**Project Report**

**Healthcare Dashboard Using DOMO**

1. Abstract

This project focuses on creating comprehensive dashboards using DOMO for healthcare data visualization and business intelligence. It involves generating realistic datasets, cleaning and manipulating data, and designing dashboards to provide actionable insights for healthcare management. The project aims to demonstrate the application of advanced data analytics and visualization techniques to real-world scenarios, enhancing decision-making processes in the healthcare sector.

2. Introduction

The healthcare industry generates vast amounts of data that, if properly analyzed, can lead to significant improvements in patient care and operational efficiency. This project leverages DOMO, a powerful data analytics and visualization tool, to create dashboards that provide valuable insights from healthcare data. The project covers the entire data pipeline, from data generation and cleaning to visualization and reporting.

3. Literature Review

Effective data visualization is crucial in the healthcare sector for making informed decisions. According to Few (2006), dashboards should communicate data effectively to support decision-making. Wexler, Shaffer, and Cotgreave (2017) emphasize using real-world scenarios to design intuitive and impactful dashboards. This project applies these principles using DOMO to create healthcare dashboards that provide clear and actionable insights.

4. Methodology

## 4.1 Data Generation

Realistic healthcare datasets were generated using Python's Faker library. The datasets included patient health monitoring data, hospital management data, and patient experience data.

## 4.2 Data Cleaning

Data cleaning involved filtering, transforming, and validating the generated datasets to ensure accuracy and relevance. Techniques included using regular expressions in ETL processes and recursive dataflows in DOMO.

## 4.3 Dashboard Design

Dashboards were designed to present the cleaned data in an intuitive and insightful manner. Key features included summary dashboards, patient feedback analysis, and executive dashboards with What-If Analysis and alert systems.

5. Implementation Details

The project was implemented in several stages:

## 5.1 Initial Setup

Acquired DOMO certification to validate proficiency. Created sample dashboards in Power BI to understand the basics of data visualization.

## 5.2 Data Handling

Generated realistic datasets using the Faker library in Python. Cleaned and transformed data using DOMO's ETL tools.

## 5.3 Dashboard Development

Designed and customized dashboards in DOMO. Integrated advanced features like What-If Analysis and alerts to enhance functionality.

## 5.4 Feedback and Iteration

Regular feedback from supervisors and colleagues was incorporated to refine the dashboards. Ensured alignment with certification requirements and best practices in data visualization.

6. Results and Discussion

The final dashboards provided comprehensive insights into various aspects of healthcare management. Key achievements included:

Patient Health Monitoring Dashboard: Visualized patient health metrics and trends.

Hospital Management Dashboard: Provided operational insights into hospital performance.

Patient Feedback Analysis Dashboard: Analysed patient feedback to identify areas for improvement.

These dashboards demonstrated the ability to transform raw data into actionable insights, supporting better decision-making in healthcare management.

7. Conclusions and Future Scope

The project successfully demonstrated the use of DOMO for creating impactful healthcare dashboards. Key takeaways include the importance of data cleaning, the value of intuitive dashboard design, and the potential of advanced features like What-If Analysis.

Future work could involve:

* Integrating additional data sources for more comprehensive insights.
* Exploring machine learning techniques to enhance predictive analytics.
* Further refining dashboard designs based on user feedback.

8. References

[1] M. A. Few, "Information Dashboard Design: The Effective Visual Communication of Data," O'Reilly Media, Inc., 2006.

[2] S. Wexler, J. Shaffer, and A. Cotgreave, "The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios," Wiley, 2017.

[3] DOMO University, "DOMO Certification Course," [Online]. Available: https://www.domo.com/university. [Accessed: 22-May-2024].