Laboratory 6
SQL Queries – Part 1

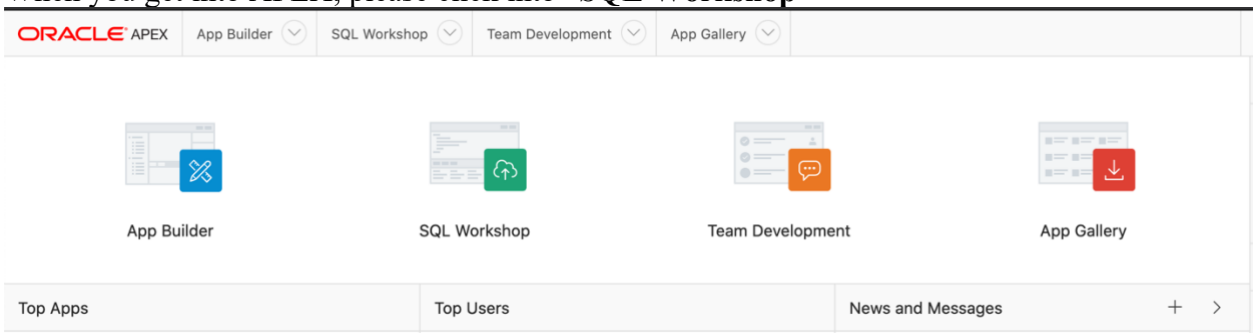
References
Lecture Notes: Topic 6
Elmasri and Navathe, 2017: Chapter 6

Exercise 1 – Running a Script

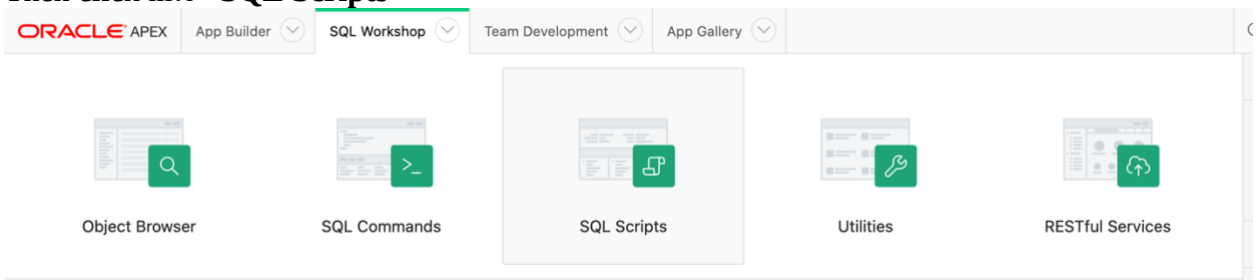
Download the file eventSchema.sql from Week 7 section in our LMS site into a folder on your local drive. **NOTE:** Make sure you right-click and "save as" to download. If you save the file while it is open in your browser a HTML header will be inserted and the script will not run.

The "eventSchema" file contains all the `create` and `insert` statements you will need for the remaining SQL/PL labs. The file creates an event management database and a graphical overview of the database has been given to you on LMS.

When you get into APEX, please click into "**SQL Workshop**"

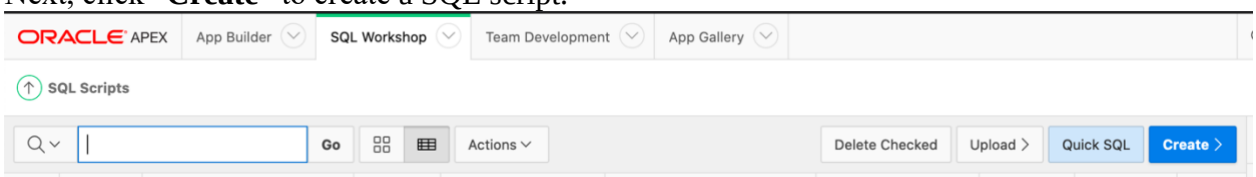


Then click into "**SQL Scripts**"

