

PROJECT REPORT

1. INTRODUCTION

1.1 Project Overview

The Heritage Treasures project aims to explore and analyze the global distribution and characteristics of UNESCO World Heritage Sites using powerful visual analytics in Tableau. This project integrates multiple dimensions of heritage data such as country, region, category (Cultural, Natural, Mixed), year of inscription, and site status to create interactive and insightful dashboards. By transforming complex global datasets into intuitive visual representations, the project enables users to understand patterns, trends, and regional differences effectively.

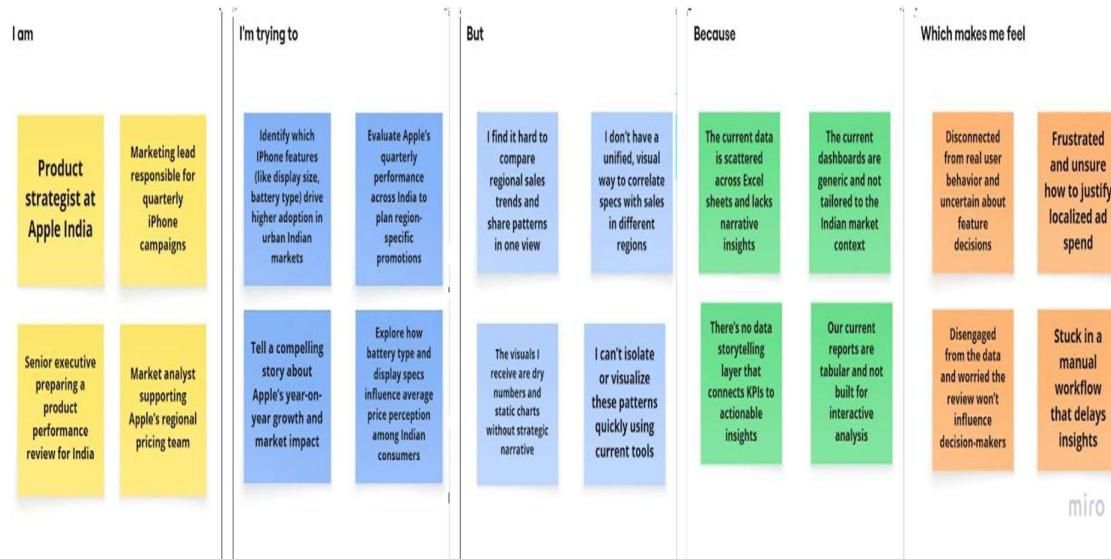
1.2 Purpose

The primary purpose of this project is to assist researchers, policymakers, heritage analysts, and decision-makers in understanding the growth, distribution, and classification of UNESCO World Heritage Sites across the world. Through a data-driven approach, the project provides an interactive platform to explore regional trends, category dominance, and year-wise inscription patterns. This helps in identifying heritage concentration areas, understanding preservation trends, and supporting informed decisions related to cultural and environmental conservation.

