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1  /* =====
2
3  SQL ANALYSIS PROJECT
4
5  Real Estate Transactions Dataset
6  Source: Dubai Land Department (United Arab Emirates)
7
8  Author: Hella Gyergyák
9  Date of Publication: 06-10-2025
10
11  Description:
12  SQL-based analysis of apartment sales in Dubai (Jan-Sep 2025).
13  Focus on pricing trends, transaction status, and area insights.
14  Includes two detailed tables for JVC to explore flat type
15  distribution and price vs size relationships.
16
17  SQL Flavour: Microsoft SQL Server
18
19  ===== */
20
21
22
23
24  -- =====
25  -- SECTION 1: Table Updates
26  -- =====
27
28  -- 1. Function to Convert Selected Text to Title Case
29
30  CREATE FUNCTION dbo.ToTitleCase (@text VARCHAR(200))
31  RETURNS VARCHAR(200)
32  AS
33  BEGIN
34      DECLARE @result VARCHAR(200) = LOWER(@text);
35      DECLARE @pos INT = 1;
36
37      WHILE @pos <= LEN(@result)
38      BEGIN
39          IF @pos = 1 OR SUBSTRING(@result, @pos - 1, 1) = ' '
40              SET @result = STUFF(
41                  @result,
42                  @pos,
43                  1,
44                  UPPER(SUBSTRING(@result, @pos, 1))
45              );
46          SET @pos = @pos + 1;
47      END
48
49      RETURN @result;
50  END;
51
52
53
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54 -- 2. Update Area Names in Original Table
55
56 UPDATE dldjansep2025.dbo.[transactions-2025-10-04]
57     SET AREA_EN = dbo.ToTitleCase(AREA_EN);
58
59
60
61 -- 3. Update Area Name of Island 2
62
63 UPDATE dldjansep2025.dbo.[transactions-2025-10-04]
64     SET AREA_EN = 'Jumeirah Island 2'
65     WHERE AREA_EN = 'Island 2';
66
67
68
69
70 -- =====
71 -- SECTION 2: Descriptive Analysis
72 -- =====
73
74 -- 1. Average Price Per Squermeter by Area and Status
75
76 SELECT
77     area_en AS area,
78     is_offplan_en AS status,
79     ROUND(AVG(trans_value),2) AS avg_price_AED,
80     ROUND(AVG(trans_value/ACTUAL_AREA),2) AS avg_psqm_AED,
81     COUNT (*) AS total_transactions
82 FROM dldjansep2025.dbo.[transactions-2025-10-04]
83 WHERE PROP_SB_TYPE_EN IN ('Flat')
84 GROUP BY area_en, is_offplan_en
85 ORDER BY area_en, is_offplan_en;
86
87
88
89 -- 2. Market Share of Off-Plan vs Ready Apartments
90
91 SELECT
92     area_en AS area,
93     is_offplan_en AS status,
94     COUNT (*) AS total_transactions,
95     CAST(COUNT(*) * 100.0 / SUM(COUNT(*)) OVER (PARTITION BY area_en)
96         AS decimal(5,2)) AS percent_share
97 FROM dldjansep2025.dbo.[transactions-2025-10-04]
98 WHERE prop_sb_type_en IN ('Flat')
99 GROUP BY area_en, is_offplan_en
100 ORDER BY area_en, percent_share DESC;
101
102
103 -- 3. Identify Hotspots for Off-Plan Pricing
104
105 SELECT

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106     area_en AS area,
107     COUNT (*) AS total_transactions,
108     ROUND(AVG(trans_value/actual_area),2) AS avg_psqm_AED
109 FROM dldjansep2025.dbo.[transactions-2025-10-04]
110 WHERE prop_sb_type_en IN ('Flat') AND
111        is_offplan_en = 'Off-Plan'
112 GROUP BY area_en
113 ORDER BY avg_psqm_AED DESC;
114
115
116
117 -- 4. Compute Price Gaps Between Off-Plan and Ready Properties by Areas
118
119 WITH area_prices AS (
120 SELECT
121     area_en,
122     is_offplan_en,
123     ROUND(AVG(trans_value/ACTUAL_AREA),2) AS avg_psqm
124 FROM dldjansep2025.dbo.[transactions-2025-10-04]
125 WHERE prop_sb_type_en IN ('Flat')
126 GROUP BY area_en, is_offplan_en
127 )
128
129 SELECT
130     a.area_en AS area,
131     a.avg_psqm AS offplan_psqm_AED,
132     b.avg_psqm AS ready_psqm_AED,
133     (a.avg_psqm - b.avg_psqm) AS price_gap_AED
134 FROM area_prices AS a
135 JOIN area_prices AS b
136 ON a.area_en = b.area_en
137 AND a.is_offplan_en = 'Off-Plan'
138 AND b.is_offplan_en = 'Ready'
139 ORDER BY price_gap_AED DESC;
140
141
142
143
144 -- =====
145 -- SECTION 3: Ranking Insights and Trends
146 -- =====
147
148 -- 1. Ranking Based on Average Price Per Squermeter
149
150 WITH area_avg AS (
151     SELECT
152         area_en,
153         ROUND(AVG(trans_value / actual_area), 2) AS avg_psqm_AED
154     FROM dldjansep2025.dbo.[transactions-2025-10-04]
155     WHERE prop_sb_type_en = 'Flat'
156     GROUP BY area_en
157 )
158 SELECT

