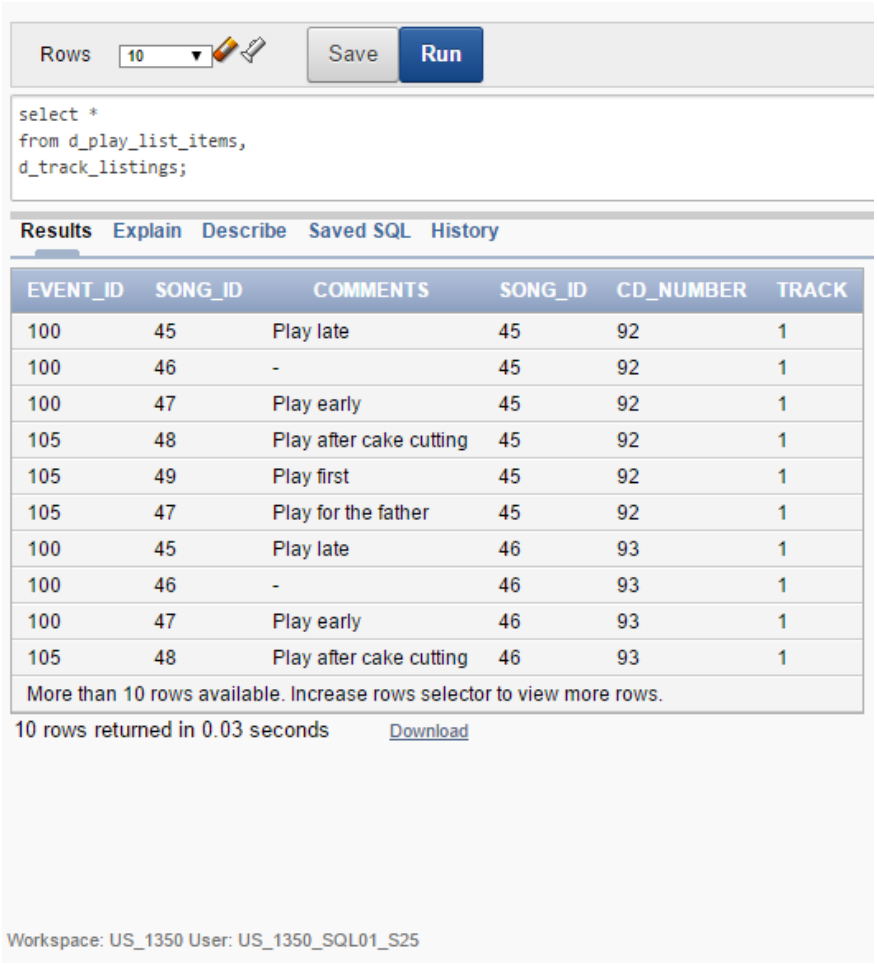
ORACLE ACADEMY

Section 15 Lesson 1: Cartesian Product and the Join Operations

Try It / Solve It

1. Create a Cartesian product that displays the columns in the d_play_list_items and the d_track_listings in the DJs on Demand database.



Rows 10 Save Run

```
select *
from d_play_list_items,
d_track_listings;
```

Results Explain Describe Saved SQL History

EVENT_ID	SONG_ID	COMMENTS	SONG_ID	CD_NUMBER	TRACK
100	45	Play late	45	92	1
100	46	-	45	92	1
100	47	Play early	45	92	1
105	48	Play after cake cutting	45	92	1
105	49	Play first	45	92	1
105	47	Play for the father	45	92	1
100	45	Play late	46	93	1
100	46	-	46	93	1
100	47	Play early	46	93	1
105	48	Play after cake cutting	46	93	1

