DAX Practice Questions

✅ DAX Practice Summary: Q1–Q10 (Airplane Crashes Dataset)

📘 DAX Practice Questions

💡 Power BI Learning Project – Airplane Crashes Dataset

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🔍 Goal: Practice DAX for real-world scenarios (Q1–Q10)

Q1. Fatality Rank

Goal: Rank crashes by number of fatalities (Rank 1 = most deadly).

DAX:

```
Fatality Rank =
RANKX(
    ALL('Airplane Crashes'),
    CALCULATE(SUM('Airplane Crashes'[Fatalities])),
    ,
    DESC,
    DENSE
)
```

Explanation: RANKX removes filter context and ranks based on sum of fatalities. Calculate gets fatalities per row and Dense so ranks are continuous.

Q2. Assign Season Based on Month

Goal: Create a column that classifies crashes into seasons.

DAX:

```
Season =
SWITCH(
    TRUE(),
    'Airplane Crashes'[Crash Month] IN {"December", "January", "February"},
"Winter",
    'Airplane Crashes'[Crash Month] IN {"March", "April", "May"}, "Spring",
    'Airplane Crashes'[Crash Month] IN {"June", "July", "August"}, "Summer",
    'Airplane Crashes'[Crash Month] IN {"September", "October", "November"},
"Fall"
)
```

Explanation: Logical switch case to group by season. SWITCH is common DAX pattern to replace multiple nested IF statements.

Q3. Fatality % per Crash (Column)

Goal: Calculate percentage of people who died in each crash.

DAX:

```
Fatality Rate% = DIVIDE('Airplane Crashes'[Fatalities], 'Airplane Crashes'[Abo
ard], 0) * 100
```

Explanation: Uses `DIVIDE()` to handle division safely, multiplied by 100 for percentage ,0 is for alternate result .

Q4. Extract Year from Date

Goal: Create a column with just the year.

DAX:

```
Crash Year = YEAR('Airplane Crashes'[Date])
```

Explanation: Extracts 4-digit year for trend analysis.

Q5. Extract Month Name from Date

Goal: Show full month name for each crash.

DAX:

```
Crash Month = FORMAT('Airplane Crashes'[Date], "MMMM")
```

Explanation: `FORMAT()` gives month in full text like "January", "February" we can use “MMM” for short names. If used MONTH() it would have given Month Number instead of Month Name.

Q6. Crash Classification by Death Count

Goal: Create a column classifying crashes based on fatalities.

DAX:

```
Crash Severity =
SWITCH(TRUE(),
    'Airplane Crashes'[Fatalities] = 0, "No Fatalities",
    'Airplane Crashes'[Fatalities] <= 5, "Low",
    'Airplane Crashes'[Fatalities] <= 20, "Moderate",
    'Airplane Crashes'[Fatalities] <= 100, "High",
    "Severe"
)
```

Explanation: Groups crashes based on the severity of fatalities.

Q7. Measure: Total Crashes

Goal: Count how many crashes are in the dataset.

DAX:

```
Total Crashes = COUNTROWS('Airplane Crashes')
```

Explanation: Each row = one crash, so count of rows gives total. COUNTROWS takes table as input not columns.

Q8. Measure: Total Fatalities

Goal: Total number of deaths across all crashes.

DAX:

```
Total Fatalities = SUM('Airplane Crashes'[Fatalities])
```

Explanation: Simple SUM over Fatalities column.

Q9. Extract Hour from Time

Goal: Extract the hour part from the `Time` column (which is a text field like “18:30”).

DAX:

```
Hour =
VAR TimeText = LEFT('Airplane Crashes'[Time], 2)
RETURN
```

```
    IF(ISNUMBER(VALUE(TimeText)), VALUE(TimeText), BLANK())
```

Explanation: Safely extracts and converts the first two characters as hour. Returns blank if invalid.

Q10. Create Time of Day (Morning, Afternoon, etc.)

Goal: Categorize crashes based on the hour into time slots.

DAX:

```
Time of Day =
SWITCH(TRUE(),
    'Airplane Crashes'[Hour] < 6, "Early Morning",
    'Airplane Crashes'[Hour] < 12, "Morning",
    'Airplane Crashes'[Hour] < 18, "Afternoon",
    'Airplane Crashes'[Hour] <= 24, "Evening",
    BLANK()
)
```

Explanation: Uses `SWITCH(TRUE())` to check the range of hour and assign a label.