

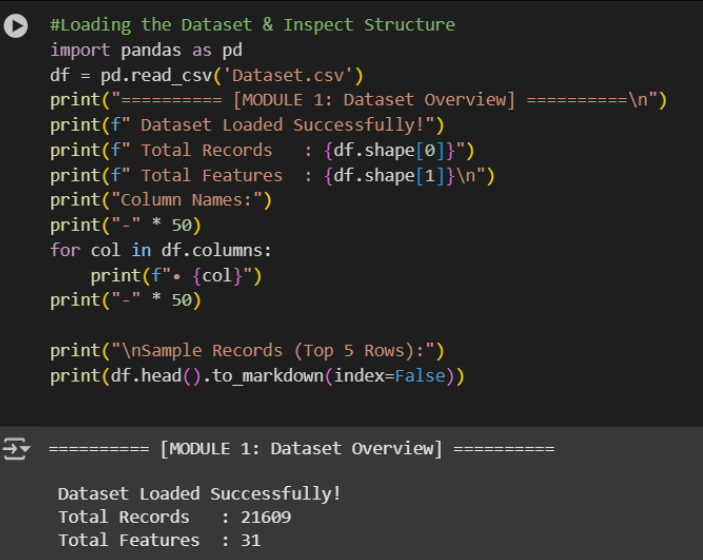
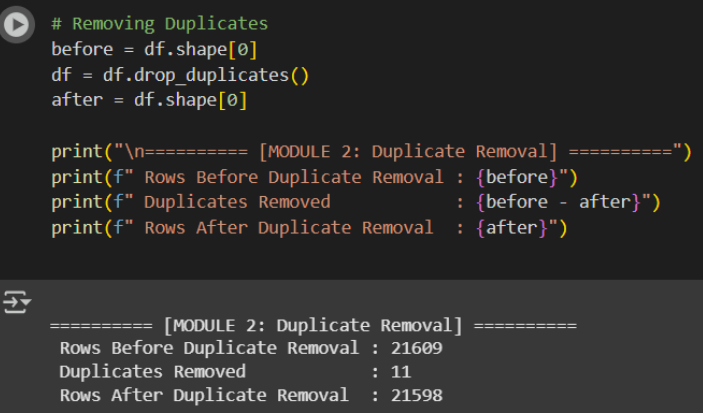
# Project Development Phase

## Model Performance Test

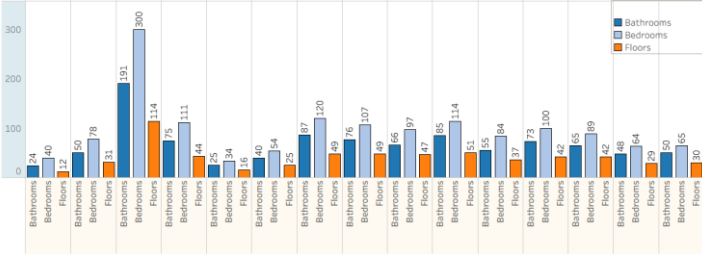
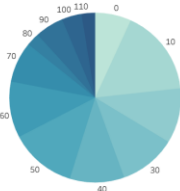

Date	29 June 2025
Team ID	LTVIP2025TMID50072
Project Name	Visualizing Housing Market Trends: An Analysis of Sale Prices and Features using Tableau
Maximum Marks	

### Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	 <pre> #Loading the Dataset &amp; Inspect Structure import pandas as pd df = pd.read_csv('Dataset.csv') print("===== [MODULE 1: Dataset Overview] =====\n") print(f" Dataset Loaded Successfully!") print(f" Total Records   : {df.shape[0]}") print(f" Total Features   : {df.shape[1]}\n") print("Column Names:") print("-" * 50) for col in df.columns:     print(f"• {col}") print("-" * 50)  print("\nSample Records (Top 5 Rows):") print(df.head().to_markdown(index=False)) </pre> <p>===== [MODULE 1: Dataset Overview] =====</p> <p>Dataset Loaded Successfully!  Total Records   : 21609  Total Features   : 31</p>
2.	Data Preprocessing	 <pre> # Removing Duplicates before = df.shape[0] df = df.drop_duplicates() after = df.shape[0]  print("\n===== [MODULE 2: Duplicate Removal] =====") print(f" Rows Before Duplicate Removal : {before}") print(f" Duplicates Removed           : {before - after}") print(f" Rows After Duplicate Removal  : {after}") </pre> <p>===== [MODULE 2: Duplicate Removal] =====</p> <p>Rows Before Duplicate Removal : 21609  Duplicates Removed           : 11  Rows After Duplicate Removal  : 21598</p>

