

## EDA Project: King County Housing Dataset

**Dataset link:** [King County Housing Data \(Kaggle\)](#)

You are analysts at **ABC Real Estate**. Your job is to study the housing market and **advise your client** (one of the scenarios below). Each group will represent a client with unique needs.

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### Your Tasks

1. **Perform Exploratory Data Analysis (EDA):** Explore, clean, and visualize the dataset.
  2. **Answer the Big Questions:**
    - What are the current market patterns?
    - When is the best time to buy or sell?
    - Which property types or locations fit your client's needs?
  3. **Client-Specific Recommendations:** Tailor your insights to your assigned group scenario (see below).
  4. **Prepare a Story-Driven Presentation:**
    - Use a clear **What / Why / When** structure:
      - *What:* Describe the property options.
      - *Why:* Explain why they fit your client's lifestyle/needs.
      - *When:* Suggest the best timing to buy or sell.
    - Keep the flow easy to follow, like a real estate pitch.
    - Add **charts, maps, and visuals** (histograms, scatter plots, heatmaps, timelines) to make your case convincing.
    - Keep it simple enough for a non-technical client to understand.
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### Client Scenarios

#### **Group 1 – The Practical Family Buyer**

- Situation: One partner recently got laid off, but they have decent savings.
  - Family: Spouse + 2 kids (school-going).
  - Needs:
    - Affordable, **family-friendly home**.
    - Good schools nearby, safe neighborhood.
    - Comfortable but not flashy.
  - Task: Recommend **budget-friendly mid-sized homes** and timing. Visualize price trends vs. size and location.
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### Group 2 – The Underground Investor

- Situation: Mafia client wants **multiple discreet properties** on the outskirts.
  - Needs:
    - Buy 4–5 properties at once.
    - **Basement required** (for “storage”).
    - Not flashy; prefer low attention.
  - Task: Identify **clusters of affordable homes with basements**. Show market potential using maps, cluster plots, and comparative charts.
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### Group 3 – The Millionaire Socialite

- Situation: A wealthy client who loves prestige.
  - Needs:
    - **Lavish waterfront bungalow**.
    - Prime location for status.
    - Space to host large parties.
  - Task: Showcase luxury listings. Use visuals like boxplots for price vs. waterfront, and maps showing premium clusters. Recommend the best time to buy.
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#### Group 4 – The Young Tech Couple

- Situation: Newly married, both work in **tech**.
  - Needs:
    - Modern condo/apartment near city/tech hubs.
    - Amenities like gym, pool, parking.
  - Task: Highlight urban listings near city center. Use geospatial plots + price vs. distance charts. Suggest whether to buy now or wait.
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#### Group 5 – The Retired Couple

- Situation: Elderly couple looking for **peaceful retirement home**.
  - Needs:
    - Smaller, cozy home with low maintenance.
    - Quiet neighborhood, **near healthcare facilities**.
    - Prefer single floor (no stairs).
  - Task: Find calm, affordable locations. Visualize price vs. square footage to recommend manageable options.
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#### Group 6 – The Startup Investor

- Situation: Young entrepreneur building a **rental portfolio**.
  - Needs:
    - Multi-family homes or duplexes.
    - High rental yield in developing areas.
  - Task: Analyze demand for rentals. Use time series (price vs. year) and location maps to identify good deals. Suggest future growth areas.
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#### Presentation Guidelines

- **Length:** 8–10 minutes per group.

- **Structure:**

1. Introduce the client (tell their “story”).
2. Show your EDA insights (charts/plots/maps).
3. Explain **what** properties you recommend, **why** they are suitable, and **when** is the right time to act.
4. End with a short “**pitch**” **slide** to convince the client.

- **Tips:**

- Use visuals over text-heavy slides.
- Keep explanations client-friendly (no jargon).
- Tell a story: *data* → *insights* → *decision* → *action*.