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

10 rows returned in 0.03 seconds Download

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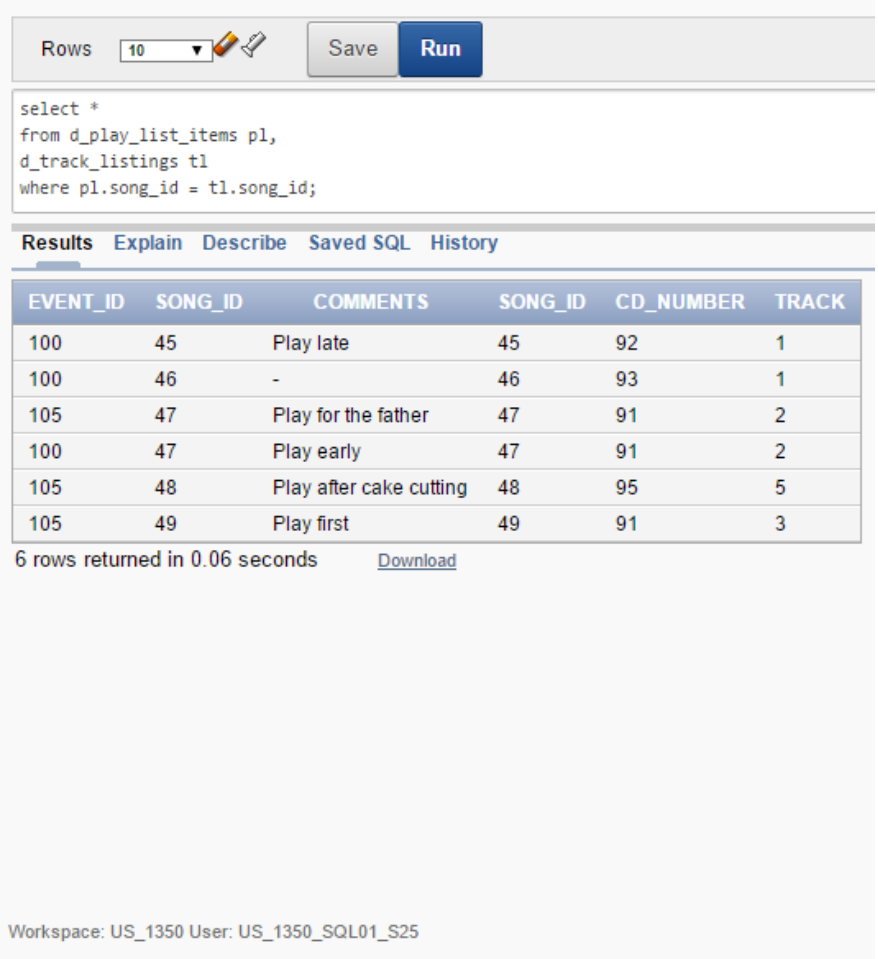
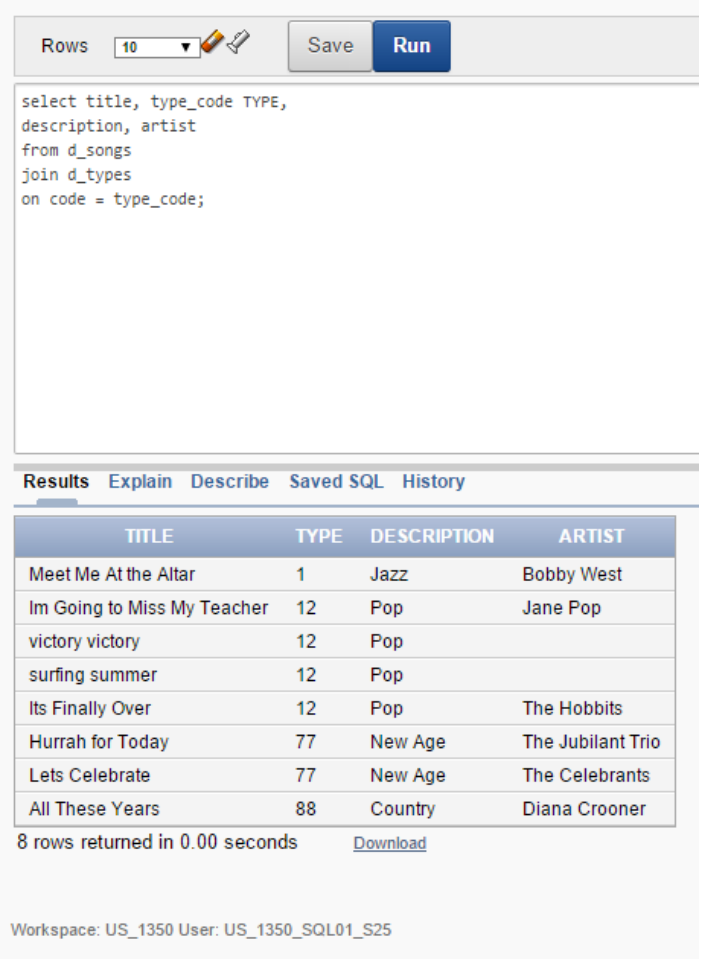
2. Correct the Cartesian product produced in question 1 by creating an equijoin using a common column.

