**Real Estate Price Analysis**

**Step-by-Step Process**

**1. Data Collection and Importing**

* Downloaded a real estate price dataset from Kaggle.
* Opened Microsoft Excel and imported the dataset using the Data → Get External Data → From Text/CSV option.
* Verified that all columns were correctly formatted and no data was lost during import.

**2. Data Cleaning and Preparation**

* **Checked for Missing or Incorrect Data**:
  + Used COUNTBLANK(range) to find missing values.
  + Used IFERROR(value, alternate\_value) to handle any errors in calculations.
* **Standardized Text Entries**:
  + Used TRIM(A2) to remove extra spaces.
  + Used UPPER(A2) or PROPER(A2) to maintain consistent text formatting.
* **Formatted Numeric Data**:
  + Applied Format Cells → Number for prices and square feet columns.
  + Used ROUND(value, 2) to round price values to two decimal places.

**3. Creating the Search Tool**

* **Implemented Property ID Search**:
  + Used VLOOKUP(A2, PropertyDatabase!A2:H1000, 2, FALSE) to find a property’s details based on its ID.
  + Alternatively, used INDEX(PropertyDatabase!B2:H1000, MATCH(A2, PropertyDatabase!A2:A1000, 0)) for more flexible searches.

**4. Creating Pivot Tables**

**Price by City**

* **Step 1**: Selected the entire dataset and clicked Insert → PivotTable.
* **Step 2**: Placed City in **Rows** and Price in **Values**.
* **Step 3**: Changed price aggregation to AVERAGE using Value Field Settings.
* **Step 4**: Applied Number Format → Currency to display prices correctly.
* **Formula Used**:

=AVERAGEIF(PropertyDatabase!B2:B1000, "City\_Name", PropertyDatabase!H2:H1000)

* + This calculates the average price of properties in each city.

**Price by Garage**

* **Step 1**: Inserted another pivot table and placed Garage (Yes/No) in **Rows**.
* **Step 2**: Added Price in **Values** to compare average prices for properties with and without a garage.
* **Step 3**: Used a slicer for easy filtering (Insert → Slicer → Select Garage Column).
* **Formula Used**:

=AVERAGEIF(PropertyDatabase!G2:G1000, "Yes", PropertyDatabase!H2:H1000)

* + This calculates the average price for properties that include a garage.

**5. Designing the Dashboard**

* **Added Pivot Charts**:
  + Used Insert → PivotChart to visualize price trends.
  + Selected Bar Chart for city price analysis and Pie Chart for garage impact.
* **Added Interactive Filters**:
  + Used Slicers to filter by City and Garage status.
* **Improved Formatting**:
  + Used Merge & Center for titles.
  + Applied Cell Borders and background colors for clarity.

**6. Final Enhancements and Review**

* **Protected the Dashboard Sheet**:
  + Used Review → Protect Sheet to prevent accidental changes.
* **Tested Search Functionality**:
  + Verified VLOOKUP and INDEX-MATCH were working correctly.
* **Validated Pivot Table Data**:
  + Ensured AVERAGEIF formulas matched the pivot results.