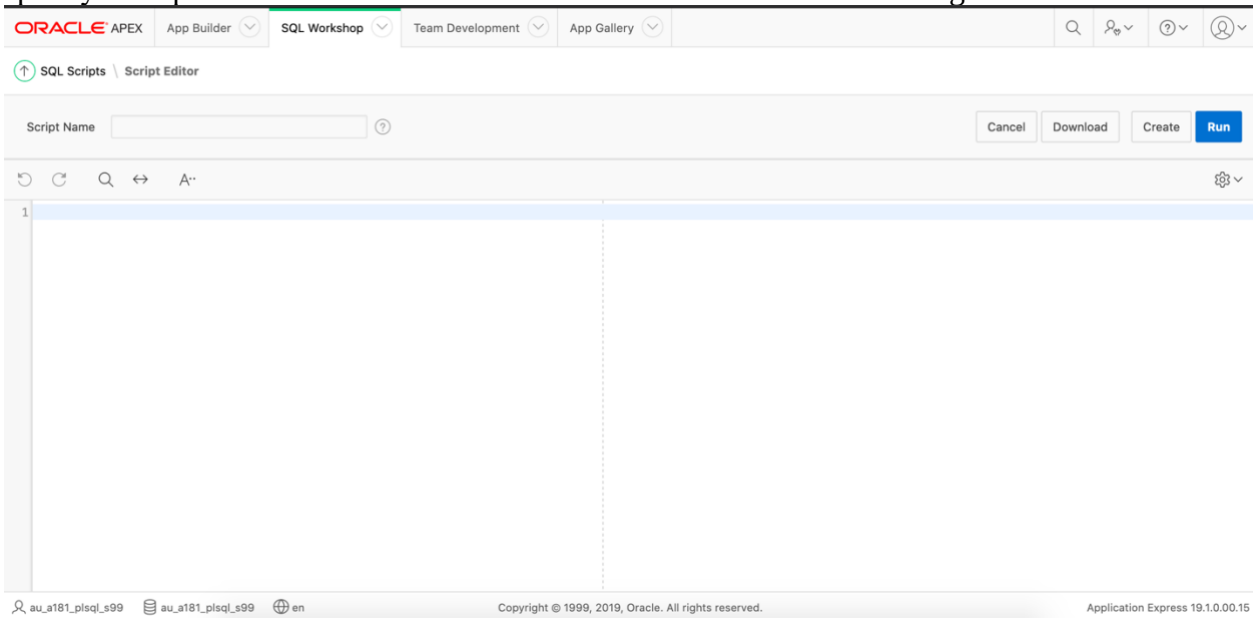


There are two ways, you can create the database from the eventSchema.sql script. You can either upload the script using the "Upload" button or create a new script as below by copying from the .sql file.

