

SQL Database Programming: Section 10-1: Fundamentals of Subqueries

Vocabulary

SUBQUERY – It accepts a value from the inner query to complete its SELECT statement.

MULTIPLE-ROW SUBQUERIES – An inner query that returns one or more rows to the outer query

SUBQUERY – An inner query that is nested within an outer query

MULTIPLE-ROW SUBQUERIES – An inner query that compares multiple columns at the same time

SINGLE-ROW SUBQUERIES – An inner query that returns only one row to the outer query

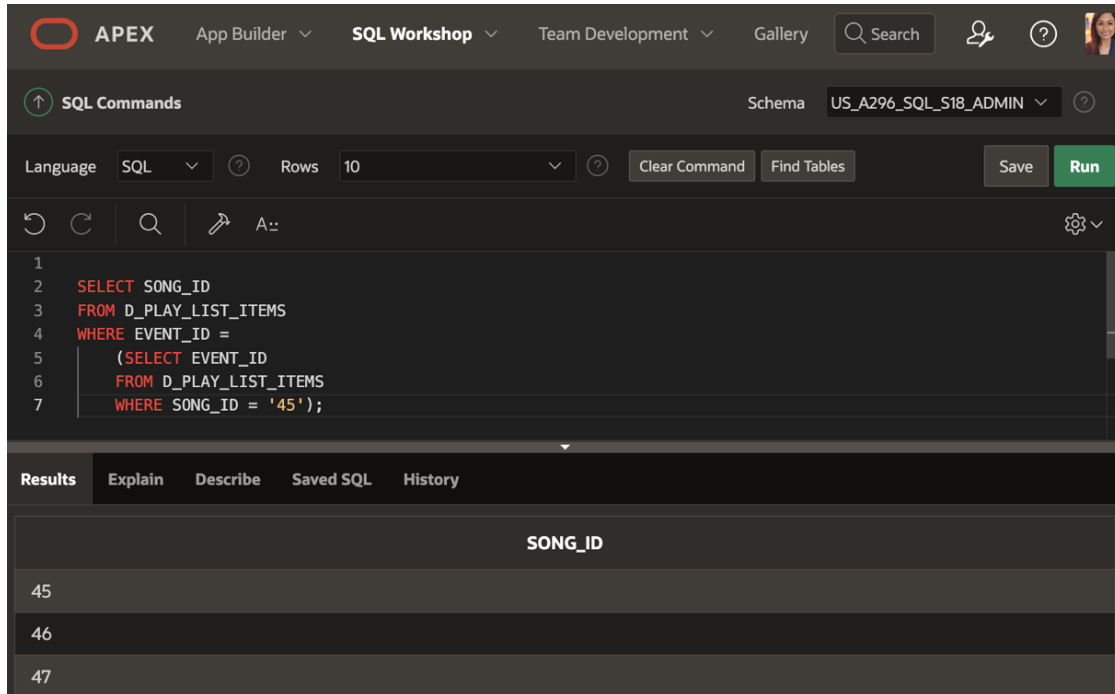
INNER QUERY – Another name for a subquery

Try It/ Solve It

1. What is the purpose of using a subquery?
 - “In SQL, subqueries enable us to find the information we need so that we can get the information we want.” (Oracle, 2020)
2. What is a subquery?
 - “A subquery is a SELECT statement that is embedded in a clause of another SELECT statement.” (Oracle, 2020) It’s like a query inside another query. The subquery or the inner query runs first, and its result will be used by the outer query.

<<< MORE ANSWERS CONTINUE ON THE NEXT PAGE >>>

3. What DJs on Demand d_play_list_items song_id's have the **same event_id** as song_id 45?

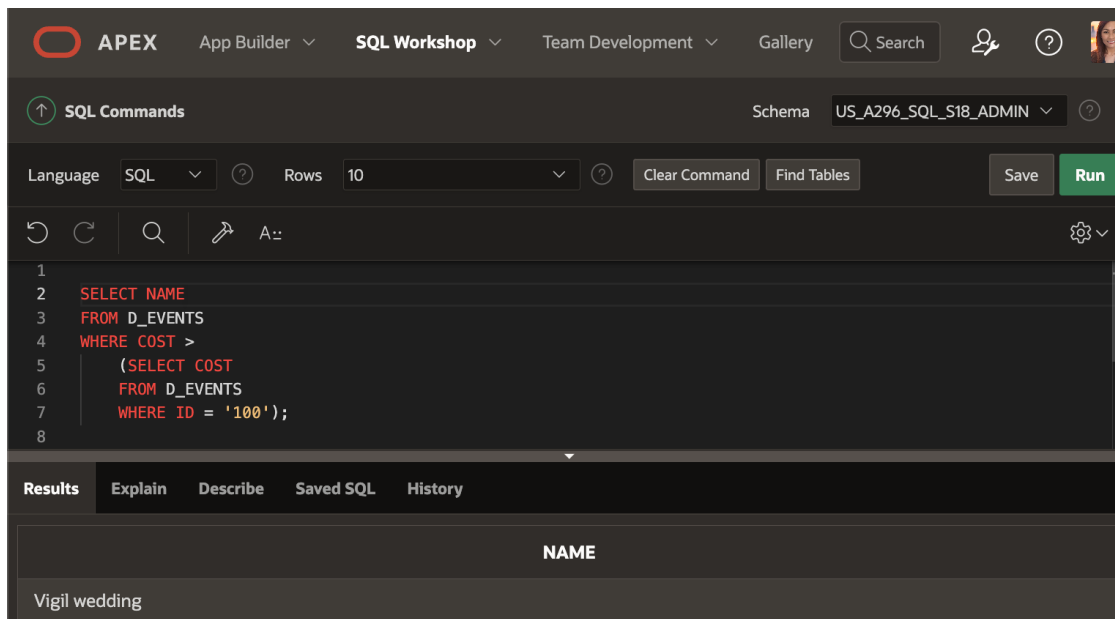


The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects song IDs from the D_PLAY_LIST_ITEMS table where the event ID matches the event ID of song ID 45. The Results tab shows the output, which is a single column named SONG_ID with values 45, 46, and 47.

```
1 SELECT SONG_ID
2 FROM D_PLAY_LIST_ITEMS
3 WHERE EVENT_ID =
4     (SELECT EVENT_ID
5      FROM D_PLAY_LIST_ITEMS
6      WHERE SONG_ID = '45');
```

SONG_ID
45
46
47

4. Which events in the DJs on Demand database cost more than event_id = 100?



The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects the name of events from the D_EVENTS table where the cost is greater than the cost of event ID 100. The Results tab shows the output, which is a single column named NAME with the value 'Vigil wedding'.

```
1 SELECT NAME
2 FROM D_EVENTS
3 WHERE COST >
4     (SELECT COST
5      FROM D_EVENTS
6      WHERE ID = '100');
```

NAME
Vigil wedding

5. Find the track number of the song that has the same CD number as “Party Music for All Occasions.”

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, showing a query in the editor. The schema is set to 'US_A296_SQL_S18_ADMIN'. The query is as follows:

```
1 SELECT CD_NUMBER
2 FROM D_CDS
3 WHERE TITLE =
4     (SELECT TITLE
5      FROM D_CDS
6      WHERE TITLE = 'Party Music for All Occasions');
7
```

Below the editor, the 'Results' tab is selected, displaying a table with one column, 'CD_NUMBER', and one row with the value '91'.

