Using Housing Data to Analyze Neighborhood Quality

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June 9, 2025

1 Project Kickoff

Goals

- Analyze the impact of proximity to amenities on sale prices.
- Examine the effects of property characteristics on market value.
- Investigate age-related depreciation trends in property pricing.
- Explore seasonal patterns in property sales.

Scope

This project investigates the key factors influencing property prices in the Miami real estate market, focusing on elements such as proximity to amenities, property characteristics, age-related depreciation, and seasonal trends. Using an extensive dataset with 13,932 property listings, we aim to analyze how factors like proximity to the ocean, highways, and the city center impacts sale prices. Additionally, the project examines how property attributes such as living area, land size, and structural quality influence market value. By exploring age-related depreciation trends, we assess how the age of a property contributes to its valuation. The study also identifies seasonal patterns in property sales. The goal is to provide actionable insights to homebuyers, real estate professionals, and policymakers, enabling them to make informed decisions in the dynamic Miami real estate market.

Deliverables and Milestones

- Milestone 1: Data Cleaning and Preprocessing
- Milestone 2: Exploratory Data Analysis and Visualizations for first two features
- Milestone 3: Exploratory Data Analysis and Visualizations for next two features
- Milestone 4: Creating the user interface to display results
- Milestone 5: PDF Report and Presentation

Timeline and Dataset

- Timeline: Each milestone represents approximately 1 week.
- Dataset: https://www.kaggle.com/datasets/deepcontractor/miami-housing-dataset

Team Readiness

- The team has strong coding, analysis, and visualization experience in Python.
- The team is not very well versed in LaTeX documentation, but that will be addressed through ongoing collaboration.

2 Team Discussions

Team Skills and Roles

- **Esha Chiplunkar** – Data Analysis, Report Writing, Features 1 and 2
- **Ishan Chotalia** – Visualizations, Report writing, GitHub management, Features 3 and 4

Skill Gaps

- Forecasting techniques in Python (to be addressed mid-project)
- Limited exposure to collaborative Overleaf workflows

Languages and Platforms

- Python (Google Colab)
- LaTeX (Overleaf)
- Git (GitHub for version control)

3 Skills and Tools Assessment

Tools and Frameworks

- Python: Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn
- Google Colab
- Overleaf for PDF report writing

External Resources

- Kaggle documentation for similar EDA tasks

Task Assignment and Role Clarity

- Each team member owns two features and its analysis.
- Shared project excel tracker file used for task tracking and updates

4 Submission for This Iteration

Completed Tasks

- Loaded and cleaned Kaggle dataset
- Updated Excel file tracker – included in the submission as `Project_Tracker.xlsx`