Dubai Real Estate Market Analysis

- **Course Code & Name**: *CS3250 Data Visualization Using Tableau*
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- **Date**: *20th May 2025*

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Problem Statement: *Identify key factors influencing property prices and active transaction zones to guide strategic investments.*

I. **Why is this topic relevant?**
   A. *Dubai's real estate market is a global investment hub. Understanding price drivers and transaction hotspots helps investors, developers, and policymakers make data-driven decisions.*

II. **What is the dataset about?**
   A. *Transactional data (2003–2024) on Dubai property prices, locations, room types, and landmarks.*

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1. Analyze the impact of **proximity to malls/landmarks** on prices.

2. Evaluate r**oom type preferences** and their correlation with property value.

3. Identify **high-transaction zones** and long-term price trends.

Source: [*dubipulse.gov.ae*](dubipulse.gov.ae)

❖ **Key Features**:
   ➢ *Nearest Mall, Landmarks, Rooms, Actual Worth (AED), Meter Sale Price (AED/sqm), Area Name.*
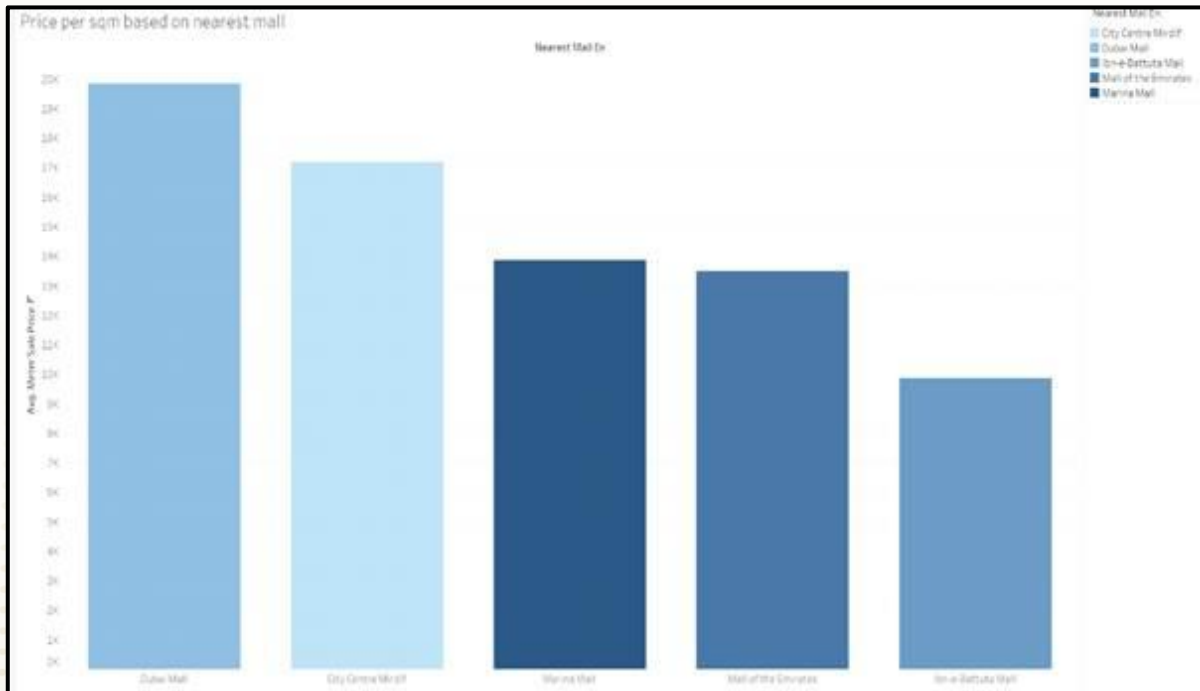
❖ **Timeframe**:
   ➢ 2003–2024.

