**Oil Reserves and Its**

**Consumption**

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**1. Introduction and Background**

A major part of the global energy supply is Oil reserves, which can be found and used in transportation, industries, and electricity. With the world moving towards cleaner energy and addressing climate change, managing these reserves efficiently has become a big challenge. Analyzing a country's oil reserves and consumption data can help us understand the reserves of oil in each country and their consumption and on that data we can predict future changes. By studying data from different countries on oil reserves and their annual uses, we can build a predictive model to know and predict how oil consumption in each country might change over time. This project will focus on collecting, cleaning, and analyzing this data to develop a predictive model that shows potential future trends in each country's oil reserves and their usage.

### **2. Research Questions**

1. How can historical data be used to predict future trends in global oil consumption?
2. How do oil reserves and consumption change over time, and what are the patterns that show a move toward cleaner energy?
3. From the dataset can we figure out which countries might have shifted to renewable energy

**3. Motivation**

Our Dataset focuses on studying global oil reserves and consumption, which is important because it helps understand how countries use this energy and how they are moving toward sustainability. As the countries try not to use oil and its by-products like gasoline, diesel, and other petrochemical products, and shift to cleaner energy, looking at oil trends shows us the areas that still rely on fossil fuels. This project will be using a predictive model to forecast how oil consumption may decrease over time showing the need for countries to make the transition to renewable energy and that will lead to sustainability.

### **4. Addressed Gap**

What we can see is that there is a need for better models to predict future consumption and how it will affect the move to renewable energy. Many studies show data on oil use and the oil reserves in each country, but they do not provide predictions that can help With planning for sustainability. In this project, this gap will be filled by creating a model to forecast oil consumption trends. With clear and well-rounded predictions, it will be helpful for countries to know when to switch from nonrenewable to renewable energy, and that leads to a more sustainable future.

### **5. Project Scope and Objectives**

For this project, the scope is to analyze the global oil consumption data and develop a predictive model to know about the future trends for each country. The goal is to provide insights on how oil usage may decrease over time, and that will lead the countries to transfer from nonrenewable energy to sustainable energy sources.

**Our objectives are:**

* **Developing a regression model**
* **Analyzing the results**

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### **6. Task Breakdown**

* **Task 1: Dataset Acquisition and cleaning** - Assigned to: Khaled Almansour
* **Task 2: Data Exploration and Visualization** - Assigned to: Naif Aba Alrous
* **Task 3: Regression model Implementation** - Assigned to: Khaled Almansour
* **Task 4: Model Evaluation** - Assigned to: Khaled Almansour
* **Task 5: Results Interpretation** - Assigned to: Naif Aba Alrous
* **Task 6: Documentation and Final Report** - Assigned to All Team members

### **7. Dataset**

| **Dataset Name** | World's Largest Oil Reserves & Consumption Dataset |
| --- | --- |
| **Link to the Dataset** | <https://www.kaggle.com/datasets/muhammadroshaanriaz/oil-reserves-and-consumption-from-1995-to-2022> |
| **Description** | **Type of Data:** Float  **Size of Data:** 69 KB  **Key Features:**   * **Entity:** Names of countries * **Year:** the period covered from 1965 to 2023 * **Oil Reserves** * **Oil Consumption:** Annual Oil Consumption |

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### **8. Expected Outcomes**

The project will deliver a model that predicts future oil consumption based on past data, and this prediction model will show that our outcome will be a clear trend of decreasing oil reserves over time. This will make the countries transfer from nonrenewable energy to sustainable renewable energy. These outcomes will help to understand how to manage existing oil reserves more efficiently and emphasize the importance of moving toward cleaner renewable energy sources.