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Overview

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Introduction

In this lesson we are going to look at how to use a relational database with Python. Using relational databases is a massive subject in its own right, but we are going to concentrate on how to use these technologies simply and effectively.

What we learn here will be a foundation on which you can build as your database needs increase in volume and complexity.

Learning Objectives

Upon successful completion of this lesson, you will be able to:

- Apply data definition techniques to help assure the quality of the data your Python programs use.
- Store and retrieve single and multiple sets of records in a database from your Python programs so that you can leverage data management services from a database.
- Use simple techniques to help model data correctly in a relational database, and recognize the trade-offs between different options for this.

New Words, Concepts, and Tools

We are going to learn about relational databases, data definition and management, and SQL. We will cover object relational mapping and relational database design, but all aligned to simplicity of use with Python.

Prerequisites

To be successful in this lesson you will need to be very familiar with the following concepts, covered earlier in the class:

1. Classes, objects and inheritance
2. Coding simple OO program using these concepts.

Before you Start

Read the following articles in preparation for this lesson.

- [Relational database concepts.](#)
- [The Peewee Quickstart.](#)
- [Query examples](#)
- [Peewee models.](#)

Optional Articles about RDBMS

- [DB-API 2.0 interface for SQLite databases.](#)
- [Programming with Databases in Python using SQLite.](#)
- [Using databases and Structured Query Language \(SQL\).](#)
- [A thorough guide to SQLite database operations in Python.](#)
How to interact with sqlite from Python (does not use Peewee)
- [PostgreSQL Python.](#)
How to interact with PostgreSQL from Python.
- [SQL in a Nutshell, 3rd Edition. A Desktop Quick Reference Guide \(book reference\)](#)
A great reference book for SQL that shows details of SQL for several databases
- [Joe Celko's SQL Programming Style](#)
If you really want to understand the details of SQL, then this is an excellent book: "Joe Celko's SQL Programming Style (The Morgan Kaufmann Series in Data Management Systems)"
- Data model design is a complex topic that requires lots of knowledge. If you do a lot of database work then the three books in the series "The Data Model Resource Book" (Vol. [1](#), [2](#) and [3](#)) are invaluable (the links are the numbers).

Suggested Workflow

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- Explore the "Before you Start" readings and video
 - Work through the lesson content pages

- Watch the required videos
- Do the practice activity
- Submit your assignment

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