1. **Data Filtering:**
   - *Retained **residential sales data only** (excluded leases, commercial properties).*
   - *Kept property types with consistent records (e.g., removed ambiguous entries like villas with incomplete data).*
2. **Column & Row Pruning:**
   - *Dropped sparse columns:*
     - *Limited "Area Name" and "Master Project Name" to **top 50 values** (by transaction volume).*
     - *Consolidated room types into **1BHK, 2BHK, 3BHK, Studio***
3. **Outlier Handling:**
   - *Applied **z-score filtering** (threshold <3) on "Meter Sale Price" to remove extreme outliers.*
4. **Null Value Management:**
   - *Dropped rows with nulls in critical columns (e.g., price, area name) as the dataset was sufficiently large.*
5. **Synthetic Dataset Creation:**
   - *Generated **latitude/longitude coordinates** for areas and malls externally.*
   - *Joined these coordinates with the main dataset in Tableau using **"Area Name"** and **"Nearest Mall"** as keys.*

Key Insights & Analysis

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## Question 1: Proximity to Major Malls & Property Prices

Key Insight:

- **Dubai Mall** commands the highest price per sqm (20K AED/sqm), driven by its status as a global landmark and tourist hotspot.

- **Takeaway**:
  - Proximity to iconic malls correlates with premium property valuations.
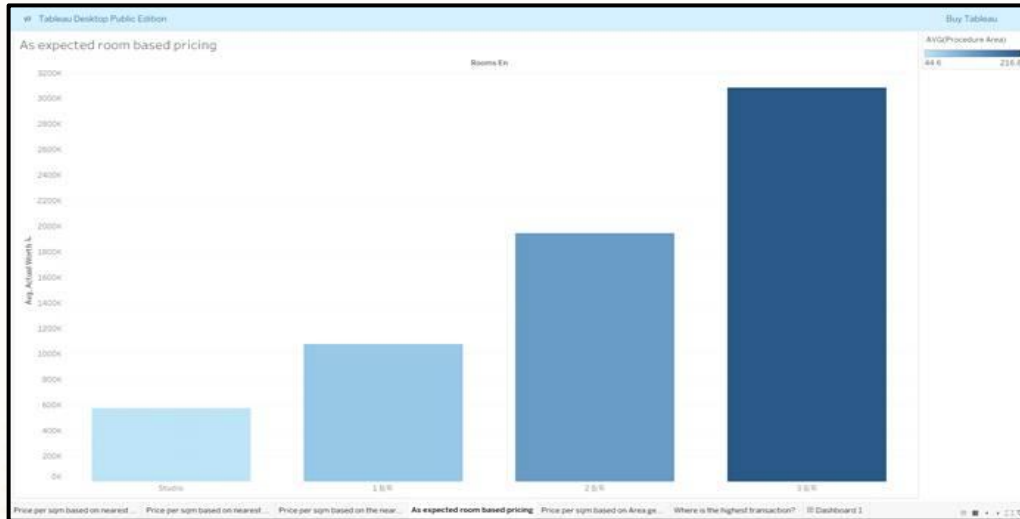
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Question 2: Landmarks & Price Premiums
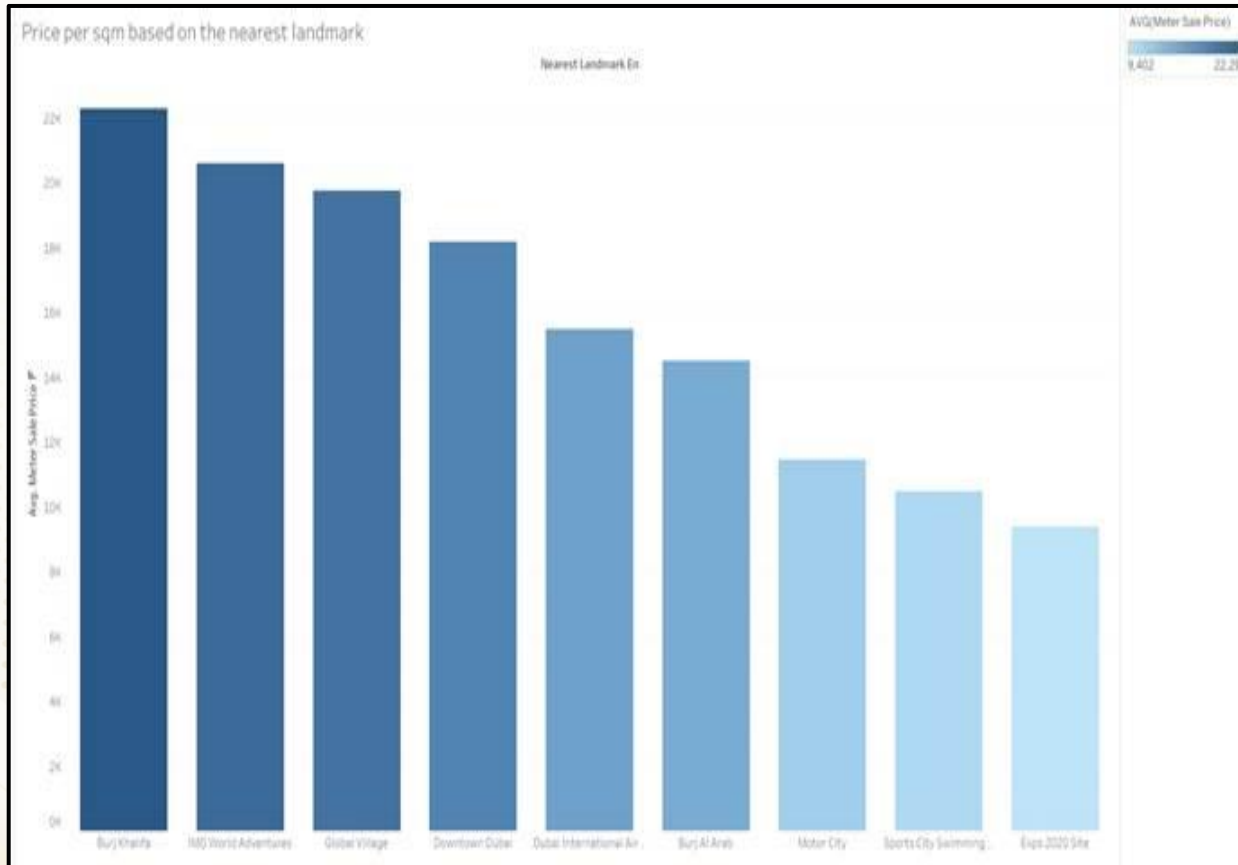
- ○ **Key Insight**:

