

# Table Types and Relational Data Modeling

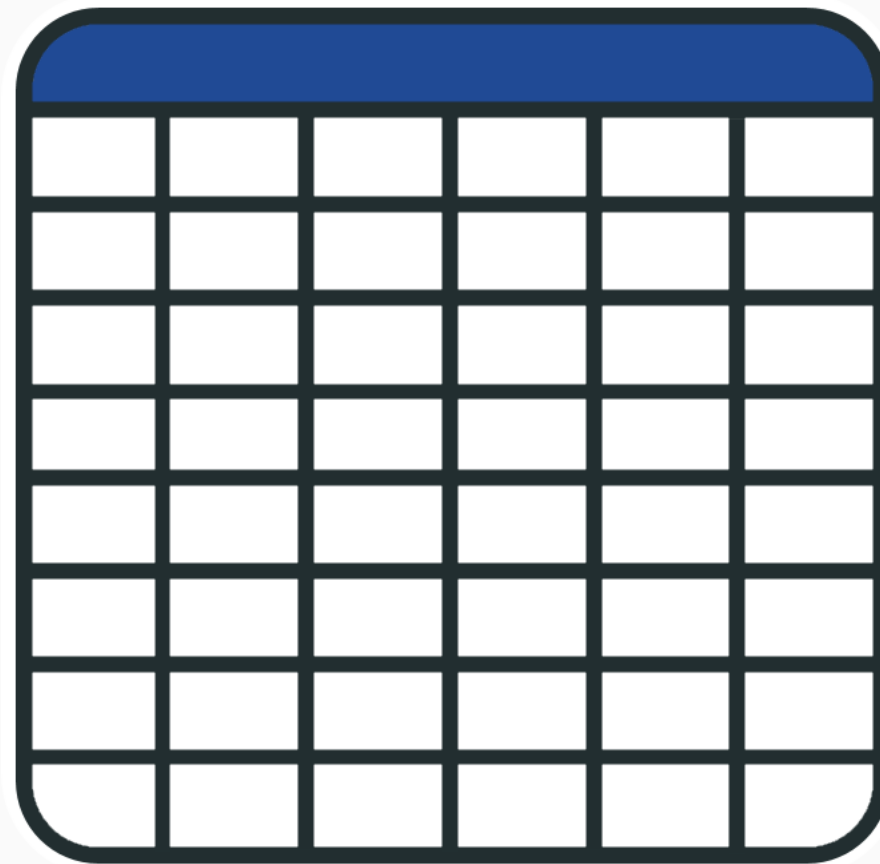
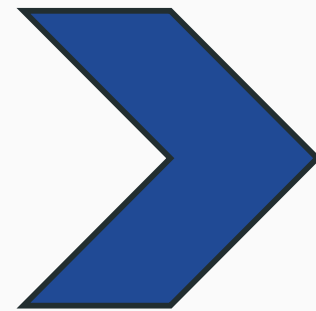
# Multiple Tables in Data Models



## Data Model

(Tables / Relationships)  
(“DAX” Engine)

# Multiple Tables in Data Models



Data Model

(Tables / Relationships)  
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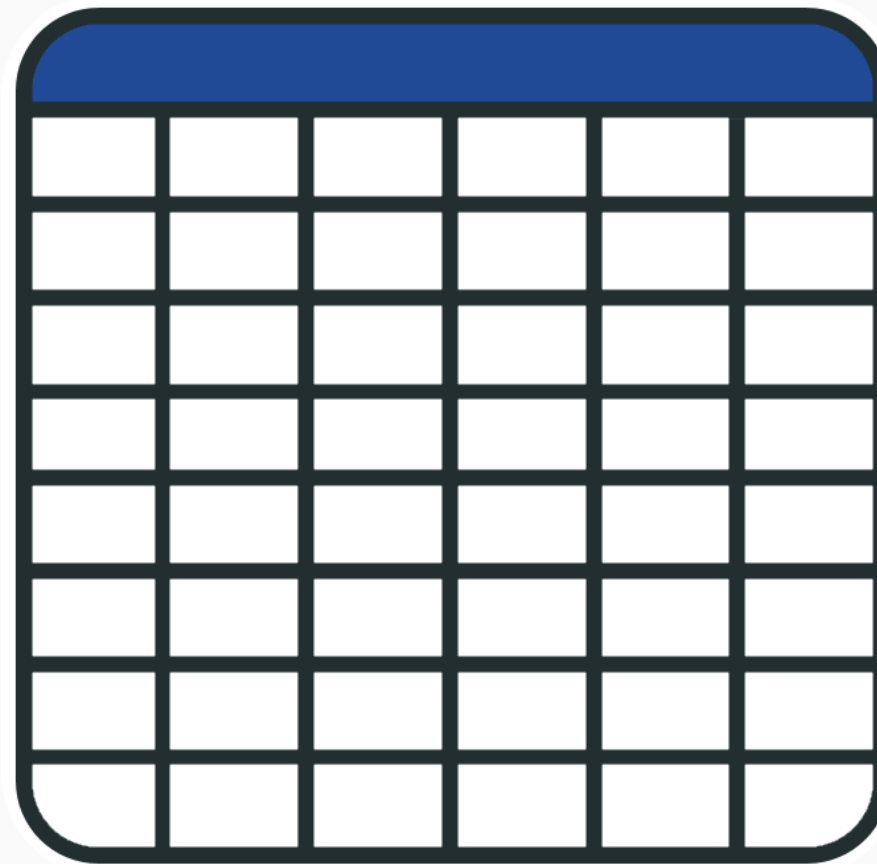
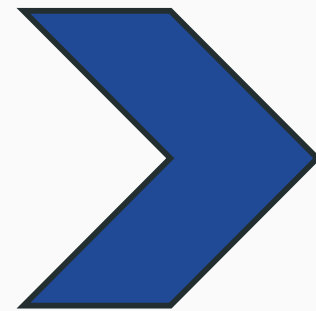
Single Table

