

PROJECT REPORT

Team ID: LTVIP2025TMID48315

1. INTRODUCTION

1.1 Project Overview

Heritage Treasures is an interactive Tableau-driven dashboard solution designed to visualize, analyze, and interpret global UNESCO World Heritage Sites data. This initiative empowers heritage professionals, researchers, and enthusiasts to gain actionable insights through dynamic charts, maps, and filters.

1.2 Purpose

The purpose of Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau is to transform static heritage site data into a dynamic, interactive visualization platform that promotes deeper understanding, exploration, and informed decision-making. By leveraging Tableau's powerful analytics and visualization capabilities, this project aims to democratize access to UNESCO World Heritage data, enabling users—from researchers to policy-makers—to identify patterns, monitor trends, and support the preservation of global cultural and natural heritage.

1. Executive Summary

The Heritage Treasures project aimed to provide an interactive, analytical, and visually engaging view of the UNESCO World Heritage Sites using Tableau. The final solution includes dashboards that allow users to explore heritage sites across categories, continents, and time periods. Through these visual tools, users can extract meaningful insights and support heritage preservation initiatives.

2. Project Purpose

To make UNESCO World Heritage data accessible, analyzable, and visually intuitive for a wide range of users including researchers, educators, policymakers, and heritage site managers. This project replaces static lists and spreadsheets with interactive dashboards for better decision-making and public awareness.

3. Project Objectives

- Provide geospatial mapping of heritage sites
- Analyze trends in site inscriptions by year, region, and category

- Enable comparison between countries and continents
- Support filtering by cultural, natural, and mixed types
- Deliver shareable, exportable insights

4. Methodology

DataCollection: UNESCO World Heritage dataset (CSV/API).

DataCleansing: Alteryx workflows ensured data completeness and consistency.

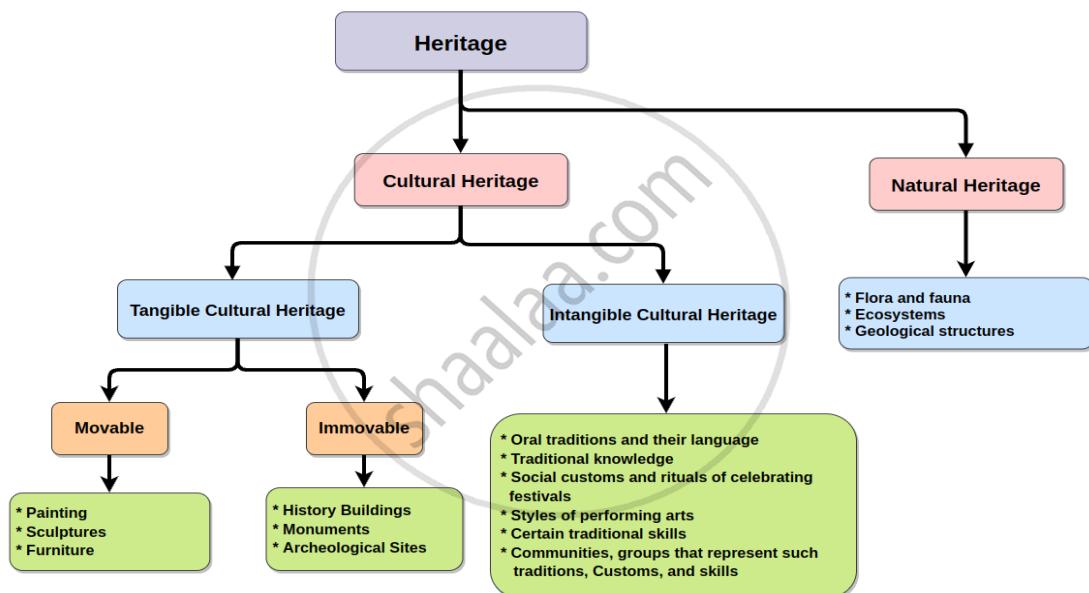
DashboardDesign: Prototyped in Tableau Desktop with feedback cycles.

