PART 1: PHPMyAdmin

You will complete questions 1-9 below in the PHPMyAdmin interface. Log in by pasting the following URL into your browser, and using the following Username and Password:

URL: https://sql.springboard.com/
Username: student
Password: learn_sql@springboard

The data you need is in the "country_club" database. This database contains 3 tables:
 i) the "Bookings" table,
 ii) the "Facilities" table, and
 iii) the "Members" table.

In this case study, you'll be asked a series of questions. You can solve them using the platform, but for the final deliverable, paste the code for each solution into this script, and upload it to your GitHub.

/* QUESTIONS

/* Q1: Some of the facilities charge a fee to members, but some do not. Write a
SQL query to produce a list of the names of the facilities that do. */

```
SELECT `name`
FROM `Facilities`
WHERE `membercost` > 0.0
```

name Tennis Court 1 Tennis Court 2 Massage Room 1 Massage Room 2 Squash Court

/* Q2: How many facilities do not charge a fee to members? */

SELECT COUNT(*)
FROM `Facilities`
WHERE `membercost` = 0.0

A2: 4 facilities do not charge a fee

/* Q3: Write an SQL query to show a list of facilities that charge a fee to members, where the fee is less than 20% of the facility's monthly maintenance cost. Return the facid, facility name, member cost, and monthly maintenance of the facilities in question. */

SELECT `facid` , `name` , `membercost` , `monthlymaintenance`
FROM `Facilities`
WHERE `membercost` > 0.0 AND `membercost` < 0.2 * `monthlymaintenance`</pre>

| facid | name | membercost | monthlymaintenance |
|-------|----------------|------------|--------------------|
| 0 | Tennis Court 1 | 5.0 | 200 |
| 1 | Tennis Court 2 | 5.0 | 200 |
| 4 | Massage Room 1 | 9.9 | 3000 |
| 5 | Massage Room 2 | 9.9 | 3000 |
| 6 | Squash Court | 3.5 | 80 |

/* Q4: Write an SQL query to retrieve the details of facilities with ID 1 and 5. Try writing the query without using the OR operator. */

SELECT *
FROM Facilities
WHERE name LIKE '%2'

| facid | name | membercost | guestcost | initialoutlay | monthlymaintenance |
|-------|----------------|------------|-----------|---------------|--------------------|
| 1 | Tennis Court 2 | 5.0 | 25.0 | 8000 | 200 |
| 5 | Massage Room 2 | 9.9 | 80.0 | 4000 | 3000 |

/* Q5: Produce a list of facilities, with each labelled as
'cheap' or 'expensive', depending on if their monthly maintenance cost is more
than \$100. Return the name and monthly maintenance of the facilities in question.
*/

SELECT name, monthlymaintenance,

CASE WHEN monthlymaintenance >100 THEN 'expensive'

ELSE 'cheap' END AS maintenancelabel

FROM Facilities

| name | monthlymaintenance | maintenancelabel |
|-----------------|--------------------|------------------|
| Tennis Court 1 | 200 | expensive |
| Tennis Court 2 | 200 | expensive |
| Badminton Court | 50 | cheap |
| Table Tennis | 10 | cheap |
| Massage Room 1 | 3000 | expensive |
| Massage Room 2 | 3000 | expensive |
| Squash Court | 80 | cheap |
| Snooker Table | 15 | cheap |
| Pool Table | 15 | cheap |

/* Q6: You'd like to get the first and last name of the last member(s)
who signed up. Try not to use the LIMIT clause for your solution. */

SELECT surname, firstname FROM Members WHERE joindate IN (SELECT MAX(joindate) FROM Members)

/* Q7: Produce a list of all members who have used a tennis court.
Include in your output the name of the court, and the name of the member
formatted as a single column. Ensure no duplicate data, and order by the member
name. */

SELECT DISTINCT

CASE WHEN memid IN (SELECT memid FROM Bookings WHERE facid = 0) THEN CONCAT(firstname, " ", surname, " Tennis Court 1")

WHEN memid IN (SELECT memid FROM Bookings WHERE facid = 1) THEN CONCAT(firstname, " ", surname, " Tennis Court 2") END AS member_name FROM Members

WHERE CASE WHEN memid IN (SELECT memid FROM Bookings WHERE facid = 0) THEN CONCAT(firstname, " ", surname, " Tennis Court 1")