# Multiple Tables in Data Models



**Data Model**

(Tables / Relationships)  
("DAX" Engine)



**Single Table**

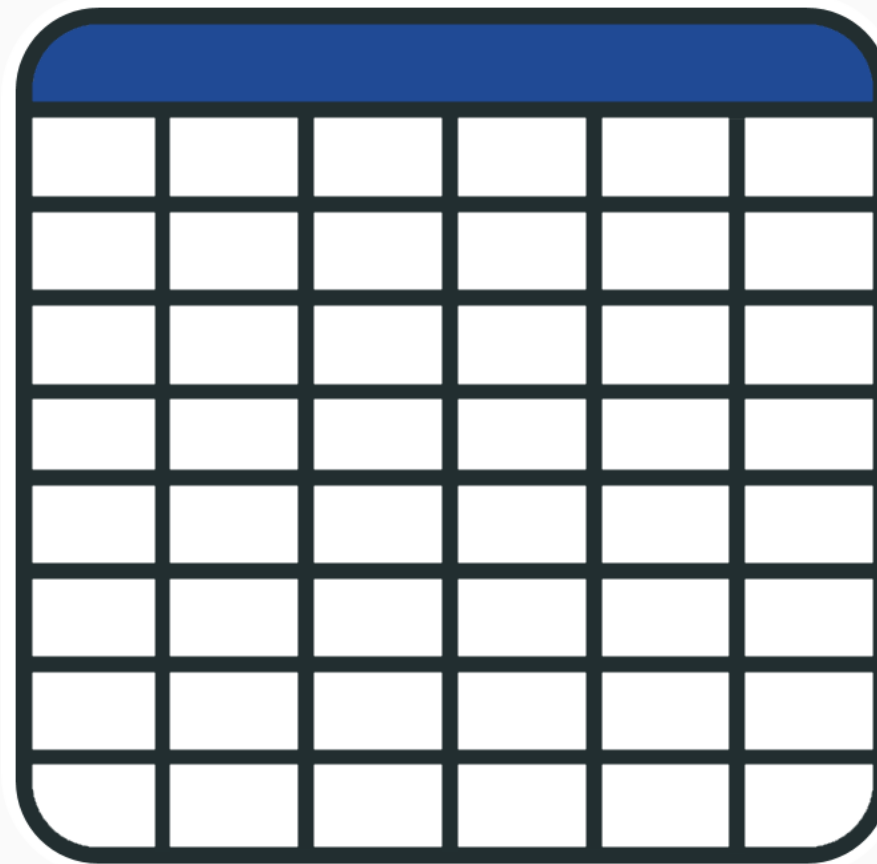
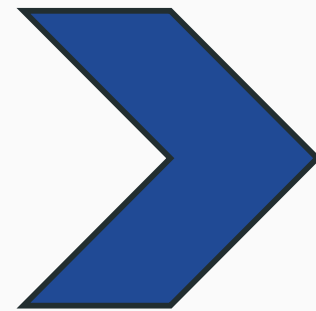
(Duplicate Information)  
(Redundant Data)

