Aggregate Functions

Sadie St. Lawrence, MSA
Data Scientist, VSP

UC**DAVIS**
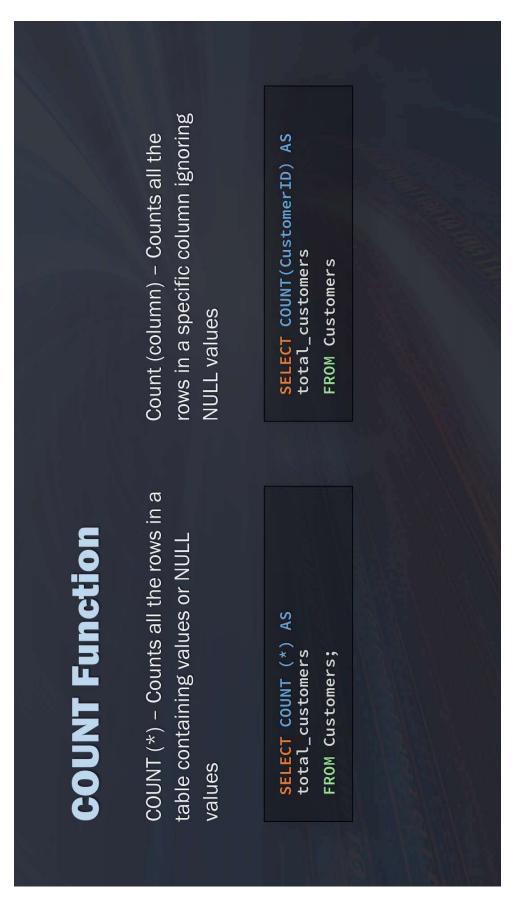EXTENSION

Slide 1: Aggregate Functions

Learning Objectives

Describe various aggregate functions

Explain how each of the aggregate functions can help you to analyze data

Use various aggregate functions: AVERAGE, COUNT, MIN, MAX, and SUM to summarize and analyze data and

Describe the DISTINCT function

Slide 2: Learning Objectives

What are Aggregate Functions?

Used to summarize data

Finding the highest and lowest values

Finding the total number of rows

Finding the average value

Slide 3: What are Aggregate Functions?

Aggregate Functions

Function	Description
AVG ()	Averages a column of values
COUNT ()	Counts the number of values
MIN ()	Finds the minimum value
MAX ()	Finds the maximum value
SUM ()	Sums the column values

AVERAGE Function

Rows containing NULL values are ignored by the AVERAGE function

```
SELECT AVG(UnitPrice) AS avg_price
FROM products
```

COUNT Function

COUNT (*) – Counts all the rows in a table containing values or NULL values

Count (column) – Counts all the rows in a specific column ignoring NULL values

```
SELECT COUNT (*) AS
total_customers
FROM Customers;
```

```
SELECT COUNT(CustomerID) AS
total_customers
FROM Customers
```

MAX and MIN Functions

Columns with NULL values are ignored by the MIN and MAX functions

```
SELECT MAX(UnitPrice) AS max_prod_price

FROM Products
```

```
SELECT MAX(UnitPrice) AS max_prod_price

,MIN(UnitPrice) AS min_prod_price

FROM Products
```

Slide 7: MAX and MIN Functions

SUM Aggregate Function

```
SELECT SUM(UnitPrice) AS total_prod_price
FROM Products
```

```
SELECT SUM(UnitPrice*UnitsInStock) AS total_price
FROM Products
WHERE SupplierID = 23;
```

Slide 8: SUM Aggregate Function

Using DISTINCT on Aggregate Functions

If DISTINCT is not specified, ALL is assumed

Cannot use DISTINCT on COUNT(*)

No value to use with MIN and MAX functions

```
SELECT COUNT(DISTINCT CustomerID)
FROM Customers
```