

# Introduction into SQLAlchemy

How SQLAlchemy is helping  
developers to boost productivity  
while building DB based applications

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# Why DB toolkit/ORM?

- Naïve DB application development cycle
  - Create database schema – tables, indices, constraints
  - Develop insert and update statements
  - Develop select queries
  - Develop store/load code that uses the queries
- What if the requirements were changed and developer needs to update database schema
  - He/she also needs to update code and sql statements
- What if the customer asked to port the application to another Database System?

# SQLAlchemy

- Data base toolkit and Object Relation Mapper
- Written on pure Python ( $\geq 2.5$ , 3.x, Jython, PyPy)
- MIT license
- Current version: 0.8.1 (started in 2005)
- Author: Michael Bayer:<http://zzzeek.org/>
- Official site: <http://www.sqlalchemy.org>

# Users



sourceforge

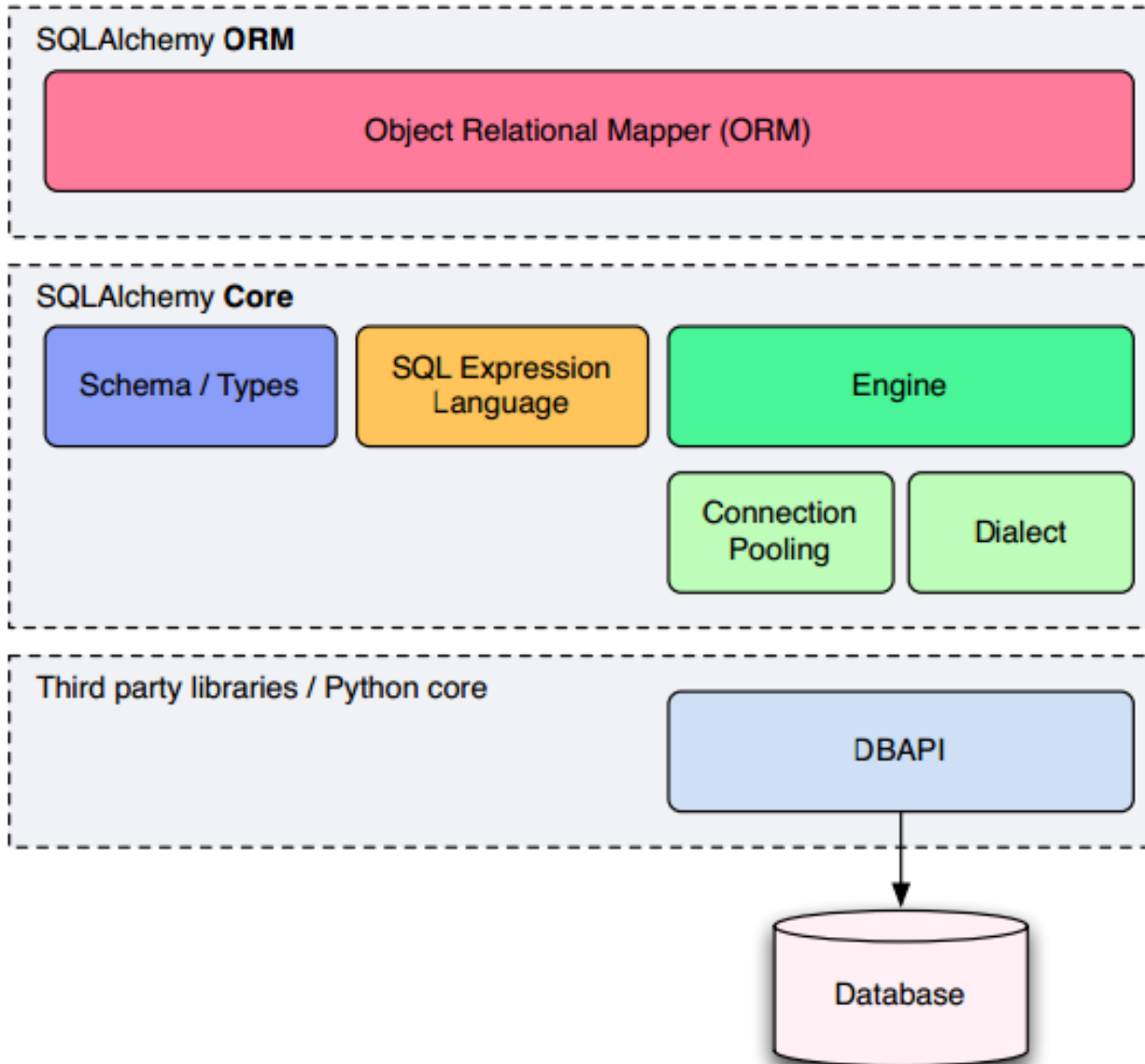


- Many more <http://bit.ly/myNgQR>

# SQLAlchemy Philosophy

- Provides a consistent interface to different databases and DB API adapters: (SQLite, PostgreSQL, MySQL, MSSQL, Oracle, Sybase, Firebird, more)
- Still exposes distinct behaviors and features of each backend
- Brings database to the developer's finger tips: must think in SQL and relation algebra
- **Provides automation and DRY**

# Architecture Overview



# Automation and DRY

- Everything is a Python object
  - Code your DB, schema definition and queries in Python
- Allows to use composition patterns:
  - Table joins, selects and other statements can be composed together into the new statements
- Database agnostic
  - Write the schema and queries once
  - Use them on multiple DB systems
- If you have an existing database schema
  - SQLAlchemy has reflection feature

# How to start learning SQLAlchemy

- Introduction to SQLAlchemy. Mike Bayer talk at Pycon 2013: <http://bit.ly/ZdWNQs>
  - 2.5h video lecture available plus Source code examples
- Pycon 2012: Hand Coded Applications with SQLAlchemy - <http://bit.ly/18gZPql>
- Pycon Canada 2012 – the SQLAlchemy Session in Depth <http://bit.ly/S1FRF8>



# Where to look for help

- Documentation on <http://www.sqlalchemy.org>
- [sqlalchemy] tag on <http://stackoverflow.com>
- <http://www.sqlalchemy.org/support.html>
- Mailing List on Google Groups
- IRC channel
- Source code: available on [github.com](https://github.com) and [bitbucket.com](https://bitbucket.com)

# Questions?

# Shameless plug

- I'm currently looking for new position as a software engineer
- Please contact me via email:
- [smartkiwi@gmail.com](mailto:smartkiwi@gmail.com)