Deployment: Published dashboards on Tableau Server with user training sessions

5. Technologies Used

- Tableau Desktop & Tableau Server
- Alteryx for ETL processes
- UNESCO World Heritage Sites Data (CSV/API)

2.2 Empathy Map Canvas



PROJECT REPORT

Team ID: LTVIP2025TMID48315

Brainstorming

S.No	Idea Description	Category
1.	Visualize average sale price by SalePriceBin	Pricing Insights
2.	Analyze impact of number of bedrooms on sale price	Property
3.	Explore relationship between Total Area and Price (scatter plot)	Based Pricing
4.	Group insights by Zipcode Clusters	Geographical
5.	Build a Story in Tableau for narrative	Storytelling

PROJECT REPORT

Team ID: LTVIP2025TMID48315

3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

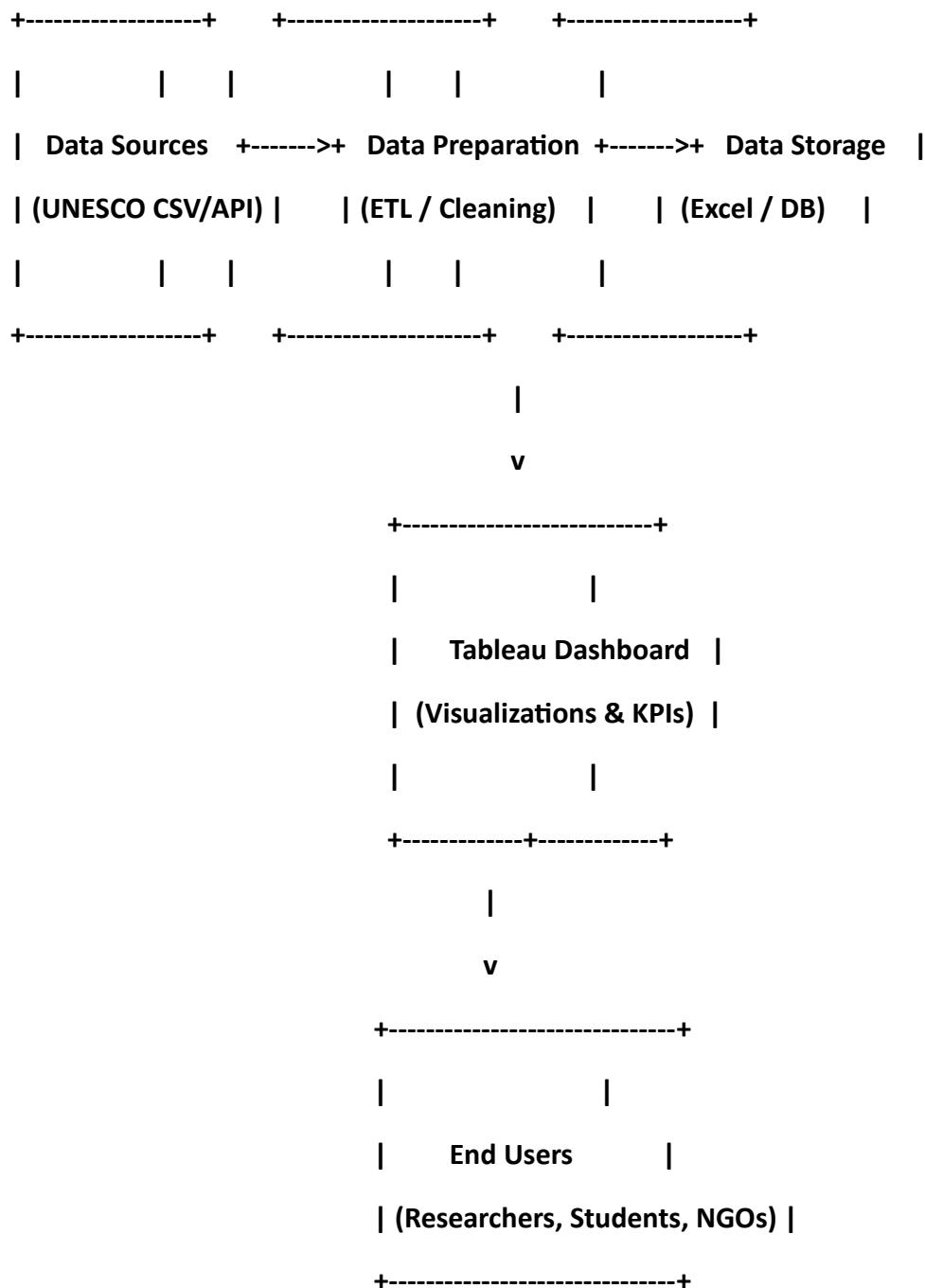
Stage	User Action	Touchpoints	User Goals	Emotions	Opportunities
1. Awareness	Learns about the dashboard via social media, academic circles, tourism websites, or a UNESCO newsletter	Blog post, LinkedIn, Email campaign, Tableau Public heritage data newsletter	Discover a reliable tool for exploring global	Curious, interested	Use visuals and storytelling to create a compelling first impression