# Multiple Tables in Data Models



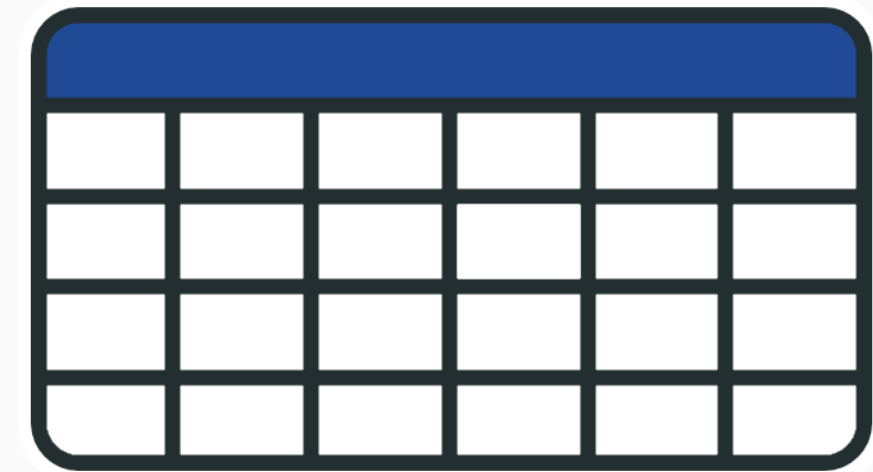
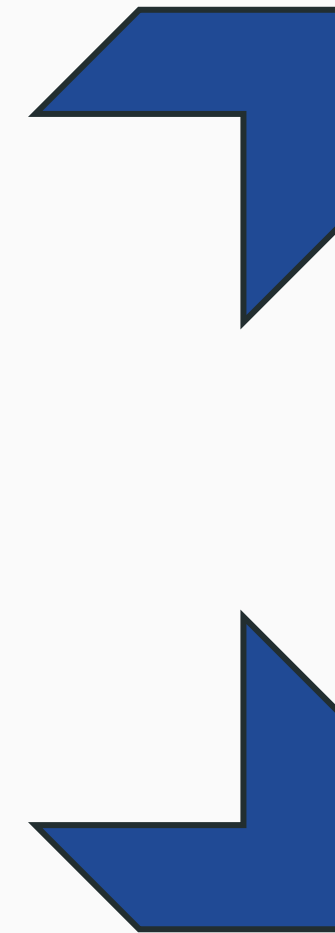
**Data Model**

(Tables / Relationships)  
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A diagram of a single table represented as a grid with 10 columns and 10 rows. The top row is highlighted in blue.

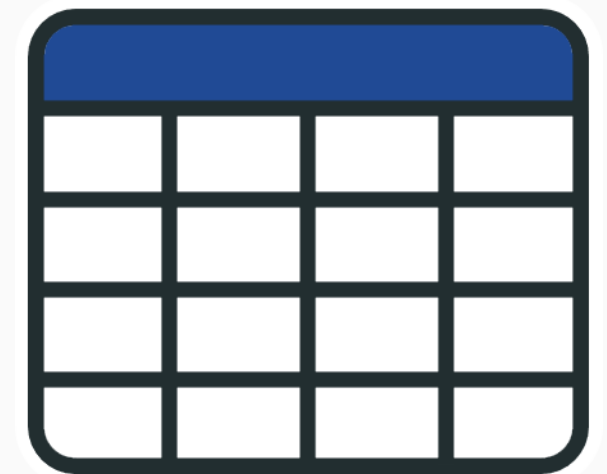
**Single Table**

(Duplicate Information)  
(Redundant Data)

A diagram of a lookup table represented as a grid with 6 columns and 6 rows. The top row is highlighted in blue.

**Lookup Table**

(Text and Information)

A diagram of a data table represented as a grid with 4 columns and 6 rows. The top row is highlighted in blue.

