

Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites

1. Introduction

Project Title: *Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites*

Team ID: LTVIP2025TMID47625

Team Size: 4

- **Team Leader** K Tushmitha– Project Lead & data engineer
- **Team Member:** Gurramkonda Shambupriya– Modal Developer
- **Team Member:** E Vishnu Priya – Frontend & Backend Developer
- **Team Member** Erri Padma Sree– Evaluation & Deployment Specialist

2. Project Overview

2.1. Purpose

This project offers a visual and interactive analysis of the global distribution, category breakdown, and endangered status of UNESCO World Heritage Sites using Tableau dashboards and stories. It empowers users with insights to explore cultural heritage and promotes awareness through data storytelling.

2.2. Features

- ☐ Interactive Dashboards (Site types, danger status, timelines)
- ☐ Storyboard Narratives (Story 1: Categories, Story 2: Timeline Trends)
- ☐ Fully responsive web interface using Flask
- ☐ Embedded Tableau Public visualizations
- ☐ Deployed on Render.com for public access

3. Architecture

3.1. Frontend

- Built with **HTML, CSS, Jinja2** The prediction result page (prediction.html) features:.
- Navigation bar, hero section, and dashboard/storyboard integration.
Responsive layout with landscape imagery and embedded iframes

3.2. Backend

- Developed using **Python (Flask)**
- Serves HTML and embedded Tableau links
- Deployed on **Render** with automatic build and run scripts

Dataset:

- ☐ Developed using **Python (Flask)**
- ☐ Serves HTML and embedded Tableau links
- ☐ Deployed on **Render** with automatic build and run scripts

Visualizations

- Countries per Region (Pie chart)
- Top 10 Dangerous Sites (Bar chart)
- Site Category Breakdown (Stacked bar)
- Site Age Trend & Forecast (Line chart)
- Danger Map View (Map chart)
- Story 1: Categories per Region (Storyline)
- Story 2: Heritage Timeline and Trends

4. Setup Instructions

4.1. Prerequisites

- Python 3.10+
- Flask
- Git

4.2. Installation

```
git clone <your-repo-url>
cd project-folder
pip install -r requirements.txt
python app.py
```

5. Folder Structure

```
heritage-treasures-project/
├── app.py
├── templates/
│   └── index.html
├── static/
│   └── style.css
├── requirements.txt
└── README.md
```

User Interface

- ☐ Navigation: Home | About | Dashboard | Storyboard
- ☐ Dashboard and story sections are directly embedded via <iframe>
- ☐ Landscape background with styled sections
- ☐ Fully responsive on mobile and desktop

Testing

- Manual testing for dashboard responsiveness
- Tableau performance testing (filters, field usage, scene load time)
- Web UI tested on Chrome, Firefox, and Edge

6. Screenshots or Demo




About the Project

Heritage Treasures: An In-depth Analysis of UNESCO World Heritage Sites is an interactive data visualization project developed using **Tableau** and **Flask**. The goal is to provide insights into the global distribution, categorization, and preservation status of world heritage sites.

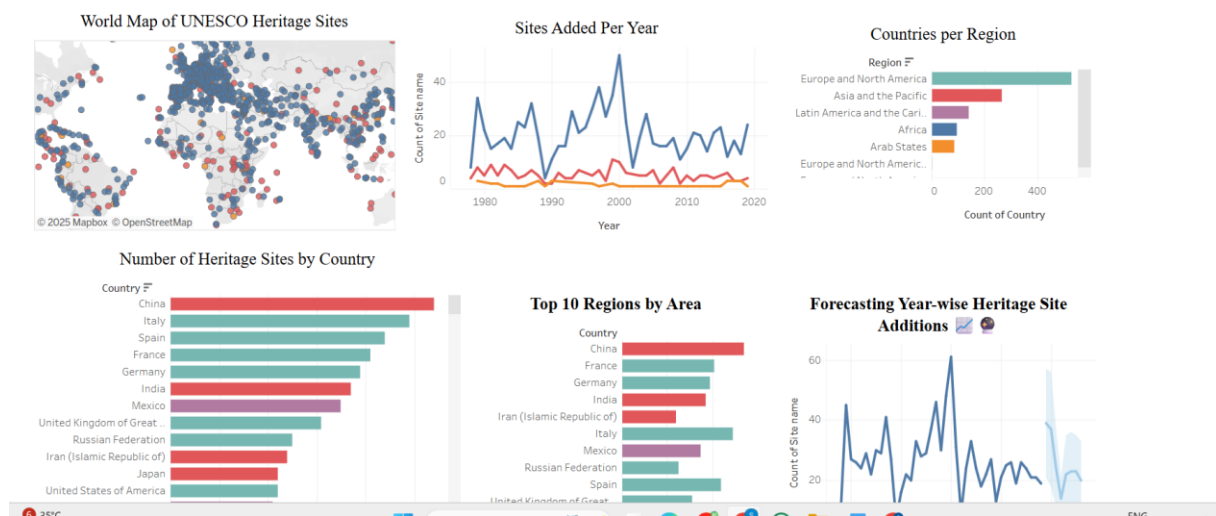
- Global Reach:** The dataset spans cultural, natural, and mixed heritage sites across every inhabited continent.
- Visualization:** Dashboards reveal country-wise site counts, endangered site analysis, and category-wise trends.
- Historical Insights:** Explore how UNESCO listings evolved over time.
- Technology Stack:** Built with Tableau for analytics, Flask for integration, and hosted on Render.

The project promotes awareness of global heritage conservation and offers a clean, educational interface for exploration.



Dashboard 1 - Global Overview

Dashboard1: UNESCO World Heritage Site Overview



■ Story 2 - Timeline and Regional Trends

Endangered Sites and Site Trends

This dashboard focuses on endangered heritage sites and historical trends.

Map of Endangered Sites

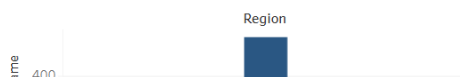


Endangered Sites & Trends

Danger Sites (as Table)

MIN(Site name)	Country	Region	Cat
Old City of Jerusalem and its Walls	Jerusalem (Si	Arab States	Cult
Chan Chan Archaeological Zone	Peru	Latin America and the Caribbean	Cult
Mount Nimba Strict Nature Reserv	Côte d'Ivoire	Africa	Nat
Air and Tānā Natural Reser	Niger	Africa	Nat
Virunga National Park	Democratic R	Africa	Nat
Manovo-Gounda St Floris National	Central Africa	Africa	Nat
Kahuzi-Biega National Park	Democratic R	Africa	Nat

Analysis of Danger Sites and Area of Heritages



Demo Link:

<https://drive.google.com/file/d/1gxVAiO4eUy6gvJxnLaaxK9l840KwCt6f/view?usp=drivesdk>

Known Issues

- Tableau stories might not embed properly on localhost
- Internet connection required to load Tableau iframes
- Not optimized for batch or live data updates

Future Enhancements

- Add filters for live exploration on the web UI
- Integrate multilingual captions for international reach
- Create a downloadable PDF report generation from dashboard insights
- Add interactive filters for story scenes

