

DATA SOCIETY:

Introduction to Tableau

Part 8



Module completion checklist

| Objective | Complete |
|---|----------|
| Implement table calculations with dataset | ✓ |
| Understand addressing and partitioning fields | ✓ |
| Explore level of detail (LOD) functions | |
| Implement number calculations on given dataset | |
| Implement aggregate calculations on given dataset | |

Level of Detail (LOD) functions

- Level of Detail (LOD) functions give you more control over the **level of granularity** you want to compute.
- In the world dataset we could aggregate population by:
 - City
 - Country
 - Region
 - Continent

Level of Detail (LOD) function syntax

- The syntax for LOD functions has curly braces.
 - { **keyword** ([column]): **aggregation function** ([data column]) }
- The keyword can be:
 - **FIXED**: takes into account the keyword and the dimensions in the table.
 - **INCLUDE**: only takes into account the keyword dimension.
 - **EXCLUDE**: ignores the specified dimension.

Creating a treemap with a LOD function

- We will now create a treemap with population summarized at the region level.
- What does this plot tell us?



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Number functions

- Number functions allow you to perform computations on the data values in your fields.
- They can only be used with fields that contain numerical values.
 - $ABS(-7) = 7$
 - $ABS([Budget Variance])$
- We can use a number function to clean up a messy column.

| GNP Old ▲ |
|-----------|
| Null |
| Null |
| Null |
| Null |
| Null |
| Null |
| Null |
| Null |
| 243.00 |
| 272.00 |
| 325.00 |
| 325.00 |
| 373.00 |
| 383.00 |
| 573.00 |



GNP_old_clean

`CEILING(ZN([GNP Old]))`

| GNP Old | GNP_old_clean |
|------------|---------------|
| Null | 0 |
| Null | 0 |
| Null | 0 |
| Null | 0 |
| 360,478.00 | 360,478 |
| 360,478.00 | 360,478 |
| 360,478.00 | 360,478 |
| 360,478.00 | 360,478 |
| 360,478.00 | 360,478 |
| 360,478.00 | 360,478 |

Number functions, cont'd.

- Normal statistical summary and math functions are also available.
- Notable functions include
 - Trigonometric functions.
 - RADIANS.
 - DIV for integer division.
 - FLOOR and CEIL.

Number

Enter search text

ABS
ACOS
ASIN
ATAN
ATAN2
CEILING
COS
COT
DEGREES
DIV
EXP
FLOOR
HEXBINX
HEXBINY
LN
LOG
MAX
MIN
PI
POWER
RADIANS
ROUND
SIGN
SIN
SQRT
SQUARE
TAN
ZN

DIV(integer, integer)

Returns the integer part of a division.

Example: `DIV(11, 2) = 5`

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Aggregate functions

- Aggregations involve a summary function, like **SUM()** or **AVG()**.
- The resulting function will have key built-in functions **AGG()** and /or **ATTR()**.
- These allow the user to conduct operations at a particular granularity.
 - Granularity is controlled by an **attribute** such as year or continent.