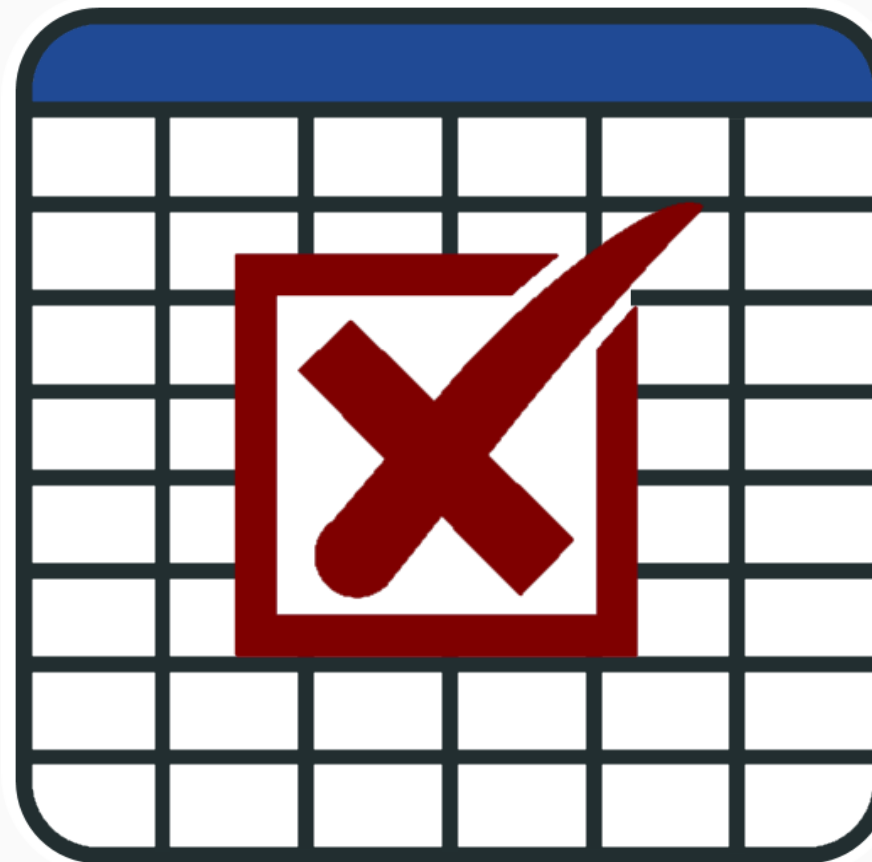
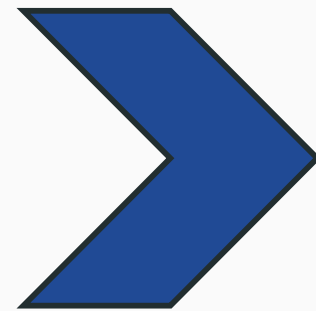
**Data Table**

(Numbers, Dates, and Math)

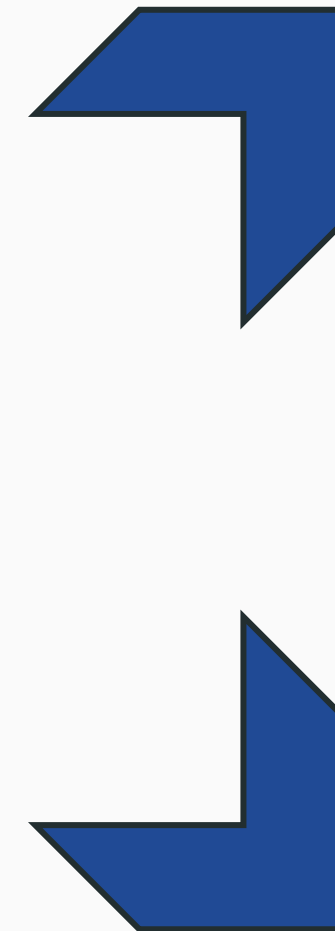
# Multiple Tables in Data Models



**Data Model**  
(Tables / Relationships)  
("DAX" Engine)



**Single Table**  
(Duplicate Information)  
(Redundant Data)



**Lookup Table**  
(Text and Information)



**Data Table**  
(Numbers, Dates, and Math)

# Duplicate Information on Single Tables

| Order ID | ProductID | Product Name      | Product Sub Category | Product Category | Amount   |
|----------|-----------|-------------------|----------------------|------------------|----------|
| 1        | 1         | Road Bike 150     | Road Bikes           | Bikes            | \$364.78 |
| 1        | 2         | Mountain Bike 370 | Mountain Bikes       | Bikes            | \$519.85 |
| 1        | 3         | 2L Water Bottle   | Bike Gear            | Accessories      | \$6.94   |
| 2        | 1         | Road Bike 150     | Road Bikes           | Bikes            | \$364.78 |
| 2        | 2         | Mountain Bike 370 | Mountain Bikes       | Bikes            | \$519.85 |
| 2        | 3         | 2L Water Bottle   | Bike Gear            | Accessories      | \$6.94   |
| 3        | 1         | Road Bike 150     | Road Bikes           | Bikes            | \$364.78 |
| 3        | 2         | Mountain Bike 370 | Mountain Bikes       | Bikes            | \$519.85 |
| 3        | 3         | 2L Water Bottle   | Bike Gear            | Accessories      | \$6.94   |
| 4        | 1         | Road Bike 150     | Road Bikes           | Bikes            | \$364.78 |
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# Separating Tables by Data Type