2. IDEATION PHASE

2.1 Problem Statement

Customer Problem Statement



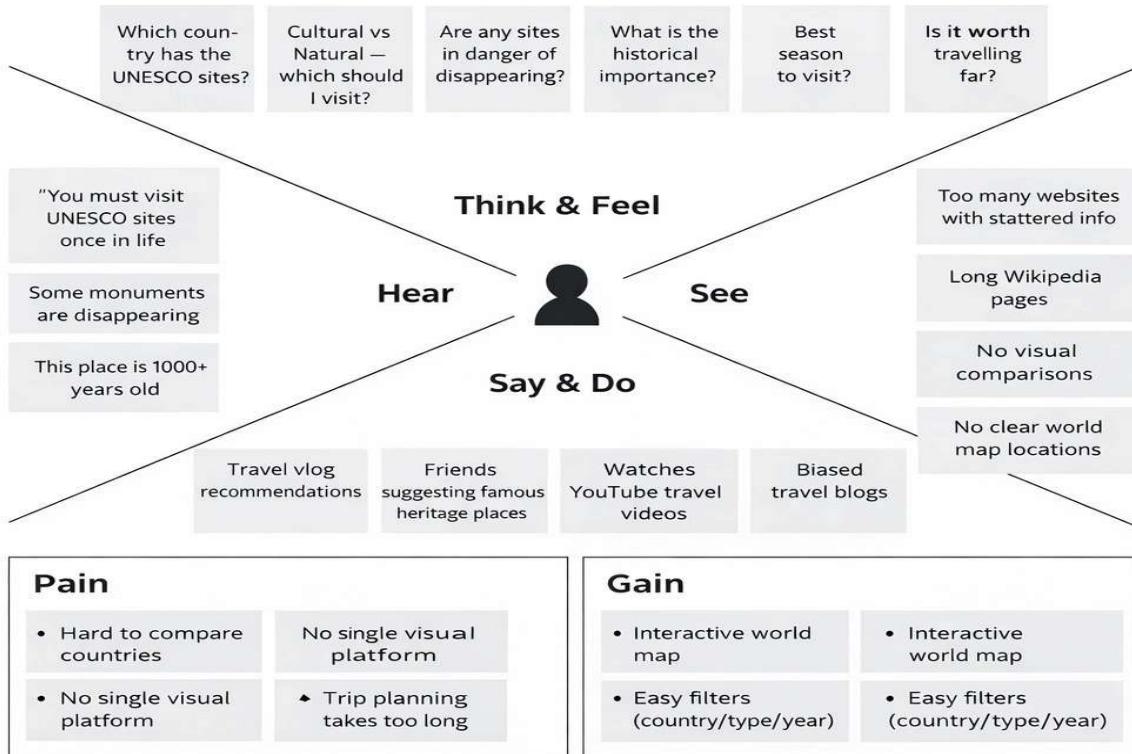
Problem Statement (PS)	I am	I'm trying to	But	Because	Which makes me feel
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PS-1	Heritage site manager / conservation planner	to identify which sites in my region are highest risk and why	data about threats, dates, and visitation is scattered and not visualised	I need a single dashboard to combine site details, threat levels, and trends	overwhelmed and unable to justify priorities to funders
PS-2	Cultural traveller / content creator	to discover notable sites by theme (architecture, nature), time period, and proximity	site lists are long and not interactive for filtering by interests or travel distance	I want to build engaging maps and story views to plan trips and make reels/articles	frustrated because research takes too long and content ideas don't stand out

2.2 Empathy Map Canvas

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



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2.3 Brainstorming

LTVIP2025TMDS/735

1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

⌚ 5 minutes

PROBLEM
How might we [your problem statement]?

How might we help Apple and stakeholders explore iPhone sales, features, and market performance in India more effectively using interactive dashboards and storytelling?

Key rules of brainstorming
To run an smooth and productive session

- Stay in topic.
- Defer judgment.
- Go for volume.
- Encourage wild ideas.
- Listen to others.
- If possible, be visual.

Need some inspiration?
See a finished version of this board to kickstart your work.

[Open example →](#)

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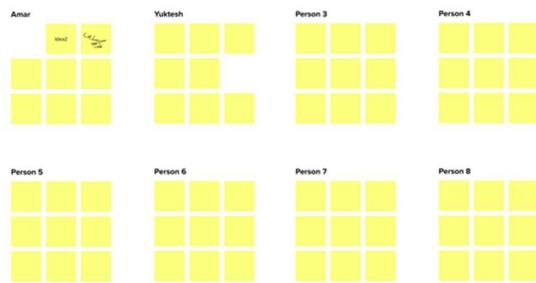
2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

TIP
You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!



3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 20 minutes

Person 4

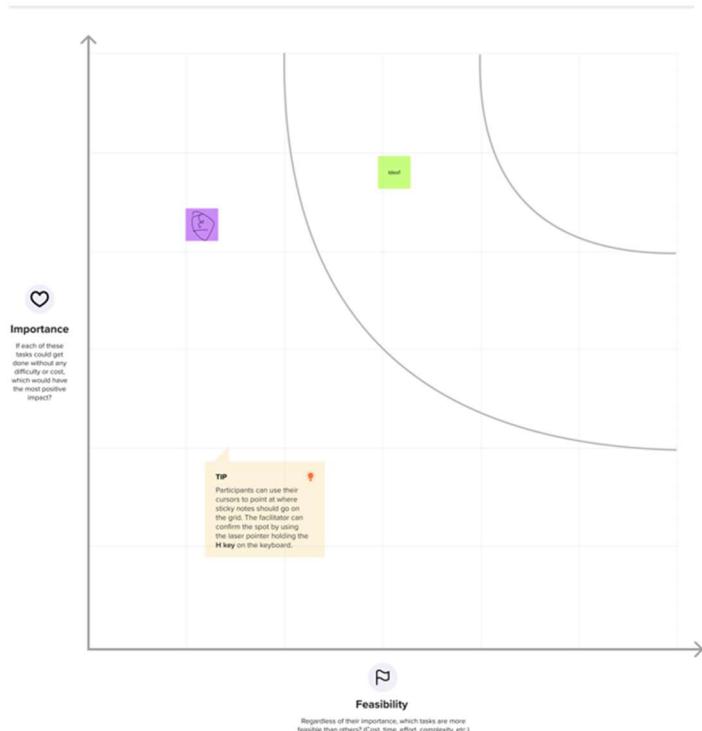
TIP
Add customizable tags to sticky notes to make it easier to find, organize, and categorize important ideas as themes emerge over time.

