

Tech Saksham

Case Study Report

Data Analytics with Power BI

“THE GLOBAL TERRORISM DATA SET ANALYTICS”

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ABSTRACT

The Global Terrorism Database documents more than 200000 international and domestic terrorist attacks that occurred worldwide since 1970. With details on various dimensions of each attack, the GTD familiarizes analysts, policymakers, scholars, and journalists with patterns of terrorism. The threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation.

This global terrorism dataset analytics based on power BI, is help us to import data from various sources, including the Global Terrorism Dataset. Once the data is imported, Power BI provides tools for cleaning and transforming the data to prepare it for analysis.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Terrorism is the use of violence and intimidation, especially against civilians, in the pursuit of political ideological or religious goals. It is a tactic used by individual or groups to achieve their objectives by creating fear and causing disruption.

The problem of terrorism remains a significant global challenge, and effort to address it must be ongoing and multifaceted.

1.2 Proposed Solution

In today's globalized society, no country is immune to terrorism and no country can effectively deal with terrorism alone. National action and international co-operations are key elements for addressing these issues effectively. The ability to successfully address the challenges depends heavily on the capacity of national criminal justice systems to administer fair and effective justice for perpetrators of terrorist crimes, and to undertake effective preventive measures in accordance with the rule of law. Power BI allows us to create dashboards that summarize the key findings of your analysis. These dashboards can be shared with others, making it easy to communicate your findings

1.3 Feature

- Present analysis with high validity, topically clustered source articles.
- Prompt human assessment of sources with unknown validity.
- Prevent creation of duplicate entries.
- Time Intelligence features can be used to analyze trends in terrorism over time.

1.4 Advantages

1. Import data from various sources, including the Global Terrorism Dataset. It provides tools for cleaning and transforming the data to prepare it for analysis.
2. Supports a wide range of visualizations, including bubble charts, heat maps, and tree maps. These can be used to better understand patterns and trends in the terrorism data.
3. Create dashboards that summarize the key findings of your analysis. These dashboards can be shared with others, making it easy to communicate your findings.
4. Geospatial features can be used to visualize the locations of terrorist attacks. This can provide valuable insights into geographical trends in terrorism.
5. Time series analysis features can be used to analyse trends in terrorism over time.

1.5 Scope

1. Reduce the violence or the threat of violence
2. Calculate to mitigate fear and aware people
3. Intended to coerce certain actions
4. Motive must include a political objective
5. Generally directed against civilian targets
6. Can be a group or an individual

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

Períofist Weapons: Périofists use guns, pistols, évolveís, íffles and (semi-) automatic weapons in assassinations, snipping, aímed attacks and massacíes. Among the foímeí, caí- and tíuck-bombs have become veíy poweíful weapons, especially in suicide attacks.

Types of Attacks in Périofism: P'heíe aíe some attacks which aíe used by the teííofists mostly

- Explosions: Attacks have occuúed in public places and on city stíeets with 1000s of people aíound the wóld injuéd and killed
- Biological P'híeats: Biological agents aíe oíganisms oí toxins that can kill oí incapacitate people, livestock and cíops.
- Chemical P'híeats: Chemical agents aíe poisonous vapoís, aeíosols, liquids and solids that have toxic effects on people, animals oí plants. P'hey can be íeleased by bombs oí spíayed fíom aíícíaft, boats and vehicles.
- Nucleaí Blast: A nucleaí blast is an explosion with intense light and heat, a damaging píessuúe wave and wide spíead íadioactive mateíial that can contaminate the aíí, wateí and gíound suífaces foí miles aíound

Types of Périofists: Accoúding to Foíeígn Périofists Oíganizations theíe aíe 60-teííofists gíoups.

2.2 Tools and Software used

Tools:

- **PowerBI:** The main tool for this project is PowerBI, which will be used to create interactive dashboards for real-time data visualization.
- **Power Query:** This is a data connection technology that enables you to discover, connect, combine, and refine data across a wide variety of sources.