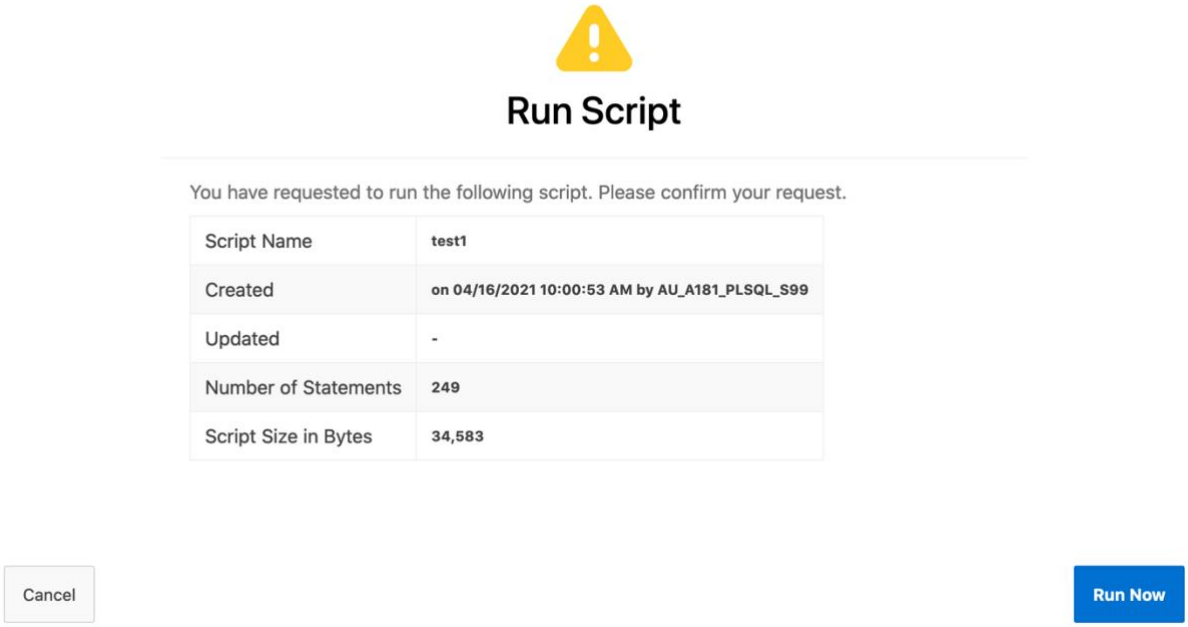
Next, click "**Create**" to create a SQL script.



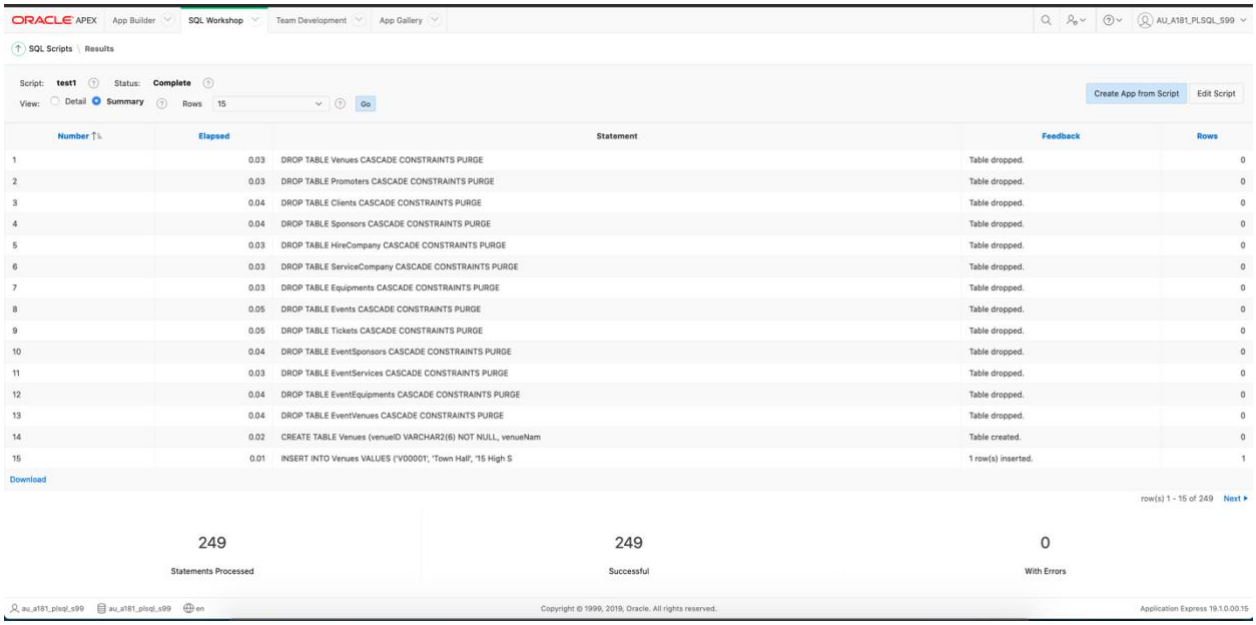
Then, you will get into the below page. Please use any Text Edit tool to open the file "eventSchema.sql" , copy paste all scripts from "eventSchema.sql" to the below window. Then specify a script Name in the box and click "Run" with blue color on the right side.



