1. Data Understanding & Cleaning

Logic:
Before creating charts, the dataset must be clean and usable.

What was done:

- Verified column names for City, Status, Price, Area, etc.
- Converted Price, Area, Bedrooms, Bathrooms into numeric types.
- Ensured Status and Property Type are text fields.
- Checked for missing values and corrected formatting.

This ensures accurate calculations and correct visualizations.

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2. Visualization Tasks — Logic & Ideas Used

TASK 1 — Price Distribution Across Cities

Logic:
A horizontal bar chart makes it easy to compare prices across cities.

Idea:
Used *City on Rows* + *Average Price on Columns* to show which cities are costlier.

TASK 2 — Average Price by Property Type (Stacked Bar)

Logic:
Stacked bars help compare both **average price** and **status breakdown** within each property type.

Idea:
Property Type on Columns, Avg Price on Rows, and Status on Color to stack.

TASK 3 — Top 3 Most Expensive Properties

Logic:
Sorting by price and filtering top 3 highlights premium properties.

Idea:
Used a **Top N filter (Top 3)** on Property ID based on Price.

TASK 4 — Status Distribution (Pie Chart)

Logic:
A pie chart best represents percentage of properties sold vs. available.

Idea:
Used Status as Color + COUNT(Property ID) as Angle to create proportional slices.

TASK 5 — Price Per Sq. Ft by City

Logic:
Price per sq. ft gives a fair comparison of real estate value across cities.

Idea:
Created a calculated field:

```
Price per SqFt = Price * 100000 / Area
```

Then used a simple bar chart to compare cities.

TASK 6 — Price Range Distribution (Low / Medium / High)

Logic:
Grouping properties into price bands shows affordability and market segmentation.

Idea:
Created a calculated field:

- Low (< 50 Lakhs)
- Medium (50–100 Lakhs)
- High (> 100 Lakhs)

Then used a bar chart to show counts of each band.

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3. Final Thoughts

The dashboard combines price trends, affordability groups, location-based comparisons, and property availability.
The logic focused on:

- Clear comparisons
- Meaningful grouping
- Real-estate-specific KPIs (price per sq. ft, price range, availability)

This provides a complete analytical view of the real estate market.