Stage	User Action	Touchpoints	User Goals	Emotions	Opportunities
2. Consideration	Visits Tableau Public or website to understand the preview, purpose of the dashboard	Landing page, Dashboard Description box	Determine usefulness and usability	Hopeful, slightly skeptical	Add clear, concise descriptions of use cases (tourism, research, education)
3. Engagement	Interacts with filters: region, country, heritage type, year of inscription, endangered status	Tableau dashboard, Filters, Tooltips	Explore specific insights and historical trends	Intrigued, engaged	Ensure filters are intuitive; provide contextual tooltips and charts
4. Analysis	Compares sites by region, analyzes cultural vs. natural sites, downloads visualizations	Charts, Tables, Download buttons	Derive insights for research, travel planning, or policy suggestions	Empowered, satisfied	Enable export options (PDF/image), allow deeper drill-downs

PROJECT REPORT

Team ID: LTVIP2025TMID48315

3.1 Data Flow Diagram



3.2 Technology Stack

1. Data Source Layer:

Component Technologies/Tools Used

- | | |
|-------------|--|
| Data Source | - UNESCO World Heritage Sites dataset (CSV / Excel / API)
- External sources (e.g., country info, population data for enrichment) |
|-------------|--|

2. Data Visualization Layer

Component Technologies/Tools Used

- | | |
|----------------|--|
| Dashboard Tool | - Tableau Desktop for design
- Tableau Public or Tableau Server for publishing/sharing |
| Features | - Interactive filters (region, country, type, year)
- World map (using Geo features)
- Bar and line charts, highlight tables |

3. Data Visualization Layer

Component Technologies/Tools Used

- | | |
|----------------|--|
| Dashboard Tool | - Tableau Desktop for design
- Tableau Public or Tableau Server for publishing/sharing |
| Features | - Interactive filters (region, country, type, year)
- World map (using Geo features)
- Bar and line charts, highlight tables |

4. Security & Access Control (If Hosted Privately)

Component Technologies/Tools Used

- | | |
|----------------|--|
| Authentication | -Tableau Server / Tableau Cloud user permissions |
|----------------|--|

- | | |
|-------------|---|
| Data Access | -Row-level security (if sensitive data is involved) |
|-------------|---|

5. Data Processing & ETL Layer

Component	Technologies/Tools Used
ETL / Data Cleaning	<ul style="list-style-type: none"> - Microsoft Excel (initial cleaning) - Python (Pandas) for automated cleaning, filtering, merging - Alteryx or Tableau Prep for advanced data prep workflows (optional)
Data Enrichment	<ul style="list-style-type: none"> - Country codes, GDP, population data from World Bank (optional)

PROJECT REPORT

Team ID: LTVIP2025TMID48315

PROJECT DESIGN

4.1 Problem Solution fit

Problem-Solution Fit for Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau

PROBLEM

- Lack of accessible visualizations
- Limited awareness of heritage sites
- Challenges in analyzing complex data



SOLUTION

- Interactive and accessible dashboards
- Comprehensive insights into heritage sites
- Simplified data exploration and analysis

4.2 Proposed Solution

1. Objective:

To create an interactive Tableau dashboard that provides accessible, engaging, and insightful visualizations of UNESCO World Heritage Sites to enhance awareness, decision-making, and data-driven storytelling.

