

Machine Learning Internship – Population Growth Rate Prediction

Team Name: Rebels

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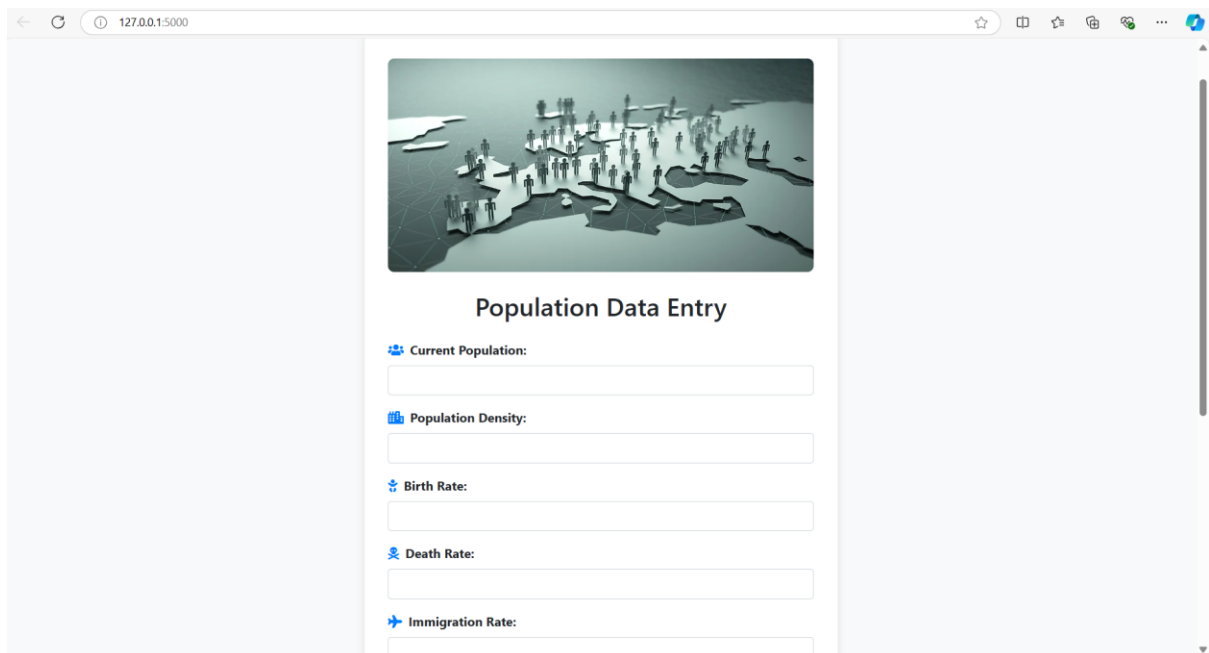
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Preference: Simple Machine Learning Project


- Training/Test data split – 80%/20%
- Machine Learning Algorithm Used:
 - GradientBoostingRegressor
 - Gradient Boosting, including variants like GradientBoostingRegressor and generally provides **high prediction accuracy**. It is known for producing models that achieve state-of-the-art performance on many tasks, especially when fine-tuned properly.
 - Gradient Boosting supports both **regression** and **classification** tasks, making it versatile for a wide range of use cases.
 - The algorithm allows for tuning various hyperparameters like learning rate, tree depth, and the number of trees, providing the flexibility to optimize performance based on the dataset.
 - Decision trees, the building blocks of gradient boosting models, are generally **robust to outliers** because they partition the feature space into regions rather than fitting a single line through the data.
 - Unlike deep learning models, which often require large datasets and substantial computational power, gradient boosting can

achieve **high performance** on smaller datasets, making it suitable for scenarios where data may be limited.

- Outlier Removal method used: Interquartile Range (IQR) method
 - It's a straightforward way to identify extreme values that deviate significantly from the majority of the data, making it easy to implement and understand.
 - Unlike the Z-score method, which relies on the mean and standard deviation, the IQR method is less influenced by extreme outliers since it uses medians (quartiles) instead of means.
- Output :
 - Home Page- For Data Entry



127.0.0.1:5000



Population Data Entry

👤 Current Population:

🏠 Population Density:

👶 Birth Rate:

💀 Death Rate:

✈️ Immigration Rate:

○ Result Page:

