



Unit 02.02

Basic Structured Query Language: Using Databases

USING DATABASES WITH PYTHON

Charles Severance Ph.D.

Clinical Associate Professor of Information
School of Information



© 2015 Charles Severance and The Regents of the University of Michigan
Except where otherwise noted, this work is licensed under
<http://creativecommons.org/licenses/by-nc/3.0/>

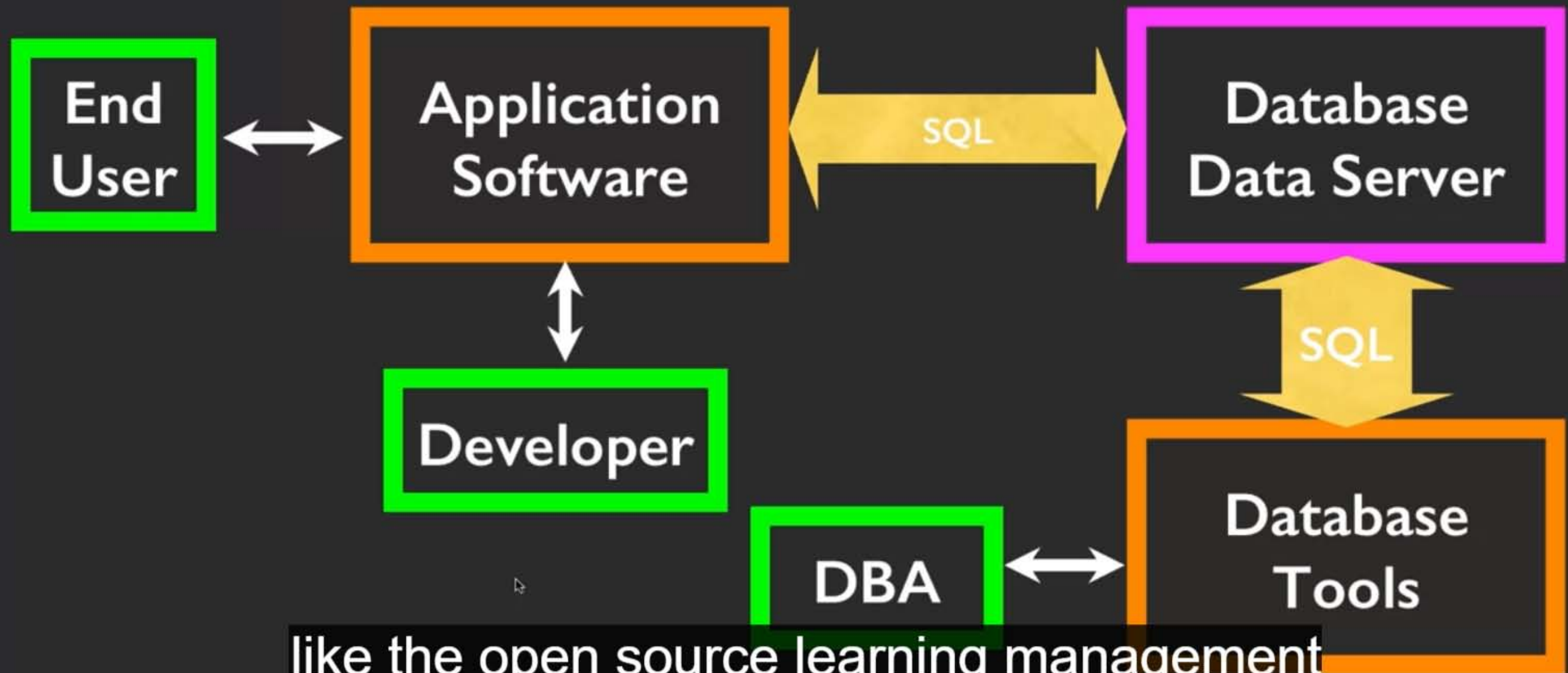
Two Roles in Large Projects

- **Application Developer** - Builds the logic for the application, the look and feel of the application - monitors the application for problems
- **Database Administrator** - Monitors and adjusts the database as the program runs in production
- Often both people participate in the building of the “Data model”

2

But there are generally sort of two roles.