CD_NUMBER
91

6. List the DJs on Demand events whose theme code is the same as the code for “Tropical.”

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, showing a query in the editor. The schema is set to 'US_A296_SQL_S18_ADMIN'. The query is as follows:

```
1
2 SELECT NAME
3 FROM D_EVENTS
4 WHERE THEME_CODE =
5     (SELECT THEME_CODE
6      FROM D_THEMES
7      WHERE DESCRIPTION = 'Tropical');
8
```

Below the editor, the 'Results' tab is selected, displaying a table with one column, 'NAME', and two rows: 'Peters Graduation' and 'Vigil wedding'.

NAME
Peters Graduation
Vigil wedding

7. What are the names of the Global Fast Foods staff members whose salaries are greater than the staff member whose ID is 12?

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects the first name, last name, and salary of staff members whose salary is greater than the salary of the staff member with ID 12. The query is as follows:

```
1 SELECT ID, FIRST_NAME, LAST_NAME, SALARY
2 FROM F_STAFFS
3 WHERE SALARY >
4       (SELECT SALARY
5        FROM F_STAFFS
6        WHERE ID = '12');
```

The Results tab is also active, showing the output of the query. The results are displayed in a table with the following columns: ID, FIRST_NAME, LAST_NAME, and SALARY. The table contains two rows of data:

ID	FIRST_NAME	LAST_NAME	SALARY
9	Bob	Miller	10
19	Monique	Tuttle	60

8. What are the names of the Global Fast Foods staff members whose staff types are not the same as Bob Miller's?

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects the first name and last name of staff members whose staff type is not the same as the staff member with the first name 'Bob' and last name 'Miller'. The query is as follows:

```
1 SELECT FIRST_NAME, LAST_NAME
2 FROM F_STAFFS
3 WHERE STAFF_TYPE <>
4       (SELECT STAFF_TYPE
5        FROM F_STAFFS
6        WHERE FIRST_NAME = 'Bob' AND LAST_NAME = 'Miller');
```

The Results tab is also active, showing the output of the query. The results are displayed in a table with the following columns: FIRST_NAME and LAST_NAME. The table contains two rows of data:

FIRST_NAME	LAST_NAME
Sue	Doe
Monique	Tuttle

9. Which Oracle employees have the same department ID as the IT department?

The screenshot shows the Oracle APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects employee details for the IT department. The query is as follows:

```
2  
3 SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME  
4 FROM EMPLOYEES  
5 WHERE DEPARTMENT_ID =  
6     (SELECT DEPARTMENT_ID  
7      FROM DEPARTMENTS  
8      WHERE DEPARTMENT_NAME = 'IT');
```

The Results tab is selected, showing a table with 5 rows and 3 columns: EMPLOYEE_ID, FIRST_NAME, and LAST_NAME.

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
103	Alexander	Hunold
104	Bruce	Ernst
107	Diana	Lorentz
222	Chen	Li
223	Alain	Fontaine

10. What are the department names of the Oracle departments that have the same location ID as Seattle?

The screenshot shows the Oracle APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects department names for departments located in Seattle. The query is as follows:

```
1  
2 SELECT DEPARTMENT_NAME  
3 FROM DEPARTMENTS  
4 WHERE LOCATION_ID =  
5     (SELECT LOCATION_ID  
6      FROM DEPARTMENTS  
7      WHERE LOCATION_NAME = 'Seattle')  
8
```

An error message is displayed above the query editor: "1 error has occurred". The error details are:

```
{ "code": "InternalServerError", "message": "Internal Server Error", "type": "tag:oracle.com,2020:error/InternalServerError", "instance":  
"tag:oracle.com,2020:ecid/0069RRhQpb2ZNkykw5yWJ000xXO000ND_" }
```

11. Indicate whether the statement regarding subqueries is True or False.

FALSE a. It is good programming practice to place a subquery on the right side of the comparison operator.

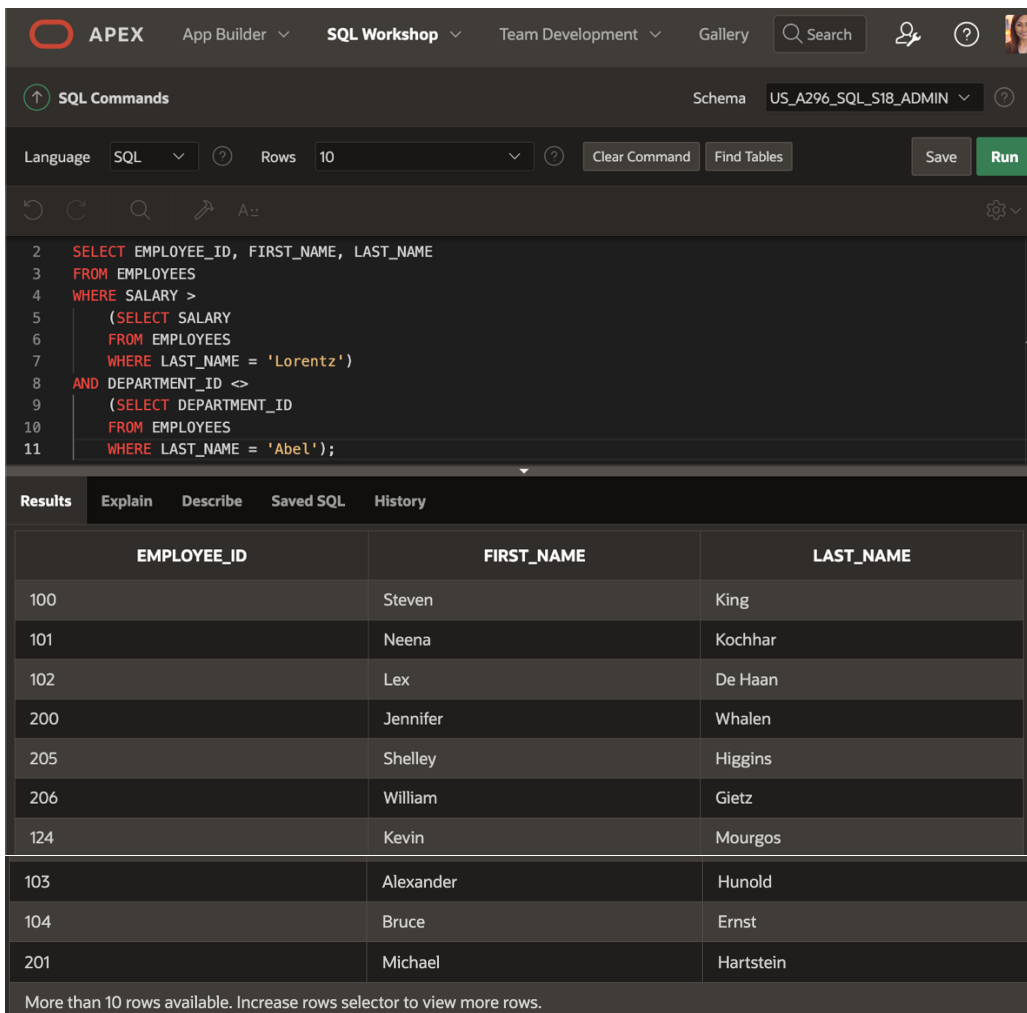
TRUE b. A subquery can reference a table that is not included in the outer query's FROM clause.