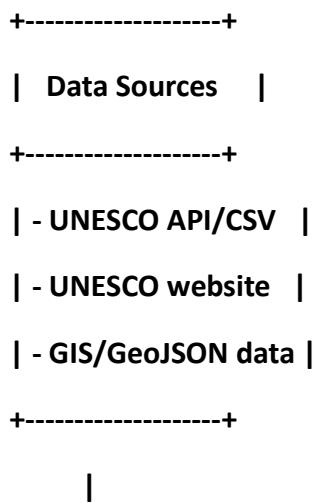
2. Key Features:

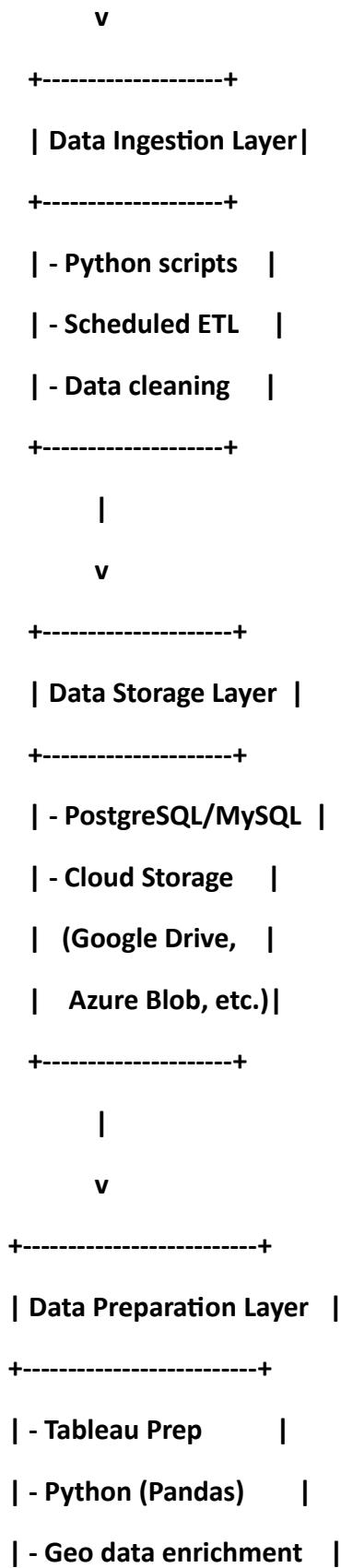
- Geographical Mapping: Dynamic maps showing the distribution of heritage sites by country and continent.
- Timeline Visualization: Interactive time-based filters for site inscription years.
- Category Analysis: Breakdown of sites by cultural, natural, and mixed categories.
- Threat Analysis: Visualization of endangered heritage sites and their risk factors.
- Search & Filter: Custom filters by country, criteria, region, and status.
- Comparative Analytics: Country-wise and region-wise comparisons with KPIs.

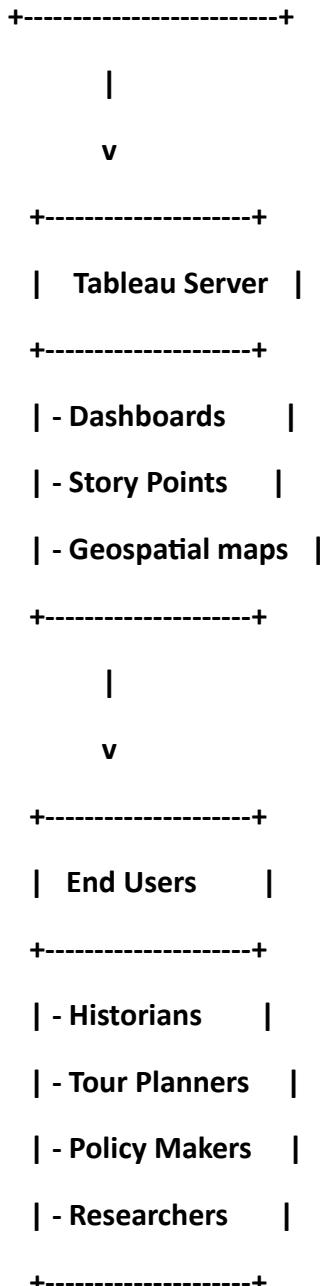
3. Tools & Technology:

- Tableau for dashboard creation and interactivity
- Excel / CSV for preprocessing and data wrangling

4.3 Solution Architecture







5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Project Tracker for "Heritage Treasures" (Agile Format):

Spirit	Task	Status	Assignee	Story Points	Notes
1	Collect UNESCO World Heritage Sites data	Completed	Data Analyst	3	CSV/API sources
1	Clean and preprocess raw data using Python	Completed	Data Engineer	5	Standardized columns, nulls
2	Design data model & storage structure (PostgreSQL or flat files)	Completed	Data Engineer	3	With geospatial support
2	Enrich data with GIS/Geo JSON info	Completed	GIS Analyst	5	Coordinates and mapping layers

