Using Subqueries

Sadie St. Lawrence, MSA
Data Scientist, VSP

UC DAVIS
EXTENSION

Slide 1: Using Subqueries

Learning Objectives

Define subqueries

Discuss advantages and disadvantages of using subqueries

Explain how subqueries help us merge data from two or more tables

Write more efficient subqueries

Slide 2: Learning Objectives

What Are Subqueries?

Queries embedded into other queries

Relational databases store data in multiple tables

Subqueries merge data from multiple sources together
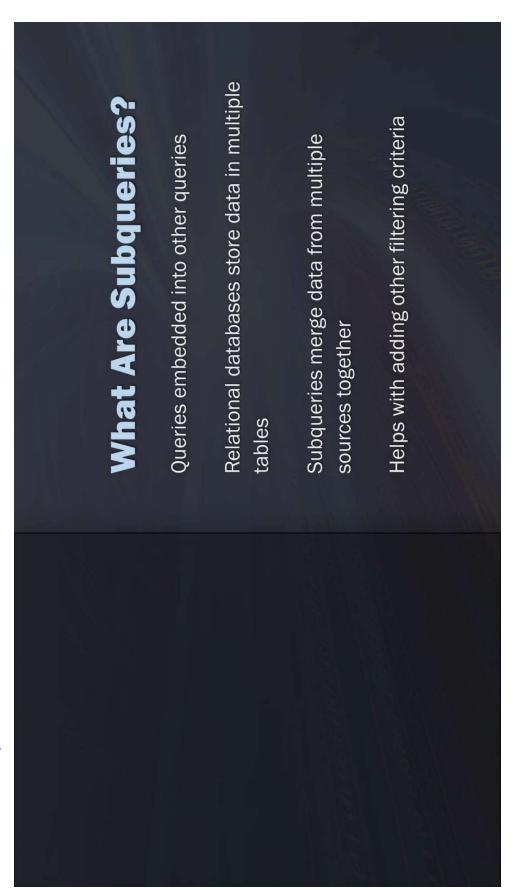
Helps with adding other filtering criteria

Slide 3: What Are Subqueries

Problem Setup: Subqueries to Filter

Need to know the region each customer is from who has had an order with freight over 100

1. Retrieve all customer IDs for orders with freight over 100

2. Retrieve customer information

3. Combine the two queries

Slide 4: Problem Setup: Subqueries to Filter

Slide 5: Example

Combined for a Subquery

Need to know the region each
customer is from who has had an
order with freight over 100

```
SELECT
CustomerID
,CompanyName
,Region
FROM Customers
WHERE customerID in (SELECT
customerID

        FROM Orders

            WHERE Freight > 100 );
```

Copyright © 2017 The Regents of University of California

Combined for a Subquery

Need to know the region each customer is from who has had an order with freight over 100

```
SELECT
CustomerID
,CompanyName
,Region
FROM Customers
WHERE customerID in (SELECT
customerID
    FROM Orders
    WHERE Freight > 100 );
```

Working with Subquery Statements

Always perform the innermost SELECT portion first

```
SELECT
CustomerID
,CompanyName
,Region
FROM Customers
WHERE customerID IN (SELECT
customerID
    FROM Orders
    WHERE Freight > 100 );
```

DBMS is performing two operations

1. Getting the order numbers for the product selected

2. Adding that to the WHERE clause and processing the overall SELECT statement