FALSE c. Single-row subqueries can return multiple values to the outer query.

SQL Database Programming: Section 10-2: Single-Row Subqueries

Try It/ Solve It

1. Write a query to return all those employees who have a salary greater than that of Lorentz and aren't in the same department as Abel.



The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' panel is active, showing a query in the 'US_A296_SQL_S18_ADMIN' schema. The query is as follows:

```
2 SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME
3 FROM EMPLOYEES
4 WHERE SALARY >
5     (SELECT SALARY
6      FROM EMPLOYEES
7      WHERE LAST_NAME = 'Lorentz')
8 AND DEPARTMENT_ID <>
9     (SELECT DEPARTMENT_ID
10      FROM EMPLOYEES
11      WHERE LAST_NAME = 'Abel');
```

The 'Results' panel shows the output of the query, displaying a table with three columns: EMPLOYEE_ID, FIRST_NAME, and LAST_NAME. The results are as follows:

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
100	Steven	King
101	Neena	Kochhar
102	Lex	De Haan
200	Jennifer	Whalen
205	Shelley	Higgins
206	William	Gietz
124	Kevin	Mourgos
103	Alexander	Hunold
104	Bruce	Ernst
201	Michael	Hartstein

More than 10 rows available. Increase rows selector to view more rows.

2. Write a query to return all those employees who have the same job id as Rajs and were hired after Davies.

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects employees with the same job ID as Rajs and hired after Davies. The query is as follows:

```
1 SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME
2 FROM EMPLOYEES
3 WHERE JOB_ID =
4     (SELECT JOB_ID
5      FROM EMPLOYEES
6      WHERE LAST_NAME = 'Rajs')
7 AND HIRE_DATE >
8     (SELECT HIRE_DATE
9      FROM EMPLOYEES
10     WHERE LAST_NAME = 'Davies');
```

The Results tab shows the following data:

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
143	Randall	Matos
144	Peter	Vargas
220	Tiffany	Heiden

3. What DJs on Demand events have the same theme code as event ID = 100?

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects events with the same theme code as event ID 100. The query is as follows:

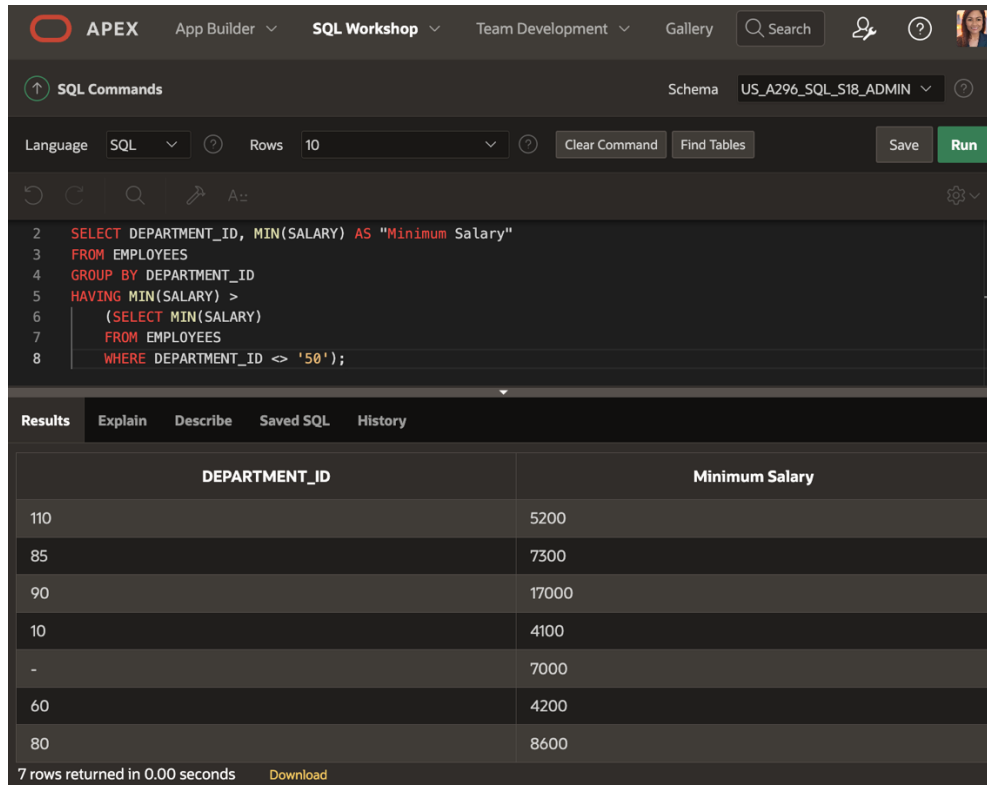
```
1 SELECT ID, NAME
2 FROM D_EVENTS
3 WHERE THEME_CODE =
4     (SELECT THEME_CODE
5      FROM D_EVENTS
6      WHERE ID = '100');
```

The Results tab shows the following data:

ID	NAME
100	Peters Graduation
105	Vigil wedding

2 rows returned in 0.00 seconds [Download](#)

6. Return the department ID and minimum salary of all employees, grouped by department ID, having a minimum salary greater than the minimum salary of those employees whose department ID is not equal to 50.



The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying the following query:

```
2 SELECT DEPARTMENT_ID, MIN(SALARY) AS "Minimum Salary"
3 FROM EMPLOYEES
4 GROUP BY DEPARTMENT_ID
5 HAVING MIN(SALARY) >
6     (SELECT MIN(SALARY)
7      FROM EMPLOYEES
8      WHERE DEPARTMENT_ID <> '50');
```

The Results tab shows the output of the query, which is a table with two columns: DEPARTMENT_ID and Minimum Salary. The table contains 7 rows of data.

