v3.". Below the news section is a "Screenshot" section showing a preview of the application window. The application window has a title bar "SQLite Database Browser - /Users/jc/tmp/example.db" and a menu bar with "New Database", "Open Database", "Write Changes", and "Revert Changes". Below the menu bar are four tabs: "Database Structure", "Browse Data", "Edit Pragmas", and "Execute SQL". On the right side of the website, there are three blue buttons with white text and icons: "Download 32-bit Windows .exe", "Download 64-bit Windows .exe", and "Download PortableApp".

DB Browser
for SQLite

The Official home of the DB Browser for
SQLite

View project on
GitHub

// News

2015-07-07 - Added PortableApp version of 3.7.0. Thanks John. :)
2015-06-14 - Version 3.7.0 released. :)
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// Screenshot

Download 32-bit
Windows .exe

Download 64-bit
Windows .exe

Download
PortableApp

<http://sqlitebrowser.org/>

Relational Databases

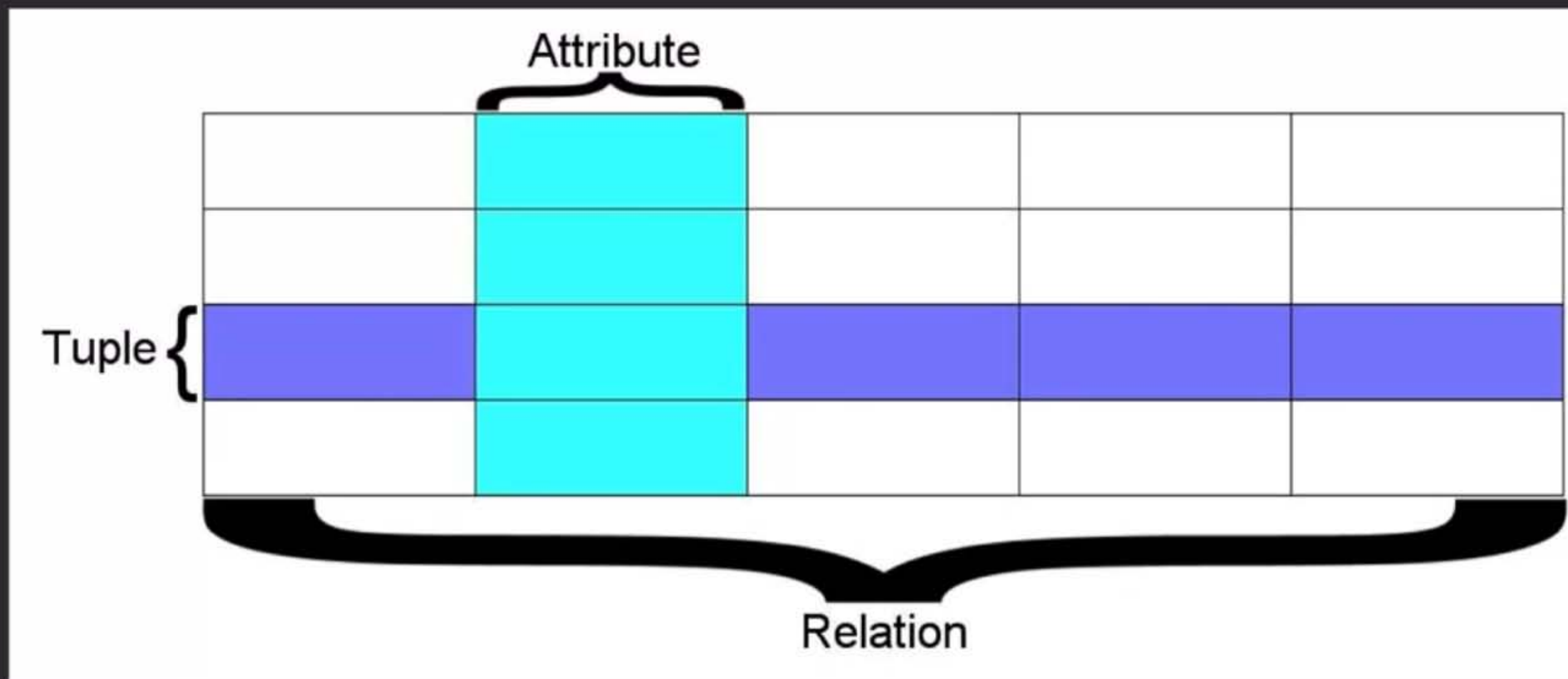
Relational databases model data by storing rows and columns in tables. The power of the relational database lies in its ability to efficiently retrieve data from those tables and in particular where there are multiple tables and the relationships between those tables involved in the query.

