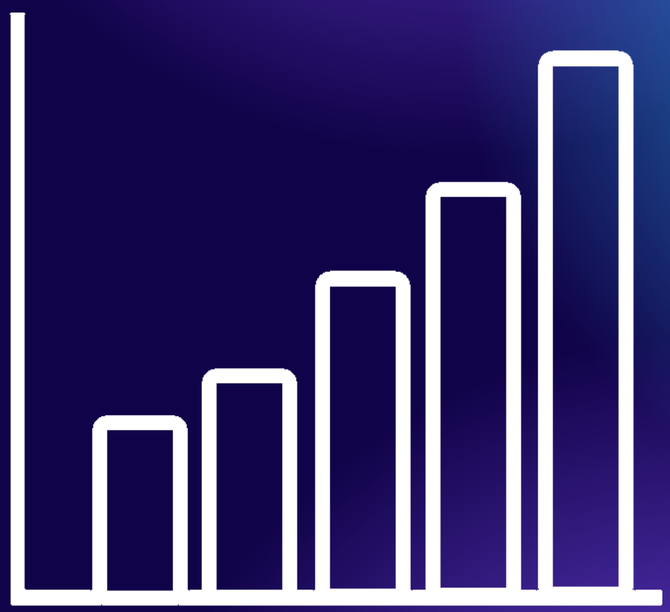
ISREAL PALESTINE PROJECT REPORT

Introduction Overview:

- Our project conducts a through analysis of conflict-related fatalities in the Israel-Palestine conflict.

- Utilizing a data-driven approach, we delve into the complexities of this geopolitical challenge to offer valuable insights and predictive trends.

- This presentation outlines our analysis, which includes thorough data collection and advanced predictive modeling. Our goal is to offer nuanced perspectives to the ongoing global discourse on this issue.



Problem Statement :

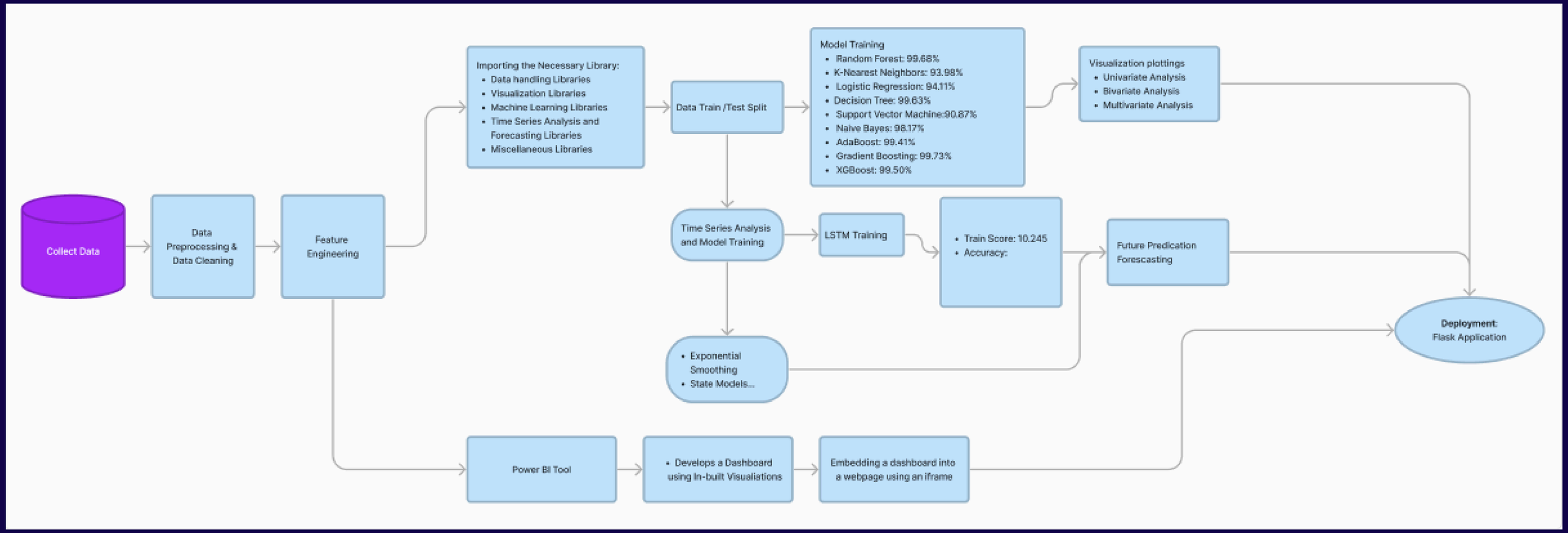
- The Israeli-Palestinian conflict poses ongoing challenges with limited solutions. Our project aims to provide valuable insights by thoroughly analyzing conflict data, specifically focusing on fatalities.