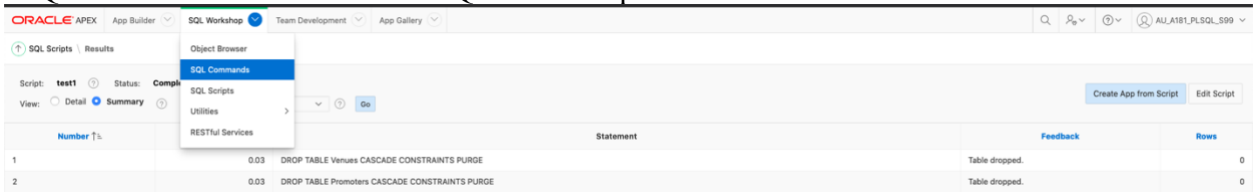
You will get Run Script information similar as below. Please just click "Run Now".



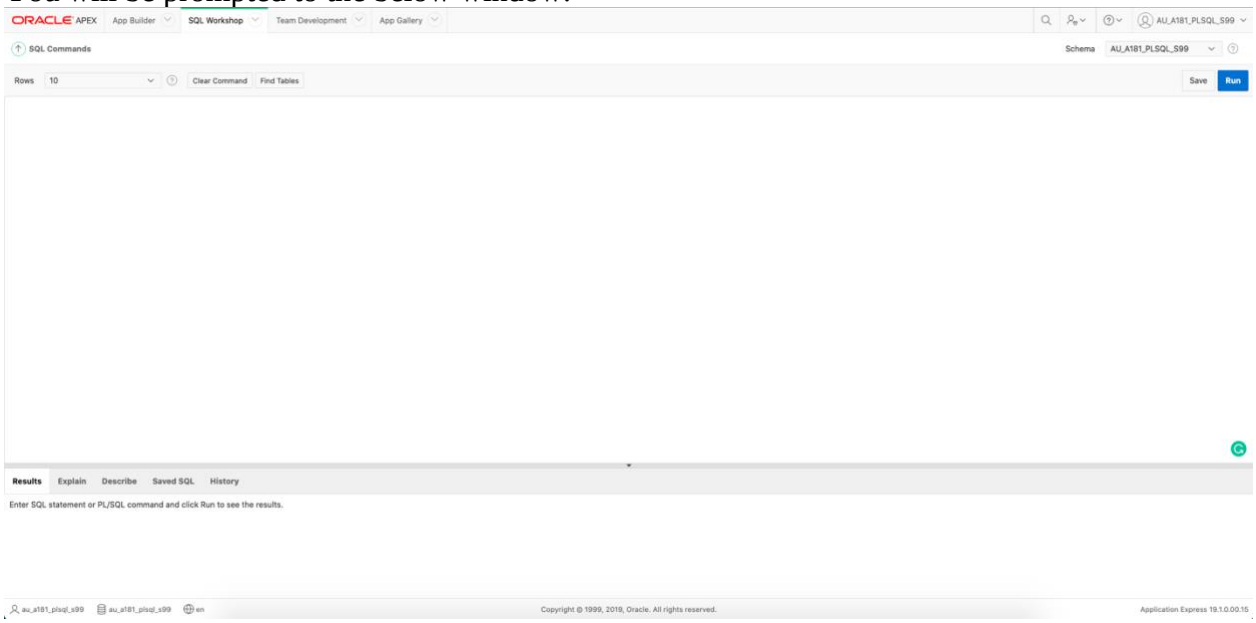
Finally, you will get a result summary information as below. Please make sure there is no error (except for the first 13 drop table statements if the tables do not exist in the database, which is normal).