WHEN memid IN (SELECT memid FROM Bookings WHERE facid = 1) THEN CONCAT(firstname, " ", surname, " Tennis Court 2") END IS NOT NULL ORDER BY member name;

| member_name |
|---------------------------------|
| Anne Baker Tennis Court 1 |
| Burton Tracy Tennis Court 1 |
| Charles Owen Tennis Court 1 |
| Darren Smith Tennis Court 2 |
| David Farrell Tennis Court 1 |
| David Jones Tennis Court 1 |
| David Pinker Tennis Court 1 |
| Douglas Jones Tennis Court 1 |
| Erica Crumpet Tennis Court 1 |
| Florence Bader Tennis Court 1 |
| Gerald Butters Tennis Court 1 |
| GUEST GUEST Tennis Court 1 |
| Henrietta Rumney Tennis Court 2 |
| Jack Smith Tennis Court 1 |
| Janice Joplette Tennis Court 1 |
| Jemima Farrell Tennis Court 1 |
| Joan Coplin Tennis Court 1 |

| member_name |
|----------------------------------|
| John Hunt Tennis Court 1 |
| Matthew Genting Tennis Court 1 |
| Millicent Purview Tennis Court 2 |
| Nancy Dare Tennis Court 1 |
| Ponder Stibbons Tennis Court 1 |
| Ramnaresh Sarwin Tennis Court 1 |
| Tim Boothe Tennis Court 1 |
| Tim Rownam Tennis Court 1 |
| Timothy Baker Tennis Court 1 |
| Tracy Smith Tennis Court 1 |

/* Q8: Produce a list of bookings on the day of 2012-09-14 which will cost the member (or guest) more than \$30. Remember that guests have different costs to members (the listed costs are per half-hour 'slot'), and the guest user's ID is always 0. Include in your output the name of the facility, the name of the member formatted as a single column, and the cost. Order by descending cost, and do not use any subqueries. */

```
SELECT bookid,
```

CASE WHEN memid = 0 AND slots * guestcost > 30 THEN 'Guest booking'
WHEN memid > 0 AND slots * membercost > 30 THEN 'Member booking' END AS type
FROM Bookings
LEFT JOIN Facilities
USING (facid)
WHERE starttime LIKE '2012-09-14%' AND
CASE WHEN memid = 0 AND slots * guestcost > 30 THEN 'Guest booking'
WHEN memid > 0 AND slots * membercost > 30 THEN 'Member booking' END IS NOT
NULL

| bookid | type |
|--------|----------------|
| 2920 | Guest booking |
| 2922 | Guest booking |
| 2925 | Guest booking |
| 2926 | Guest booking |
| 2937 | Guest booking |
| 2940 | Guest booking |
| 2941 | Member booking |
| 2942 | Guest booking |

| bookid | type |
|--------|---------------|
| 2946 | Guest booking |
| 2948 | Guest booking |
| 2949 | Guest booking |
| 2951 | Guest booking |

/* Q9: This time, produce the same result as in Q8, but using a subquery. */

SELECT s.bookid
FROM (SELECT bookid, memid, facid, slots, membercost, guestcost
FROM Bookings
LEFT JOIN Facilities
USING (facid)
WHERE starttime LIKE '2012-09-14%') AS s
WHERE COALESCE(memid = 0 AND slots * guestcost > 30, memid > 0 AND slots * membercost > 30)

| bookid | |
|--------|--|
| 2920 | |
| 2922 | |
| 2925 | |
| 2926 | |
| 2937 | |
| 2940 | |
| 2942 | |
| 2946 | |
| 2948 | |
| 2949 | |
| 2951 | |

/* PART 2: SQLite

/* We now want you to jump over to a local instance of the database on your machine. Copy and paste the LocalSQLConnection.py script into an empty Jupyter notebook, and run it.

Make sure that the SQLFiles folder containing thes files is in your working directory, and that you haven't changed the name of the .db file from 'sqlite\db\pythonsqlite'.

You should see the output from the initial query 'SELECT * FROM FACILITIES'.

Complete the remaining tasks in the Jupyter interface. If you struggle, feel free to go back to the PHPMyAdmin interface as and when you need to. You'll need to paste your query into value of the 'query1' variable and run the code block again to get an output.