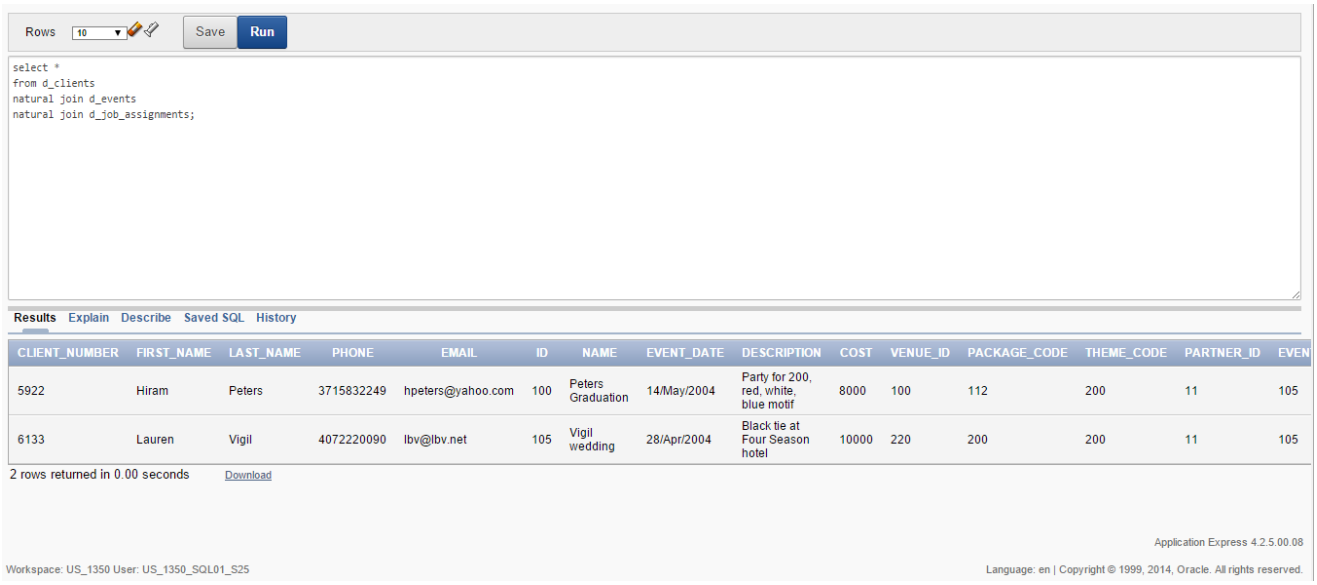


3. Write a query to display the title, type, description, and artist from the DJs on Demand database.

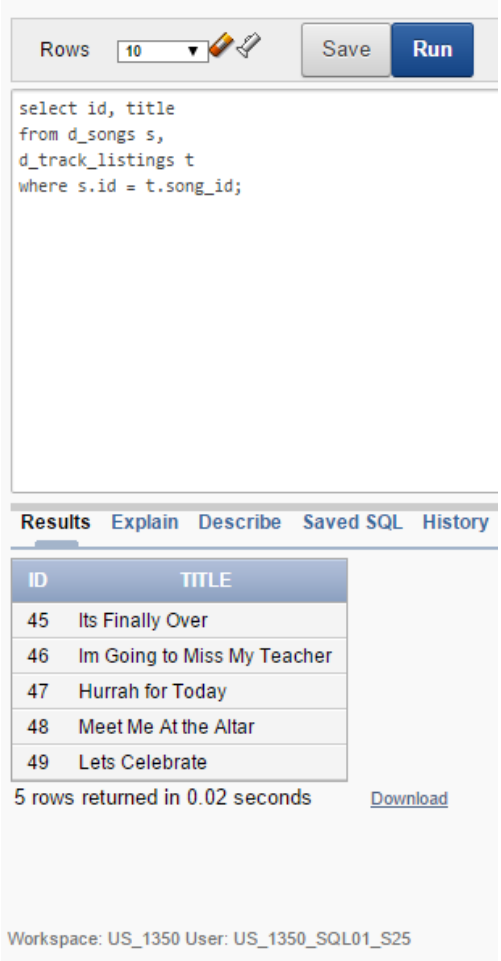


4. Rewrite the query in question 3 to select only those titles with an ID of 47 or 48.

5. Write a query that extracts information from three tables in the DJs on Demand database, the d_clients table, the d_events table, and the d_job_assignments table.



6. Create and execute an equijoin between DJs on Demand tables d_track_listings and d_cds. Return the song_id and the title only.



7. Mark T for the statements that are true and F for the statements that are false.
   __F__ a. A join is a type of query that gets data from more than one table based on columns with the same name.
   __T__ b. To join tables using an equijoin, there must be a common column in both tables and that column is usually a primary key in one of the tables.
   __T__ c. A Cartesian product occurs because the query does not specify a WHERE clause.
   __F__ d. Table aliases are required to create a join condition.
   __T__ e. If a table alias is used for a table name in the FROM clause, it must be substituted for the table name throughout the SELECT statement.
   __F__ f. Table alias must be only one character in length.
   __T__ g. A simple join or inner join is the same as an equijoin.