DEPARTMENT_ID	Minimum Salary
110	5200
85	7300
90	17000
10	4100
-	7000
60	4200
80	8600

7 rows returned in 0.00 seconds [Download](#)

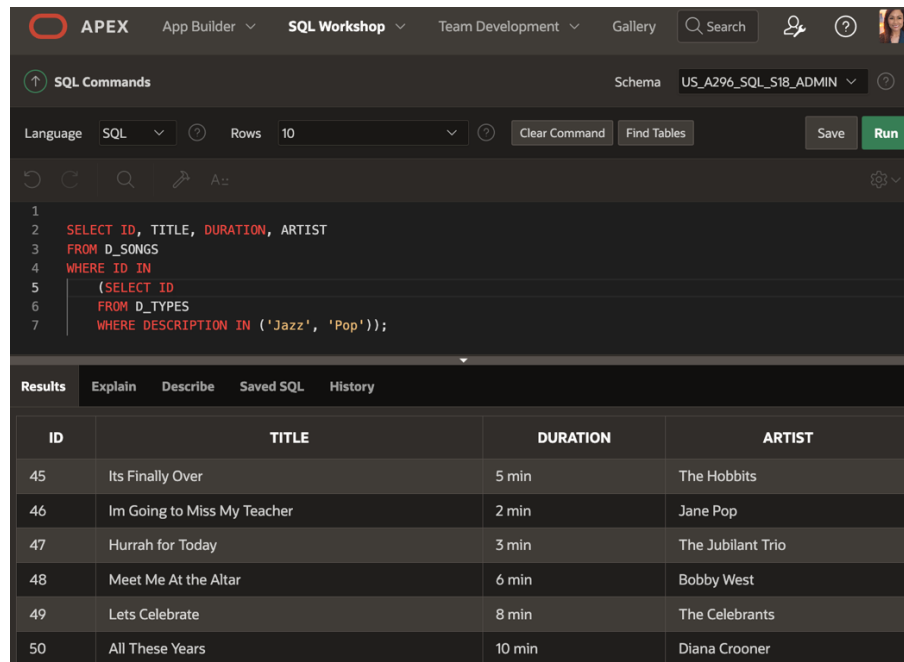
SQL Database Programming: Section 10-3: Multiple-Row Subqueries

Try It/ Solve It

1. What will be returned by a query if it has a subquery that returns a null ?
 - “If a subquery returns a null value or no rows, the outer query takes the results of the subquery (null) and uses this result in its WHERE clause.” (Oracle, 2020)

<<< MORE ANSWERS CONTINUE ON THE NEXT PAGE >>>

2. Write a query that returns jazz and pop songs. Write a **multi-row subquery** and use the d_songs and d_types tables. Include the id, title, duration, and the artist name.

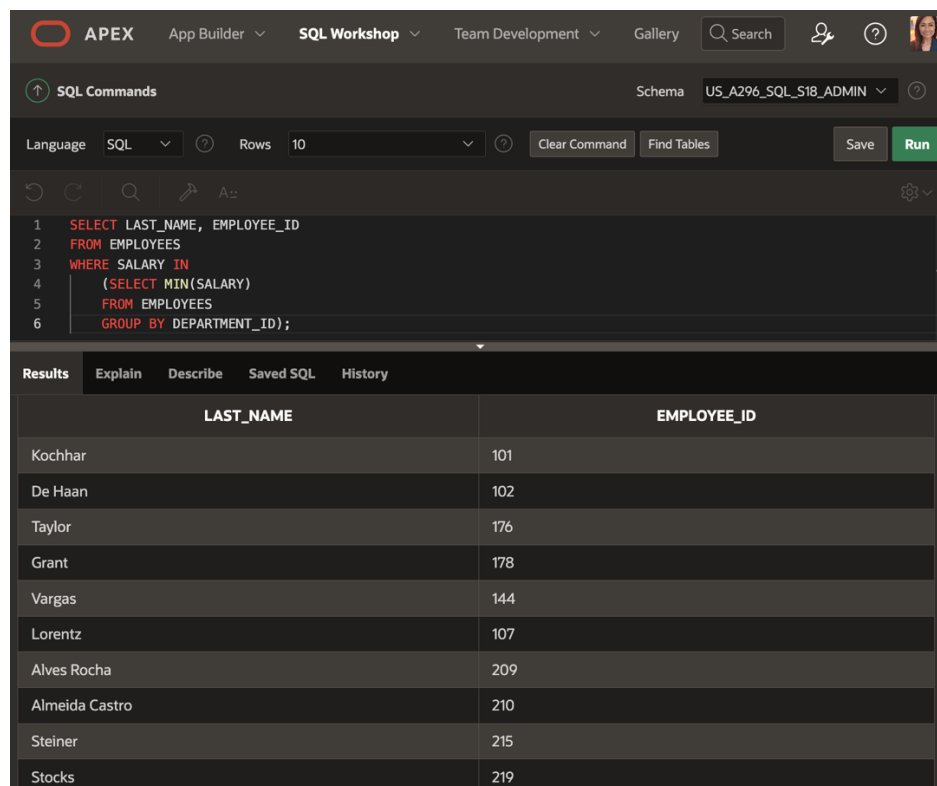


The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects columns from d_songs based on a multi-row subquery from d_types. The Results tab shows a table with 6 rows of data.

```
1 SELECT ID, TITLE, DURATION, ARTIST
2 FROM D_SONGS
3 WHERE ID IN
4     (SELECT ID
5      FROM D_TYPES
6      WHERE DESCRIPTION IN ('Jazz', 'Pop'));
```

ID	TITLE	DURATION	ARTIST
45	Its Finally Over	5 min	The Hobbits
46	Im Going to Miss My Teacher	2 min	Jane Pop
47	Hurrah for Today	3 min	The Jubilant Trio
48	Meet Me At the Altar	6 min	Bobby West
49	Lets Celebrate	8 min	The Celebrants
50	All These Years	10 min	Diana Crooner

