SQL BASIC

The following queries have been used for the following project:

The first queries are used to access the database;

- show databases (to show the list of databases)
- USE employees(use the employee database)
- SHOW tables
- DESCRIBE employees

The following queries for data wrangling with SQL(We use LIMIT from here on , to limit the amount of data viewed on the CLI, otherwise it becomes too much data that it clutters the screen). We use these statements to start inserting into tables as asked in the PILL.

- SELECT * FROM (SELECT * FROM employees ORDER BY emp_no DESC LIMIT 10) sub ORDER BY emp_no ASC

INSERT QUERY

The insert command has been used extensively with different random values over and over again to insert , but only one has been shown as the structure remains the same;

1. INSERT INTO employees(emp_no, first_name, last_name, birth_date, gender, hire_date) VALUES (500005, 'Victor','Garcia','1975-04-01','M','1986-01-01') ;

2. SELECT * FROM (SELECT * FROM titles ORDER BY emp_no DESC LIMIT 15) sub ORDER BY emp_no ASC

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+--------+------------+------------+-----------+--------+------------+
| emp_no | birth_date | first_name | last_name | gender | hire_date  |
+--------+------------+------------+-----------+--------+------------+
| 499995 | 1958-09-24 | Dekang     | Lichtner  | F      | 1993-01-12 |
| 499996 | 1953-03-07 | Zito       | Baaz      | M      | 1990-09-27 |
| 499997 | 1961-08-03 | Berhard    | Lenart    | M      | 1986-04-21 |
| 499998 | 1956-09-05 | Patricia   | Breugel   | M      | 1993-10-13 |
| 499999 | 1958-05-01 | Sachin     | Tsukuda   | M      | 1997-11-30 |
| 500000 | 1962-01-01 | Raul       | Spikes    | M      | 1980-01-01 |
| 500002 | 1963-01-01 | Raul       | Martin    | M      | 1985-01-01 |
| 500003 | 1973-01-01 | Joy        | Hensenn   | F      | 1995-01-01 |
| 500004 | 1974-01-01 | Venessa    | Garcia    | F      | 1996-01-01 |
| 500005 | 1975-04-01 | Victor     | Garcia    | M      | 1986-01-01 |
| 500006 | 1972-09-01 | Tony       | Stark     | M      | 1986-05-01 |
| 500007 | 1967-09-01 | Tania      | Stark     | F      | 1981-05-01 |
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500008	1977-05-01	Scarlet	Johanson	F	1998-05-01
500009	1967-03-01	Toni	Romano	M	1983-05-01
500010	1966-03-01	Cristiano	Ronaldo	M	1984-05-01
500011	1966-03-01	Laura	Liotta	F	1982-05-01
500012	1964-08-10	Andreas	Mikelson	M	1982-05-01
500013	1960-08-10	Matias	Nordman	M	1988-05-01
500014	1970-04-10	Marta	Nordman	F	1991-05-01
500015	1960-04-10	Raul	Mikelson	M	1987-06-01

The following queries to insert into the child table of 'titles';

1. INSERT INTO titles(emp_no, from_date) SELECT emp_no, hire_date WHERE emp_no=500000; and then update the value of the rest two columns

2. UPDATE titles SET title='Staff', to_date='1991-03-01' WHERE emp_no=500002;

emp_no	title	from_date	to_date
499997	Senior Engineer	1992-08-29	9999-01-01
499997	Engineer	1987-08-30	1992-08-29
499998	Staff	1993-12-27	1998-12-27
499998	Senior Staff	1998-12-27	9999-01-01
499999	Engineer	1997-11-30	9999-01-01
500000	Manager	1980-01-01	2007-08-01
500002	Staff	1985-01-01	1991-03-01
500003	Senior Staff	1995-01-01	9999-01-01
500004	Manager	1996-01-01	9999-01-01
500005	Manager	1986-01-01	9999-01-01
500006	Engineer	1986-05-01	9999-01-01
500007	Assistant Engineer	1981-05-01	1999-01-01
500008	Assistant Engineer	1998-05-01	2019-01-01
500009	Technique Leader	1983-05-01	2019-01-01
500010	Senior Staff	1984-05-01	2019-04-01
500011	Senior Engineer	1982-05-01	2019-10-01
500012	Senior Engineer	1982-05-01	9999-01-01
500013	Assistant Engineer	1988-05-01	9999-01-01
500014	Staff	1991-05-01	9999-01-01
500015	Staff	1987-06-01	1991-01-01