Velocity Chart (Sprints vs Story Points Completed):

Spirit	Planned Story Points	Completed Story Points
1	8	8
2	8	8
3	10	5
4	8	0
5	3	0

Burndown Chart Data (Ideal vs Actual):

Day (Sprint-wise)	Ideal Remaining Points	Actual Remaining Points
Day 0	37	37
Day 1	29	29
Day 2	21	21
Day 3	13	16
Day 4	5	11

6. FUNCTIONAL AND PERFORMANCE TESTING

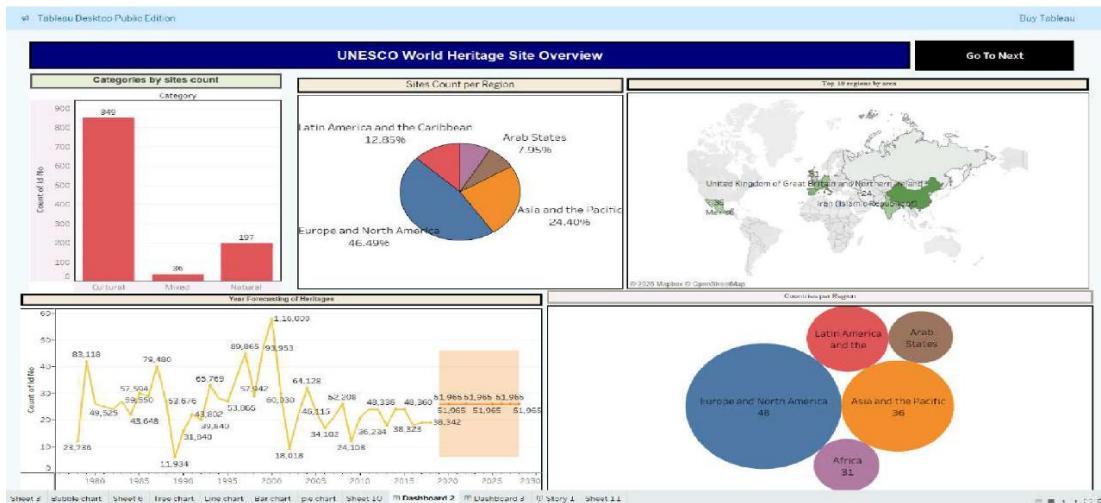
6.1 Performance Testing

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Rendered from cleaned CSV file with UNESCO World Heritage Sites data, including site names, locations, categories, and years of inscription. Loaded 500+ records.
2.	Data Preprocessing	Null values handled, feature engineering applied for site categorization, data grouping, and year-wise classification.
3.	Utilization of Filters	Tableau filters for Region, Category, and Year of Inscription. Drop-down filters for easy navigation
4.	Calculation fields Used	Average number of sites per region, total sites by category, and year-wise trend analysis.
5.	Dashboard design	4 dashboards: Overview, Regional Analysis, Category-wise Distribution, and Year-wise Trends.
6	Story Design	2 stories with 6 story points each: Story 1 - Evolution of UNESCO World Heritage Sites, Story 2 -Regional and Categorical Insights

