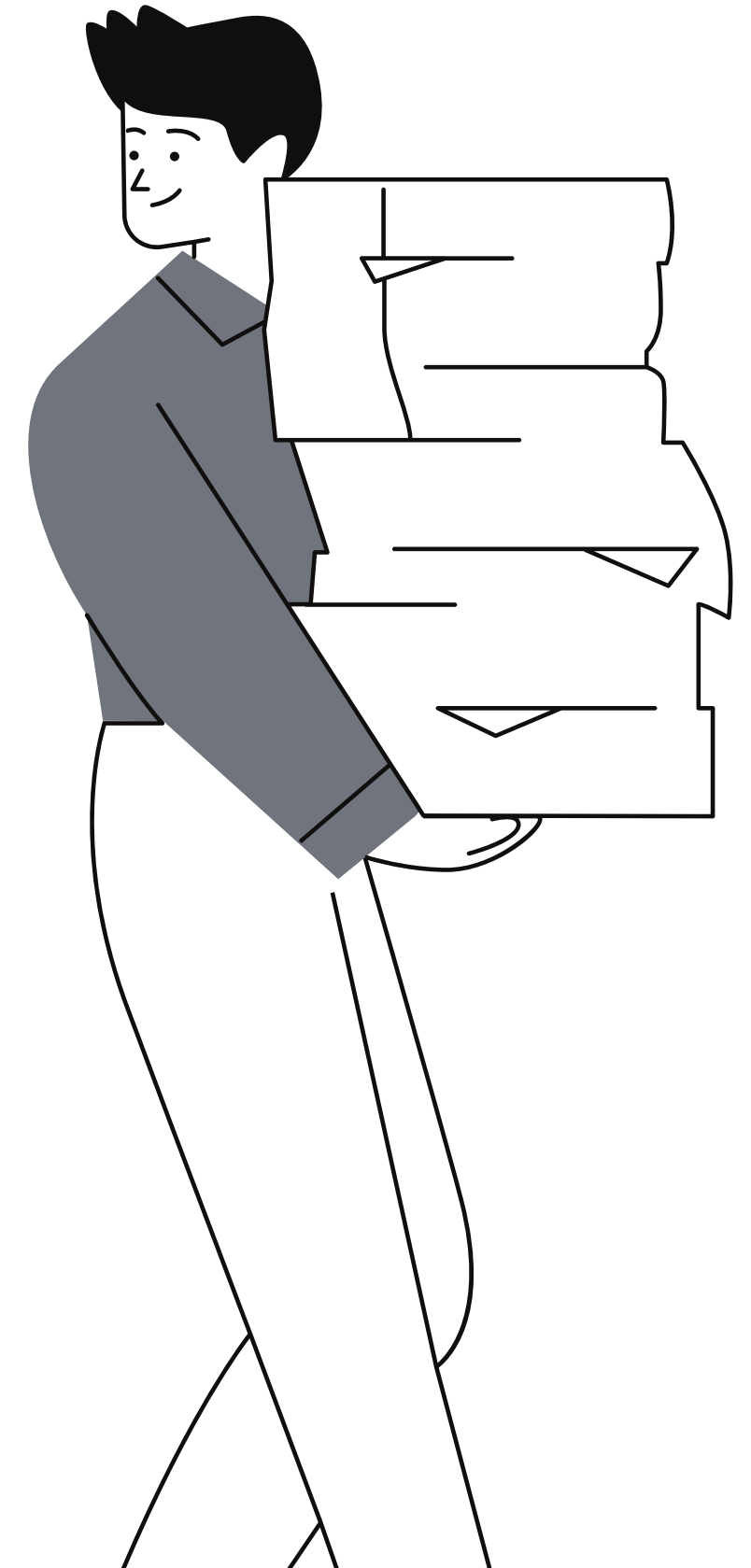


# Data Science

by Group 4  
Grey Hats

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Property Market  
Valuation



# Introduction

## Problem Statement

- **What is the problem we are trying to address?**

Even though, Real Estate Market is one of the biggest sectors in Pakistan, there is a wide variation in value of properties (with the same general amenities) across the country, which makes it difficult for buyers and sellers to evaluate true market value of a property?

- **Which dataset are you using? And why?**

We are using Zameen.com dataset because Zameen.com portal has the most recent and largest property dataset with detailed attributes.

- **What is the basic shape and structure of the dataset? (i.e., size, key fields, etc)**

The key fields include:

1. Property Type
2. Price
3. Location
4. City, Province
5. Features (bedrooms, baths, Agency & Agent)
6. Area (Size of the Property)
7. Purpose (Sale/Rent)

19 Columns

168,446 rows

# Scope of the Project

Key areas of focus for our project

What key questions do you aim to answer using the dataset?

**Below are expected questions to answer:**

1. **Which amenities are most likely to increase the value or rent of a property?**
2. **Is the price per square foot greater for apartments than houses in the same block?**
3. **Which Cities compared with each other are more expensive or cheaper when it comes to either renting or buying a house in those cities?**
4. What is the monthly/quarterly trend Analysis of the property prices?
5. What is the benefit of hiring Agency/Agent on both Sale and Rental Value?
6. What is the relationship between all the variables in the property market? And which factors are the most significant?
7. What is the average selling price and average rentals for cities and areas within cities?
8. What is the median market value per square feet for different cities?

Comparison  
between  
cities

Horizontal  
Trend  
Analysis

Difference  
in Sale and  
Rental

Relationship  
between the  
attributes

Market  
Value per  
sq feet

Visualisation  
of key  
patterns

# Procedures

What is the division of tasks among the group members?

1

- **Data Design (EDA): All Members**

1. Data Collection
2. Data Cleaning

2

- **Data Modeling & Machine Learning: Hammad & Arham**

1. Machine Learning Techniques
2. Predictions

3

- **Model evaluation: All Members**

1. Prediction error
2. Data Visualisation
3. Communication

4

- **Context: All members**

1. Conclusions
2. Answers to our Questions
3. Significance of Attributes
4. Causal Relationships etc.