# Real Estate Property Analysis

## Task 1: Analyze the Price Distribution of Properties Across Different Cities

**Question**

Create a Horizontal Bar Chart in Tableau to visualize property price variation across different cities.

**Step-by-Step Explanation**

The City field is placed on the Rows shelf to display different cities along the Y-axis.

1. The Property Price field is placed on the Columns shelf to represent price values on the X-axis. The measure is aggregated as AVG(Property Price) (or SUM if required by the dataset) to compare average prices across cities.
2. A Horizontal Bar Chart is automatically formed, allowing easy comparison of property prices between cities.
3. To improve clarity, the cities are sorted in descending order based on property price so that cities with higher prices appear at the top.
4. The City field is added to the Marks card under Details. This ensures that each bar is clearly associated with its respective city and improves interactivity when hovering over the chart.
5. Data labels are enabled to display the exact property price values on each bar for better readability.

# Task 2: Compare Average Price for Each Property Type

**Question**

# Create a Stacked Bar Chart in Tableau to compare the average price of different property types.

**Step-by-Step Explanation**

1. The Property Type field is placed on the Columns shelf to represent different types of properties on the X-axis.
2. The Property Price field is placed on the Rows shelf and aggregated as AVG(Property Price) to calculate the average price for each property type.

3. A Stacked Bar Chart is selected to visualize the price comparison clearly.
4. To create the stacked effect, the City (or any relevant category such as Location or Area, if available) field is added to the Marks card under Color. This breaks down the average price of each property type across different cities.
5. The bars are sorted in descending order based on average price to make comparison easier.
6. Data labels are enabled to display the average price values directly on the bars for better readability.

# Task 3: Identify the Top 3 Most Expensive Properties

## Question

Find and visualize the top 3 most expensive properties using Tableau.

## Step-by-Step Explanation

The Property ID field is placed on the Rows shelf to represent individual properties.

1. The Property Price field is placed on the Columns shelf and aggregated as SUM(Property Price) or MAX(Property Price) (depending on dataset structure) to represent the price of each property.
2. The properties are sorted in descending order based on property price.
3. A Top N filter is applied on Property ID to keep only the Top 3 properties based on price.
4. A Bar Chart is used to clearly compare the prices of the top 3 properties.
5. The City field is added to the Marks card under Label so that each bar displays the city where the property is located.
6. The Property ID field is added to the Marks card under Color to assign different colors to each property, improving visual distinction.
7. Data labels are enabled to show the exact price values for better clarity.

# Task 4: Show the Percentage of Properties Sold vs. Available

**Question**

# Use a Pie Chart in Tableau to compare the percentage of properties that are Sold, Available, and Under Construction.

**Step-by-Step Explanation**

The Property Status field (Sold / Available / Under Construction) is placed on the Marks card under Color to differentiate each status category.

1. The Property ID field is placed on the Marks card under Angle and aggregated as CNT(Property ID) to calculate the total number of properties in each status.
2. A Pie Chart visualization is selected to represent the proportion of each property status.
3. The Property Status field is also added to the Marks card under Label so that each slice of the pie clearly displays its category.
4. Percentage labels are enabled to show the percentage contribution of Sold, Available, and Under Construction properties.

# Task 5: Price Per Sq. Ft Analysis by City

**Question**

Calculate the average price per square foot for each city to compare real estate value.

**Step-by-Step Explanation**

1. A calculated field named Price per Sq. Ft is created using the formula:

   `([Price (₹ Lakhs)] * 100000) / [Area (Sq. Ft)]`
2. The City field is placed on the Columns shelf to represent different cities on the X-axis.
3. The calculated Price per Sq. Ft field is placed on the Rows shelf and aggregated as AVG(Price per Sq. Ft) to compute the average value for each city.
4. A Bar Chart is selected to clearly compare the average price per square foot across cities.
5. The cities are sorted in descending order based on the average price per square foot to highlight cities with higher real estate value.
6. Data labels are enabled to display exact average price per square foot values on each bar for better readability.

# Task 6: Group Properties by Price Range and Analyze Count

## Question

Categorize properties into Low, Medium, and High price ranges and analyze how many properties fall into each category using a Bar Chart.

## Step-by-Step Explanation

A calculated field named Price Range is created to categorize properties into different price bands. Example logic:

- Low Price: `Property Price < X`
- Medium Price: `Property Price >= X AND Property Price < Y`
- High Price: `Property Price >= Y`

1. *X and Y represent suitable price thresholds based on the dataset.*
2. The calculated Price Range field is placed on the Columns shelf to represent different price categories on the X-axis.
3. The Property ID field is placed on the Rows shelf and aggregated as CNT(Property ID) to calculate the number of properties in each price range.
4. A Bar Chart is selected to visualize the distribution clearly.
5. The Price Range field is added to the Marks card under Color so that each price category is displayed in a different color, improving visual distinction.
6. Data labels are enabled to display the count of properties in each price range for better readability.