- Using LSTM for predictive modeling, our goal is to uncover patterns, bridging the understanding gap and laying the groundwork for informed discussions and potential resolution paths.

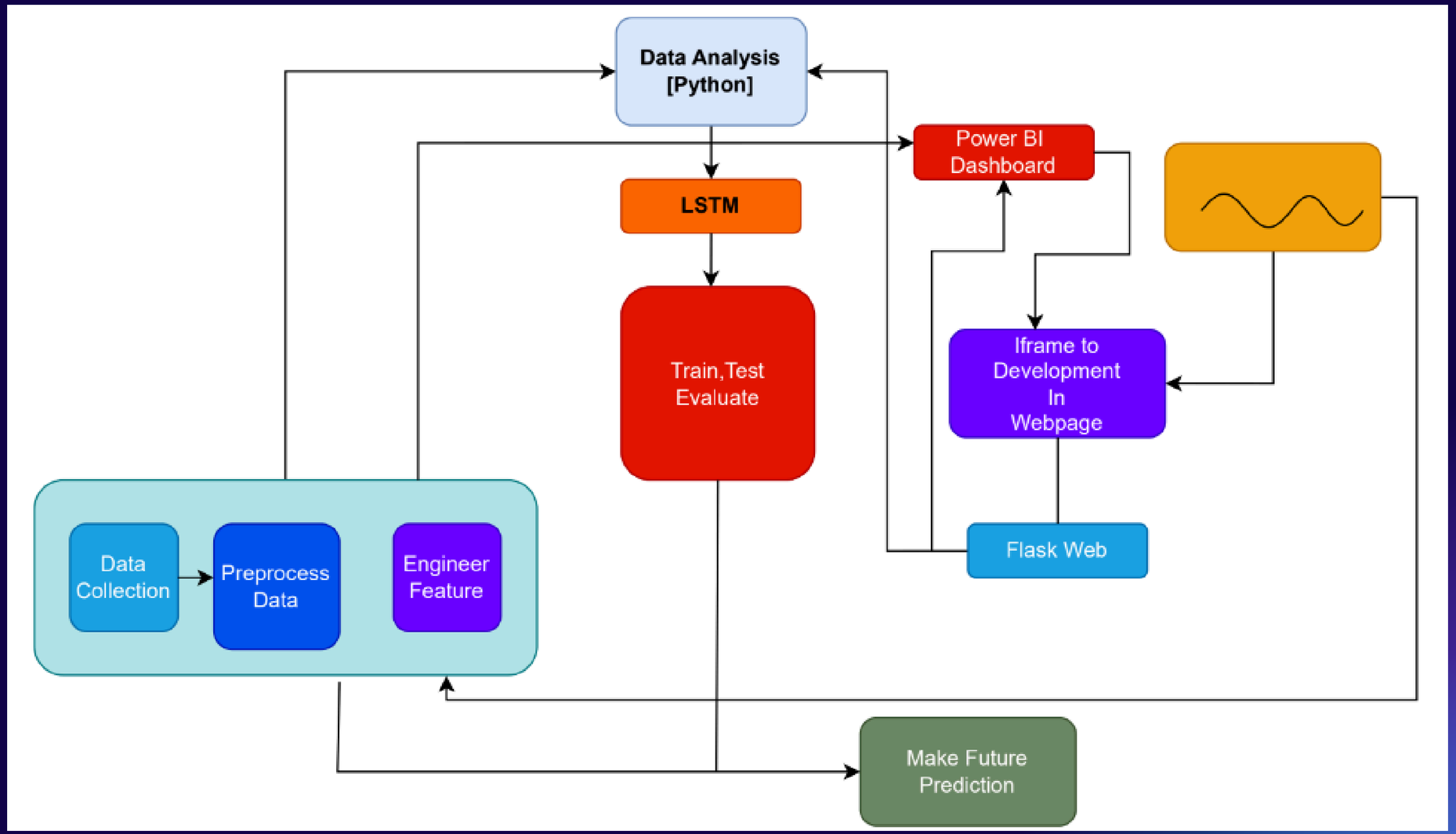
Our Proposed Solution:

- Leverage data handling and visualization libraries for comprehensive analysis.
- Implement machine learning models like Random Forest (99.68% accuracy) and LSTM for forecasting.
- Ensure thorough data preprocessing with cleaning and feature engineering.
- Deploy a Flask application and Power BI for interactive dashboards.
- Integrate Exponential Smoothing and state models for refined forecasting accuracy.

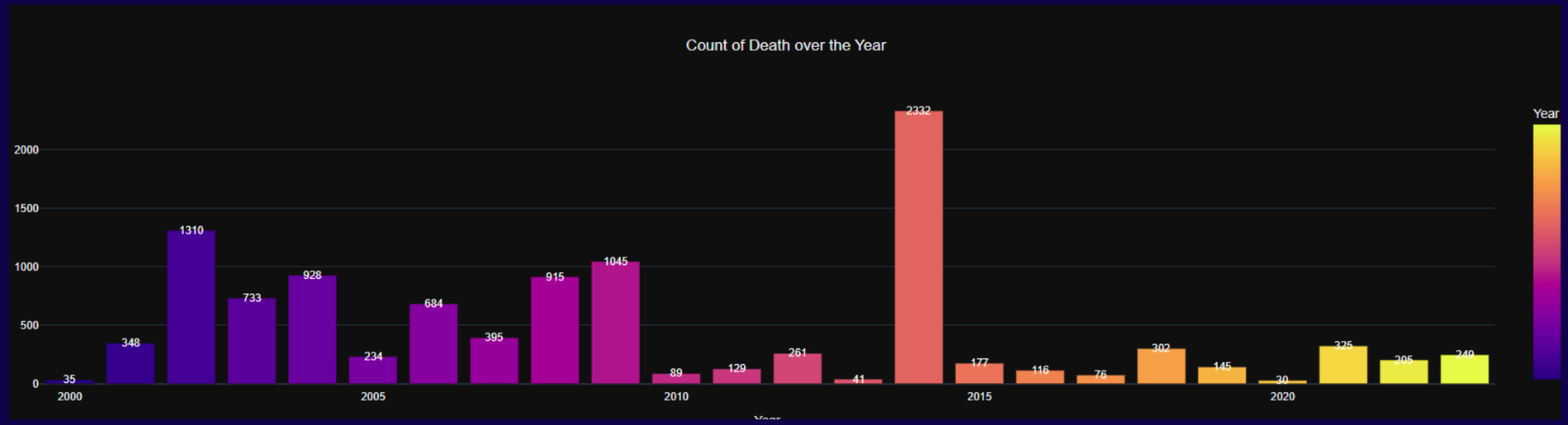
Flow Diagram:

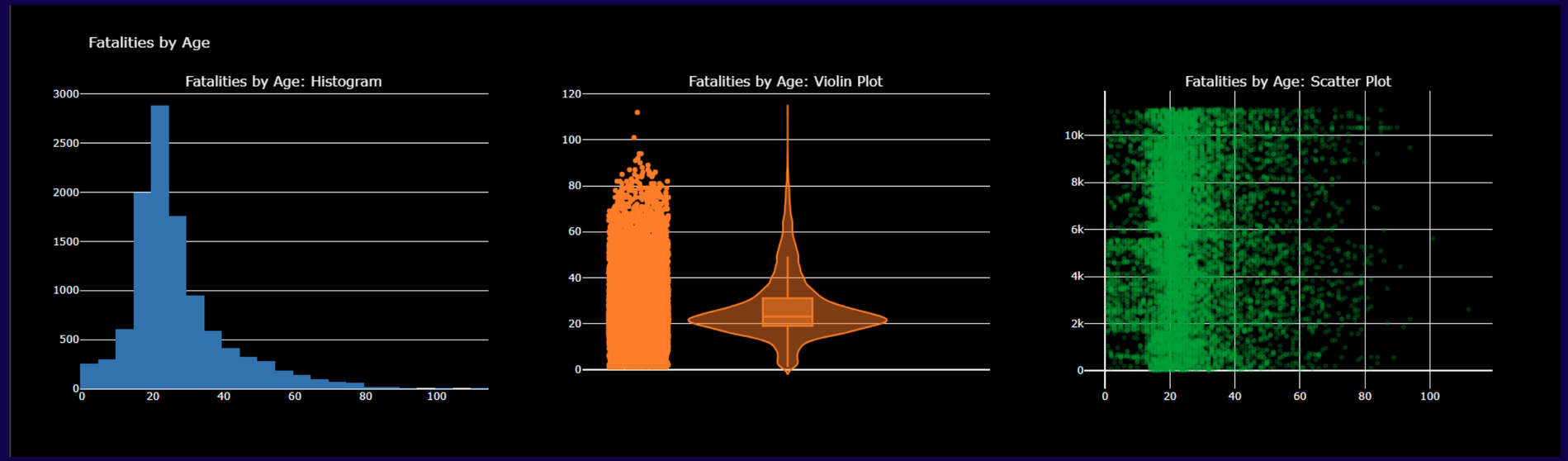


Architectural View

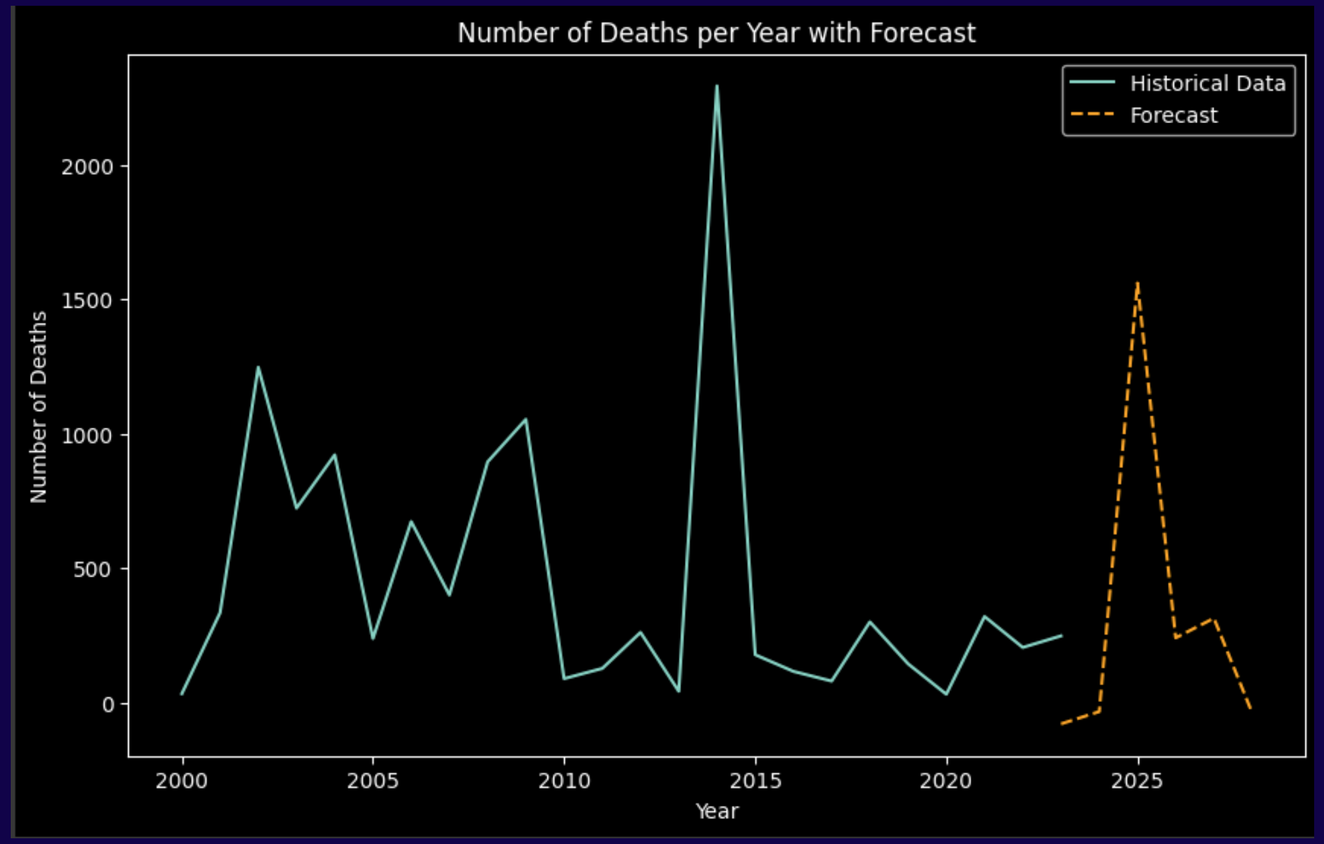


MODEL	Random Forest	K-Nearest Neighbors	Logistic Regression	Decision tree	support vector machine	Naive Bayes	Adaboost	Gradient Boosting	Multi Layer Perceptron	XGBoost
PRECISION	0.995	0.875	0.97	0.995	0.91	0.623	0.663	1.00	0.99	0.995
RECALL	0.995	0.725	0.675	0.985	1.00	1.306	0.97	0.985	0.985	0.975
ACCURACY	0.99	0.93	0.94	0.99	0.98	0.98	0.99	0.99	0.99	0.99
F1-SCORE	0.99	0.775	0.745	0.99	0.95	0.636	0.985	0.99	0.99	0.985


Count of Death over the Year
Year
2000
2005
2010
2015
2020
0
500
1000
1500
2000
35
348