QUESTIONS:

```
/* Q10: Produce a list of facilities with a total revenue less than 1000. The
output of facility name and total revenue, sorted by revenue. Remember that
there's a different cost for guests and members! */
SELECT name,
     SUM(CASE WHEN b.type = 'quest' THEN b.slot sum * questcost
     WHEN b.type = 'member' THEN b.slot sum * membercost
    END) AS revenue
FROM Facilities
JOIN (SELECT facid, SUM(slots) AS slot sum,
     CASE WHEN memid = 0 THEN 'quest'
     WHEN memid > 0 THEN 'member' END AS type
FROM Bookings
GROUP BY facid, type) as b
USING (facid)
GROUP BY name
ORDER BY revenue
2.6.0
2. Query all tasks
('Table Tennis', 180)
('Snooker Table', 240)
('Pool Table', 270)
('Badminton Court', 1906.5)
('Squash Court', 13468.0)
('Tennis Court 1', 13860)
('Tennis Court 2', 14310)
('Massage Room 2', 14454.6)
('Massage Room 1', 50351.6)
/* Q11: Produce a report of members and who recommended them in alphabetic
surname, firstname order */
SELECT ml.surname AS member surname, ml.firstname AS member firstname, m2.surname
AS recommender surname, m2.firstname AS recommender firstname
FROM Members AS m1
LEFT JOIN Members AS m2
ON m1.recommendedby = m2.memid
WHERE COALESCE (m1.recommendedby > 0, m2.recommendedby > 0)
ORDER BY member surname
2.6.0
2. Query all tasks
('Bader', 'Florence', 'Stibbons', 'Ponder')
('Baker', 'Anne', 'Stibbons', 'Ponder')
('Baker', 'Timothy', 'Farrell', 'Jemima')
('Boothe', 'Tim', 'Rownam', 'Tim')
('Butters', 'Gerald', 'Smith', 'Darren')
('Coplin', 'Joan', 'Baker', 'Timothy')
```

```
('Crumpet', 'Erica', 'Smith', 'Tracy')
('Dare', 'Nancy', 'Joplette', 'Janice')
('Genting', 'Matthew', 'Butters', 'Gerald')
('Hunt', 'John', 'Purview', 'Millicent')
('Jones', 'David', 'Joplette', 'Janice')
('Jones', 'Douglas', 'Jones', 'David')
('Joplette', 'Janice', 'Smith', 'Darren')
('Mackenzie', 'Anna', 'Smith', 'Darren')
('Owen', 'Charles', 'Smith', 'Darren')
('Pinker', 'David', 'Farrell', 'Jemima')
('Purview', 'Millicent', 'Smith', 'Tracy')
('Rumney', 'Henrietta', 'Genting', 'Matthew')
('Sarwin', 'Ramnaresh', 'Bader', 'Florence')
('Smith', 'Jack', 'Smith', 'Darren')
('Stibbons', 'Ponder', 'Tracy', 'Burton')
('Worthington-Smyth', 'Henry', 'Smith', 'Tracy')
/* Q12: Find the facilities with their usage by member, but not guests */
SELECT f.name, sq.surname, sq.firstname, member use
FROM (SELECT facid, m.surname, m.firstname, COUNT(*) AS member use
    FROM Bookings as b
    INNER JOIN Members as m
    USING (memid)
    WHERE b.memid >= 1
    GROUP BY facid, m.surname, m.firstname) as sq
INNER JOIN Facilities as f
USING (facid)
ORDER BY f.name
The list is rather long, so I have pasted it at the end of this document. UPDATE:
I realize that I have completely misunderstood what the question was asking for.
Perhaps this is what is being requested?
SELECT f.name, member use
FROM (SELECT facid, COUNT(*) AS member use
    FROM Bookings as b
    INNER JOIN Members as m
    USING (memid)
    WHERE b.memid >= 1
    GROUP BY facid) as sq
INNER JOIN Facilities as f
USING (facid)
ORDER BY f.name
('Pool Table', 783)
('Massage Room 1', 421)
('Snooker Table', 421)
('Table Tennis', 385)
('Badminton Court', 344)
('Tennis Court 1', 308)
('Tennis Court 2', 276)
('Squash Court', 195)
('Massage Room 2', 27)
```

```
/* Q13: Find the facilities usage by month, but not guests */
SELECT strftime ('%m', starttime) AS month, name, count(slots) as member usage
FROM Bookings
INNER JOIN Facilities
USING (facid)
WHERE memid > 0
GROUP BY month, name
ORDER BY month, member usage DESC
('07', 'Pool Table', 103)
('07', 'Massage Room 1', 77)
('07', 'Snooker Table', 68)
('07', 'Tennis Court 1', 65)
('07', 'Badminton Court', 51)
('07', 'Table Tennis', 48)