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159     area_en,
160     avg_psqm_AED,
161     RANK() OVER (ORDER BY avg_psqm_AED DESC) AS price_rank
162 FROM area_avg
163 ORDER BY price_rank;
164
165
166
167 -- 2. Ranking Based Transaction Volume per Status (Off-Plan, Ready)
168 --     Listing the Top 10 Areas
169
170 WITH area_volume AS (
171     SELECT
172         area_en AS area,
173         is_offplan_en AS status,
174         COUNT(*) AS transactions
175     FROM dldjansep2025.dbo.[transactions-2025-10-04]
176     GROUP BY area_en, is_offplan_en
177 ),
178 ranked AS (
179     SELECT
180         area,
181         status,
182         transactions,
183         RANK() OVER (PARTITION BY status ORDER BY transactions DESC)
184             AS volume_rank
185     FROM area_volume
186 )
187 SELECT
188     area,
189     status,
190     transactions,
191     volume_rank
192 FROM ranked
193 WHERE volume_rank <= 10
194 ORDER BY status, volume_rank;
195
196
197 -- 3. Monthly Price Trends per Area
198
199 SELECT
200     area_en AS area,
201     is_offplan_en AS status,
202     LEFT(instance_date, 7) AS transaction_month,
203     ROUND(AVG(trans_value / actual_area), 2) AS avg_psqm_AED
204 FROM dldjansep2025.dbo.[transactions-2025-10-04]
205 GROUP BY area_en, is_offplan_en, LEFT(instance_date, 7)
206 ORDER BY area_en, transaction_month, is_offplan_en;
207
208
209
210
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211 -- =====
212 -- SECTION 4: JVC Area Analysis
213 -- =====
214
215 -- 1. Exploreing Apartment Type Distribution
216
217 SELECT
218     rooms_en AS type,
219     ROUND(AVG(actual_area), 2) AS avg_size,
220     ROUND(AVG(trans_value), 2) AS avg_price_AED,
221     ROUND(AVG(trans_value / actual_area), 2) AS avg_psqm_AED,
222     COUNT(*) AS total,
223     CAST(COUNT(*) * 100.0 / SUM(COUNT(*)) OVER () AS decimal (5,2)) AS percent_share
224 FROM dldjansep2025.dbo.[transactions-2025-10-04]
225 WHERE prop_sb_type_en = 'Flat'
226     AND is_offplan_en = 'Off-Plan'
227 AND area_en = 'JUMEIRAH VILLAGE CIRCLE'
228 AND rooms_en IS NOT NULL
229 GROUP BY rooms_en
230 ORDER BY avg_size;
231
232
233
234 -- 2. Exploreing Apartment Price vs Size Relationships
235
236 WITH room_stats AS (
237     SELECT
238         rooms_en,
239         ROUND(AVG(actual_area), 2) AS avg_size,
240         ROUND(AVG(trans_value), 2) AS avg_price_AED
241     FROM dldjansep2025.dbo.[transactions-2025-10-04]
242     WHERE prop_sb_type_en = 'Flat'
243         AND area_en = 'JUMEIRAH VILLAGE CIRCLE'
244         AND rooms_en IS NOT NULL
245     GROUP BY rooms_en
246 )
247 SELECT
248     rooms_en AS type,
249     avg_size,
250     LAG(avg_size) OVER (ORDER BY avg_size) AS prev_avg_size,
251     avg_price_AED,
252     LAG(avg_price_AED) OVER (ORDER BY avg_price_AED) AS prev_avg_price_AED,
253     ROUND(avg_size / NULLIF(LAG(avg_size) OVER (ORDER BY avg_size), 0), 2) AS size_gain,
254     ROUND(avg_price_AED / NULLIF(LAG(avg_price_AED) OVER (ORDER BY avg_price_AED), 0), 2) AS price_increase
255 FROM room_stats
256 ORDER BY avg_size;
257

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