1310
733
928
234
684
395
915
1045
89
129
261
41
2332
177
116
76
302
145
30
325
205
249


Fatalities by Age
Fatalities by Age: Histogram
Fatalities by Age: Violin Plot
Fatalities by Age: Scatter Plot
0
500
1000
1500
2000
2500
3000
0
20
40
60
80
100
120
0
2k
4k
6k
8k
10k

Future Prediction using the ExponentialSmoothing:



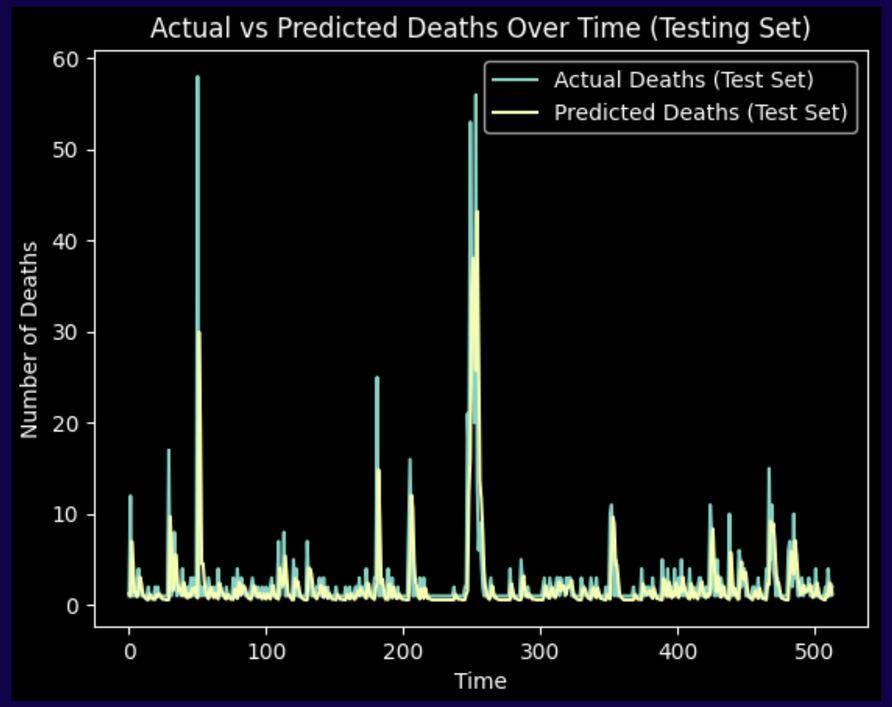
This plot signifies that the patterns are recognized through exponential smoothing, aiding in the prediction of future deaths within the time series. However, it's important to note that this prediction is solely based on machine learning algorithms.

