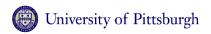
SQL: Database Access

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Using Databases

Problem

- Many different "experiments".
- Each experiment has input parameters and output measurements.

Database Design

Experiments with input parameters and output values.

Database Design

Experiments with input parameters and output values. Tables

- Experiments
- Experiment parameters
- Experiment results

SQL For Table Creation

```
CREATE TABLE experiments (
    eid INT PRIMARY KEY,
    name VARCHAR (255),
    date DATE NOT NULL
    );
CREATE TABLE parameters (
    pid INT PRIMARY KEY,
    name VARCHAR (255) NOT NULL
    );
CREATE TABLE experiment parameters (
    eid INT NOT NULL,
    pid INT NOT NULL,
    paramvalue VARCHAR (255)
CREATE TABLE experiment_results (
    eid INT NOT NULL,
    measure WARCHAR (255)
```

Example Query

```
SELECT name, date
FROM experiments, parameters, experiment_parameters
WHERE experiments.eid = experiment_parameters.eid AND
    experiment_parameters.pid = paramenters.pid AND
    parameters.name = 'Generation/model' AND
    experiment parameters.paramvalue = 'brownian';
```

A Traditional Database Management System

- Install it.
- Set it up to run as daemon.
- Oreate database(s).
- Oreate user(s).
- Oreate tables.
- Use it.

SQLite: Database in a File

SQLite implements SQL-like databases in a single file.

Using SQLite

Using SQLite (II)

cursor.execute("' SELECT eid,name,date FROM experiments WHERE date ¿ DATE('2008-12-01') "')

for eid,name,date in cursor.fetchall(): print eid, name, date

PyTables

A different type of database, based on HDF5.