3. Find the last names of all employees whose salaries are the same as the minimum salary for any department.

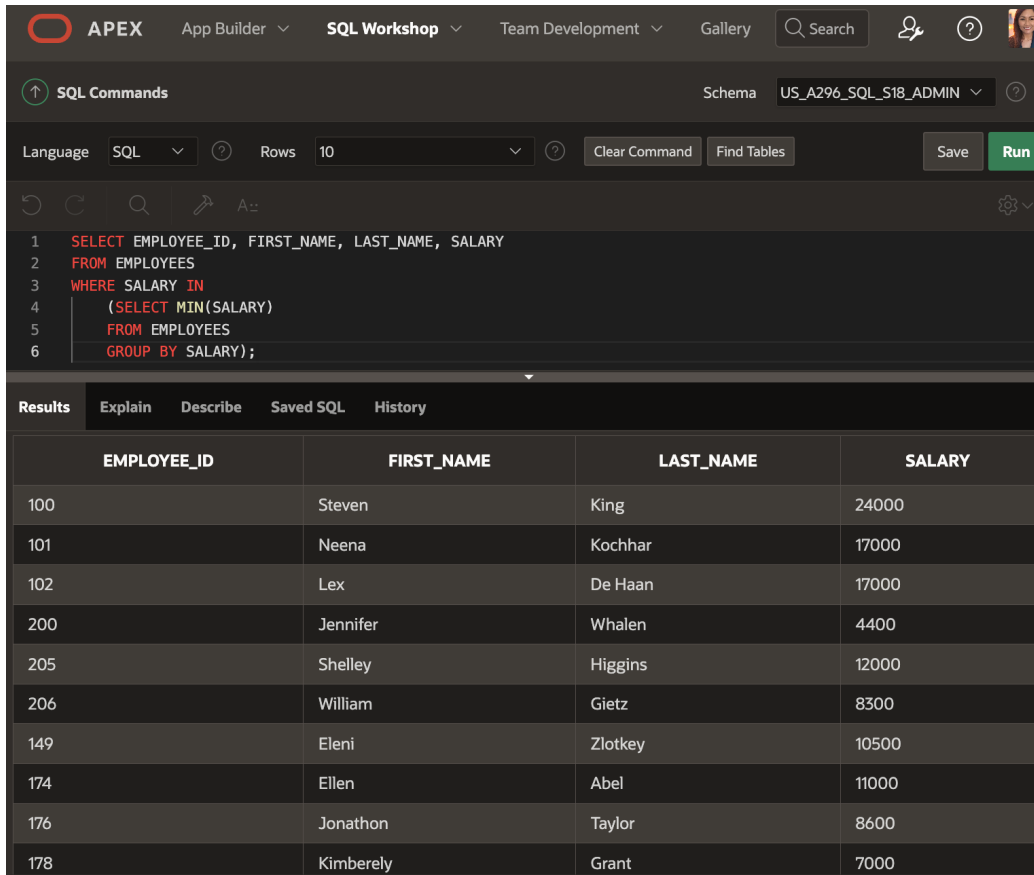


The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects last names and employee IDs from the EMPLOYEES table based on a subquery that finds the minimum salary for each department. The Results tab shows a table with 10 rows of data.

```
1 SELECT LAST_NAME, EMPLOYEE_ID
2 FROM EMPLOYEES
3 WHERE SALARY IN
4     (SELECT MIN(SALARY)
5      FROM EMPLOYEES
6      GROUP BY DEPARTMENT_ID);
```

LAST_NAME	EMPLOYEE_ID
Kochhar	101
De Haan	102
Taylor	176
Grant	178
Vargas	144
Lorentz	107
Alves Rocha	209
Almeida Castro	210
Steiner	215
Stocks	219

4. Which Global Fast Foods employee earns the lowest salary? Hint: You can use either a single- row or a multiple- row subquery.



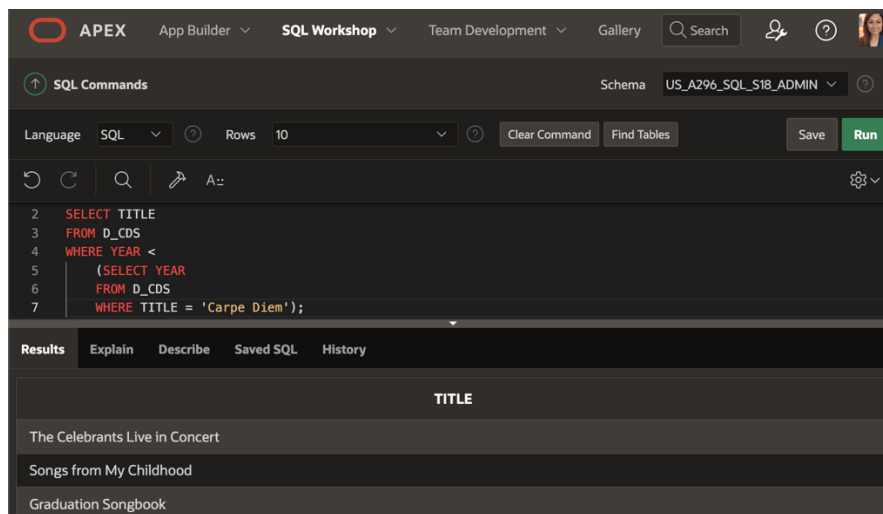
The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects employee details where the salary is the minimum among all employees. The query is as follows:

```
1 SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME, SALARY
2 FROM EMPLOYEES
3 WHERE SALARY IN
4     (SELECT MIN(SALARY)
5      FROM EMPLOYEES
6      GROUP BY SALARY);
```

The Results tab shows the output of the query, which is a table with four columns: EMPLOYEE_ID, FIRST_NAME, LAST_NAME, and SALARY. The results are as follows:

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY
100	Steven	King	24000
101	Neena	Kochhar	17000
102	Lex	De Haan	17000
200	Jennifer	Whalen	4400
205	Shelley	Higgins	12000
206	William	Gietz	8300
149	Eleni	Zlotkey	10500
174	Ellen	Abel	11000
176	Jonathon	Taylor	8600
178	Kimberely	Grant	7000

5. Place the correct multiple-row comparison operators in the outer query WHERE clause of each of the following:
- a. Which CDs in our d_cds collection were produced before “Carpe Diem” was produced?
WHERE year < (SELECT year FROM d_cds WHERE title = 'Carpe Diem');



The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying a query that selects the title of CDs from the d_cds collection where the year is less than the year of the CD titled 'Carpe Diem'. The query is as follows:

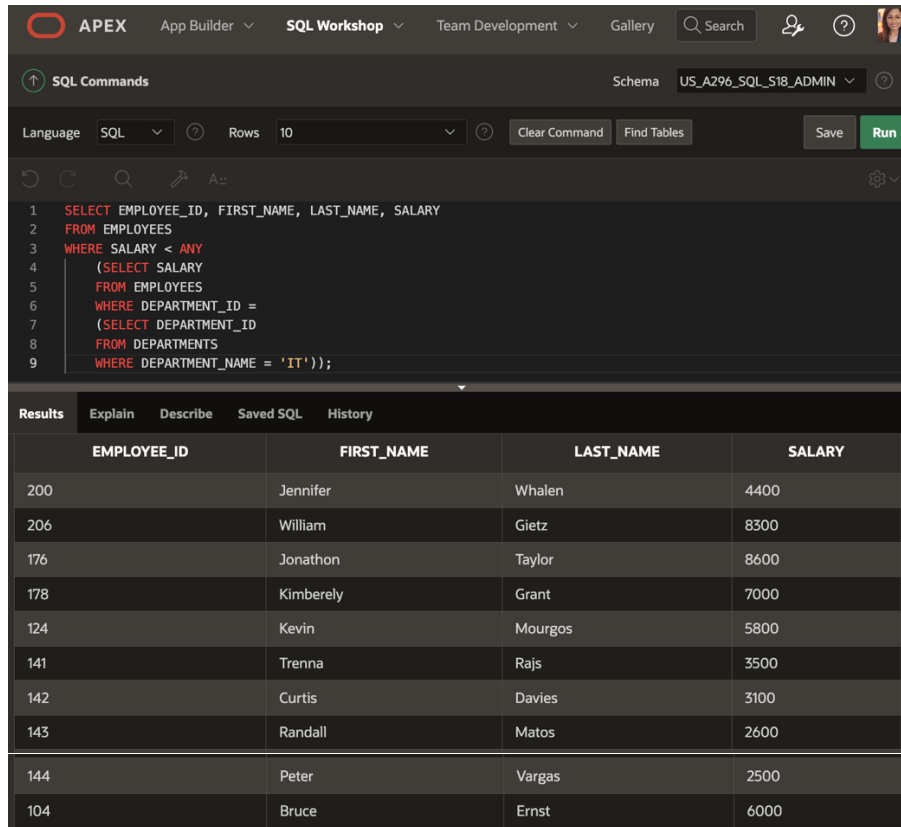
```
2 SELECT TITLE
3 FROM D_CDS
4 WHERE YEAR <
5     (SELECT YEAR
6      FROM D_CDS
7      WHERE TITLE = 'Carpe Diem');
```