8. What advantage does being able to combine data from multiple tables have for a business?

   Having the data broken up into multiple tables makes it easier to build relationships between the data and read tables of data. Data separated by entities within the business make it easier to store and locate data as well as restrict access and maintain reliability.

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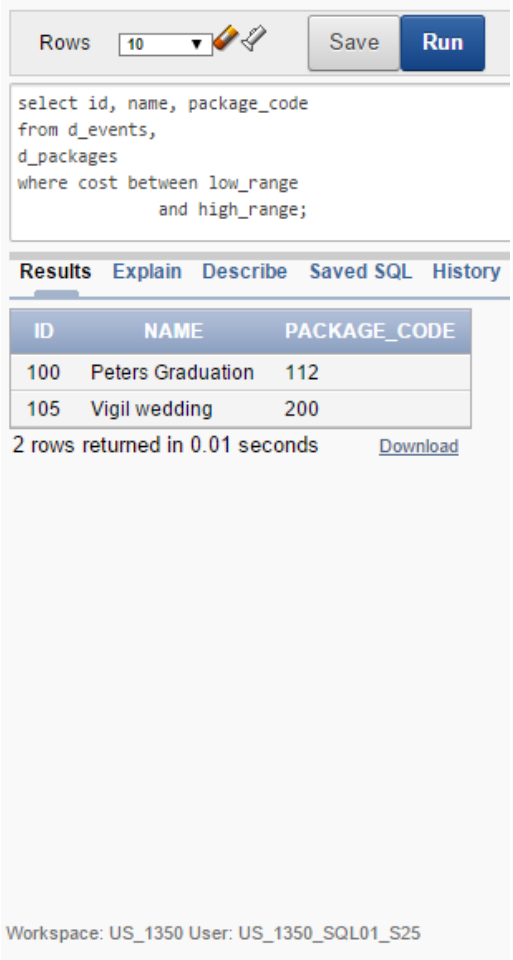
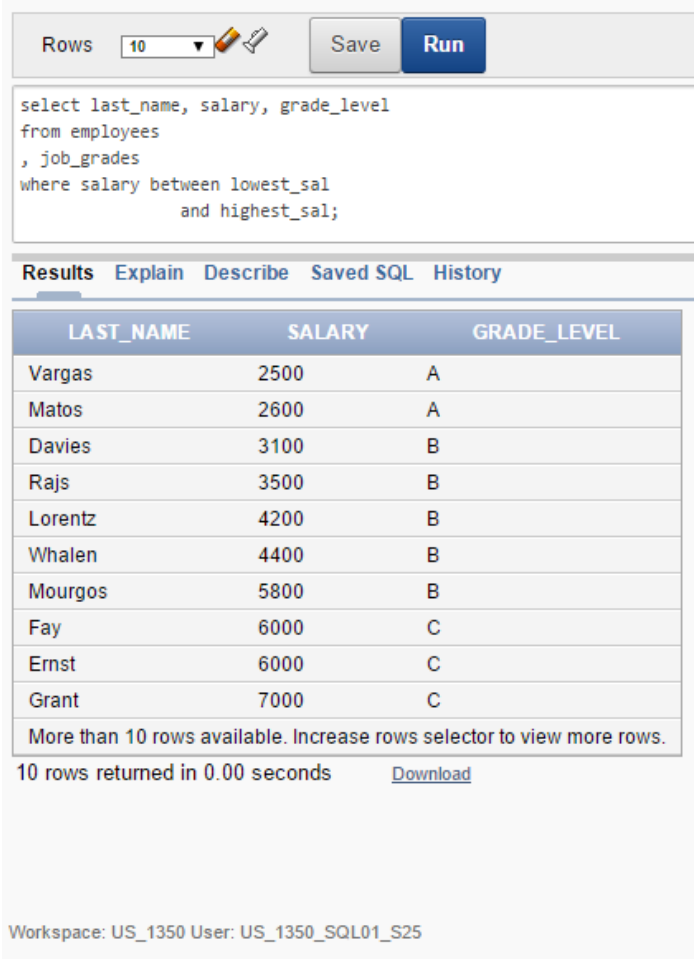
Section 15 Lesson 2: Nonequijoins

Try It / Solve It

1. Create a join based on the cost of the event between the DJs on Demand tables D_EVENTS and D_PACKAGES. Show the name of the event and the code for each event.



2. Using the Oracle database, create a query that returns the employee last name, salary, and job-grade level based on the salary. Select the salary between the lowest and highest salaries.