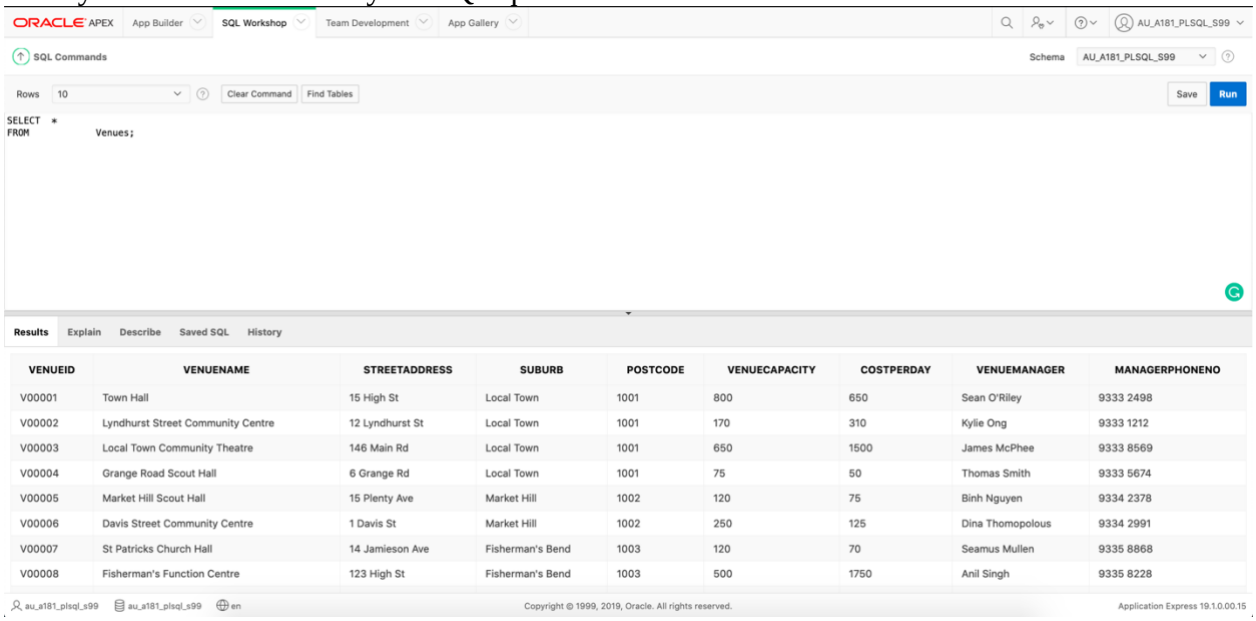
Now you have created this database. Next, you can start the “Exercise 2 – SQL” by clicking “SQL Commands” from the tab “SQL Workshop”.



You will be prompted to the below window.



Then you can write and test your SQL queries as below.



VENUEID	VENUENAME	STREETADDRESS	SUBURB	POSTCODE	VENUECAPACITY	COSTPERDAY	VENUEMANAGER	MANAGERPHONENO
V00001	Town Hall	15 High St	Local Town	1001	800	650	Sean O'Riley	9333 2498
V00002	Lyndhurst Street Community Centre	12 Lyndhurst St	Local Town	1001	170	310	Kylie Ong	9333 1212
V00003	Local Town Community Theatre	146 Main Rd	Local Town	1001	650	1500	James McPhee	9333 8569
V00004	Grange Road Scout Hall	6 Grange Rd	Local Town	1001	75	50	Thomas Smith	9333 5674
V00005	Market Hill Scout Hall	15 Plenty Ave	Market Hill	1002	120	75	Binh Nguyen	9334 2378
V00006	Davis Street Community Centre	1 Davis St	Market Hill	1002	250	125	Dina Thomopolous	9334 2991
V00007	St Patricks Church Hall	14 Jamieson Ave	Fisherman's Bend	1003	120	70	Seamus Mullen	9335 8868
V00008	Fisherman's Function Centre	123 High St	Fisherman's Bend	1003	500	1750	Anil Singh	9335 8228

Exercise 2 – SQL

1. Write the SQL query to list all the venues stored in the database.

   ```
   10 rows selected.
   ```

2. Write an SQL query to list all the data in the events table.

   ```
   24 rows selected.
   ```

3. Write an SQL query to list all the clients stored in the database. Make sure the data presented is ordered by company name.