The Results tab shows the output of the query, which is a table with one column: TITLE. The results are as follows:

TITLE
The Celebrants Live in Concert
Songs from My Childhood
Graduation Songbook

b. Which employees have salaries lower than any one of the programmers in the IT department?

WHERE salary < any (SELECT salary FROM employees WHERE department_id = (SELECT department_id FROM departments WHERE department_name = 'IT'));



The screenshot shows the APEX SQL Workshop interface. The SQL Commands pane contains the following query:

```

1 SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME, SALARY
2 FROM EMPLOYEES
3 WHERE SALARY < ANY
4   (SELECT SALARY
5    FROM EMPLOYEES
6    WHERE DEPARTMENT_ID =
7      (SELECT DEPARTMENT_ID
8       FROM DEPARTMENTS
9       WHERE DEPARTMENT_NAME = 'IT'));

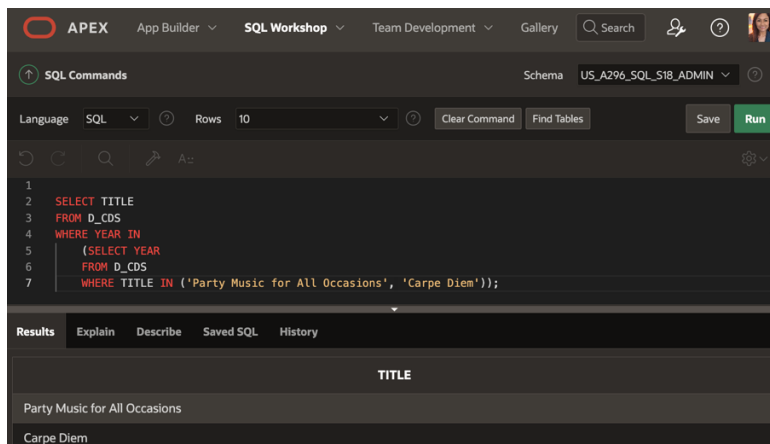
```

The Results pane shows the following table:

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY
200	Jennifer	Whalen	4400
206	William	Gietz	8300
176	Jonathon	Taylor	8600
178	Kimberely	Grant	7000
124	Kevin	Mourgos	5800
141	Trenna	Rajs	3500
142	Curtis	Davies	3100
143	Randall	Matos	2600
144	Peter	Vargas	2500
104	Bruce	Ernst	6000

c. What CD titles were produced in the same year as “Party Music for All Occasions” or “Carpe Diem”?

WHERE year IN (SELECT year IN (SELECT year FROM d_cds WHERE title IN ('Party Music for All Occasions', 'Carpe Diem'));



The screenshot shows the APEX SQL Workshop interface. The SQL Commands pane contains the following query:

```

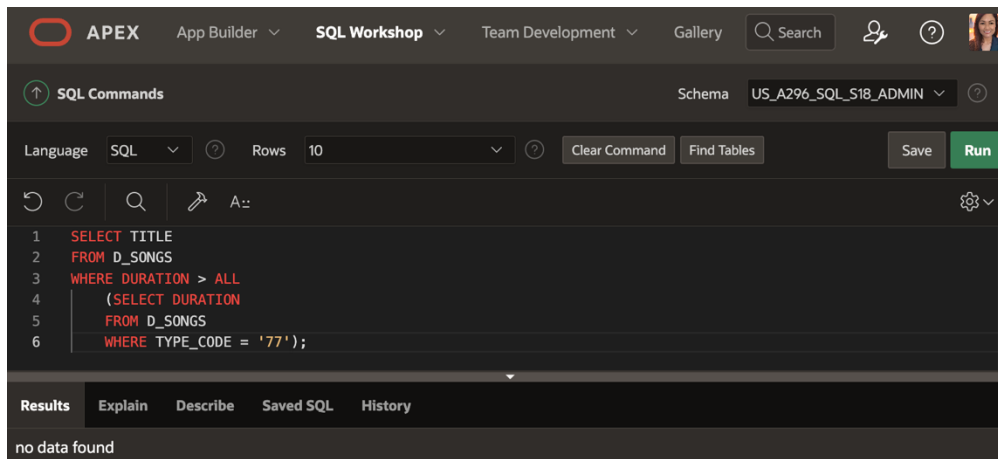
1 SELECT TITLE
2 FROM D_CDS
3 WHERE YEAR IN
4   (SELECT YEAR
5    FROM D_CDS
6    WHERE TITLE IN ('Party Music for All Occasions', 'Carpe Diem'));

```

The Results pane shows the following table:

TITLE
Party Music for All Occasions
Carpe Diem

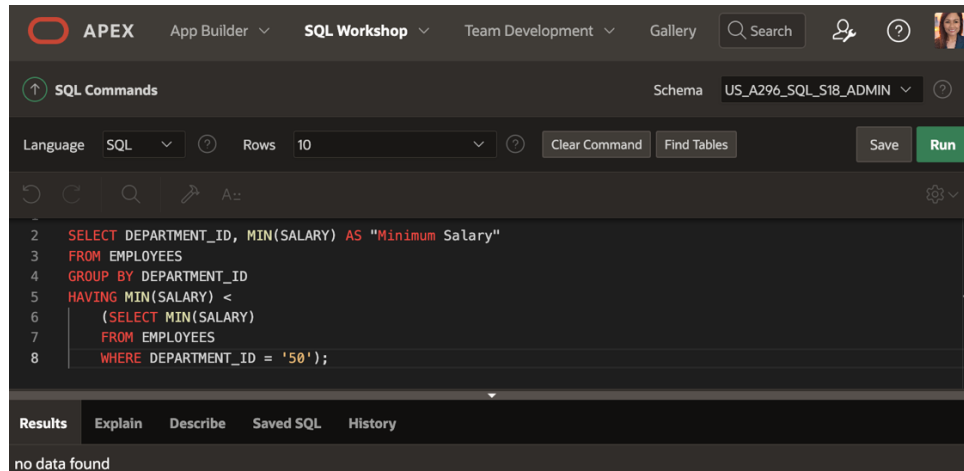
- d. What song title has a duration longer than every type code 77 title?
WHERE duration _____(SELECT duration ...