Following queries to insert into salaries(either hard coded values or random values could be inserted into the SQL query)

1. INSERT INTO salaries(emp_no, salary, from_date, to_date) VALUES((SELECT emp_no FROM `employees` WHERE emp_no=500000), 500000, (SELECT from_date from titles WHERE emp_no=500000), (SELECT to_date FROM titles WHERE emp_no=500000));

2. SELECT MIN(salary) FROM salaries; (to get the minimum salary, similar query for the maximum)

3. INSERT INTO salaries(emp_no, salary, from_date, to_date) VALUES((SELECT emp_no FROM `employees` WHERE emp_no=500004), FLOOR(38263+RAND()*(158220-38623)), (SELECT from_date from titles WHERE emp_no=500004), (SELECT to_date FROM titles WHERE emp_no=500004));

To insert salaries at two different dates we could use interval and dateadd as following;

- INSERT INTO salaries(emp_no, salary, from_date, to_date) VALUES((SELECT emp_no FROM `employees` WHERE emp_no=500010), FLOOR(38263+RAND()*(158220-38623)), (SELECT from_date from titles WHERE emp_no=500010),(DATE_ADD((SELECT from_date FROM titles WHERE emp_no=500010), INTERVAL 12 year)));

- INSERT INTO salaries(emp_no, salary, from_date, to_date) VALUES((SELECT emp_no FROM `employees` WHERE emp_no=500010), FLOOR(38263+RAND()*(158220-38623)), '1996-05-02',(SELECT to_date from titles WHERE emp_no=500010));

| emp_no | salary | from_date | to_date |
+--------+--------+------------+------------+
| emp_no | salary | from_date | to_date |
+--------+--------+------------+------------+
499999	77303	2001-11-29	9999-01-01
499999	74327	2000-11-29	2001-11-29
499999	70745	1999-11-30	2000-11-29
500000	500000	1980-01-01	2007-08-01
500002	98036	1985-01-01	1991-03-01
500003	38696	1995-01-01	9999-01-01
500004	100304	1996-01-01	9999-01-01
500005	107978	1986-01-01	9999-01-01
500006	81116	1986-05-01	9999-01-01
500007	43384	1981-05-01	1999-01-01

500008	54908	1998-05-01	2019-01-01
500009	106125	1983-05-01	2019-01-01
500010	85592	1996-05-02	2019-04-01
500010	88446	1984-05-01	1996-05-01
500011	146103	2002-05-02	2019-10-01
500011	87570	1992-05-01	1992-05-01
500011	124361	1982-05-01	1992-05-01
500012	92182	2002-05-02	9999-01-01
500012	70751	1982-05-01	2002-05-01
500013	52750	1993-05-02	9999-01-01
500013	73512	1988-05-01	2003-05-01
500014	67453	2011-05-02	9999-01-01
500014	124552	1991-05-01	2011-05-01
500014	44945	1987-06-01	1991-01-01
500015	106208	1987-06-01	1991-01-01
+--------+--------+------------+------------+

To insert into dept_manager;

- INSERT INTO dept_manager(emp_no, dept_no, from_date, to_date) VALUES((SELECT emp_no FROM titles WHERE emp_no=500013), 'd002',(SELECT from_date from titles WHERE emp_no =500013), (SELECT to_date from titles WHERE emp_no=500013));

And inserting into the dept_emp values in a hard coded way

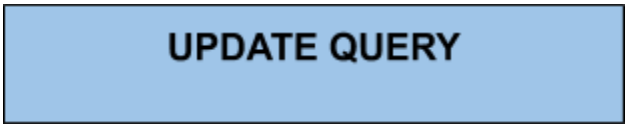
- INSERT INTO dept_emp(emp_no, dept_no, from_date, to_date) SELECT emp_no, dept_no, from_date, to_date from dept_manager where emp_no=500000;

To get all the managers and to add further managers, let's get the dept_emp

+--------+---------+------------+------------+
| emp_no | dept_no | from_date | to_date |
+--------+---------+------------+------------+
499999	d004	1997-11-30	9999-01-01
500000	d007	1980-01-01	2007-08-01
500002	d003	1985-01-01	1991-03-01
500002	d001	1985-01-01	1991-03-01
500003	d003	1995-01-01	9999-01-01
500003	d001	1995-01-01	9999-01-01
500004	d004	1996-01-01	9999-01-01
500005	d005	1986-01-01	9999-01-01
500006	d003	1986-05-01	9999-01-01
500007	d001	1981-05-01	1999-01-01