3. What condition requires the creation of a nonequijoin? The columns from each table to be joined cannot be joined with an equality operator (=) because there is no exact match between the two columns.
4. Rewrite the following nonequijoin statement using the logical condition operators (AND, OR, NOT): WHERE a.ranking BETWEEN g.lowest_rank AND g.highest_rank

   WHERE a_ranking >= g_lowest_rank AND a_ranking <= g_highest_rank

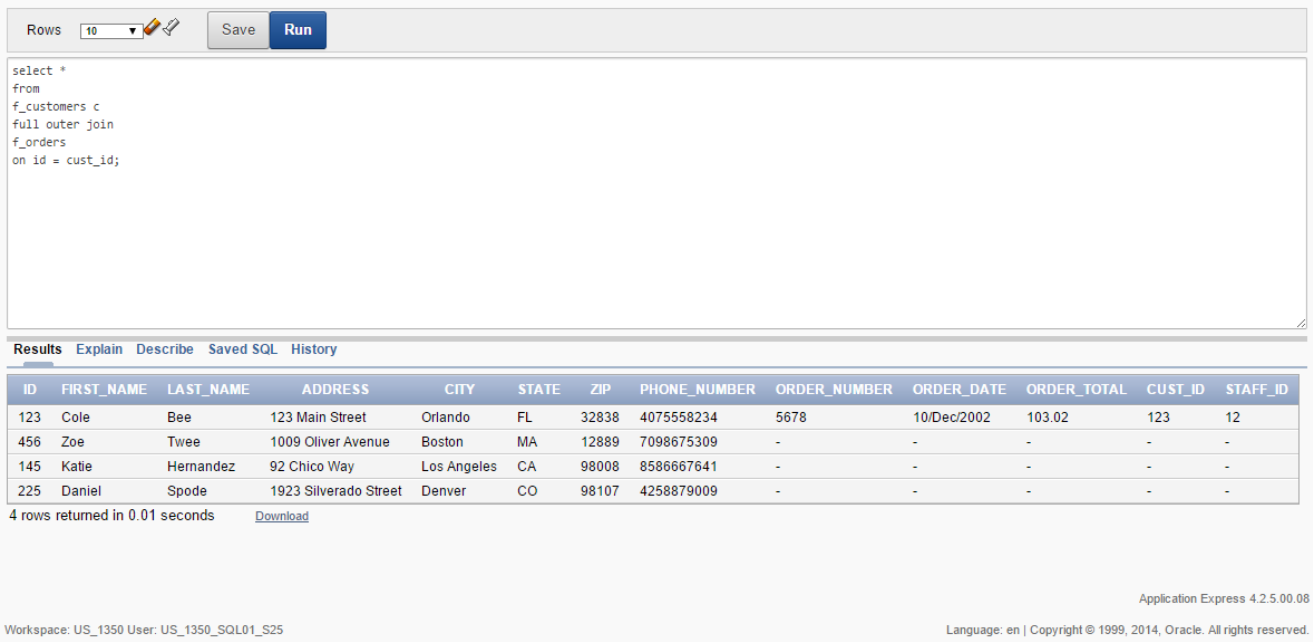
5. How do you know when to use a table alias and when not to use a table alias? When column names are not duplicated between two tables, you do not need to add the table name to it. However, if a table alias is used in the FROM clause, then that table alias must be substituted for the table name throughout the SELECT statement.

6. What kind of join would you use if you wanted to find data between a range of numbers? A nonequijoin.

Section 15 Lesson 3: Outer Joins

Try It / Solve It

1. You need to produce a report for Global Fast Foods showing customers and orders. A customer must be included on the report even if the customer has had no orders.



Rows 10 Save Run

```
select *
from
f_customers c
full outer join
f_orders
on id = cust_id;
```

Results Explain Describe Saved SQL History

ID	FIRST_NAME	LAST_NAME	ADDRESS	CITY	STATE	ZIP	PHONE_NUMBER	ORDER_NUMBER	ORDER_DATE	ORDER_TOTAL	CUST_ID	STAFF_ID
123	Cole	Bee	123 Main Street	Orlando	FL	32838	4075558234	5678	10/Dec/2002	103.02	123	12
456	Zoe	Twee	1009 Oliver Avenue	Boston	MA	12889	7098675309	-	-	-	-	-
145	Katie	Hernandez	92 Chico Way	Los Angeles	CA	98008	8586667641	-	-	-	-	-
225	Daniel	Spode	1923 Silverado Street	Denver	CO	98107	4258879009	-	-	-	-	-