Large Project Structure



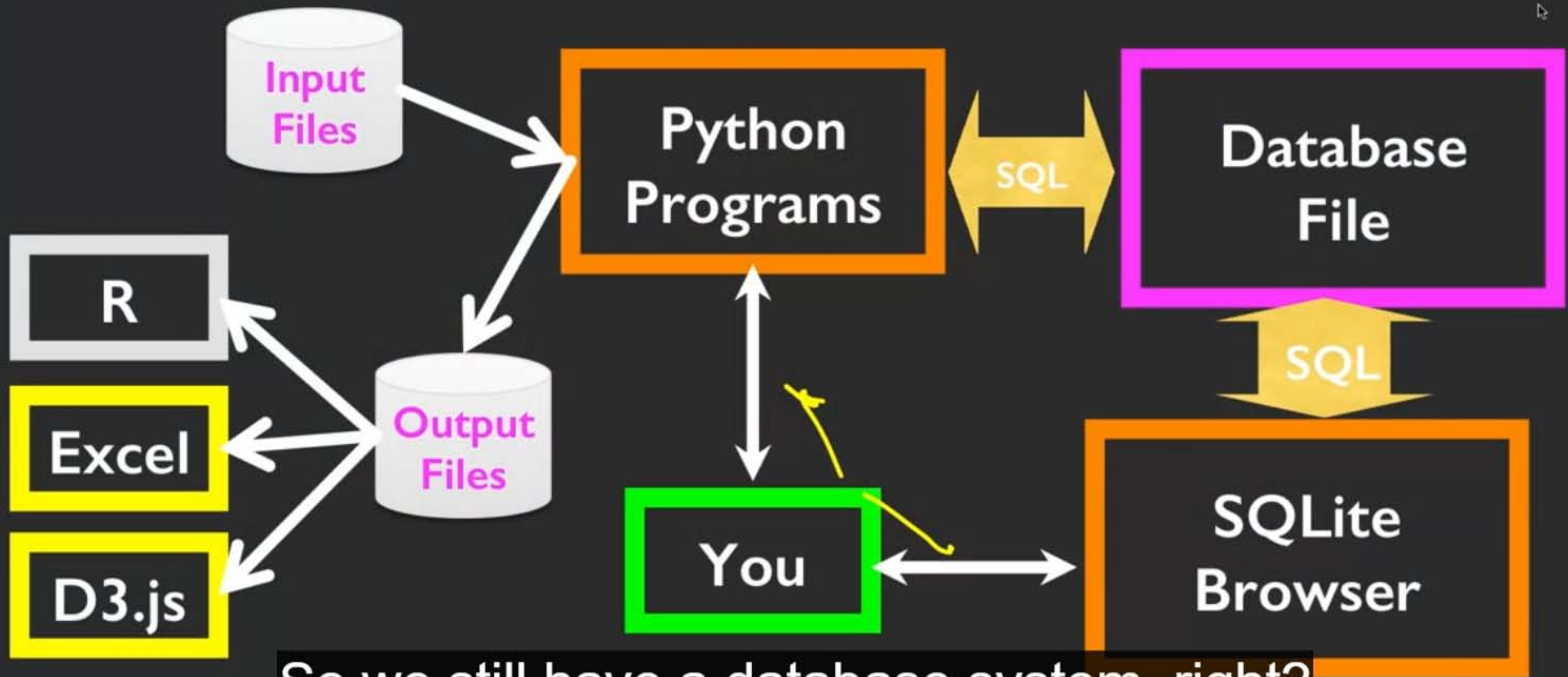
like the open source learning management system that I work on named Sakai,

Database Administrator (dba)

A database administrator (DBA) is a person responsible for the design, implementation, maintenance, and repair of an organization's database. The role includes the development and design of database strategies, monitoring and improving database performance and capacity, and planning for future expansion requirements. They may also plan, coordinate, and implement security measures to safeguard the database.

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

Data Analysis Structure



So we still have a database system, right?

Database Model


A **database model** or **database schema** is the **structure or format of a database**, described in a formal language supported by the database management system. In other words, a “database model” is the application of a data model when used in conjunction with a database management system.

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

And it's best thought of as a contract.

Common Database Systems

- Three Major Database Management Systems in wide use
 - **Oracle** - Large, commercial, enterprise-scale, very very tweakable
 - **MySql** - Simpler but very fast and scalable - commercial open source
 - **SqlServer** - Very nice - from Microsoft (also Access)
- Many other smaller projects, free and open source
 - HSQL, **SQLite**, Postgress, ...



So MariaDB is a copy of the open
source version of MySQL



SQLite is in lots of software...

symbian

python™



skype



Microsoft®

McAfee®



Adobe



php

Google™

TOSHIBA

Sun
microsystems

<http://www.sqlite.org/fam.html>
And so, SQLite is what's
called an embedded database.