## Project Title

Real Estate Sales/Rentals in Perth, Australia

## Team Members

Aaron Bilbow

Athira Reji

## Zonia Quiroga

## Project Description/Outline

The project aims to analyse the housing price trends in Perth, Australia. Identify areas of high and low property values. Identify key factors in the suburb sale price growth. Understand whether factors including location, floor area, number of bedrooms, number of bathrooms, proximity to schooling or transport infrastructure/development and other amenities have any influence on the housing prices. The research will reveal the relative significance of different attributes and their combined impact on property values.

## Research Questions to Answer

Investigate how variables such as location, property characteristics, and economic indicators impact housing prices in Perth, Australia.

Subquestions:

1. Does the cost of homes in Perth depend on its proximity to the central business district?
2. Does house characteristics including floor area, number of bedrooms, number of bathrooms, proximity to schooling or transport infrastructure/development have any influence on the housing prices?
3. Are house costs and the quality of the neighbourhood schools correlated? Examine if homes that are close to schools tend to sell for more money.
4. Does the cost of homes in Perth depend on its closeness to public transit (such as railway stations and bus stops)? Investigate if houses close to points of public transportation tend to be more expensive than those further away.

## Datasets to Be Used

All data will be based on the CSV data generated from:

* [Perth House Prices | Kaggle](https://www.kaggle.com/datasets/syuzai/perth-house-prices)

## Rough Breakdown of Tasks

* Data Collection: Gather historical real estate sales data from the above-mentioned CSV file.
* Data Processing: Clean, normalize, and organize the collected data for consistency and accuracy.
* Exploratory Data Analysis: Visualize and analyze the distribution of housing prices across different neighbourhoods in Perth. Explore the relationships between housing prices and individual variables such as property size, number of bedrooms, and proximity to amenities.
* Visualization: Create clear and informative visualizations, such as graphs, charts, and maps, to illustrate sales trends and comparisons.
* Documentation: Prepare a comprehensive report summarizing the analysis findings, and recommendations.
* Insights Generation: Derive actionable insights from the analysis to provide recommendations for buyers, sellers, and investors.

# Real Estate Sales/Rentals in Perth, Australia

## Project Overview:

* Median house sale price for 10km, 20km, 30km 40, 50+km radius from Perth
* Median unit/townhouse price for 10km, 20km, 30km 40, 50+km radius from Perth
* Median rental price house 10km, 20km, 30km 40, 50+km radius from Perth
* Median unit/townhouse price for 10km, 20km, 30km 40, 50+km radius from Perth
* Median prices per bedroom/bathroom 10km, 20km, 30km 40, 50+km radius from Perth
* Median price comparing schools 10km, 20km, 30km 40, 50+km radius from Perth
* Median price comparing Train Stations 10km, 20km, 30km 40, 50+km radius from Perth

All data will be based off the CSV data generated from:

* [Perth House Prices | Kaggle](https://www.kaggle.com/datasets/syuzai/perth-house-prices)

## Scope:

* Data Collection: Gather historical real estate sales data from the above mentioned CSV file.
* Data Processing: Clean, normalize, and organize the collected data for consistency and accuracy.
* Sales Trends Analysis: Conduct an in-depth analysis of sales trends over the 20+yr timeframe in the CSV file
* School Comparison: Compare sales data among different school areas, identifying variations in average sale prices, property types, and market growth.
* Visualization: Create clear and informative visualizations, such as graphs, charts, and maps, to illustrate sales trends and comparisons.
* Key Drivers: Identify key factors in the suburb sale price growth, is it schooling or transport infrastructure development.
* Insights Generation: Derive actionable insights from the analysis to provide recommendations for buyers, sellers, and investors.
* Documentation: Prepare a comprehensive report summarizing the analysis findings, and recommendations.

## Deliverables:

* Cleaned and organized real estate sales dataset.
* Detailed analysis report with sales trends and city comparisons.
* Visualizations presenting key findings and trends.
* Recommendations for potential buyers, sellers, and investors.
* Documentation outlining data sources and analysis methodologies.