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes



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3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

Stage	Need	Action	Touchpoint	Pain Point	Opportunity
Discover	Understand global distribution of heritage sites	Searches for UNESCO datasets and reports	UNESCO website, research portals, CSV files	Data scattered across sources	Provide a single cleaned dataset & dashboard entry
Explore	Compare sites by country & category	Imports data into Tableau and creates initial charts	Tableau worksheets, Excel sheets	Manual filtering is time-consuming	Add interactive filters (Country, Category, Year)
Engage	Create compelling visual storytelling	Designs dashboard layout with tooltips & captions	Tableau Dashboard view	Dashboard may look plain or less interactive	Add actions, story points, and dynamic tooltips
Decide	Present finding clearly for evaluation	Publishes dashboard or present slides	Presentations	Data may appear technical & complex	Use Tableau story feature with insights & summarize

3.2 Solution

Requirement

Functional

Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Interactive Heritage KPI Dashboard	Displays total number of UNESCO sites, category distribution (Cultural/Natural/Mixed), and country-wise counts with filters.
FR-2	Country & Category Comparison	Allows users to compare heritage sites by country, region, and category.
FR-3	Year-wise Trend Analysis	Shows inscription trends over years using line and bar charts.
FR-4	Geo-Map Visualization	Displays global heritage site locations on an interactive world map.
FR-5	Endangered Site Insights	Highlights endangered sites and their risk status for analysis.

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FR-6	Story-Based Dashboard	Provides a narrative view explaining key insights using Tableau story points.

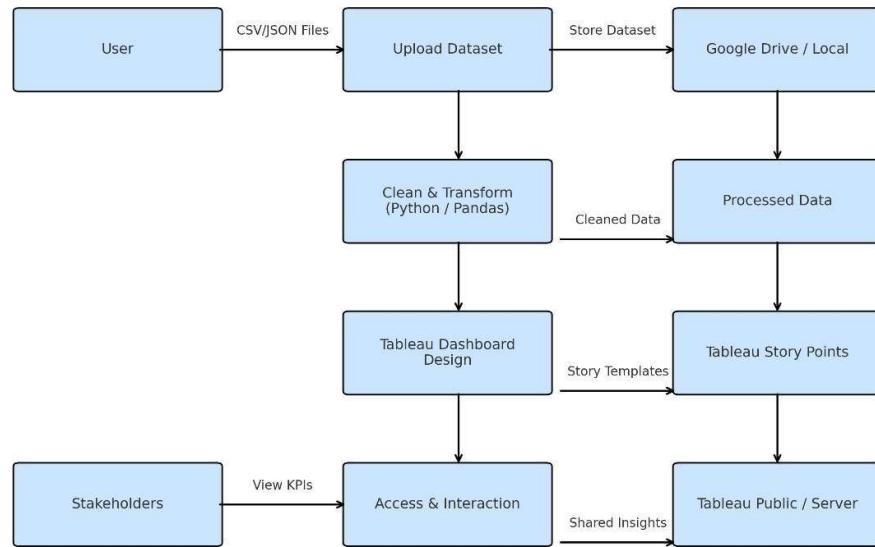
Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Performance	Dashboards must load within 3–5 seconds even with filters applied.
NFR-2	Scalability	The system should support future addition of new heritage site data without redesigning the dashboard.
NFR-3	Responsiveness	Dashboard layout should be usable on laptops and projectors during presentations.
NFR-4	Reliability	The dashboard should function without errors during interaction and filtering.
NFR-5	Usability	The interface should be simple, readable, and easy to navigate without technical knowledge.
NFR-6	Data Accuracy	All KPIs, calculations, and comparisons must be validated against original UNESCO data sources.

