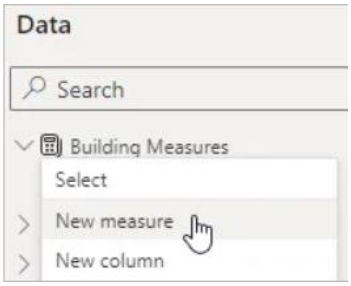
**Write basic measures in DAX to calculate statistics for the world's tallest buildings.**

Open the **Tallest Buildings - Basic Measures.pbix** file in the folder shown above. You should see a matrix visual which uses a measure to count the number of buildings in each country.


*You can click the + button next to a country to see its cities.*

Add a new measure called **Total height m** to the **Building measures** table. Use the **SUM** function to calculate the total of the **Height m** column.




*You can right-click the table and choose **New measure**.*

Add a measure called **Average height m** to the **Building measures** table. Use the **AVERAGE** function to calculate the average of the **Height m** column.

Add the two new measures to the matrix visual and sort it in descending order of **Average height m**.

| Country | Count of Buildings | Total height m | Average height m |
|---|---|---|---|
| **Saudi Arabia** | **2** | **986.00** | **493.00** |
| Mecca | 1 | 601.00 | 601.00 |
| Riyadh | 1 | 385.00 | 385.00 |

*You can format the measures to control the number of decimal places.*

Create three new measures according to table shown below:

| Measure name | What it should do |
|---|---|
| **Tallest height m** | Use the **MAX** function to return the biggest **Height m**. |
| **Shortest height m** | Use the **MIN** function to return the smallest **Height m**. |
| **Height range m** | Subtract the **Shortest height m** measure from the **Tallest height m** measure. |

*Remember that you can reference an existing measure by typing **[** and then picking the measure from the list.*

Add these new measures to the matrix visual.

| Country | Count of Buildings | Total height m | Average height m | Tallest height m | Shortest height m | Height range m |
|---|---|---|---|---|---|---|
| **United Arab Emirates** | **15** | **6,022.20** | **401.48** | **828.00** | **342.00** | **486.00** |
| Dubai | 13 | 5,299.00 | 407.62 | 828.00 | 352.00 | 476.00 |
| Abu Dhabi | 2 | 723.20 | 361.60 | 381.20 | 342.00 | 39.20 |

*Sort the matrix in descending order of **Tallest height m**.*

Add a measure called **Average floor height m** which takes the sum of the **Height m** column and divides it by the sum of the **Floors above ground** column. Add this new measure to the matrix.

| Country | Count of Buildings | Total height m | Average height m | Tallest height m | Shortest height m | Height range m | Average floor height m |
|---|---|---|---|---|---|---|---|
| **Vietnam** | **1** | **461.20** | **461.20** | **461.20** | **461.20** | **0.00** | **5.69** |
| Ho Chi Minh City | 1 | 461.20 | 461.20 | 461.20 | 461.20 | 0.00 | 5.69 |

*Sort the matrix in descending order of the new column.*

Add a measure called **Total floors** which uses the **SUMX** function to return the total of the **Floors above ground** column plus the **Floors below ground** column. You can see the syntax of the **SUMX** function below:

**SUMX( Table to use, Calculation for each table row )**

Use the **AVERAGEX** function to create a measure called **Average floors**. This should return the average of the **Floors above ground** column plus the **Floors below ground** column.

| Country | Count of Buildings | Total height m | Average height m | Tallest height m | Shortest height m | Height range m | Average floor height m | Total floors | Average floors |
|---|---|---|---|---|---|---|---|---|---|
| **South Korea** | **2** | **966.10** | **483.05** | **554.50** | **411.60** | **142.90** | **4.31** | **235** | **117.50** |
| Seoul | 1 | 554.50 | 554.50 | 554.50 | 554.50 | 0.00 | 4.51 | 129 | 129.00 |
| Busan | 1 | 411.60 | 411.60 | 411.60 | 411.60 | 0.00 | 4.08 | 106 | 106.00 |

*Add these measures to the matrix visual and sort in descending order of **Average floors**.*

Save and close the report.