   ```
   15 rows selected.
   ```

4. a. Write an SQL query to list the promoter business names, their phone numbers and contact person.

```
PROMOTERBUSINESSNAME                                PROMOTERPHONENO
--------------------------------------------------- ---------------
CONTACTPERSON
--------------------------------------------------
Walter's Meats                                      9333 3331
Walter Dreyer

Clara's Cafe                                        9333 3221
Clara Thompson

Tandoori Temptations                                9333 3111
Gaurav Singh

Vietnamese Cuisine                                  9333 3001
Anna Nguyen
```

```
Coffee by the Lake                                    9335 2221
Maree Cotti
```

b. Write the Relational Algebra expression for this query.

5. a. Write an SQL query to select client companies in the postcode area *1001*.

Six companies – 1, 2, 3, 11, 12, 14

b. Write the Relational Algebra expression for this query.

6. Write an SQL query to select client companies who are not in the postcode area *1001*.

Nine companies – 4, 5, 6, 7, 8, 9, 10, 13, 15

7. Write an SQL query to list the names of all the client companies and the events that have been run for them or are currently booked.

24 rows selected

8. Write an SQL query to list the names of all the venues that have been booked, or are currently booked and the names of the associated events.

24 rows selected

9. Write an SQL query to list all the venues and the events they will be hired for in June 2018.

```
VENUENAME
--------------------------------
EVENTNAME
--------------------------------
Local Town Community Theatre
Bopping Ballet

Davis Street Community Centre
Tappin Tots

Local Town Community Theatre
Mimed Moments
```

10. Write an SQL query to show the dates in July 2018 that the *Local Town Community Theatre* is already booked.

```
TO_CHAR(BOO
-----------
18-JUL-2018
19-JUL-2018
25-JUL-2018
26-JUL-2018
```

11. Write an SQL query to list those venues that have never been booked.

Market Hill Scout Hall

12. a. Write an SQL query to list all the events that have been sponsored by *Gordon's Greengrocers*.

Fame

b. Write the Relational Algebra expression for this query.

13. Write an SQL query that will calculate the average cost per day of hiring a venue for 100 – 120 people (inclusive).

```
Average Cost per Day
--------------------
                72.5
```

14. Write an SQL query that will determine which is the least expensive venue that will accommodate 120 people.

VENUENAME	*COSTPERDAY*
St Patricks Church Hall	*70*

15. Write an SQL query that calculates how many events are being held in July 2018.

```
Number of events in July 2018
-----------------------------
                            2
```

A word on dates…

The DATE data type stores two pieces of information, the first value is the year, month and day and the second value is the time. Therefore you need to take care when comparing dates as two dates that are the same (year, month and day) may have different times associated with them. Oracle allows you to format the dates you are comparing to ensure you are only looking at the desired fields. For example:

To see if any events are being held on May 3rd 2018:

```
SELECT E.eventName
FROM Event E, EventVenue EV
WHERE E.eventID = EV.eventID and TO_CHAR(EV.bookingDate, 'DD-MON-YYYY) = '03-MAY-2018';
```

The TO_CHAR function takes a date as its argument and returns the date as a character string in the format given, in this example 'DD-MON-YYYY'. There are many different ways that the date and time can be formatted. For a comprehensive listing refer to the Oracle documentation.

TO_CHAR can also be used in the SELECT clause to format the date for display.

You can also perform date arithmetic and use SYSDATE to find out the current date and time.

Aggregate Functions…

The following aggregate functions are quite useful in this lab.

You can also refer to your lecture notes for examples.

AVG (*x*)	This function returns the average of *x*
COUNT (*x*)	This function returns number of rows returned by a query involving *x*
MAX (*x*)	This function returns the maximum value of *x*
MIN (*x*)	This function returns the minimum value of *x*

For more practice try the following from your text book (Elmasri and Navathe, 2014):

Q4.5, Q4.6, Q4.7 (pg 107)