

Use Power BI's automatic calendar tables and time intelligence functions in DAX measures

Open the **Music Tours - Basic Time Intelligence.pbix** file in the exercise's folder. On **Page 1** you'll find a matrix containing the dates of shows and the tickets sold and revenue generated.

| Artist, Tour name | | Year | Tickets Sold | Show Revenue |
|----------------------------|----------------|-----------|--------------|--------------|
| ✓ <input type="checkbox"/> | AC/DC | 1981 | | |
| ✓ <input type="checkbox"/> | Bad Bunny | Qtr 3 | | |
| ✓ <input type="checkbox"/> | Beyoncé | September | | |
| ✓ <input type="checkbox"/> | Bon Jovi | 25 | 90,782 | \$1,429,817 |
| ✓ <input type="checkbox"/> | Britney Spears | 26 | 90,782 | \$1,429,817 |

You can use the slicer to choose different artists and tours.

Add a measure to create a monthly running total of tickets sold using the **TOTALMTD** function.

*Remember to reference the **Date** column of the automatic calendar table that is related to the **Show date** field, rather than just the **Show date** field itself.*

Add the measure to the matrix.

| Year | Tickets Sold | Show Revenue | Monthly Running Total Tickets Sold |
|-----------|--------------|--------------|------------------------------------|
| 1981 | | | |
| Qtr 3 | | | |
| September | | | |
| 25 | 90,782 | \$1,429,817 | 90,782 |
| 26 | 90,782 | \$1,429,817 | 181,564 |
| 27 | 75,000 | \$1,125,000 | 256,564 |
| 28 | | | 256,564 |
| 29 | | | 256,564 |

Annoyingly, the running total makes dates on which no tickets were sold appear in the matrix.

To hide the dates on which no tickets were sold, update the measure to include an **IF** function which checks if the sum of tickets sold is blank.

| Year | Tickets Sold | Show Revenue | Monthly Running Total Tickets Sold |
|-----------|--------------|--------------|------------------------------------|
| 1981 | | | |
| Qtr 3 | | | |
| September | | | |
| 25 | 90,782 | \$1,429,817 | 90,782 |
| 26 | 90,782 | \$1,429,817 | 181,564 |
| 27 | 75,000 | \$1,125,000 | 256,564 |
| Qtr 4 | | | |
| October | | | |
| 3 | 60,000 | \$960,000 | 60,000 |
| 4 | 60,000 | \$960,000 | 120,000 |

The matrix should now hide any dates with no ticket sales.

Add another measure to calculate a monthly running total of show revenue. Add this measure to the matrix and make sure that it doesn't cause dates with no ticket sales to appear.

| Year | Tickets Sold | Show Revenue | Monthly Running Total Tickets Sold | Monthly Running Total Show Revenue |
|-----------|--------------|--------------|------------------------------------|------------------------------------|
| 1981 | | | | |
| Qtr 3 | | | | |
| September | | | | |
| 25 | 90,782 | \$1,429,817 | 90,782 | \$1,429,817 |
| 26 | 90,782 | \$1,429,817 | 181,564 | \$2,859,633 |
| 27 | 75,000 | \$1,125,000 | 256,564 | \$3,984,633 |

On **Page 2** you'll find a matrix showing the total length of tracks released as singles, grouped by year and month.

| Year | Sum Single Length (secs) |
|----------|--------------------------|
| ☐ 1980 | 8,757 |
| January | 523 |
| February | 202 |

Create a measure which compares the sum of single length with the same period in the previous year. You can use a combination of the **CALCULATE** and **SAMEPERIODLASTYEAR** functions to do this. Add the measure to the matrix.

| Year | Sum Single Length (secs) | Sum Single Length vs. Same Dates Last Year |
|----------|--------------------------|--|
| ☐ 1983 | 10,422 | 4,899 |
| January | 634 | 401 |
| February | 257 | -386 |

You could add conditional formatting to highlight positive and negative numbers.

Add a measure which compares the sum of single length with the same value from one month ago. You can use the **CALCULATE** and **DATEADD** functions to do this. Add the measure to the matrix.

| Year | Sum Single Length (secs) | Sum Single Length vs. Same Dates Last Year | Sum Single Length vs. Previous Month |
|----------|--------------------------|--|--------------------------------------|
| December | 436 | 436 | -685 |
| ☐ 1984 | 9,520 | -902 | -62 |
| January | 878 | 244 | 442 |
| February | 548 | 291 | -330 |

Again, conditional formatting might make it easier to read the results.

When comparing with the previous month, it doesn't make sense to display a value for the year. Try modifying the measure so that it only shows a result when the **Month** column is in scope.

*You can use the **ISINSCOPE** function to check if the **Month** column of the **Single release date** field is in scope.*

Save and close the report.