('07', 'Tennis Court 2', 41)
('07', 'Squash Court', 23)
('07', 'Massage Room 2', 4)
('08', 'Pool Table', 272)
('08', 'Snooker Table', 154)
('08', 'Massage Room 1', 153)
('08', 'Table Tennis', 143)
('08', 'Badminton Court', 132)
('08', 'Tennis Court 1', 111)
('08', 'Tennis Court 2', 109)
('08', 'Squash Court', 85)
('08', 'Massage Room 2', 9)
('09', 'Pool Table', 408)
('09', 'Snooker Table', 199)
('09', 'Table Tennis', 194)
('09', 'Massage Room 1', 191)
('09', 'Badminton Court', 161)
('09', 'Tennis Court 1', 132)
('09', 'Tennis Court 2', 126)
('09', 'Squash Court', 87)
('09', 'Massage Room 2', 14)
Question 12 Long Answer:
2.6.0
2. Query all tasks
```

```
('Badminton Court', 'Bader', 'Florence', 9)
('Badminton Court', 'Bader', 'Florence', 9)
('Badminton Court', 'Baker', 'Anne', 10)
('Badminton Court', 'Baker', 'Timothy', 7)
('Badminton Court', 'Boothe', 'Tim', 12)
('Badminton Court', 'Butters', 'Gerald', 20)
('Badminton Court', 'Crumpet', 'Erica', 2)
('Badminton Court', 'Dare', 'Nancy', 10)
('Badminton Court', 'Farrell', 'Jemima', 7)
('Badminton Court', 'Hunt', 'John', 2)
('Badminton Court', 'Jones', 'David', 8)
('Badminton Court', 'Jones', 'Douglas', 2)
 ('Badminton Court', 'Mackenzie', 'Anna', 30)
('Badminton Court', 'Owen', 'Charles', 6)
('Badminton Court', 'Owen', 'Charles', 6)
('Badminton Court', 'Pinker', 'David', 7)
('Badminton Court', 'Purview', 'Millicent', 2)
('Badminton Court', 'Rownam', 'Tim', 4)
('Badminton Court', 'Sarwin', 'Rammaresh', 7)
('Badminton Court', 'Smith', 'Darren', 132)
('Badminton Court', 'Smith', 'Jack', 12)
('Badminton Court', 'Smith', 'Tracy', 32)
('Badminton Court', 'Stibbons', 'Ponder', 16)
('Badminton Court', 'Tracy', 'Burton', 2)
('Badminton Court', 'Tupperware', 'Hyacinth', 1)
```

```
('Badminton Court', 'Worthington-Smyth', 'Henry', 4)
('Massage Room 1', 'Baker', 'Anne', 3)
('Massage Room 1', 'Baker', 'Timothy', 24)
('Massage Room 1', 'Boothe', 'Tim', 36)
('Massage Room 1', 'Bouthers', 'Gerald', 32)
('Massage Room 1', 'Coplin', 'Joan', 1)
('Massage Room 1', 'Crumpet', 'Erica', 2)
('Massage Room 1', 'Dare', 'Nancy', 19)
('Massage Room 1', 'Farrell', 'Jemima', 29)
('Massage Room 1', 'Genting', 'Matthew', 25)
('Massage Room 1', 'Hunt', 'John', 3)
('Massage Room 1', 'Jones', 'David', 19)
('Massage Room 1', 'Joplette', 'Janice', 12)
('Massage Room 1', 'Mackenzie', 'Anna', 1)
('Massage Room 1', 'Ween', 'Charles', 11)
('Massage Room 1', 'Pinker', 'David', 3)
('Massage Room 1', 'Rownam', 'Tim', 80)
('Massage Room 1', 'Sarwin', 'Ramnaresh', 8)
('Massage Room 1', 'Smith', 'Darren', 28)
('Massage Room 1', 'Smith', 'Darren', 28)
('Massage Room 1', 'Smith', 'Jack', 27)
('Massage Room 1', 'Smith', 'Tracy', 6)
('Massage Room 1', 'Stibbons', 'Ponder', 19)
('Massage Room 1', 'Stibbons', 'Ponder', 19)
('Massage Room 1', 'Tracy', 'Burton', 31)
('Massage Room 1', 'Tupperware', 'Hyacinth', 1)
```

```
('Mossage Room '), 'Rorth'sgton-Smyth', 'Varry', ']
('Squash Court', 'Sarry', 'Rorth'sgton-Smyth', ')
('Mossage Room '), 'Rorth's, '(Americ', ')
('Mossage Room '), 'Rorth's, '(Americ', ')
('Mossage Room '), 'Rorth's, '(Americ', ')
('Mossage Room '), 'Rorth's, 'Rorth's, ')
('Mossage Room '), 'Rorth's, 'Island's, '
              ('Massage Room 1', 'Worthington-Smyth', 'Henry', 1)
('Massage Room 2', 'Bader', 'Florence', 2)
('Massage Room 2', 'Baker', 'Anne', 2)
('Massage Room 2', 'Butters', 'Gerald', 1)
('Massage Room 2', 'Coplin', 'Joan', 2)
('Massage Room 2', 'Coplin', 'Joan', 2)
('Massage Room 2', 'Dare', 'Nancy', 5)
('Squash Court', 'Smith', 'Tracy', 6)
('Squash Court', 'Smith', 'Tracy', 6)
('Squash Court', 'Stibbons', 'Ponder', 2)
('Massage Room 2', 'Dare', 'Nancy', 5)
('Squash Court', 'Tracy', 'Burton', 35)
```