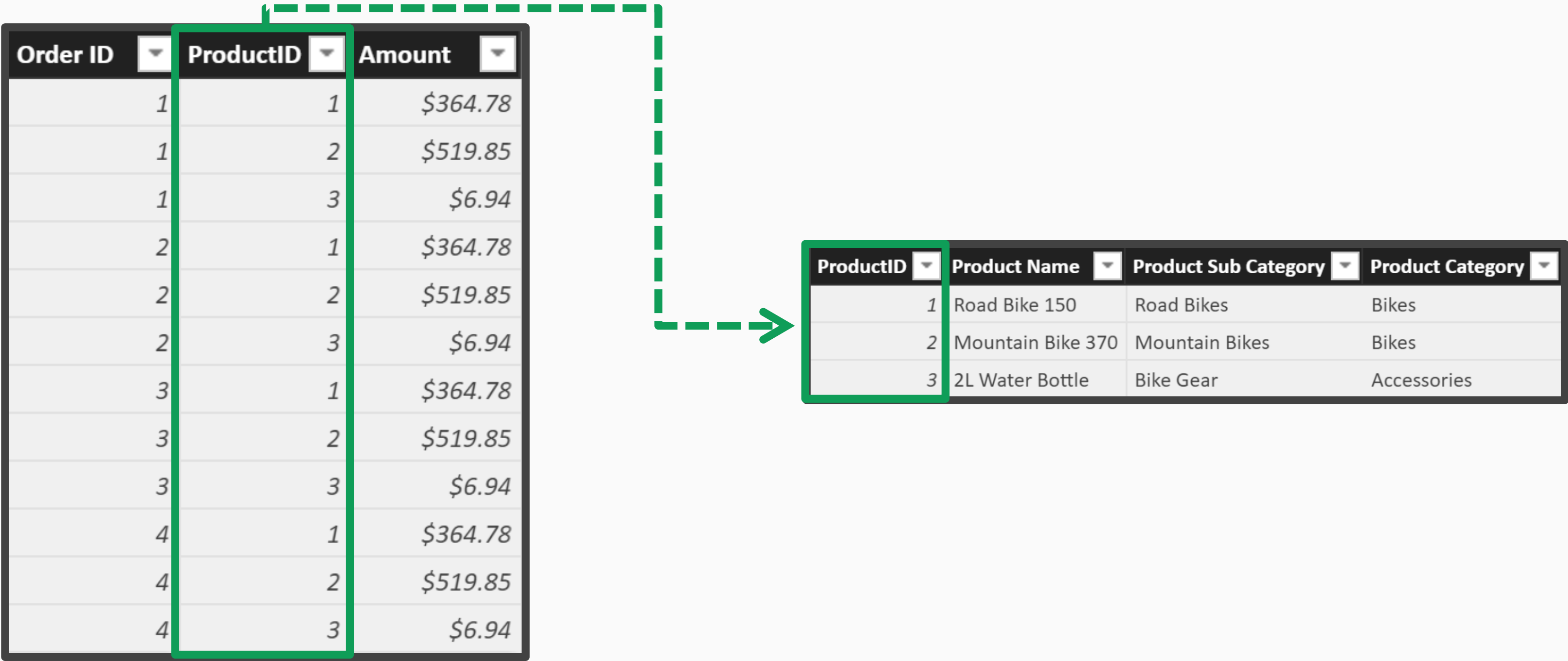
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| 2        | 2         | \$519.85 |
| 2        | 3         | \$6.94   |
| 3        | 1         | \$364.78 |
| 3        | 2         | \$519.85 |
| 3        | 3         | \$6.94   |
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Data Table  
(Numbers, Dates, and Math)

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Lookup Table  
(Text and Information)