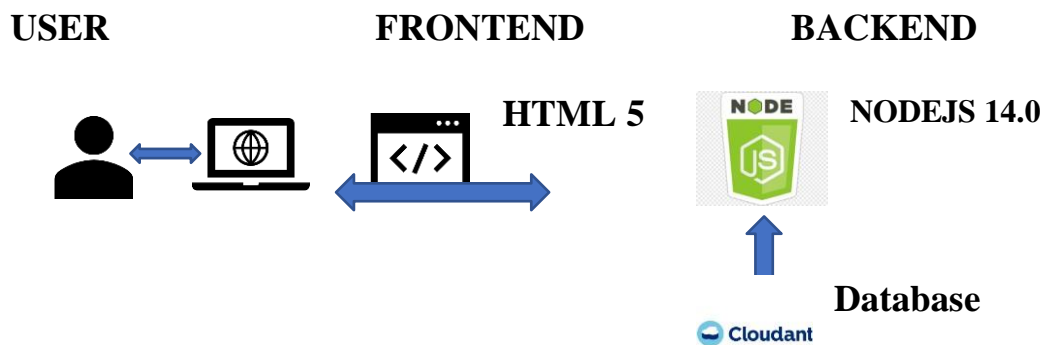
Software Requirements:

- **PowerBI Desktop:** This is a Windows application that you can use to create reports and publish them to PowerBI.
- **PowerBI Service:** This is an online SaaS (Software as a Service) service that you use to publish reports, create new dashboards, and share insights.
- **PowerBI Mobile:** This is a mobile application that you can use to access your reports and dashboards on the go.

CHAPTER 3

PROJECT ARCHITECTURE

3.1 Architecture



Here's a high-level architecture for the project:

1. **Data Collection:** It collects data from various sources of input and processes all the data in a dashboard for the visualization of data.
2. **Data Storage:** Power BI stores data in two main locations: the cloud and on-premises desktop. The cloud storage is used for data generated by end-users through the Power BI cloud service. The on-premises storage is used for data generated through the Power BI desktop service.
3. **Data Processing:** Power BI allows us to import data from a wide range of sources, including Excel spreadsheets, cloud-based and on-premises hybrid data warehouses. Once the data is imported, Power BI provides tools for cleaning and transforming the data to prepare it for analysis. This process is sometimes referred to as ETL (Extract, Transform, Load).
4. **Machine Learning:** Power BI's Auto Machine Learning automates the data science behind the creation of machine learning models. It provides guidance to ensure model quality and visibility to ensure you have full insight into the steps used to create your machine learning model.

5. **Data Visualization:** Once the data model is ready, you can use Power BI's visualization tools to create interactive reports and dashboards.
6. **Data Access:** The dashboards created in PowerBI can be accessed through PowerBI Desktop, PowerBI Service (online), and PowerBI Mobile.