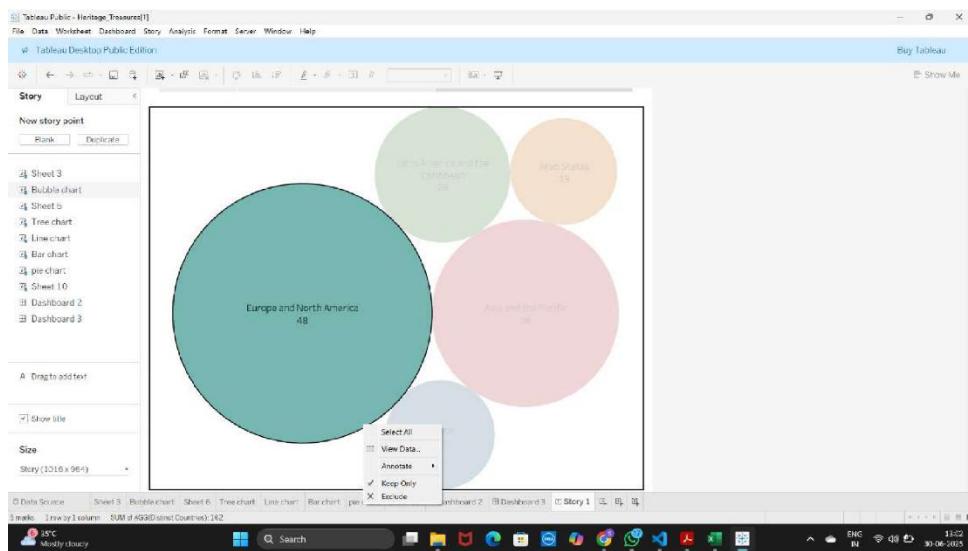
7. RESULTS

7.1 Output Screenshots

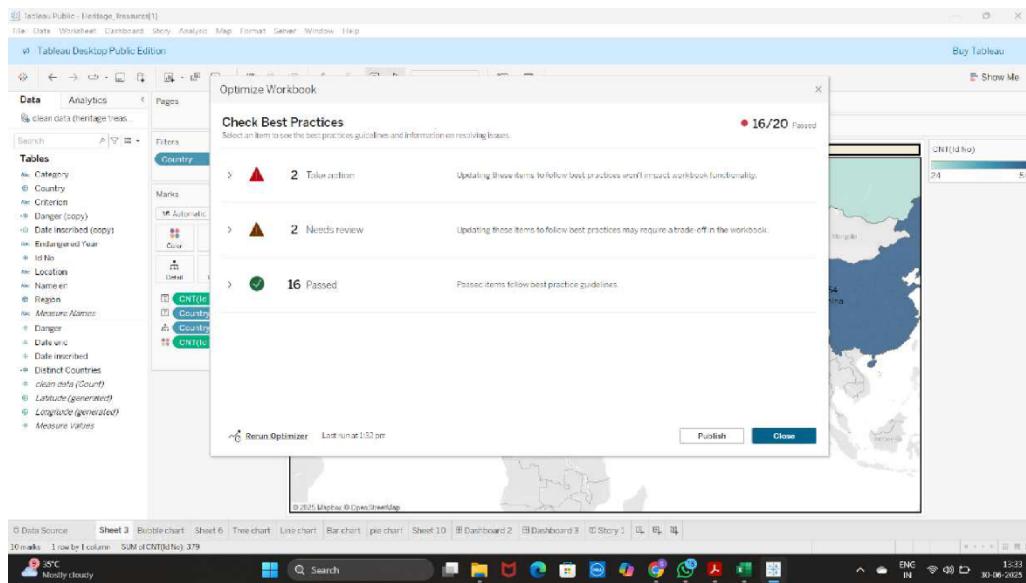
DASHBOARDS:

