SQL Query Examples

Exercise (1)

- Relations:

Movie(<u>title</u>, <u>year</u>, length, inColor, studioName, producerC#)

StarsIn(<u>movieTitle</u>, <u>movieYear</u>, <u>starName</u>)

MovieStar(<u>name</u>, address, gender, birthdate)

MovieExec(<u>name</u>, address, cert#, netWorth)

Studio(<u>name</u>, address, presC#)

- Queries:

a) Find the address of MGM studios.

b) Find Sandra Bullock's birthdate.

c) Find all the stars that appear either in a movie made in 1980 or a movie with "Love" in the title.

d) Find all executives worth at least $10,000,000.

e) Find all the stars who either are male or live in Miami (have Miami as a part of their address).

Answers (1)

a) SELECT address FROM studio WHERE name = 'MGM';

b) SELECT birthdate FROM moviestar WHERE name = 'Sandra Bullock';

c) SELECT starName FROM StarsIn
WHERE movieYear = 1980 OR movieTitle LIKE '%Love%';

```
SELECT starName FROM StarsIn
WHERE movieYear = 1980 OR movieTitle LIKE 'Love %'
        OR movieTitle LIKE '% Love %' OR  movieTitle LIKE '% Love'
        OR movieTitle = 'Love';
```

d) SELECT name FROM MovieExec WHERE netWorth >= 10,000,000;

e) SELECT name FROM MovieStar
WHERE gender = 'M' OR address LIKE 'Miami %'
OR address LIKE '% Miami %' OR address LIKE '% Miami'
OR address = 'Miami';

Exercise (2)

- Relations:

Movie(<u>title</u>, <u>year</u>, length, inColor, studioName, producerC#)

StarsIn(<u>movieTitle</u>, <u>movieYear</u>, <u>starName</u>)

MovieStar(<u>name</u>, address, gender, birthdate)

MovieExec(<u>name</u>, address, cert#, netWorth)

Studio(<u>name</u>, address, presC#)

- Queries:

a) Who were the male stars in *Terms of Endearment*.

b) Which stars appeared in movies produced by MGM in 1995?

c) Which movies are longer than *Gone With the Wind*?

d) Which executives are worth more than *Merv Griffin*?

Answer (2)

a) SELECT name FROM MovieStar, StarsIn
WHERE gender = 'M' AND name = starName
AND movieTitle = 'Terms of Endearment';

b) SELECT starName FROM MovieStar, Movie
WHERE title = movieTitle AND year = movieYear AND year = 1995
AND studioName = 'MGM';

c) SELECT M1.title FROM Movie AS M1, Movie AS M2
WHERE M2.title = 'Gone With the Wind' AND M1.length > M2.length;

SELECT title FROM Movie
WHERE length > ANY (SELECT length FROM Movie
WHERE title = 'Gone With the Wind');

d) SELECT M1.name FROM MovieExec AS M1, MovieExec AS M2
WHERE M2.name = 'Mery Griffin' AND M1.networth > M2.networth;

Exercise 3

- Relations:

Classes(class, type, country, numGuns, bore, displacement)

Ships(name, class, launched)

Battles(name, date)

Outcomes(ship, battle, result)

- Queries:

a) Find the countries whose ships had the largest number of guns.

b) Find the classes of ships at least one of which was sunk in a battle.

c) Find the names of the ships with a 16-inch bore.

d) Find the battles in which ships of the *Kongo* class participated.

e) Find the names of the ships whose number of guns was the largest for those ships of the same bore.

Answer (3-1)

a) SELECT country FROM classes
WHERE numGuns = (SELECT MAX(numGuns) from classes);

SELECT country FROM classes
WHERE numGuns >= ALL (SELECT numGuns from classes);

b) SELECT DISTINCT class FROM Ships
WHERE name IN (SELECT ship FROM Outcomes
WHERE result = 'sunk');

SELECT class FROM Ships
WHERE EXISTS (SELECT * FROM Outcomes
WHERE Ships.name = Outcomes.ship AND result = 'sunk');

Answer (3-2)

c) SELECT name FROM ships
WHERE class IN (SELECT class from classes where bore = 16);

SELECT name FROM ships, classes
WHERE ships.class = classes.class AND bore = 16;

d) SELECT DISTINCT battle FROM ships, outcomes
WHERE name = ship AND class = 'Kongo';

SELECT DISTINCT battle FROM outcomes
WHERE ship = ANY (SELECT name FROM ships WHERE class = 'Kongo');

Answer (3-3)

e) SELECT name FROM ships, classes AS C1
WHERE ships.class = C1.class
AND numGuns = (SELECT MAX(numGuns)
FROM classes AS C2
WHERE C1.bore = C2.bore);

Exercise 4

- Relations:

Classes(class, type, country, numGuns, bore, displacement)

Ships(name, class, launched) Battles(name, date) Outcomes(ship, battle, result)

- Queries:

a) Find the number of battleship classes.

b) Find the average number of guns of battleship classes.

c) Find the average of guns of battleships. Note the difference between (b) and (c); do we weight a class by the number of ships of that class or not.

d) Find for each class the year in which the first ship of that class was launched.

e) Find for each class the number of ships of that class sunk in battle.

Answer (4-1)

a) SELECT count(*) FROM classes
   WHERE type = 'bc';

b) SELECT avg(numGuns) FROM classes
   WHERE type = 'bc';

c) SELECT avg(numGuns) FROM ships, classes
   WHERE ships.class =classes.class AND type = 'bc';

d) SELECT class, launched FROM ships AS S1
   WHRE launched <= ALL (SELECT year
   FROM ships AS S2
   WHERE S2.class = S1.class);

Answer (4-2)

e) SELECT classes.class, count(*) FROM classes, ships, outcomes
   WHERE classes.class = ships.class AND ship = name AND result = 'sunk'
   GROUP BY classes.class;