		<div><pre># feature Engineering df['Total Area (in Sqft)'] = df['Flat Area (in Sqft)'] + df['Basement Area (in Sqft)'] df['House Age Group'] = pd.cut(df['Age of House (in Years)'],                                bins=[0, 10, 20, 30, 40, 100],                                labels=['0-10', '11-20', '21-30', '31-40', '40+'])  print("\n----- [MODULE 5: Feature Engineering] -----") print("■ New Features Added:") print("  • Total Area (in Sqft)") print("  • House Age Group\n")  print("Sample View of engineered Features:\n") print(df[['Flat Area (in Sqft)', 'Basement Area (in Sqft)',           'Total Area (in Sqft)', 'Age of House (in Years)',           'House Age Group']].head().to_markdown(index=False))</pre></div> <div><div>[MODULE 5: Feature Engineering]</div><div>■ New Features Added:<ul style="list-style-type: none"><li>• Total Area (in Sqft)</li><li>• House Age Group</li></ul></div><div>Sample View of Engineered Features:</div><table><tr><th>Flat Area (in Sqft)</th><th>Basement Area (in Sqft)</th><th>Total Area (in Sqft)</th><th>Age of House (in Years)</th><th>House Age Group</th></tr><tr><td>1180</td><td>0</td><td>1180</td><td>63</td><td>40+</td></tr><tr><td>2570</td><td>400</td><td>2970</td><td>67</td><td>40+</td></tr><tr><td>770</td><td>0</td><td>770</td><td>85</td><td>40+</td></tr><tr><td>1960</td><td>910</td><td>2870</td><td>53</td><td>40+</td></tr><tr><td>1680</td><td>0</td><td>1680</td><td>31</td><td>31-40</td></tr></table></div>	Flat Area (in Sqft)	Basement Area (in Sqft)	Total Area (in Sqft)	Age of House (in Years)	House Age Group	1180	0	1180	63	40+	2570	400	2970	67	40+	770	0	770	85	40+	1960	910	2870	53	40+	1680	0	1680	31	31-40
Flat Area (in Sqft)	Basement Area (in Sqft)	Total Area (in Sqft)	Age of House (in Years)	House Age Group																												
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3.	Utilization of Filters	<div><div><div><div>0</div><div>10</div><div>20</div><div>30</div><div>40</div><div>50</div><div>60</div><div>70</div><div>80</div><div>90</div><div>100</div><div>110</div></div></div><div><div><div><div>Bathrooms</div><div>Bedrooms</div><div>Floors</div></div><div><div>Years Since ...</div><div><div><input type="checkbox"/> 0</div><div><input checked="" type="checkbox"/> 1</div><div><input checked="" type="checkbox"/> 2</div><div><input checked="" type="checkbox"/> 3</div><div><input checked="" type="checkbox"/> 4</div><div><input checked="" type="checkbox"/> 5</div><div><input checked="" type="checkbox"/> 6</div></div></div></div></div></div>																														
4.	Calculation fields Used	<div><div><div><div>Number of Houses</div><div>1</div><div>The calculation is valid.3 Dependencies</div><div>ApplyOK</div></div><div><div>Renovation Status</div><div>IF [Years Since Renovation] &gt; 0 THEN "Renovated" ELSE "Not Renovated"END</div><div>The calculation is valid.</div><div>ApplyOK</div></div></div></div>																														
5.	Dashboard design	No of Visualizations / Graphs – 4																														

		<div><div>"Housing Data Insights: Market Metrics and Renovation Trends"</div><div><div>Residential Market Snapshot: Volume, Value &amp; Space</div><div><div>Area of the House from Basement (in Sqft)</div><div>115,931,394</div></div><div><div>Count of Transformed_Housing_Data</div><div>64,827</div></div><div><div>Avg. Sale_Price</div><div>511,619</div></div></div><div><div>Feature Trends by Years Since Renovation</div><div><div>Pivot Field Names</div><div><div><div><div></div><div>Bathrooms</div></div><div><div></div><div>Bedrooms</div></div><div><div></div><div>Floors</div></div></div></div></div><div><div>"Renovation Impact Analysis: Housing Age Groups and Sales Trends"</div><div><div>Pie Chart of House Age Groups Based on Renovation Status</div></div><div><div>Total Sales By Years Since Renovation</div><div>Sale_Price (bin)</div></div></div></div><tr><td>6</td><td>Story Design</td><td><div>No of Visualizations / Graphs – 1</div><div><div><div>The strong housing volume and substantial basement area reflect market depth, while the</div><div>Most older homes remain unrenovated, with newer age groups showing higher renovation</div><div>Homes renovated in the last 5 to 15 years contribute to the highest total sales, indicating</div><div>House age distribution is more influenced by the number of bathrooms compared to bedrooms</div></div><div><div>ABC Company – Housing Market KPIs</div><div><div>Number of Houses</div><div>64,827</div></div><div><div>Average Sale Price</div><div>\$511,619</div></div><div><div>Total Basement Area (Sqft)</div><div>18,897,945</div></div></div></div></td></tr></div>	6	Story Design	<div>No of Visualizations / Graphs – 1</div> <div><div><div>The strong housing volume and substantial basement area reflect market depth, while the</div><div>Most older homes remain unrenovated, with newer age groups showing higher renovation</div><div>Homes renovated in the last 5 to 15 years contribute to the highest total sales, indicating</div><div>House age distribution is more influenced by the number of bathrooms compared to bedrooms</div></div><div><div>ABC Company – Housing Market KPIs</div><div><div>Number of Houses</div><div>64,827</div></div><div><div>Average Sale Price</div><div>\$511,619</div></div><div><div>Total Basement Area (Sqft)</div><div>18,897,945</div></div></div></div>
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