Working with Databases

```
import pymysql as db
```

This line goes to the file pymysql and imports a class definition.

```
connection = db.connect('localhost', 'userid', 'password', 'database_name')
```

This line opens a connection to the database. Localhost needs to be the address of the computer the db is on. 'localhost' itself means the address of the computer the program is on. For us it's cs1dev. Userid and password are the userid we're familiar with, and the password for our database, which we got in an email ages ago. The database name for us is something like 2019_[user_id].

```
cursor = connection.cursor(db.cursors.DictCursor)
```

This line creates an object that knows how to talk to the database.

```
cursor.execute('''[SQL code]''')
```

This is how we run SQL commands from python.

```
for row in cursor.fetchall():
    print(…)
```

.fetchall returns a list of all (remaining) rows, or the empty list. Since we created a DictCursor, each row is a dictionary. The keys in the dictionaries are the attributes (column names) from the db, and the values will be the entries in those columns.

```
cursor.close()
connection.close()
```

These lines close the connection and cursor. Python automatically closes them at the end anyway, but in future you may want to close them well before the end of the program.

There are many ways to get errors making connections to databases. They crash. Use a try/except to catch the error. The exception is db.Error.

Showing our errors to the users can be dodgy because it can include our database password.