CHAPTER 4

MODELING AND RESULT

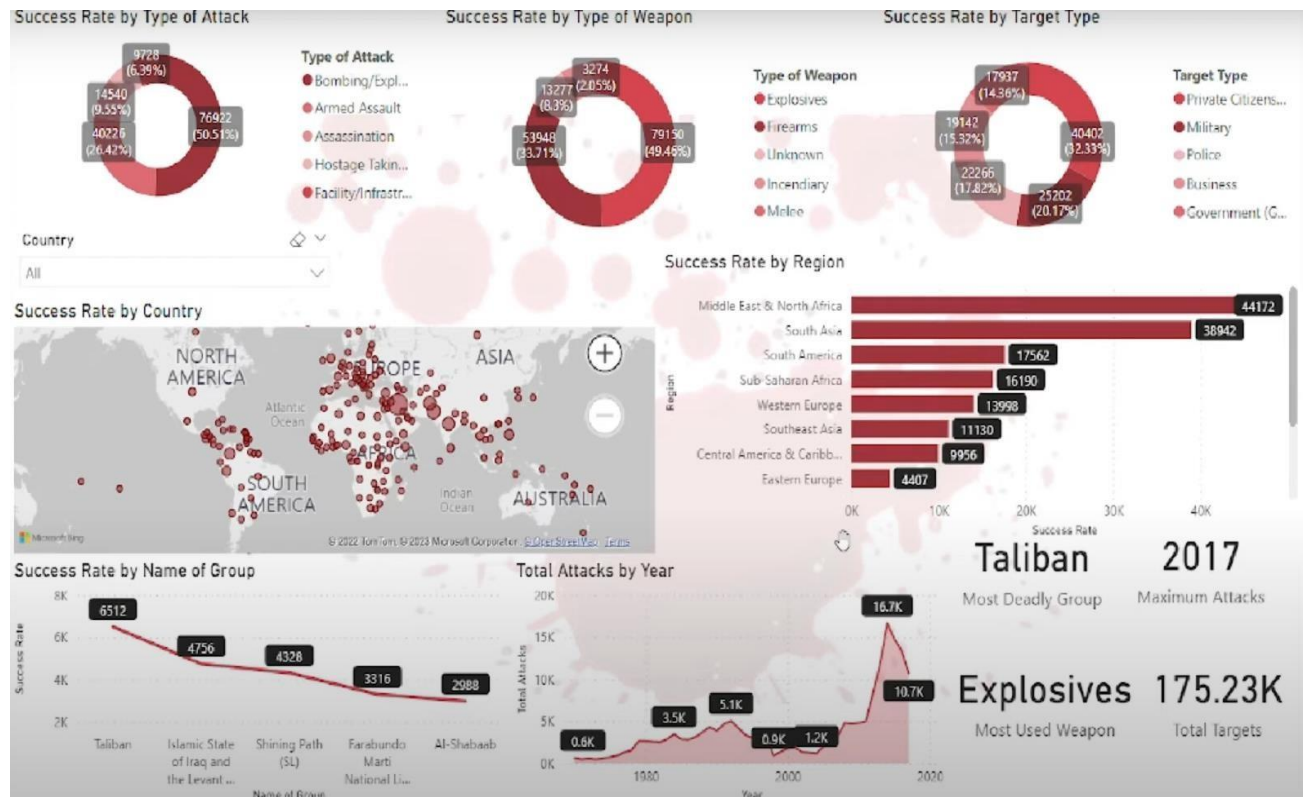
Data modeling in Power BI involves structuring and organizing data for meaningful analysis.

The steps for Power BI Data Modeling include:

- Importing data
- Transforming data using Power Query
- Creating relationships
- Building calculations in Power BI with DAX
- Visualizing data.

To do data modeling in Power BI, we must first import our datasets to Power BI. Then, Power BI starts analyzing the dataset, creating data object models, creating data models, and finally takes you to the Report view tab.

Dashboard



CONCLUSION

The project **GLOBAL TERRORISM DATA ANALYTICS** using PowerBI has successfully demonstrated the potential data about the global terrorism. The real-time analysis of terrorism data has provided valuable insights into country, region, type of attack, weapon type and trends, thereby facilitating informed data analytics. The interactive dashboards and reports have offered a comprehensive view of terrorism data, enabling the identification of patterns and correlations. This has not only improved the efficiency of data analysis but also enhanced the country's ability to tackle the terrorism. The project has also highlighted the importance of data visualization in making complex data more understandable and accessible. The use of PowerBI has made it possible to present data in a visually appealing and easy-to-understand format, thereby aiding in better decision-making.

FUTURE SCOPE

The future scope of this project is vast. With the advent of advanced analytics and machine learning, PowerBI can be leveraged to predict future trends based on historical data. Integrating these predictive analytics into the project could enable the country to tackle the attack proactively and offer better solutions. Furthermore, PowerBI's capability to integrate with various data sources opens up the possibility of incorporating more diverse datasets for a more holistic incident of attacks. As data privacy and security become increasingly important, future iterations of this project should focus on implementing robust data governance strategies. This would ensure the secure handling of sensitive customer data while complying with data protection regulations. Additionally, the project could explore the integration of real-time data streams to provide even more timely and relevant insights. This could potentially transform the way that the country tackling the attacks of terrorism, leading to improved safeguarding and stability to the country and its people.

Link

<https://github.com/AAAD-23510/anuchiya12>