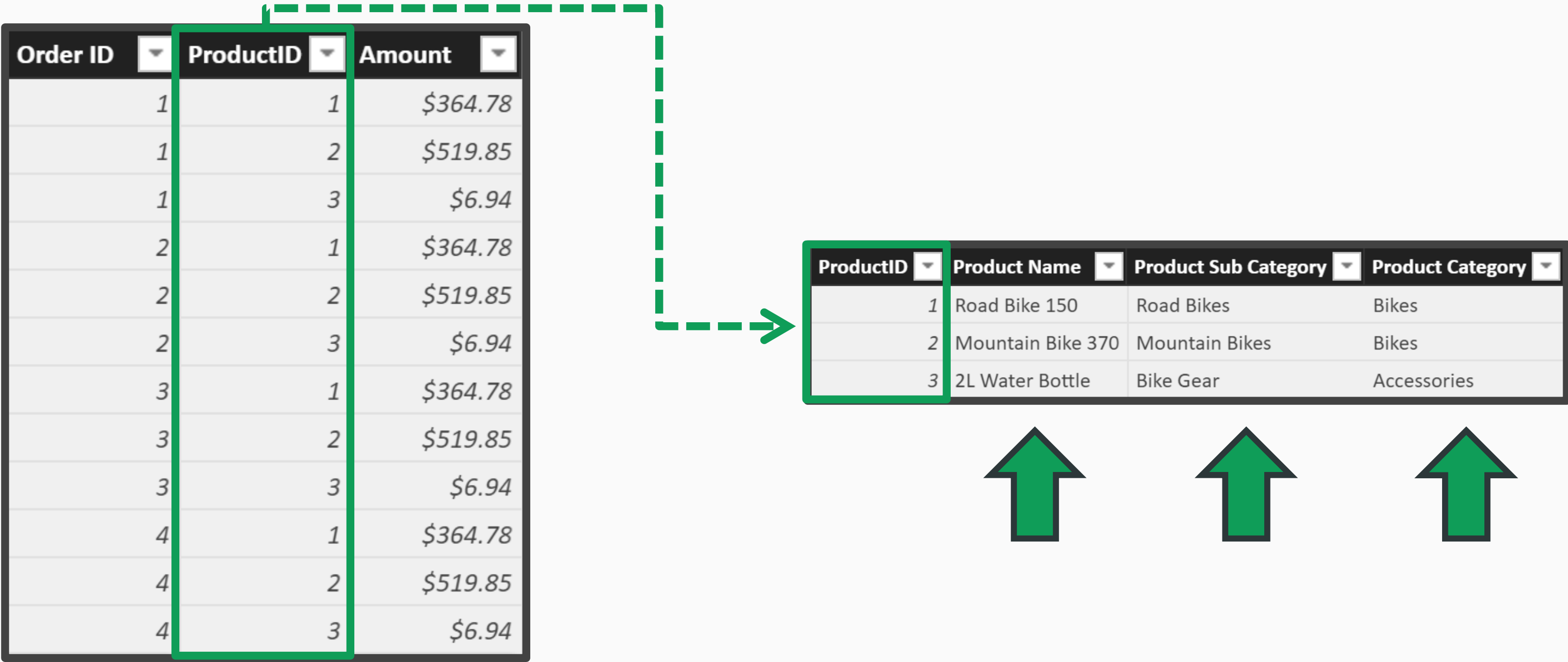
# Separating Tables by Data Type



Data Table  
(Numbers, Dates, and Math)

Lookup Table  
(Text and Information)

# Separating Tables by Data Type



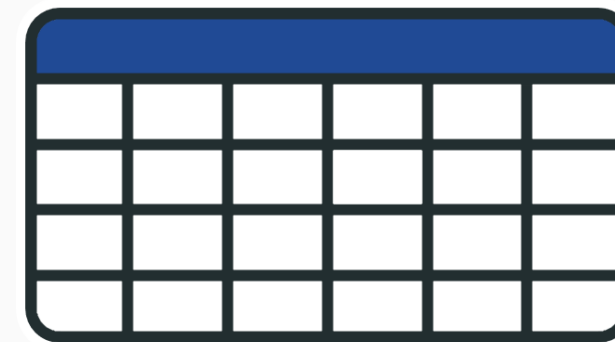
Data Table  
(Numbers, Dates, and Math)

Lookup Table  
(Text and Information)

# Table Types In Data Models



**DATA TABLE**



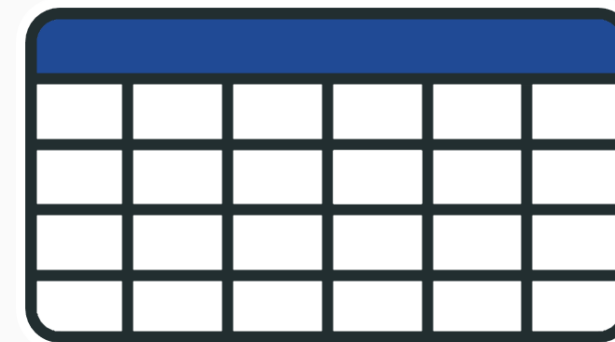
**LOOKUP TABLE**

# Table Types In Data Models



**DATA TABLE**

- Typically Tall (Many Rows)