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3.3 Data Flow Diagram

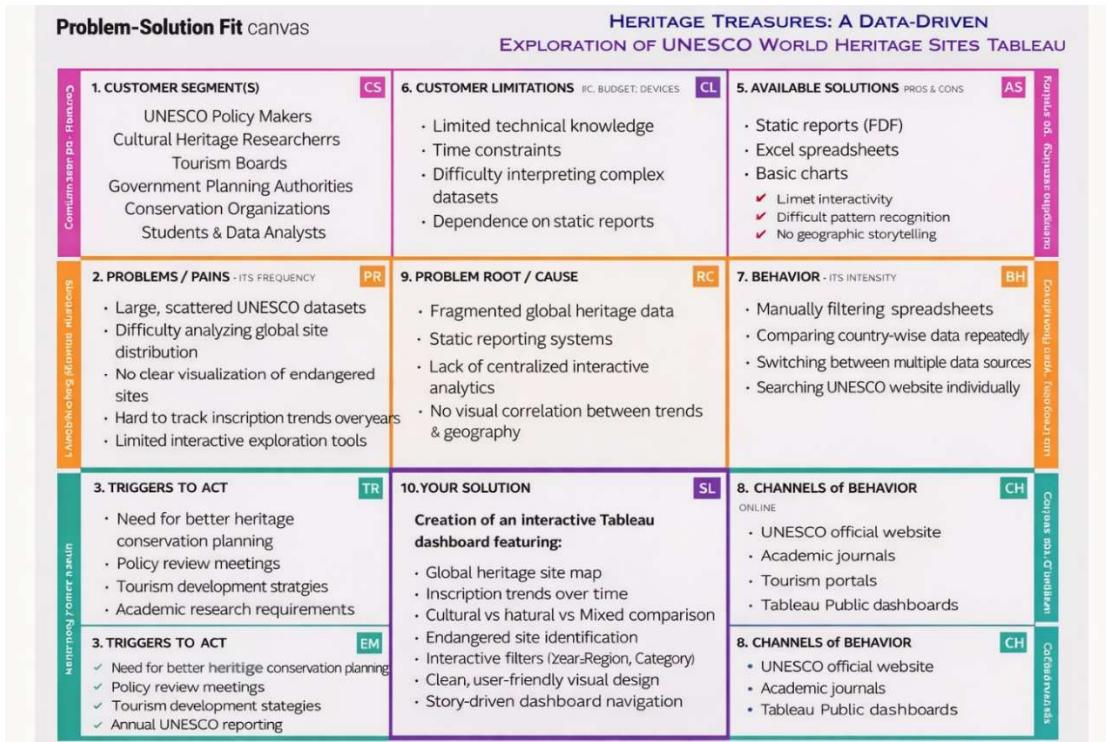


3.4 Technology Stack

Component	Tool/Technology	Purpose
Data Source	UNESCO World Heritage CSV, Kaggle Dataset	World Heritage site details, location, category, year of inscription
Visualization	Tableau Desktop	Creating interactive dashboards and story analysis
Storage	Google Drive / Local	Storing raw and cleaned datasets
Collaboration	Google Docs	Documentation and report preparation
Deployment	Tableau Public	Publishing and sharing dashboards online

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4. PROJECT DESIGN



4.1 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	UNESCO heritage data is large and scattered, making it difficult to analyze site distribution, trends, and endangered status effectively.
2.	Idea / Solution description	Develop an interactive Tableau dashboard with global maps, trend analysis, category comparison, and dynamic filters.
3.	Novelty / Uniqueness	Provides interactive, story-driven visualization instead of static reports or spreadsheets.