- **Accurate Trend Identification**:
  Excels at capturing and identifying underlying trends for precise future predictions.

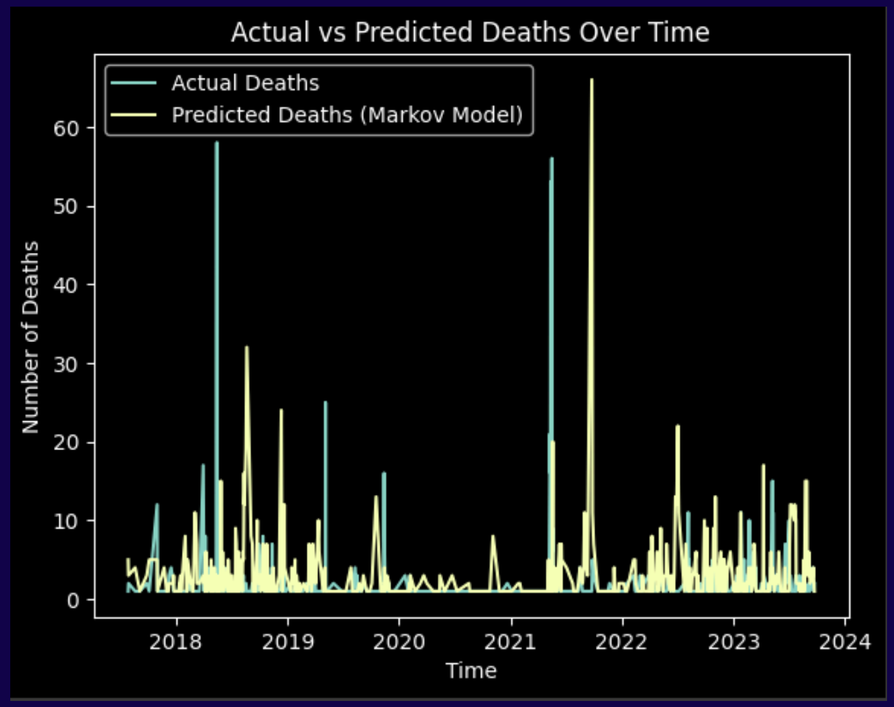
- **Responsive to Changes:**
  Quickly adjusts to changing patterns, enhancing forecast accuracy for evolving scenarios.

- **Efficient Noise Handling**:
  Effectively filters out short-term noise, ensuring stable, long-term patterns inform future predictions.

- **Ease of Forecasting:**
  The simple implementation makes it a practical choice for straightforward forecasting.



LSTM



Markov’s

The Future: Leveraging Long Short-Term Memory (LSTM) models and Markov models for training and predicting future fatalities, while also extracting valuable insights through pattern recognition.

Conclusion:

- In conclusion, this project has successfully integrated Python's visualization libraries, machine learning algorithms, time series algorithms, and the Power BI tool to undertake a comprehensive exploration of data related to the Israel-Palestine conflict.

- by utilizing Python's visualization libraries like Matplotlib, Seaborn, and Plotly, we've created compelling data representations. The use of machine learning and time series algorithms ensures accurate prediction forecasting, revealing future trends in the context of the conflict.

- Additionally, integrating the Power BI tool has played a crucial role in developing interactive dashboards, enhancing accessibility. This project aims to enhance understanding, encourage informed discussions, and offer a sophisticated perspective on the complex Israel-Palestine conflict.