Aggregate

▼

Enter search text

ATTR

AVG

COLLECT

CORR

COUNT

COUNTD

COVAR

COVARP

EXCLUDE

FIXED

INCLUDE

MAX

MEDIAN

MIN

PERCENTILE

STDEV

STDEVP

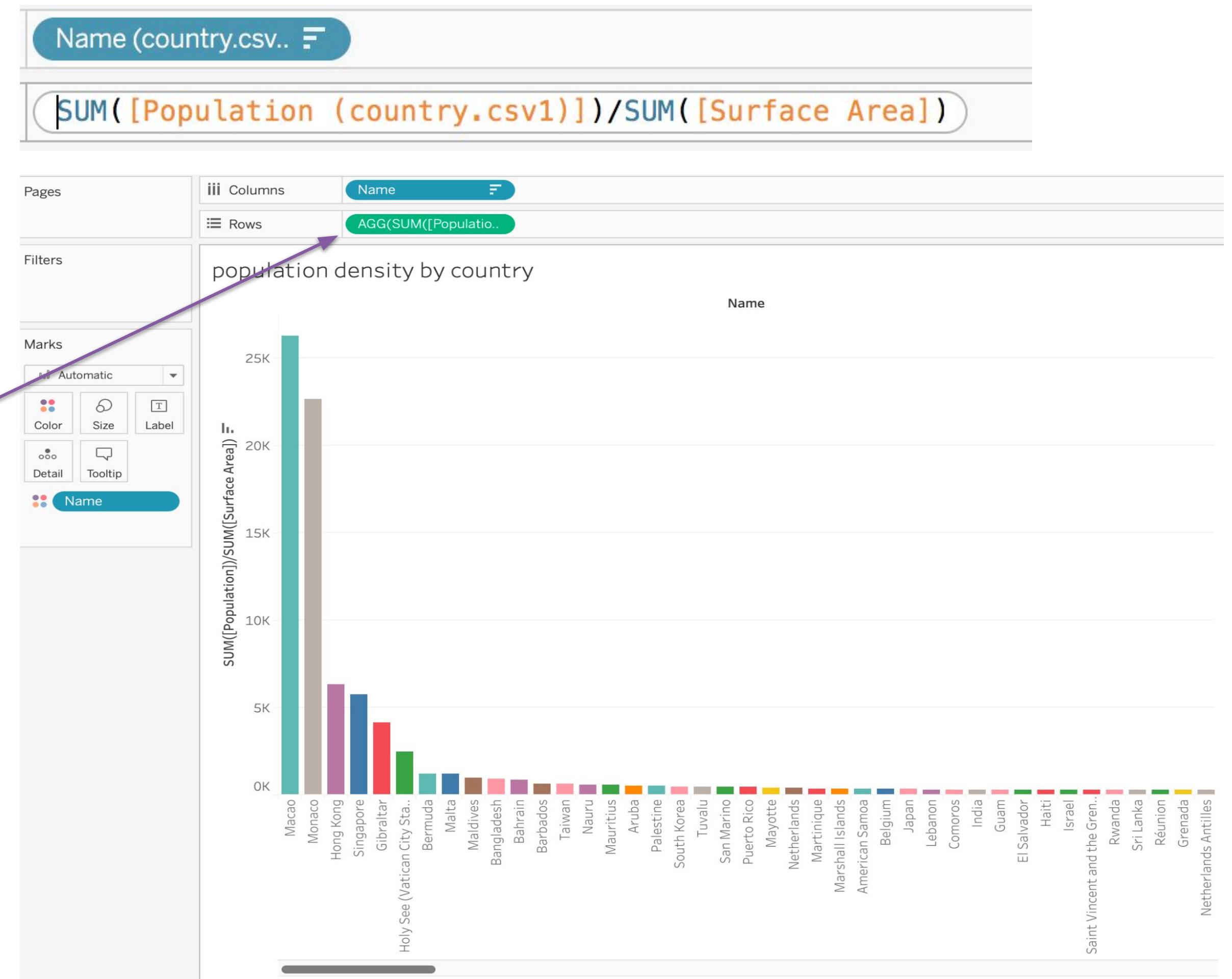
SUM

VAR

VARP

Aggregate functions

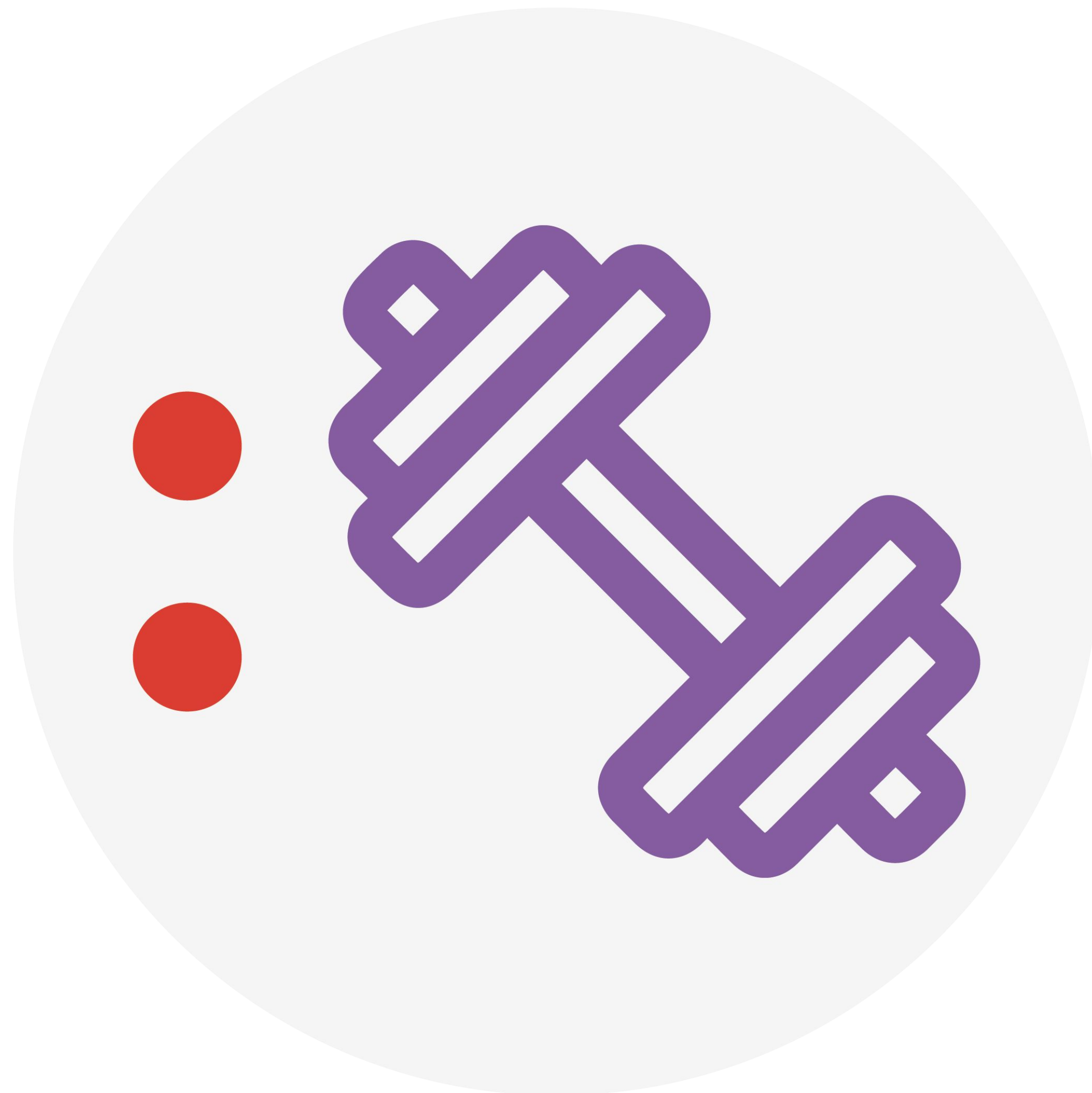
- We can use **AGG()** to get population density by country.
 - Divide Population/area
 - Aggregate at country level
- Note that the aggregate formula was added directly to the pill.
- What other aggregation might we apply to our data?



Knowledge check 8



Exercise 8



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Congratulations!

In the past few modules, we covered:

- Functions
 - Table Calculations
 - Syntax
 - Addressing vs. Partitioning Fields
 - Level of Detail functions
 - Number functions
 - Aggregate functions

Next steps

In the next few modules, we will cover:

- String functions
- Date functions
- Type functions
- Logic functions

● End of Part 8