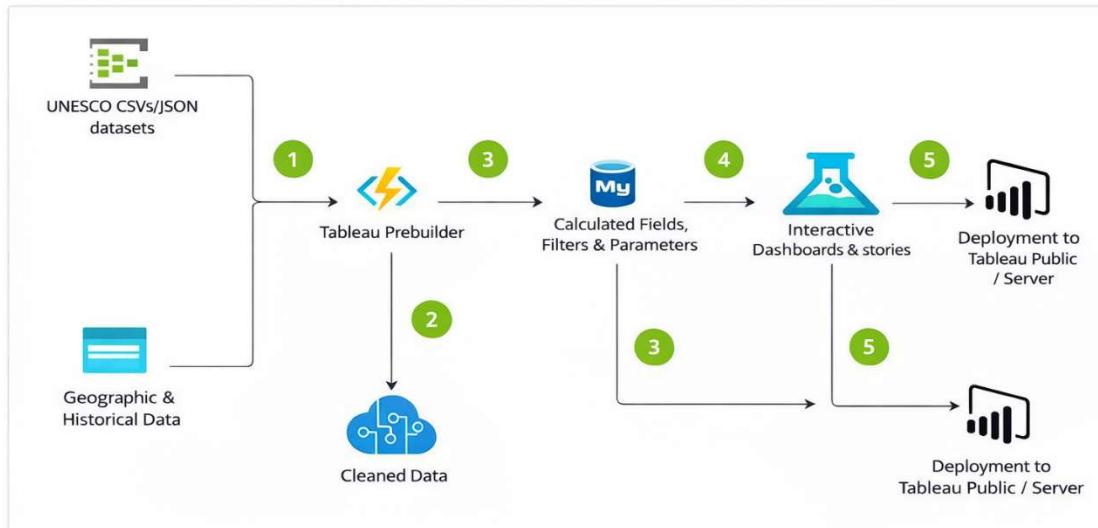
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4.	Social Impact / Customer Satisfaction	Supports better conservation planning and increases global heritage awareness.
5.	Business Model (Revenue Model)	Can be deployed via Tableau Public or institutional Tableau Server for analysis and reporting.
6.	Scalability of the Solution	Easily extendable to include tourism, climate, or funding-related datasets.

4.2 Solution Architecture

Solution Architecture Diagram:

Heritage Treasures: A Data-Driven Analysis of UNESCO World Heritage Sites Using Tableau



5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

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Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Data Collection	USN-2	As a user, I can collect UNESCO World Heritage datasets (CSV/JSON) for analysis	2	High	ALL
Sprint-2	Data Preprocessing	USN-3	As a user, I can clean missing values and standardize country/category fields	3	High	ALL
Sprint-2	Data Structuring	USN-4	As a user, I can create calculated fields (site count, category classification)	3	Medium	ALL
Sprint-3	Visualization development	USN-5	As a user, I can create a global interactive map of heritage sites	5	High	ALL
SPRINT - 4	Dashboard & STORIES	USN - 6	As a user, I can design interactive dashboards with filters (Year, Region, Category)	4	High	ALL
SPRINT - 5	Report & documentation	USN - 7	As a user, I can publish the dashboard to Tableau Public and prepare project documentation	7	MEDIUM	ALL

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

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S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Rendered from cleaned CSV files containing UNESCO World Heritage Sites data including Country, Region, Category (Cultural/Natural/Mixed), Year of Inscription, Area (hectares), and Site Status. Loaded 1,000+ records successfully without errors.
2.	Data Preprocessing	Null values handled; duplicate records removed; country and region names standardized; category grouping applied; year classification created for trend analysis.
3.	Utilization of Filters	Applied Tableau filters for Country, Region, Category, Year of Inscription, and Site Status. Dashboard response time under 2–3 seconds.
4.	Calculation fields Used	- Total Sites by Country - Category-wise Distribution - Year-wise Growth Trend - Regional Percentage Share - KPI Metrics (Total Sites, Top Region, Oldest Inscription Year)
5.	Dashboard design	No. of Visualizations / Graphs – Multiple charts (Map, Bar Chart, Line Chart, KPI Cards) – 2 Dashboards Created.
6	Story Design	No. of Visualizations / Graphs – 1 Story with 5 Story Points (Global Overview, Category Analysis, Regional Comparison, Trend Analysis, Conclusion).

