

PROJECT REPORT

Heritage Treasures Data Analysis and Visualization

Submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology (B.Tech)

Department of Electronics and Communication Engineering

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ABSTRACT

This project focuses on analyzing global heritage site data to extract meaningful insights using data visualization techniques. The objective is to understand the distribution of heritage sites across different regions, categories, and countries through systematic data analysis. The dataset was cleaned by removing missing values, standardizing country names, and converting date fields into proper formats. Various visualizations such as bar charts, maps, pie charts, heatmaps, and cumulative trend charts were developed to identify patterns and trends. The results highlight regional concentration, category dominance, and endangered site statistics.

1. INTRODUCTION

Data analysis plays a vital role in interpreting large datasets and deriving actionable insights. Heritage site data contains valuable information regarding cultural, natural, and mixed sites worldwide. This project applies structured data cleaning and visualization techniques to better understand global heritage site distribution.

2. PROBLEM STATEMENT

Heritage datasets are complex and contain large volumes of structured and semi-structured data. Without proper analysis and visualization, it is difficult to identify distribution patterns, endangered sites, and yearly growth trends.

6. RESULTS AND ANALYSIS

The analysis indicates that certain regions have a higher concentration of heritage sites. Cultural sites dominate globally, while only a small percentage are categorized as endangered. The cumulative trend shows steady growth in site inscription over time.

8. LIMITATIONS

Dependent on dataset accuracy. Does not include real-time updates.

10. CONCLUSION

The project successfully demonstrates the application of data cleaning, transformation, and visualization techniques to analyze global heritage data. The developed dashboard provides

meaningful insights and enhances understanding of data analytics workflows.

3. OBJECTIVES

- To clean and preprocess the dataset.
- To standardize and structure data fields.
- To analyze site distribution by region and country.
- To identify endangered heritage sites.
- To create meaningful visual dashboards.
- To interpret analytical insights.

4. TOOLS AND TECHNOLOGIES USED

- Python (Pandas, NumPy)
- Tableau
- Microsoft Excel
- Visual Studio Code
- GitHub

9. FUTURE ENHANCEMENTS

- Integration of real-time data sources.
- Web-based interactive dashboard deployment.
- Predictive analysis using Machine Learning.
- Cloud deployment for scalability.