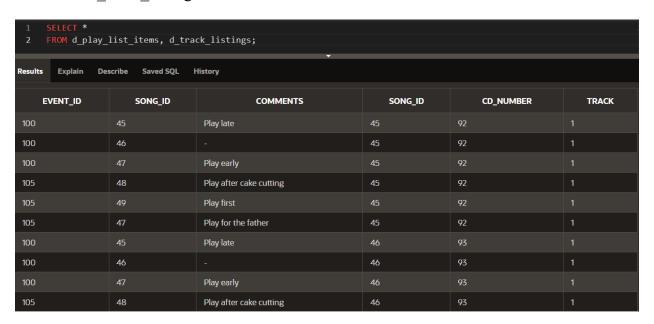
## Database Programming with SQL

## 7-1: Oracle Equijoin and Cartesian Product

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.



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.



The D\_CDS table doesn't have columns type and description, so only title and producer have been included in this query.

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

No title with ID's 47 and 48 exist.

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.



_T_ 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.

7. Mark T for the statements that are true and F for the statements that are false.

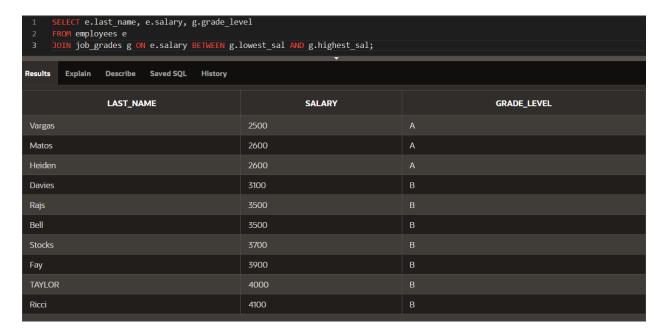
- 8. What advantage does being able to combine data from multiple tables have for a business?
  - Comprehensive Insights: Businesses can gain a more holistic view of their operations, customers, and events by combining data from different sources.
  - Enhanced Decision-Making: By analyzing data across multiple tables, businesses can make more informed decisions, leading to better strategies and outcomes.
  - Efficiency in Data Management: Combining data reduces redundancy and improves data integrity, leading to a more streamlined database management process.
  - Customized Reports: Businesses can create detailed reports that cater to specific needs by merging relevant data from various tables.
  - Improved Customer Service: By analyzing customer interactions and event details together, businesses can enhance their service offerings and customer satisfaction.

## 7-1: Oracle Equijoin and Cartesian Product

 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?
  - When equality isn't involved between two tables during join condition, a **nonequijoin** is required. For example, when comparing ranges, a nonequijoin is used.

- 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;</li>
- 5. How do you know when to use a table alias and when not to use a table alias?
  - Use a table alias when:
    - You are joining multiple tables to avoid ambiguity between column names.
    - O You want to shorten the table name for readability.

## Example:

<pre>SELECT e.last_name, d.department_name FROM employees e JOIN departments d ON e.department_id = d.department_id;  Results Explain Describe Saved SQL History</pre>	
LAST_NAME	DEPARTMENT_NAME
Ricci	Administration
Saikawa	Administration
Hernandez	Administration
Whalen	Administration
Safwah	Marketing
Newton	Marketing
Steiner	Marketing
Stocks	Marketing
TAYLOR	Marketing
Hartstein	Marketing

- Do not use a table alias when:
  - There is only one table or when aliases would not improve the clarity of your SQL.
- 6. What kind of join would you use if you wanted to find data between a range of numbers?
  - To find data between a range of numbers, a **nonequijoin** is appropriate. This is because the condition for joining the tables is based on a range rather than equality.

7. 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.