6. If each WHERE clause is from the outer query, which of the following are true?
- TRUE a. WHERE size > ANY -- If the inner query returns sizes ranging from 8 to 12, the value 9 could be returned in the outer query.
- _____ b. WHERE book_number IN -- If the inner query returns books numbered 102, 105, 437, and 225 then 325 could be returned in the outer query.
- _____ c. WHERE score <= ALL -- If the inner query returns the scores 89, 98, 65, and 72, then 82 could be returned in the outer query.
- TRUE d. WHERE color NOT IN -- If the inner query returns red, green, blue, black, and then the outer query could return white.
- _____ e. WHERE game_date = ANY -- If the inner query returns 05-Jun-1997, 10-Dec-2002, and 2-Jan-2004, then the outer query could return 10-Sep-2002.
7. The goal of the following query is to display the minimum salary for each department whose minimum salary is less than the lowest salary of the employees in department 50. However, the subquery does not execute because it has **five errors**. Find them, *correct them*, and *run the query*.

```
SELECT department_id
FROM employees
WHERE MIN(salary)
HAVING MIN(salary) >
GROUP BY department_id
SELECT MIN(salary)
WHERE department_id < 50;
```

<<< MORE ANSWERS CONTINUE ON THE NEXT PAGE >>>



8. Which statements are **true** about the subquery below?

```
SELECT employee_id, last_name
FROM employees
WHERE salary =
(SELECT MIN(salary)
FROM employees
GROUP BY department_id);
```

- _____ a. The inner query could be eliminated simply by changing the WHERE clause to WHERE MIN(salary).
- TRUE _____ b. The query wants the names of employees who make the same salary as the smallest salary in any department.
- _____ c. The query first selects the employee ID and last name, and then compares that to the salaries in every department.
- _____ d. This query will not execute.

<<< MORE ANSWERS CONTINUE ON THE NEXT PAGE >>>

9. Write a pair-wise subquery listing the last_name, first_name, department_id, and manager_id for all employees that have the same department_id and manager_id as employee 141. Exclude employee 141 from the result set.

The screenshot shows the APEX SQL Workshop interface. The SQL command is as follows:

```
2 SELECT EMPLOYEE_ID, LAST_NAME, FIRST_NAME, DEPARTMENT_ID, MANAGER_ID
3 FROM EMPLOYEES
4 WHERE DEPARTMENT_ID =
5       (SELECT DEPARTMENT_ID
6        FROM EMPLOYEES
7        WHERE EMPLOYEE_ID = '141')
8 AND MANAGER_ID =
9       (SELECT MANAGER_ID
10      FROM EMPLOYEES
11      WHERE EMPLOYEE_ID = '141')
12 AND EMPLOYEE_ID NOT IN(141);
```

The results table shows 5 rows returned in 0.01 seconds:

EMPLOYEE_ID	LAST_NAME	FIRST_NAME	DEPARTMENT_ID	MANAGER_ID
142	Davies	Curtis	50	124
143	Matos	Randall	50	124
144	Vargas	Peter	50	124
216	Bell	George	50	124
220	Heiden	Tiffany	50	124

10. Write a non-pair-wise subquery listing the last_name, first_name, department_id, and manager_id for all employees that have the same department_id and manager_id as employee 141.

The screenshot shows the APEX SQL Workshop interface. The SQL command is as follows:

```
1
2 SELECT EMPLOYEE_ID, LAST_NAME, FIRST_NAME, DEPARTMENT_ID, MANAGER_ID
3 FROM EMPLOYEES
4 WHERE DEPARTMENT_ID IN
5       (SELECT DEPARTMENT_ID
6        FROM EMPLOYEES
7        WHERE EMPLOYEE_ID IN (141))
8 AND MANAGER_ID IN
9       (SELECT MANAGER_ID
10      FROM EMPLOYEES
11      WHERE EMPLOYEE_ID IN (141));
12
```

The results table shows 6 rows returned in 0.01 seconds:

EMPLOYEE_ID	LAST_NAME	FIRST_NAME	DEPARTMENT_ID	MANAGER_ID
141	Rajs	Trenna	50	124
142	Davies	Curtis	50	124
143	Matos	Randall	50	124
144	Vargas	Peter	50	124
216	Bell	George	50	124
220	Heiden	Tiffany	50	124

SQL Database Programming: Section 10-4: Correlated Subqueries

Try It/ Solve It

1. Explain the main difference between correlated and non-correlated subqueries?

➤ Correlated Subquery:

- Each subquery is executed once for every row being processed by outer query.
- It depends on the outer query for its values. It refers to a column from the outer query within the WHERE clause.

➤ Non-Correlated Subquery:

- Each subquery is only executed once/independently of the outer query.
- Each result from the subquery is passed to the outer query which will be used in WHERE/HAVING/FROM clause.

2. Write a query that **lists the highest earners for each department**. Include the last_name, department_id, and the salary for each employee.

The screenshot shows the APEX SQL Workshop interface. The SQL Commands panel displays a query that finds the highest salary for each department. The query is as follows:

