# Assignment 5 - Databases & SQL

In this assignment you will create tables for a database, populate it with rows, and then query it.

**Submission:**

- Write out the SQL statements for parts 1-3 in a text file named `hw5.sql`.
- Put your name at the top in comments.
- Use `/*` and `*/` to enclose the comments.
- Put your answers to the bonus questions in comments.
- When I grade your submission I should be able to simply copy and paste the entire thing into a SQLite3 command line.
- Remember that each SQL statement must end with a semicolon `;`
- It's OK to have blank lines in your document to make it more readable.

# Part 1 - Create the database tables

**1a.** Create a database named `hw5.db`. You can do this with SQLite3 with the following command: `sqlite3 hw5.db`.

**1b.** Create tables with these specified field names, capable of handling the specified data types.

- bands
    - id (primary key, integer)
    - name (string of max length 64)
- musicians
    - id (primary key, integer)
    - name (string of max length 64)
- members
    - band (integer foreign key)
    - musician (integer foreign key)
    - role (string of max length 64)
    - use a composite of both fields to create a primary key: `PRIMARY KEY(band, musician)`
- albums
    - id (primary key, integer)
    - title (string of max length 128)
    - year (integer)
    - band (integer foreign key)
- tracks
    - id (primary key, integer)
    - title (string of max length 128)
    - duration (string of 5 characters)
    - album (integer foreign key)

# Part 2 - Populate the database

Insert the following data into your database.

- **Bands & Artists**

    - Queen
        - Freddie Mercury, (vocals)
        - Brian May, (guitars)
        - Roger Taylor, (drums)
        - John Deacon, (bass)

- Herb Alpert & the Tijuana Brass
  - Herb Alpert (vocals, trumpet)
- AC/DC
  - Bon Scott, (vocals)
  - Angus Young, (lead guitar)
  - Malcolm Young, (rhythm guitar)
  - Mark Evans, (bass)
  - Phil Rudd, (drums)
- **Albums & Tracks**

  - A Night at the Opera, by Queen, 1975
    - Death on Two Legs, duration 3:43
    - Lazing on a Sunday Afternoon, duration 1:08
    - I'm in Love with My Car, duration 3:05
    - You're My Best Friend, duration 2:50
    - '39, duration 3:25
    - Sweet Lady, duration 4:01
    - Seaside Rendezvous, duration 2:13
    - The Prophet's Song, duration 8:17
    - Love of My Life, duration 3:38
    - Good Company, duration 3:26
    - Bohemian Rhapsody, duration 5:55
    - God Save the Queen, duration 1:11
  - Whipped Cream, by Herb Alpert & the Tijuana Brass, 1965
    - A Taste of Honey, duration 2:43
    - Green Peppers, duration 1:31
    - Tangerine, duration 2:46
    - Bittersweet Samba, duration 1:46
    - Lemon Tree, duration 2:23
    - Whipped Cream, duration 2:33
    - Love Potion No. 9, duration 3:02
    - El Garbanzo, duration 2:13
    - Ladyfingers, duration 2:43
    - Butterball, duration 2:12
    - Peanuts, duration 2:09
    - Lollipops and Roses, duration 2:27
  - Dirty Deeds Done Dirt Cheap, by AC/DC, 1976
    - Dirty Deeds Done Dirt Cheap, duration 3:52
    - Love at First Feel, duration 3:12
    - Big Balls, duration 2:38
    - Rocker, duration 2:50
    - Problem Child, duration 5:46
    - There's Gonna Be Some Rockin', duration 3:18
    - Ain't No Fun (Waiting Round to Be a Millionaire), duration 6:54
    - Ride On, duration 5:53
    - Squealer, duration 5:27

*Hint1:* Remember to wrap your string values in quotes. That includes the duration values too.

*Hint2:* It may serve you well to write a Python script to parse the above data and create the appropriate INSERTstatements for you! Or you can just write the statements manually. I did a combination of both.

# Part 3 - Query the database

**3a.** Query the database to list all the album titles

**3b.** Query the database to list all the album data for albums released before 1970.

**3c.** Query the database to list all the data for tracks on the album whose title is "Whipped Cream".

**3d.** Query the database to list all the musicians who have the role of "drummer".

**3e.** Query the database to list all of the members of the band "AC/DC".