The Ohio State University

Predicting House Prices in Ames, Iowa

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Data Analytics Final Project
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Rationale

1. The data retrieved from kaggle was clean to work with for our intended project.
2. The data retrieved from kaggle seemed manageable for principal component analysis.

Description of Data

- 81 columns of homes features.
- 1460 rows.
- Half of the data was categorical and the other half, numerical.

Research Questions

01 To what extent does the machine learning model predict house prices in Iowa.

02 How accurate are the different linear regression models?

Description of the Data Exploration Phase

1. Database - PostgreSQL was used for the database. We used Google Colab, pandas and pySpark to explore the data, extract, transform, and load into the database. The database was created using AWS, RDS.
2. We used pgAdmin to create the table schema in RDS.
3. Used Spark on Colab to clean and transform the data.
4. Loaded the data from Pandas DataFrames into RDS.

Description of the Analysis Phase

- Linear Regression
- Chi-Square test
- Simple imputation & KNN method (this was the most accurate after comparing the two methods)
- Principal Component Analysis

Technologies, Languages, Tools, and Algorithms Used

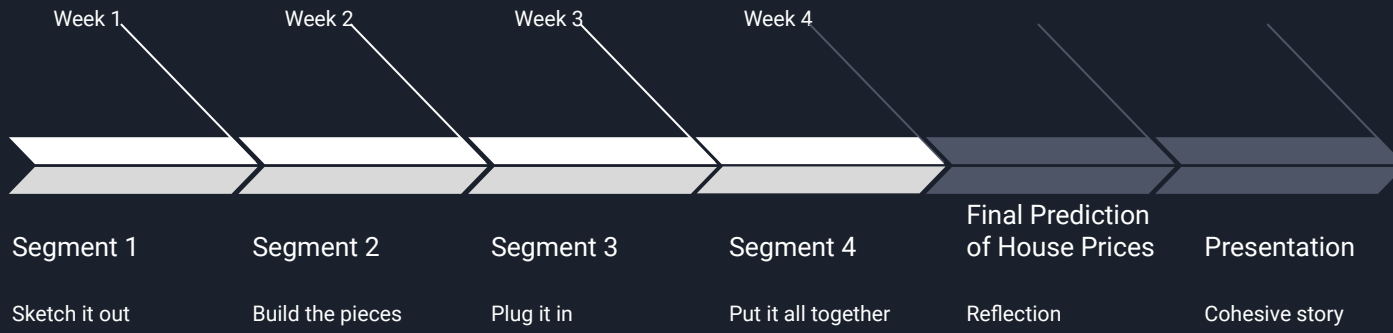
AWS	S3	Spark	Pandas
RDS	Scipy	Sklearn.impute	Python
Seaborn	Pyspark	Google collab	PostgreSQL
Numpy	Scipy.stats	Google Slides	

Results of Analysis

Recommendation for Future Analysis

Anything the Team Would Have Done Differently

Project timeline



Description of the tool(s) that will be used to create the final dashboard

Description of interactive element(s)

References

Dean De Cock (2022). House prices - Advanced Regression techniques. *Kaggle*. Retrieved from https://www.kaggle.com/competitions/house-prices-advanced-regression-techniques/data

Thank you!