4 rows returned in 0.01 seconds Download

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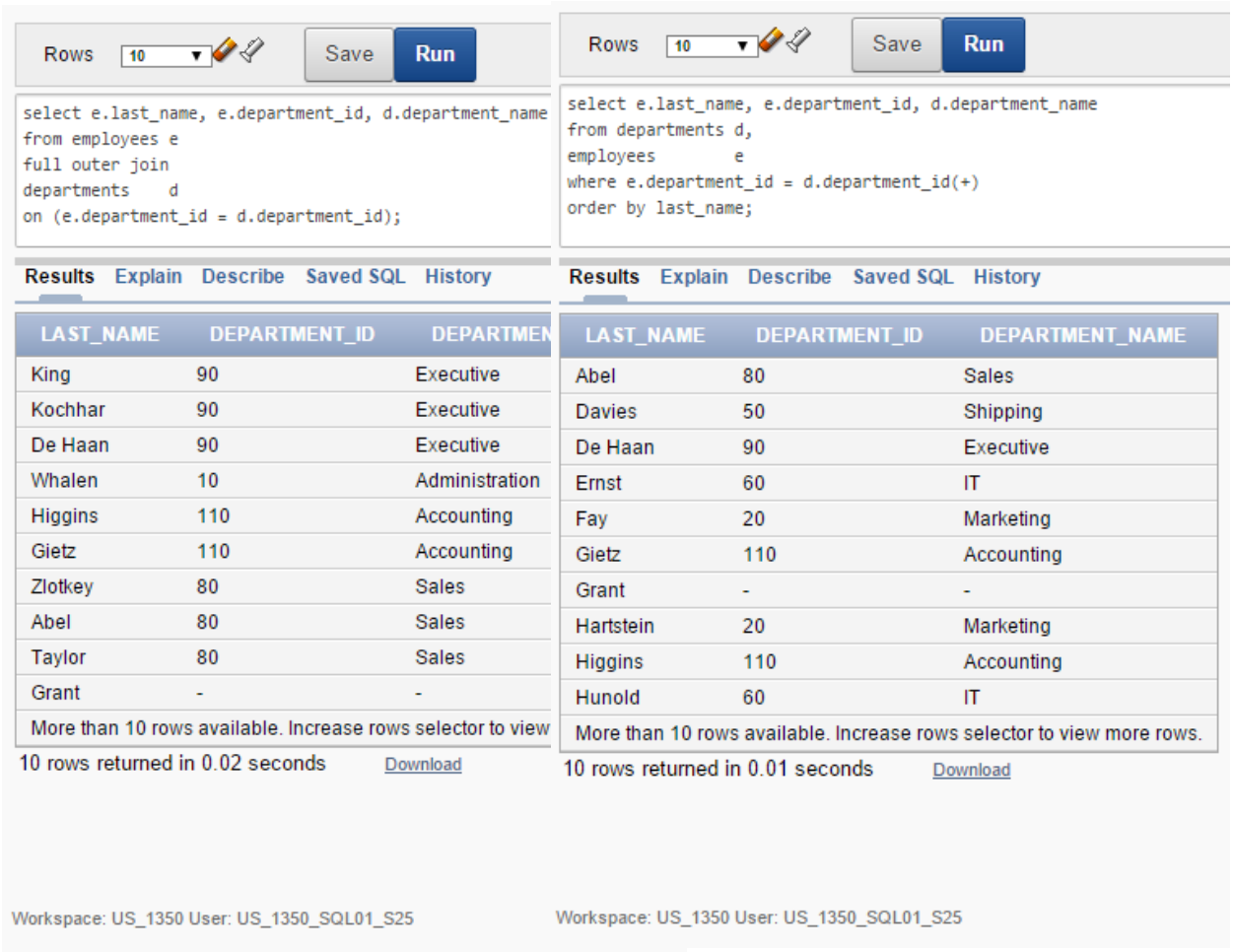
2. Create a query of the Oracle database that shows employee last names, department IDs, and department names. Include all employees even if they are not assigned to a department.



Rows 10 Save Run

```
select e.last_name, e.department_id, d.department_name
from employees e
full outer join
departments    d
on (e.department_id = d.department_id);
```

Results Explain Describe Saved SQL History

LAST_NAME	DEPARTMENT_ID	DEPARTMEN
King	90	Executive
Kochhar	90	Executive
De Haan	90	Executive
Whalen	10	Administration
Higgins	110	Accounting
Gietz	110	Accounting
Zlotkey	80	Sales
Abel	80	Sales
Taylor	80	Sales
Grant	-	-

More than 10 rows available. Increase rows selector to view

10 rows returned in 0.02 seconds Download

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Rows 10 Save Run

```
select e.last_name, e.department_id, d.department_name
from departments d,
employees        e
where e.department_id = d.department_id(+)
order by last_name;
```