http://en.wikipedia.org/wiki/Relational_database

Terminology

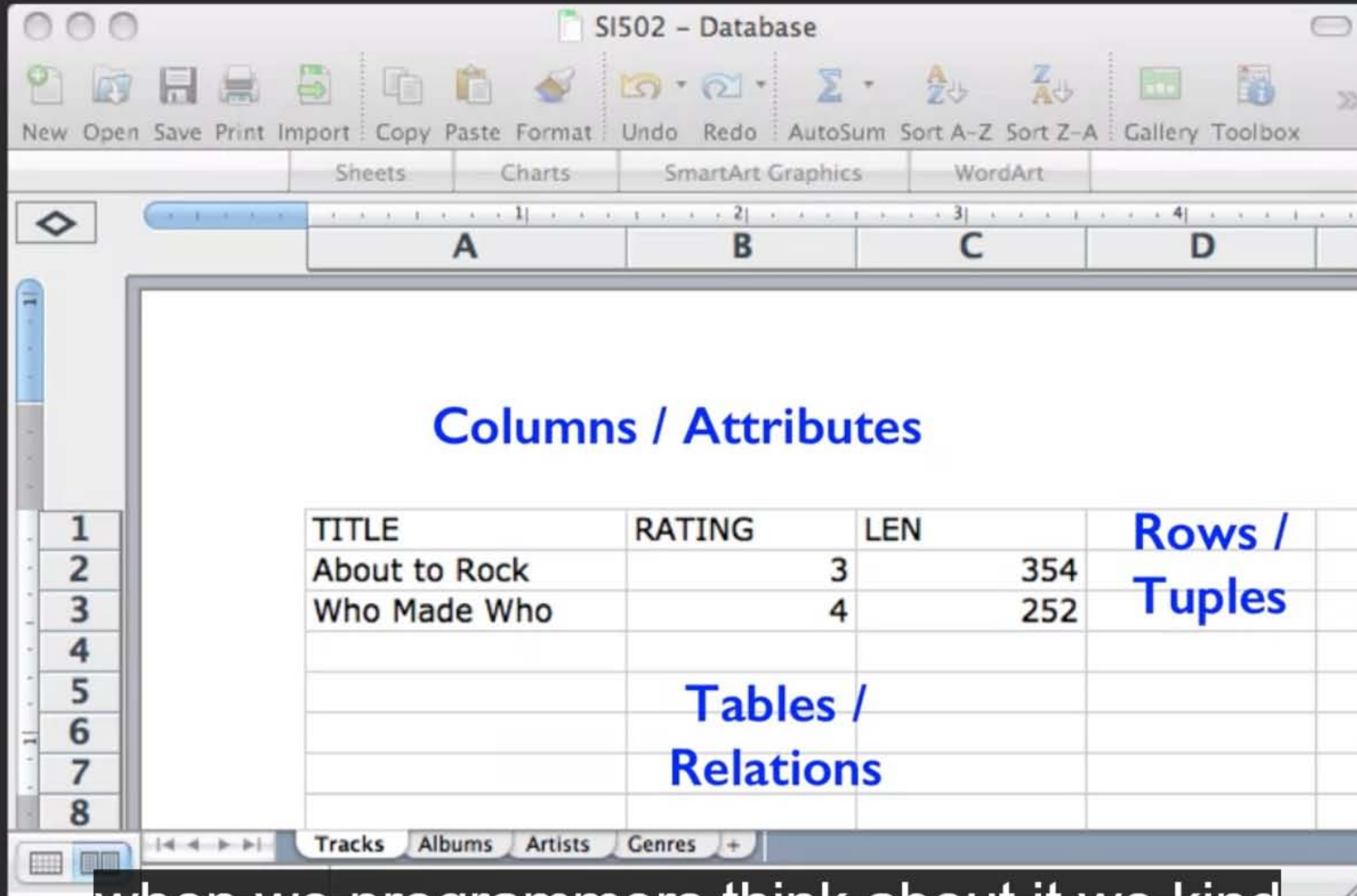
- **Database** - contains many tables
- **Relation (or table)** - contains tuples and attributes
- **Tuple (or row)** - a set of fields that generally represents an “object” like a person or a music track
- **Attribute (also column or field)** - one of possibly many elements of data corresponding to the object represented by the row

in some of the terminology that some people use to describe databases.



A **relation** is defined as a **set of tuples** that have the same **attributes**. A **tuple** usually represents **an object** and information about that object. **Objects** are typically physical objects or concepts. A **relation** is usually described as a **table**, which is organized into **rows** and **columns**. All the data referenced by an **attribute** are in the same domain and **conform to the same constraints**.

(Wikipedia)



Columns / Attributes

TITLE	RATING	LEN
About to Rock	3	354
Who Made Who	4	252

Rows / Tuples

Tables / Relations

when we programmers think about it we kind of think about it as rows and columns.

SQL

- **Structured Query Language** is the language we use to issue commands to the database
- Create a table
- Retrieve some data
- Insert data
- Delete data



<http://en.wikipedia.org/wiki/SQL>

SQL

- **Structured Query Language** is the language we use to issue commands to the database

- Create a table

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UPDATE CRUD

So that's a database term. **SQL**