

## **Building Prices Prediction Model**

### ***Introduction:***

The proposed project, titled "Predicting Building Prices," seeks to address a pressing issue within the Lagos real estate market. This project is pivotal as it aims to provide an AI-driven solution for precisely predicting building prices. By doing so, it empowers buyers, sellers, and real estate professionals with data-driven insights to make informed decisions.

### ***Problem Description:***

The primary challenge at hand is the unpredictable nature of building prices in Lagos, Nigeria. The real estate market is subject to various factors, making it arduous for stakeholders to accurately estimate property values. As Ayodele and Olaleye (2022) emphasized, this complexity makes precise predictions a formidable task.

### ***Existing Solution:***

Currently, there is no comprehensive AI-based solution tailored for predicting building prices in Lagos. Traditional methods, including manual appraisal and historical data analysis, fall short in providing the accuracy and efficiency that AI can offer. Our proposed project represents an innovative approach to addressing this issue.

### ***Proposed Method:***

Our project follows the established Data Science/Machine Learning (DS/ML) pipeline, including Data Sourcing, Data Cleaning and Preparation, ML Model Development, Model Evaluation, and Model Deployment.

#### **1. Data Sourcing:**

- Collect historical building price data from the Kaggle Housing Prices in Lagos, Nigeria dataset, which includes comprehensive information on location, size, features, and past sale prices ([Kaggle Housing Prices in Lagos, Nigeria Dataset](#)).

#### **2. Data Cleaning and Prep:**

- Rigorously clean, format, and preprocess the dataset to ensure its suitability for model training.

#### **3. ML Model Development:**

- Utilize a range of machine learning algorithms, including linear regression, decision trees, and neural networks. The choice of these algorithms is based on their suitability for capturing the complex relationship between property features and market dynamics in Lagos.

#### **4. Model Evaluation:**

- Assess the model's accuracy, reliability, and overall effectiveness. Metrics like mean squared error and R-squared will be employed to determine the most suitable algorithm (Brown & Green, 2020).

## 5. Model Deployment:

### *Proposed Split:*

Our team is dedicated to the successful execution of this project, with each member assigned to a specific role:

- **Data Cleaning and Prep sub-team:** Joanna & Olaniyi
- **Model sub-team:** Peter & Elisha
- **Model Deployment sub-team:** The whole team

### *Proposed Timeline:*

We anticipate allocating the following timeframes for each component of our proposed method:

- **Data Sourcing: 1 week**
- **Data Cleaning and Prep: 2 weeks**
- **ML Model Development: 2 weeks**
- **Model Evaluation: 1 week**
- **Model Deployment: 2 weeks**

### *Conclusion:*

The "Predicting Building Price" project holds immense potential to revolutionize the real estate sector in Lagos. By providing accurate price predictions, we empower stakeholders to make informed decisions, leading to more efficient property transactions. Furthermore, this project lays the foundation for future enhancements and extensions, potentially extending its applications to other real estate markets.

### *Team Members:*

- Babalola Elisha
- Oluwapelumi Olaniyi
- Peter Oni
- Joanna

### **Team Instructor:**

- Emefa Duah

**References:**

- Brown, A., & Green, C. (2020). "Real Estate Price Prediction in Urban Markets." *Real Estate Research Journal*, 14(2), 123-135.
- Ayodele, T. O., & Olaleye, A. (2022). Fundamental sources of uncertainty in real estate development: perspectives from an emerging market. *International Journal of Construction Management*, 22(14), 2775-2787.