Results Explain Describe Saved SQL History

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
Abel	80	Sales
Davies	50	Shipping
De Haan	90	Executive
Ernst	60	IT
Fay	20	Marketing
Gietz	110	Accounting
Grant	-	-
Hartstein	20	Marketing
Higgins	110	Accounting
Hunold	60	IT

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

10 rows returned in 0.01 seconds Download

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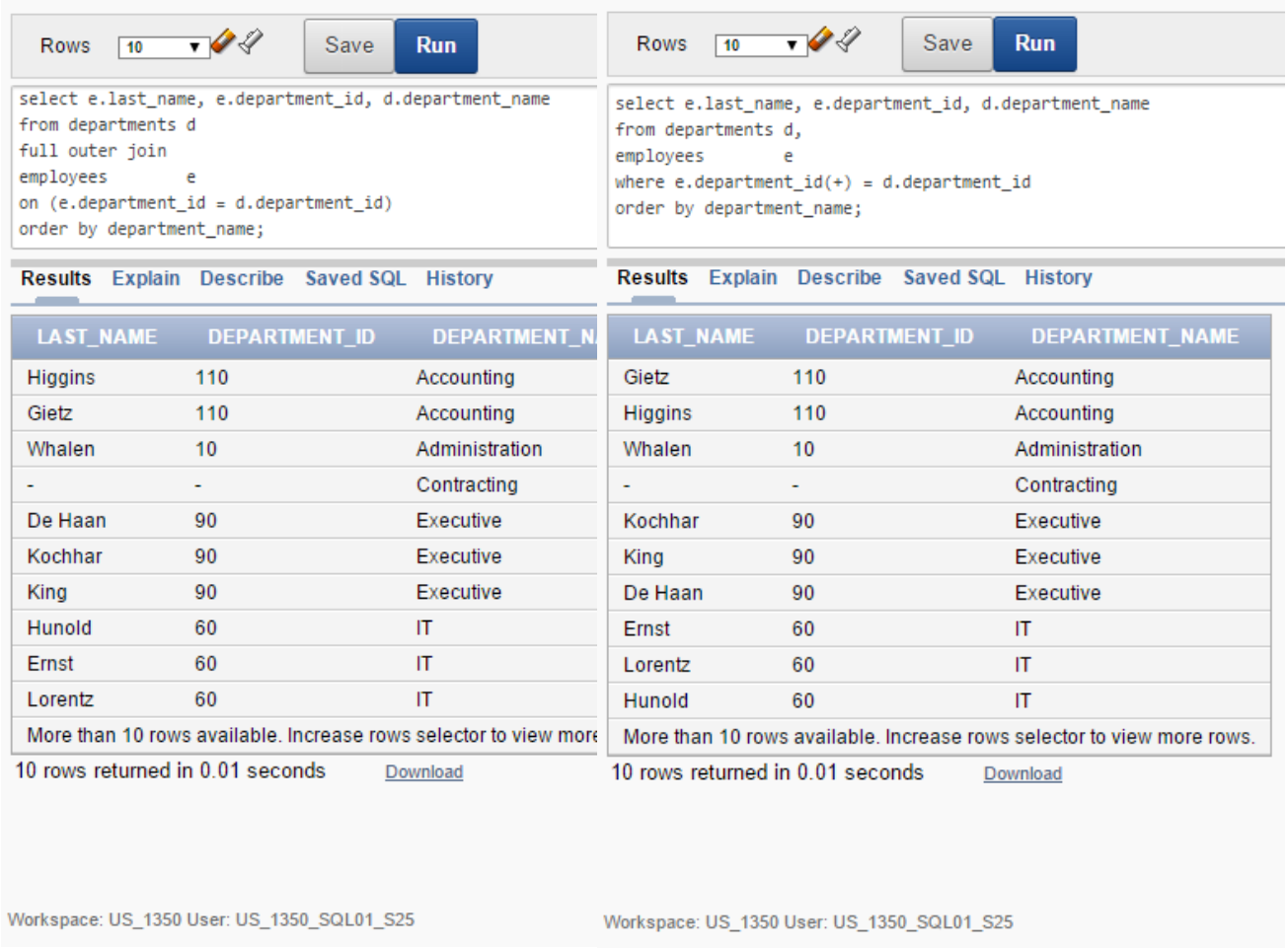
3. Modify the query in problem 2 to return all the department IDs even if no employees are assigned to them.