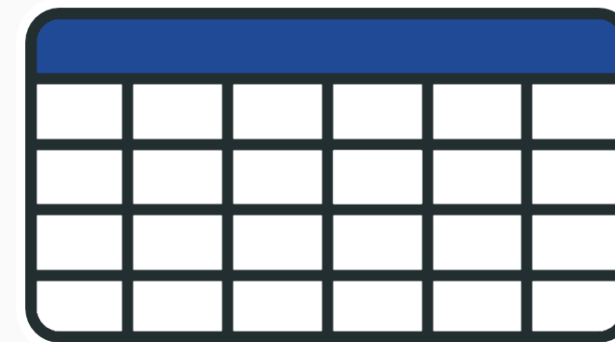
**LOOKUP TABLE**

# Table Types In Data Models



**DATA TABLE**

- Typically Tall (Many Rows)



**LOOKUP TABLE**

- Typically Wide (Many Columns)

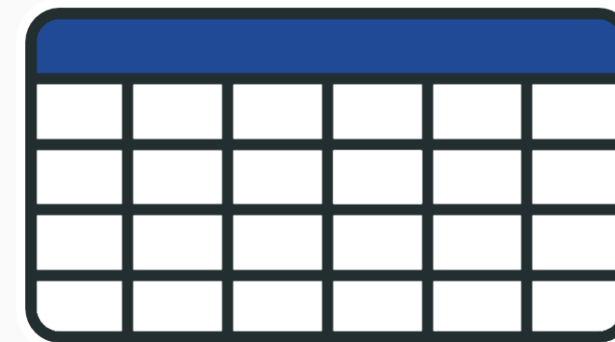


# Table Types In Data Models



**DATA TABLE**

- Typically Tall (Many Rows)
- Mostly Dates and Numbers



**LOOKUP TABLE**

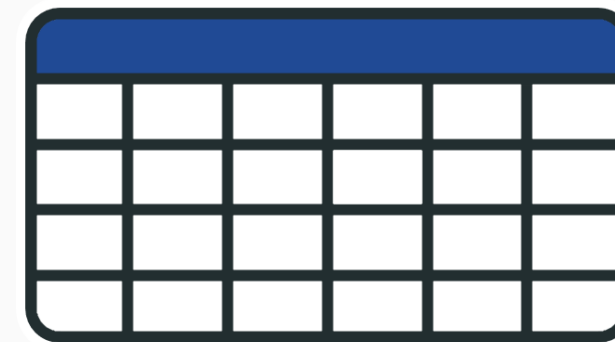
- Typically Wide (Many Columns)

# Table Types In Data Models



**DATA TABLE**

- Typically Tall (Many Rows)
- Mostly Dates and Numbers



**LOOKUP TABLE**

- Typically Wide (Many Columns)
- Mostly Text

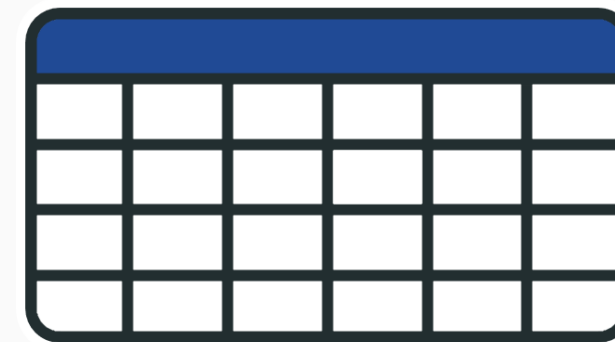


# Table Types In Data Models



DATA TABLE

- Typically Tall (Many Rows)
- Mostly Dates and Numbers
- Do Math against it (Example: SUM, AVERAGE, MIN, MAX, and so on)



LOOKUP TABLE

- Typically Wide (Many Columns)
- Mostly Text

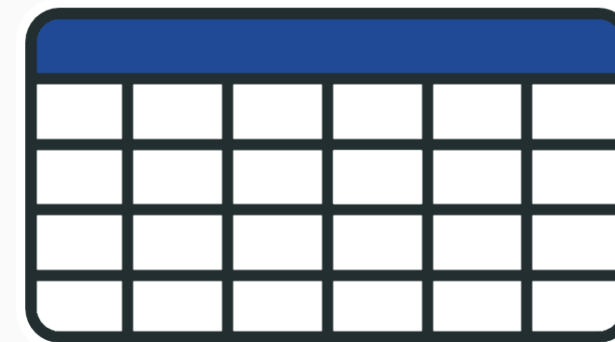


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LOOKUP TABLE

- Typically Wide (Many Columns)
- Mostly Text
- Look Up Information (Example: Name, Address, Description, and so on)