  - ■ **Burj Khalifa** areas have the highest premium, followed by IMG Worlds and Global Village.
  - ■ **Takeaway**:
    - ● Landmark proximity directly influences real estate desirability and pricing.
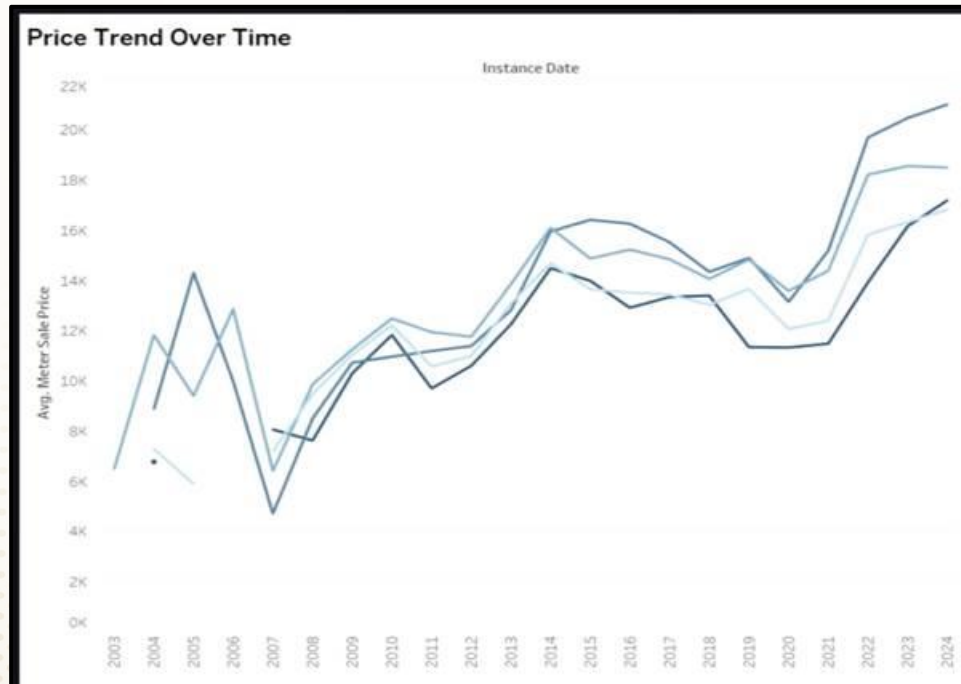
Question 3: Room Type vs. Property Value