500008	d006	1998-05-01	2019-01-01
500008	d003	1998-05-01	2019-01-01
500009	d004	1983-05-01	2019-01-01
500009	d003	1983-05-01	2019-01-01
500010	d005	1984-05-01	2019-04-01
500010	d001	1984-05-01	2019-04-01
500011	d009	1982-05-01	2019-10-01
500011	d005	1982-05-01	2019-10-01
500012	d007	1982-05-01	9999-01-01
500012	d002	1982-05-01	9999-01-01
500013	d002	1988-05-01	9999-01-01
500014	d007	1991-05-01	9999-01-01
500014	d001	1991-05-01	9999-01-01
500015	d002	1987-06-01	1991-01-01
500015	d001	1987-06-01	1991-01-01
+--------+---------+------------+------------+

- INSERT INTO dept_emp(emp_no, from_date, to_date, dept_no) VALUES((SELECT emp_no from titles where emp_no=500003), (SELECT from_date from titles where emp_no=500003), (SELECT to_date from titles where emp_no=500003),'d003');

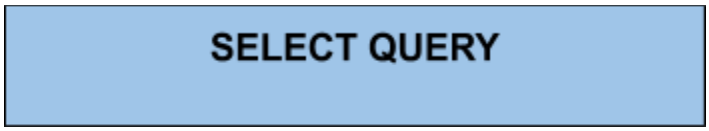


Updating a name;

- UPDATE employees SET first_name = 'Saxon', last_name='Francois' WHERE first_name='Sachin' AND last_name='Tsukuda' AND birth_date='1958-05-01';

Update department name;

- UPDATE departments SET dept_name='New customer service' WHERE dept_no='d009';



SELECT statements are shown as follows (they follow the sequence of the questions in the pill)
;

1. SELECT * FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no WHERE salaries.salary>20000 LIMIT 25;

2. SELECT * FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no WHERE salaries.salary<10000 LIMIT 25;

3. SELECT * FROM employees INNER JOIN salaries ON employees.emp_no=salaries.emp_no WHERE salaries.salary BETWEEN 1400 AND 50000 LIMIT 25;

4. SELECT COUNT(*) FROM employees LIMIT 25;

5. SELECT * FROM(SELECT emp_no, COUNT(*) as count FROM dept_emp GROUP BY emp_no HAVING COUNT(*) >1 ORDER BY emp_no DESC LIMIT 25) sub ORDER BY emp_no ASC;

6. SELECT title FROM TITLES WHERE from_date LIKE '%2019%' OR to_date LIKE '%2019%' LIMIT 25;

7. SELECT title FROM TITLES WHERE year(from_date)='2019' OR year(to_date)='2019' LIMIT 25;

8. SELECT first_name, last_name FROM employees WHERE ASCII(left(first_name, 1)) between ASCII('A') and ASCII('Z') LIMIT 25;

9. SELECT E.first_name, E.last_name, D. dept_name FROM employees E INNER JOIN current_dept_emp as C ON E.emp_no= C.emp_no INNER JOIN Departments as D ON C.dept_no=D.dept_no LIMIT 25;

10. SELECT E.first_name, E.last_name, COUNT(*) FROM employees as E INNER JOIN Titles as t ON E.emp_no=T.emp_no WHERE title='Manager' GROUP BY E.emp_no LIMIT 25;

11. SELECT DISTINCT(E.first_name) FROM employees AS E;

DELETE QUERY

Delete statements for the two questions asked are as follows respectively;

1. DELETE E.*, DE.*, DM.*, S.* , T.* FROM employees E INNER JOIN dept_emp as DE ON E.emp_no= DE.emp_no INNER JOIN dept_manager as DM ON DE.emp_no= DM.emp_no INNER JOIN salaries as S ON DM.emp_no = S.emp_no INNER JOIN titles as T ON S.emp_no = T.emp_no WHERE S.salary >20000;

2. DELETE DE.*, DM.*, D.* FROM dept_emp as DE INNER JOIN (SELECT MAX(dept_no) maxt FROM dept_emp) TdeMAx ON DE.dept_no=TdeMAx.maxt INNER JOIN dept_manager as DM ON DM.dept_no=TdeMAx.maxt INNER JOIN departments as D ON D.dept_no=TdeMAx.maxt;