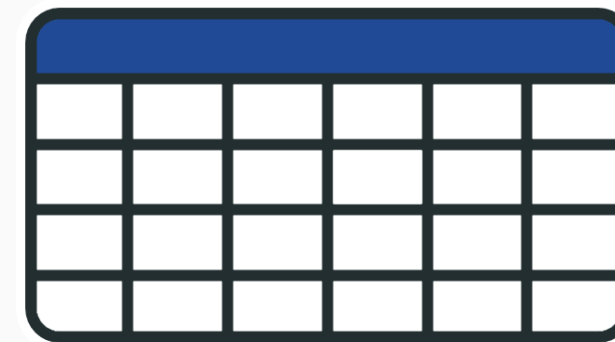


# Table Types In Data Models



DATA TABLE

- Typically Tall (Many Rows)
- Mostly Dates and Numbers
- Do Math against it (Example: SUM, AVERAGE, MIN, MAX, and so on)
- Fast-changing (Updated Often)



LOOKUP TABLE

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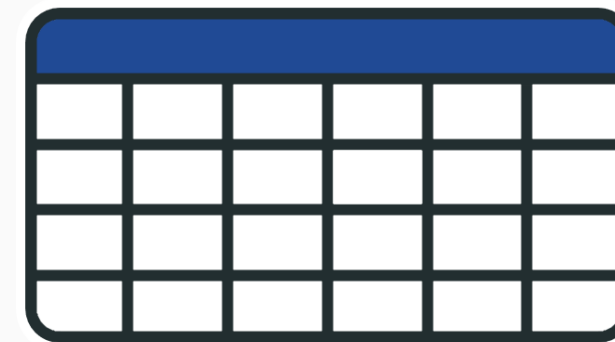


# Table Types In Data Models



DATA TABLE

- Typically Tall (Many Rows)
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LOOKUP TABLE

- Typically Wide (Many Columns)
- Mostly Text
- Look Up Information (Example: Name, Address, Description, and so on)
- Slow-changing (Updated Less Often)

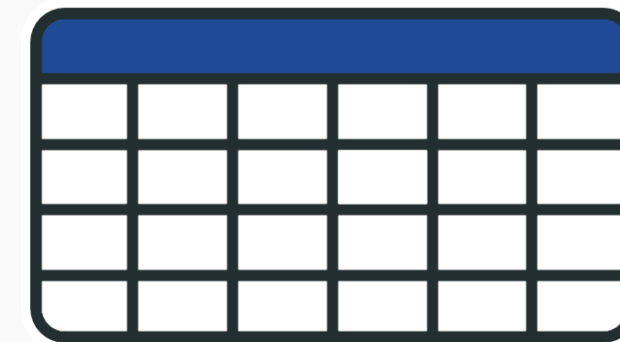


# Table Types In Data Models



DATA TABLE

- Typically Tall (Many Rows)
- Mostly Dates and Numbers
- Do Math against it (Example: SUM, AVERAGE, MIN, MAX, and so on)
- Fast-changing (Updated Often)
- May contain Time Dimensions (Example: Order Date, Record Time, and so on)



LOOKUP TABLE



- Typically Wide (Many Columns)
- Mostly Text
- Look Up Information (Example: Name, Address, Description, and so on)
- Slow-changing (Updated Less Often)

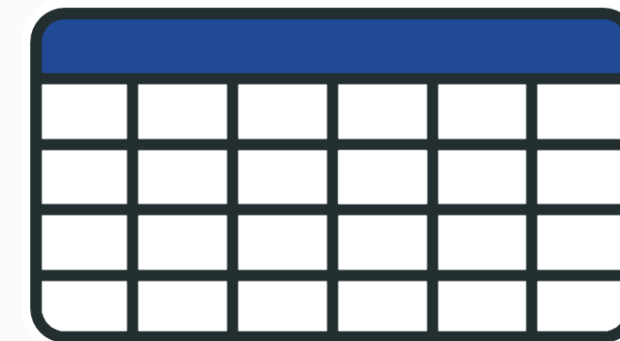


# Table Types In Data Models





DATA TABLE

- Typically Tall (Many Rows)
- Mostly Dates and Numbers 
- Do Math against it (Example: SUM, AVERAGE, MIN, MAX, and so on) 
- Fast-changing (Updated Often)
- May contain Time Dimensions (Example: Order Date, Record Time, and so on)



LOOKUP TABLE

- Typically Wide (Many Columns)
- Mostly Text 
- Look Up Information (Example: Name, Address, Description, and so on) 
- Slow-changing (Updated Less Often)
- Does not typically contain Time Dimensions



# Common Data Transformations

Next Section