

CSCB20

Introduction to Databases and Web Application

Week 8 - SQLite and Flask

Dr. Purva R Gawde

Topics

- SQLAlchemy
 - Object Relational Mapper (ORM)
 - Setup
 - Demo

SQLAlchemy

- SQLAlchemy is a library used to interact with a wide variety of databases
- enables you to create data models and queries
- Created by Mike Bayer in 2005
- Used to connect to most databases:
 - Postgres, MySQL, SQLite, Oracle, and many others.
- Why SQLAlchemy?
 - Abstract your code away from the underlying database and its associated SQL peculiarities
 - Two modes of usage:
 - SQL Expression Language (commonly referred to as Core) and ORM

Core and ORM

- SQLAlchemy Core and the SQL Expression Language
 - Pythonic way of representing common SQL statements and expressions
 - focused on the actual database schema
- The SQLAlchemy ORM
 - It is focused around the domain model of the application
 - high-level abstraction on top of the SQL Expression Language that enables the user to work in a more idiomatic way

Installing SQLAlchemy and Connecting to a Database

- Installing Database Drivers
 - By default, SQLAlchemy will support SQLite3 with no additional drivers
- Connecting to a database
 - To connect to a database, we need to create a SQLAlchemy engine.

SQLAlchemy - Environment setup (in virtual environment)

```
pip install sqlalchemy
```

```
from sqlalchemy import create_engine  
  
engine = create_engine('sqlite:///persons.db')
```



The SQLAlchemy ORM - Demo