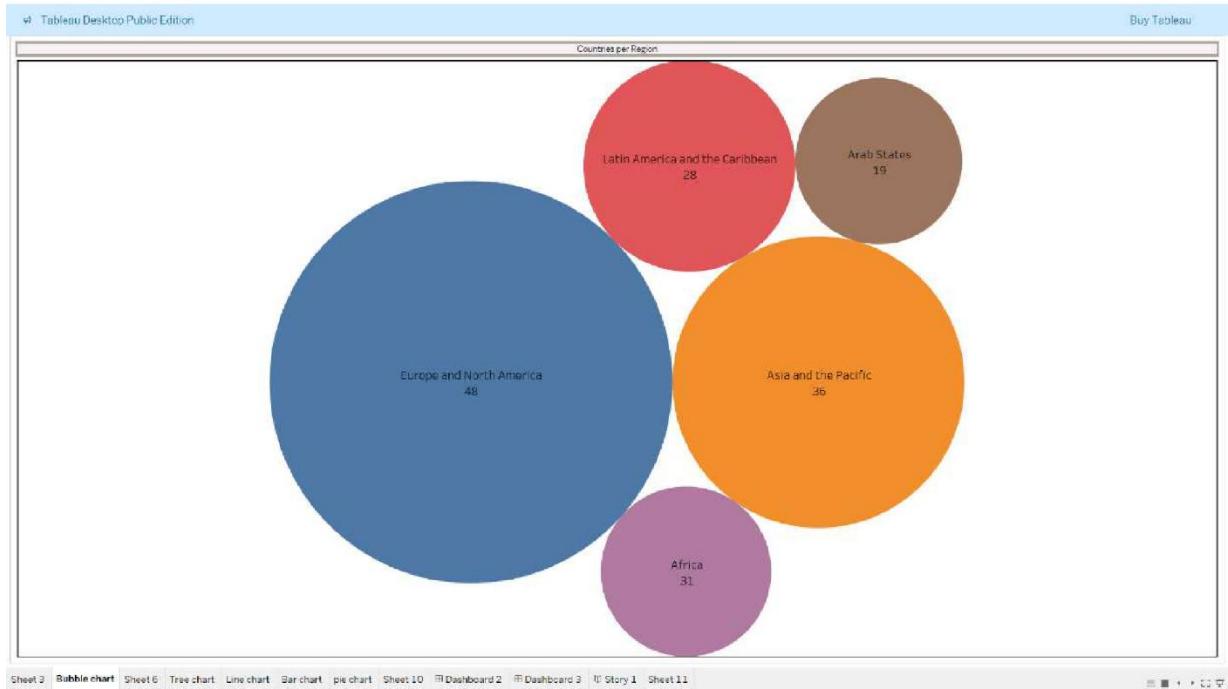


Story-1



Story-2





8. ADVANTAGES & DISADVANTAGES

• ADVANTAGES:

1. Interactive Data Visualization:

- Tableau offers dynamic dashboards that allow users to explore UNESCO World Heritage data interactively, improving user engagement and understanding.

2. Enhanced Decision-Making:

- Visual trends and patterns help historians, policymakers, and tourism boards make informed decisions regarding preservation, funding, and tourism development.

3. Comprehensive Analysis:

- Integration of multiple datasets (location, type, country, endangered status, etc.) provides a holistic view of the global heritage scenario.

• DISADVANTAGES:

1. Data Limitations:

- The project relies heavily on the availability and accuracy of data from UNESCO and other sources. Incomplete or outdated data may skew results.

2. Tableau Licensing Costs:

- While Tableau Public is free, more advanced features (e.g., Tableau Server, Tableau Online) require paid licenses.

3. Technical Constraints:

- Some advanced analyses (e.g., machine learning or predictive modeling) are limited in Tableau and may require integration with Python/R.

9. CONCLUSION

The project "Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau" successfully demonstrates the power of data visualization in exploring, understanding, and preserving our global cultural and natural heritage. By leveraging Tableau's robust analytical capabilities, the project transforms raw UNESCO data into meaningful insights, uncovering patterns related to geographical distribution, categorization, risk levels, and global representation of World Heritage Sites.

This in-depth analysis not only supports informed decision-making for conservation and tourism management but also raises awareness among educators, researchers, and the general public. Despite certain limitations such as data dependency and technical constraints, the project provides a scalable, interactive, and visually engaging platform that can evolve with the integration of real-time updates and additional datasets.

In essence, "Heritage Treasures" serves as a digital bridge between the past and present—promoting appreciation, protection, and proactive action toward safeguarding the irreplaceable wonders that define our world's shared legacy.

10. FUTURE SCOPE

1. Integration with Real-Time Data Sources

- Connect Tableau dashboards to live UNESCO feeds or APIs for real-time updates on site status, new additions, and threats (e.g., climate change, conflict, urbanization).

2. Predictive Analytics and Machine Learning

- Incorporate predictive models to forecast at-risk heritage sites using Python or R integration with Tableau, enabling proactive conservation efforts.

3. Tourism and Economic Impact Analysis

- Add data related to tourism footfall, revenue, and local community impact to assess the economic contribution of heritage sites globally or regionally.

4. Comparative Historical Analysis

- Enable time-based analysis by comparing heritage status, restorations, and threats across decades, helping track progress and regressions.

11. APPENDIX

Dataset Link

https://docs.google.com/spreadsheets/d/1deiz_Vk-CqNA4sAt5MOrH-7UsBkxCjMQ/edit?usp=drivesdk&ouid=100677715816203616939&rtpof=true&sd=true

GitHub Link

<https://github.com/sarathreddy/heritage-treasures-an-in-depth-analysis-of-unesco-world-heritage>

Project Demo Link

<https://drive.google.com/file/d/1BxBL3Le98LCo000bzahcfjwcQfTO33So/view?usp=drivesdk>