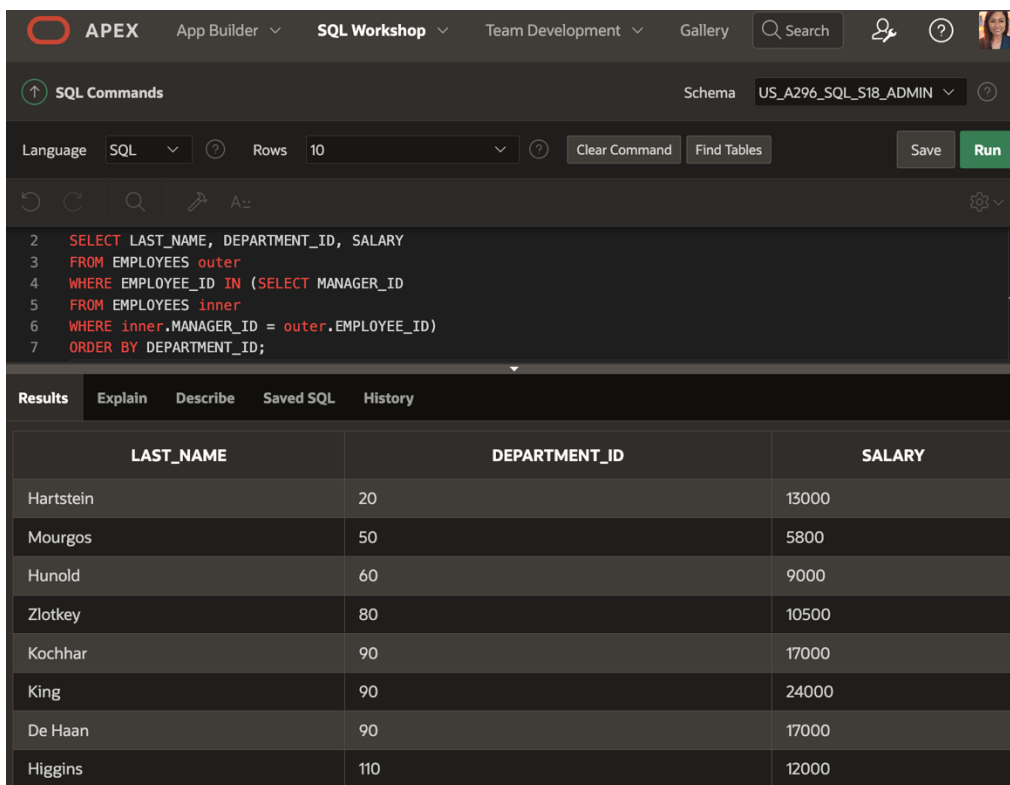
```
1 SELECT LAST_NAME, DEPARTMENT_ID, SALARY
2 FROM EMPLOYEES o
3 WHERE o.SALARY =
4     (SELECT MAX(i.SALARY)
5      FROM EMPLOYEES i
6      WHERE i.DEPARTMENT_ID = o.DEPARTMENT_ID);
```

The Results panel shows the output of the query, which is a table with three columns: LAST_NAME, DEPARTMENT_ID, and SALARY. The results are as follows:

LAST_NAME	DEPARTMENT_ID	SALARY
Mourgos	50	5800
Higgins	110	12000
Barbosa Souza	85	9500
King	90	24000
Whalen	10	4400
Saikawa	10	4400
Hartstein	20	13000
Hunold	60	9000
Abel	80	11000

3. Examine the following select statement and finish it so that it will return the **last_name**, **department_id**, and **salary** of employees who have at least one person reporting to them. So we are effectively looking for **managers only**. In the partially written SELECT statement, the WHERE clause will work as it is. It is simply testing for the existence of a row in the subquery. Finish off the statement by sorting the rows on the department_id column.

```
SELECT LAST_NAME, DEPARTMENT_ID, SALARY
FROM EMPLOYEES outer
WHERE EMPLOYEE_ID IN (SELECT MANAGER_ID
FROM EMPLOYEES inner
WHERE inner.MANAGER_ID = outer.EMPLOYEE_ID)
ORDER BY DEPARTMENT_ID;
```



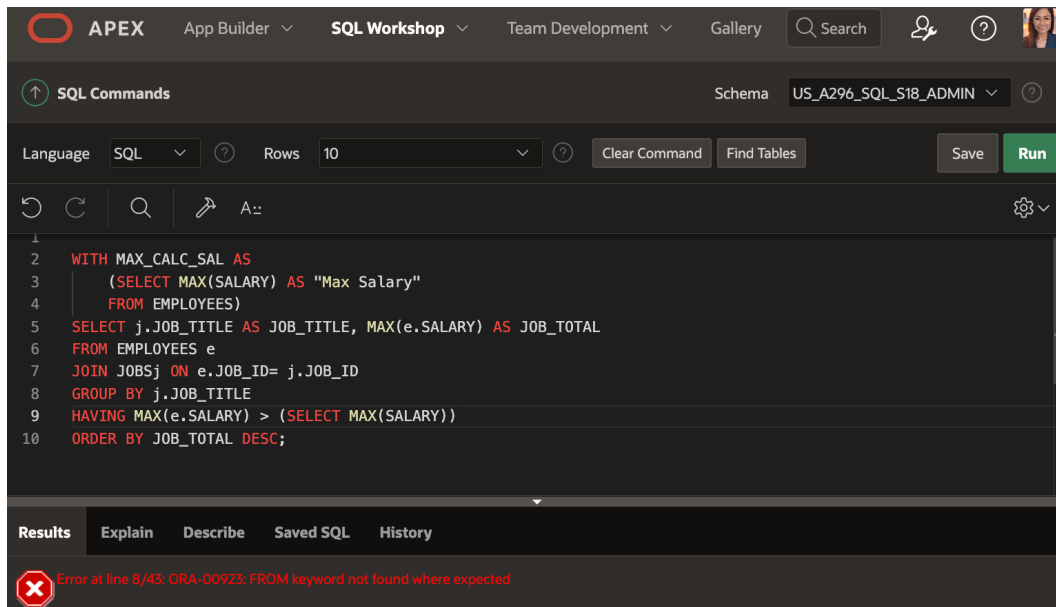
The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying the query. The Schema is set to US_A296_SQL_S18_ADMIN. The query is executed, and the Results tab shows a table with 8 rows of data.

LAST_NAME	DEPARTMENT_ID	SALARY
Hartstein	20	13000
Mourgos	50	5800
Hunold	60	9000
Zlotkey	80	10500
Kochhar	90	17000
King	90	24000
De Haan	90	17000
Higgins	110	12000

<<< MORE ANSWERS CONTINUE ON THE NEXT PAGE >>>

4. Using a **WITH clause**, write a SELECT statement to list the job_title of those jobs whose maximum salary is more than half the maximum salary of the entire company. Name your subquery **MAX_CALC_SAL**. Name the columns in the result **JOB_TITLE** and **JOB_TOTAL**, and sort the result on **JOB_TOTAL** in descending order.

Hint: Examine the jobs table. You will need to join JOBS and EMPLOYEES to display the job_title.



The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes the APEX logo, App Builder, SQL Workshop, Team Development, and Gallery. A search bar and user profile are also visible. The main area is titled 'SQL Commands' and shows a schema of 'US_A296_SQL_S18_ADMIN'. The SQL editor contains the following query:

```
1
2 WITH MAX_CALC_SAL AS
3   (SELECT MAX(SALARY) AS "Max Salary"
4    FROM EMPLOYEES)
5 SELECT j.JOB_TITLE AS JOB_TITLE, MAX(e.SALARY) AS JOB_TOTAL
6 FROM EMPLOYEES e
7 JOIN JOBSj ON e.JOB_ID= j.JOB_ID
8 GROUP BY j.JOB_TITLE
9 HAVING MAX(e.SALARY) > (SELECT MAX(SALARY))
10 ORDER BY JOB_TOTAL DESC;
```

Below the editor, there are tabs for 'Results', 'Explain', 'Describe', 'Saved SQL', and 'History'. The 'Results' tab is active, but it displays an error message: 'Error at line 8/43: ORA-00923: FROM keyword not found where expected'.