Rows 10 Save Run

```
select e.last_name, e.department_id, d.department_name
from departments d
full outer join
employees        e
on (e.department_id = d.department_id)
order by department_name;
```

Results Explain Describe Saved SQL History

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_N
Higgins	110	Accounting
Gietz	110	Accounting
Whalen	10	Administration
-	-	Contracting
De Haan	90	Executive
Kochhar	90	Executive
King	90	Executive
Hunold	60	IT
Ernst	60	IT
Lorentz	60	IT

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

10 rows returned in 0.01 seconds Download

Workspace: US_1350 User: US_1350_SQL01_S25

Rows 10 Save Run

```
select e.last_name, e.department_id, d.department_name
from departments d,
employees        e
where e.department_id(+) = d.department_id
order by department_name;
```

Results Explain Describe Saved SQL History

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
Gietz	110	Accounting
Higgins	110	Accounting
Whalen	10	Administration
-	-	Contracting
Kochhar	90	Executive
King	90	Executive
De Haan	90	Executive
Ernst	60	IT
Lorentz	60	IT
Hunold	60	IT

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

10 rows returned in 0.01 seconds Download

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4. There are one or more errors in each of the following statements. Describe the errors and correct them.

   a. WHERE e.department_id(+) = d.department_id (+); You cannot have (+) on both sides of the equality operator.

      WHERE e.department_id(+) = d.department_id;

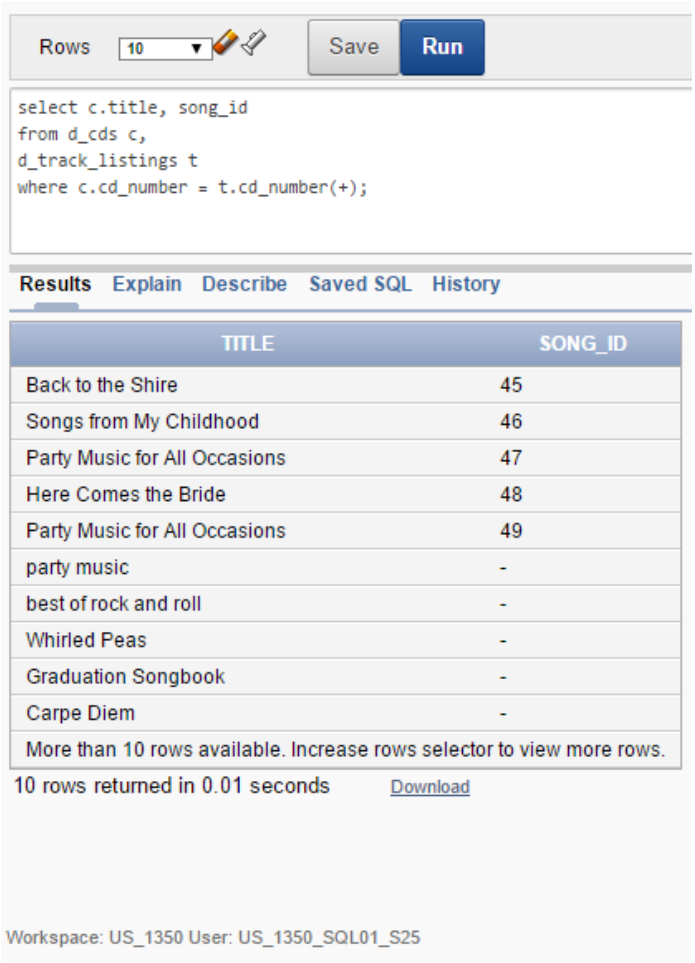
      OR

      WHERE e.department_id = d.department_id(+);

   b. SELECT e.employee id, e. last name, d. location id
      FROM employees, departments
      WHERE e.department_id = d.department_id(+); You cannot have a spaces between the table alias and the column name. You must name your aliases in order to use them in the SELECT and WHERE clauses.

      SELECT e.employee id, e.last_name, d.location_id
      FROM employees e, departments d
      WHERE e.department_id = d.department_id(+);

5. Create a query that will show all CD titles and song IDs in the DJs on Demand database even if there is no CD number in the track-listings table.



6. How many times has someone asked you: “What do you want to be when you grow up?” For most of us, the first thing that comes to mind is something like business manager, engineer, teacher, game designer, doctor, scientist, computer programmer, or accountant -- all pretty much traditional career choices. Have you ever thought about working in an odd job or nontraditional career? There are people who are professional shoppers for busy executives, directors of zoos, recipe designers, insecticide chemists, golf-course designers, and turf managers. Picture yourself in a dream job or nontraditional career doing something that you think would be interesting, life fulfilling, and profitable.

   Use Internet resources to explore your idea. Write a brief description of the job to share with the class.

   My ideal job would be software engineering which is a nontraditional job for women. Basic duties include fixing complex logical problems, being able to communicate in a logical manner, favoring mathematics, and understanding programming languages and methodologies. Job outlook is growing and is one of the fastest growing careers as far as demand.