

DNSC 6303 – Programming for Analytics 2

Final Project

Group Members:

- Yumin Chang
- Yujin Im
- Abdul Haleem Abdul Salam
- Marc Machado

Group Project Title: Predictive and Prescriptive Analysis of Sustainable energy and GDP per capita of top 10 countries.

Introduction:

This data-driven project focuses on conducting predictive and prescriptive analysis of sustainable energy and GDP per capita. By utilizing advanced statistical and machine learning techniques, the project aims to provide valuable insights into sustainable energy trends and economic growth. This analysis will assist policymakers, researchers, and communities in understanding and preparing for future energy needs and economic developments.

Dataset:

https://drive.google.com/file/d/1hloPp1E7vx_IB-bNBdIs03KtQMPKz9Kx/view?usp=drive_link

The dataset used for this project combines comprehensive data on sustainable energy resources and GDP per capita from various reliable sources. It spans several years, providing a detailed overview of energy consumption patterns and economic indicators. This dataset forms the basis for developing predictive models to forecast sustainable energy usage and economic growth rates for the upcoming years.

Problem Statement:

The project aims to predict future trends in sustainable energy consumption and GDP per capita, offering essential information for sustainable development planning. By analyzing historical data, the project seeks to identify patterns and correlations between sustainable energy practices and economic prosperity. These insights can serve as a foundation for informed policy decisions and strategic planning related to energy resources and economic stability.

Layout and Methodology:

Data Cleaning: Rigorous data cleaning processes are implemented to handle missing values, outliers, and ensure data consistency and accuracy.

Data Analysis: The dataset is analyzed using statistical methods to identify trends and patterns in sustainable energy usage and GDP per capita. This analysis forms the basis for predictive modeling.

Predictive Modeling: Advanced machine learning algorithms are employed to develop predictive models for sustainable energy consumption and GDP per capita. These models are trained on historical data and validated to ensure their reliability and accuracy in predicting future trends.

Prescriptive Analysis: In addition to predictive analysis, the project explores prescriptive insights, suggesting recommendations and strategies to optimize sustainable energy practices and economic growth.

Data Visualization: The project findings are presented through visually appealing graphs and charts, making it easier to comprehend the relationships between sustainable energy usage, economic indicators, and the proposed recommendations for a sustainable future.