- ○ **Key Insight**:

    - ■ **Charts used:** Bar chart and Bubble chart
    - ■ **3B/R units** yield the highest average worth (3M AED), while studios lag behind.

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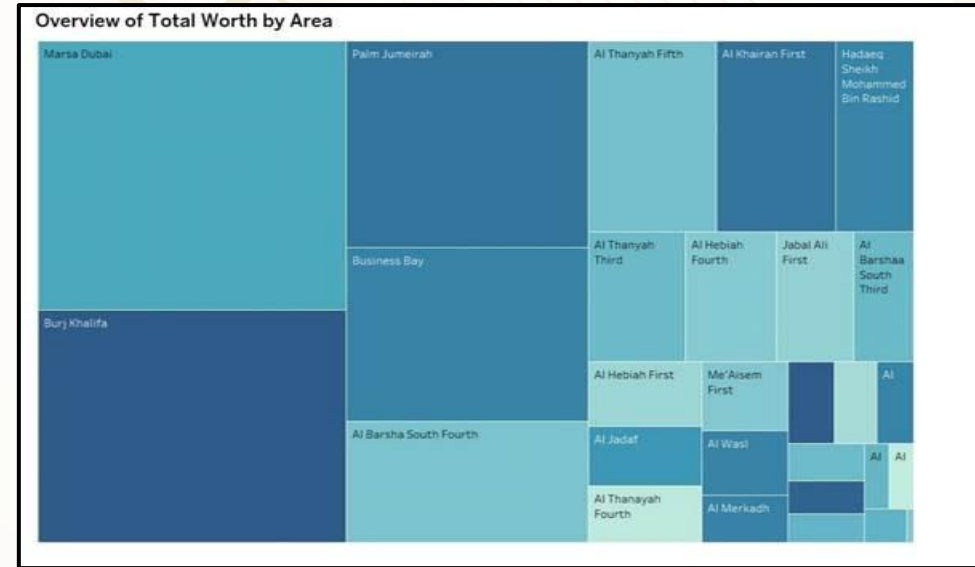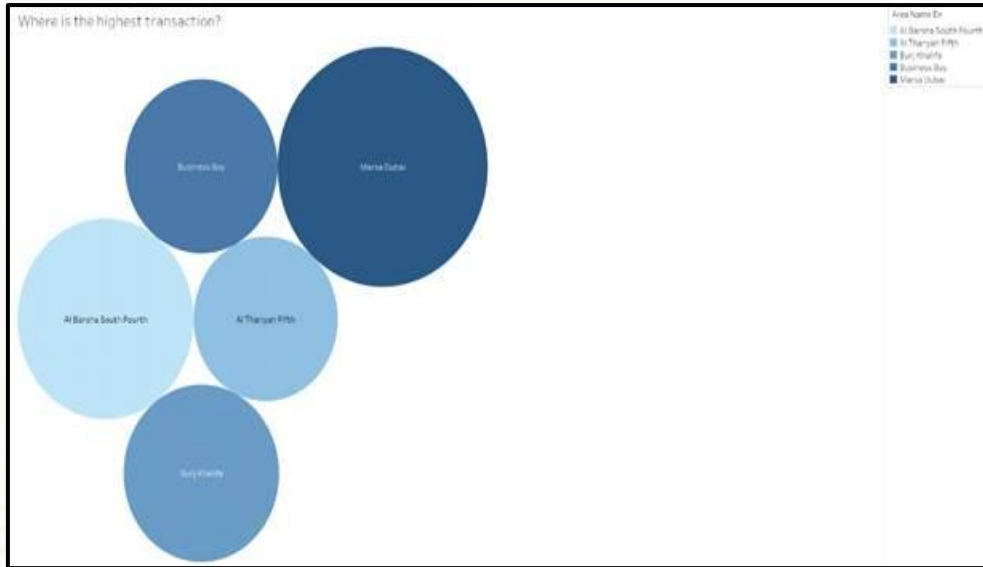*an initiative of RV EDUCATIONAL INSTITUTIONS*

Property time series By Room Type:

- ○ **Key Insight**:

  - ■ **3 B/R (Dark Teal):** Most desirable; prices surged post-2020 due to demand for bigger spaces.

  - ■ **2 B/R (Mid Teal):** Steady growth; strong mid-range investment.

  - ■ **1 B/R (Light Teal):** Low volatility; safe pick for first-time buyers.

 - ■ **Studio (Dark Blue):** Most volatile; sharp ups and downs over time.

Question 4: Transaction Hotspots

- ○ **Key Insight**:

    - ■ **Marsa Dubai** and **Business Bay** are top zones for transaction volume.
    - ■ **Takeaway**:
        - ● High liquidity in these zones signals strong investor confidence and development activity.

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Question 5: Price Trends Over Time (2003–2024)
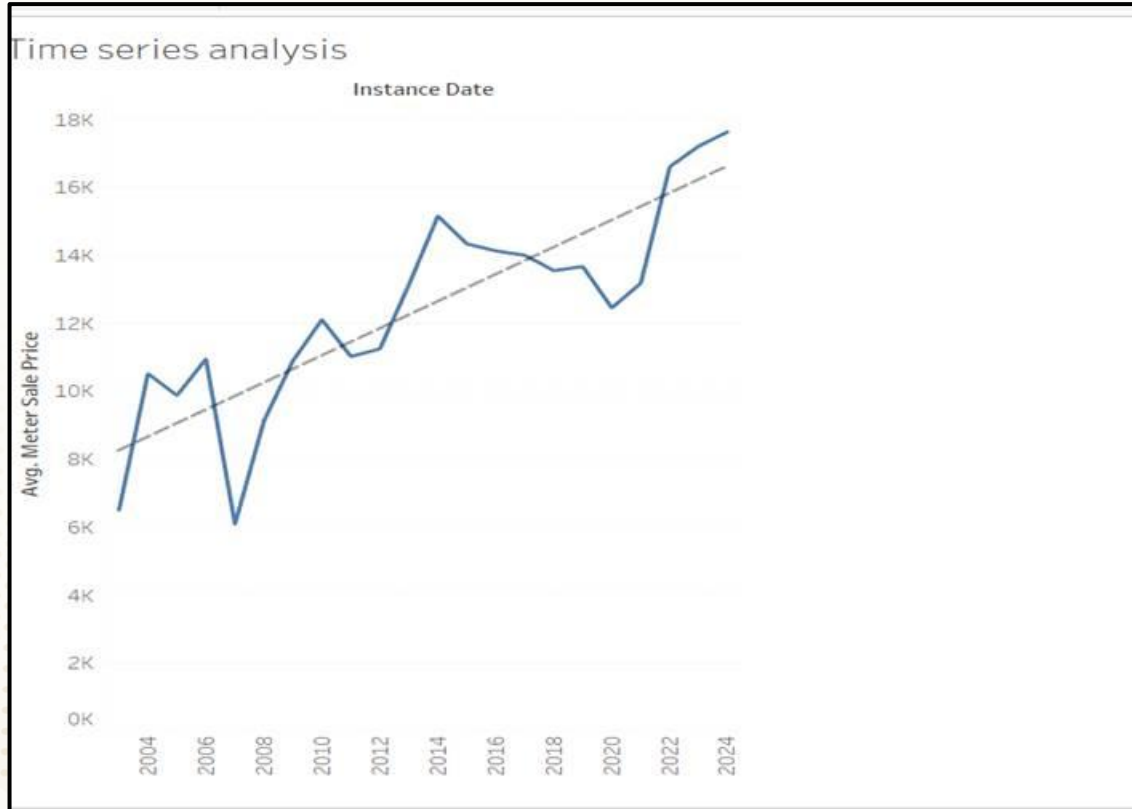
Key Insight:

- ■ Long-term growth despite crises:
    - ● **2008 crash**: Prices fell to 8K AED/sqm.
    - ● **Post-2020 recovery**: Prices surged past 20K AED/sqm (Expo 2020, post-pandemic demand).
- ■ **Takeaway**:
    - ● Dubai's market exhibits resilience and long-term capital appreciation.

1. **Price Drivers**:
   ○ Proximity to **Dubai Mall** (highest price/sq.m at ˜20K AED) and **Burj Khalifa** significantly elevates property values.
   ○ Landmarks and tourist attractions create premium pricing zones.

2. **Transaction Hotspots**:
   ○ **Marsa Dubai** and **Business Bay** dominate transaction volumes, indicating high liquidity and investor confidence.

3. **Long-Term Trends**:

   Steady recovery post-2008 crisis, with exponential

   growth post-2020 (Expo 2020, pandemic recovery).

➔ *Dubai's real estate market rewards investments in **landmark-adjacent properties**, **mid-to-large residential units**, and **high-transaction zones**.*
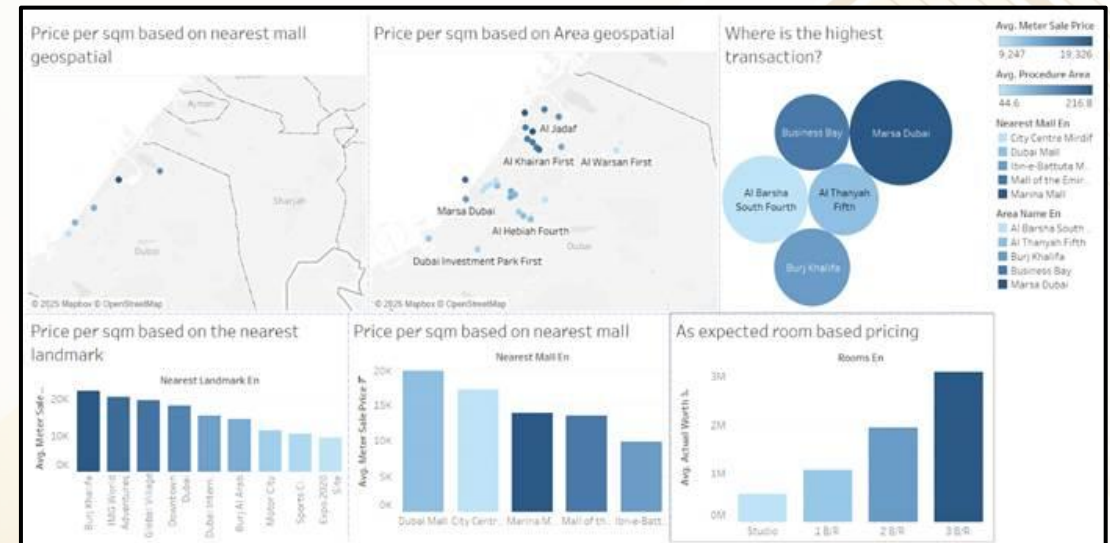
References & Acknowledgements

- **Data Source**: Dubai Government Open Data Portal.

- **Tools**: Tableau Public, Python (Jupyter Notebook).

- **Faculty**: Dr. Amruthesh Bhat, RV University.