7. RESULTS:

7.1 OUT PUTS

7.2

Screenshots

DASHBOARD:

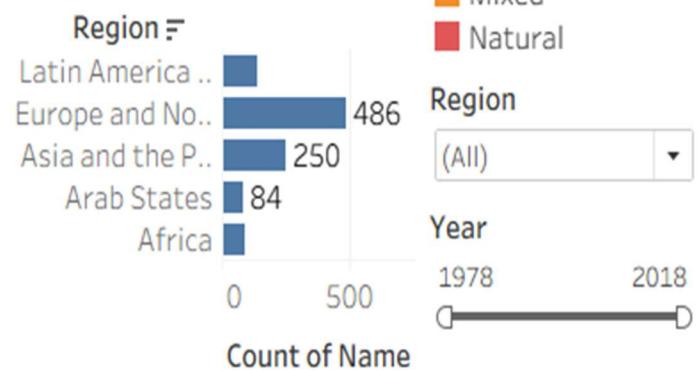
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UNESCO World Heritage Sites Analysis

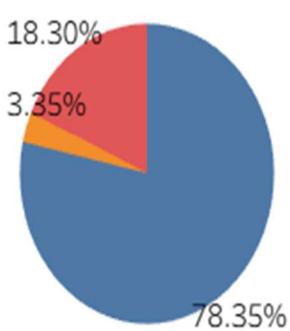
Global Map



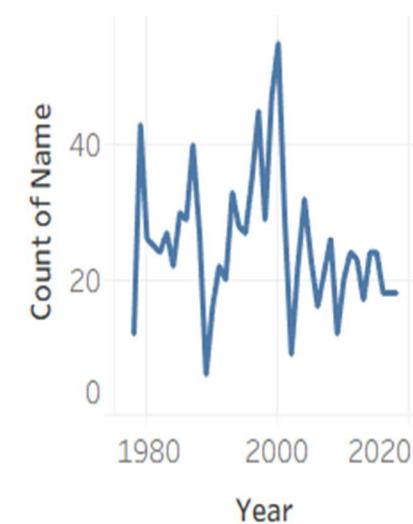
Top Regions



Category Distribution



Year Wise Trend



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STORIES

OUTPUTS:

UNESCO World Heritage Sites Analysis Story

Introduction

This project provides a comprehensive analysis of UNESCO World Heritage Sites across different regions, categories, and years of inscription.
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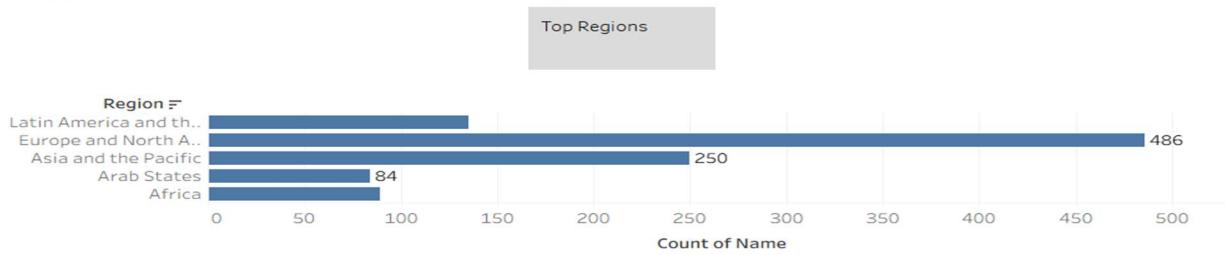
Global Distribution of Heritage Sites

Global Map

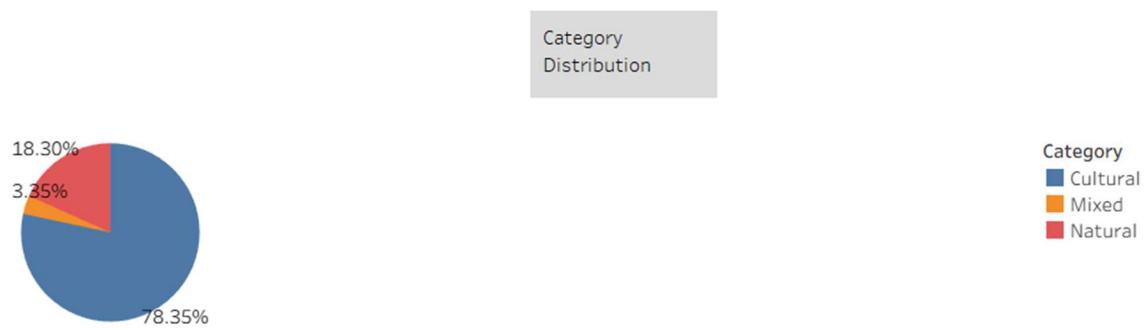


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Regions with Highest Heritage Sites

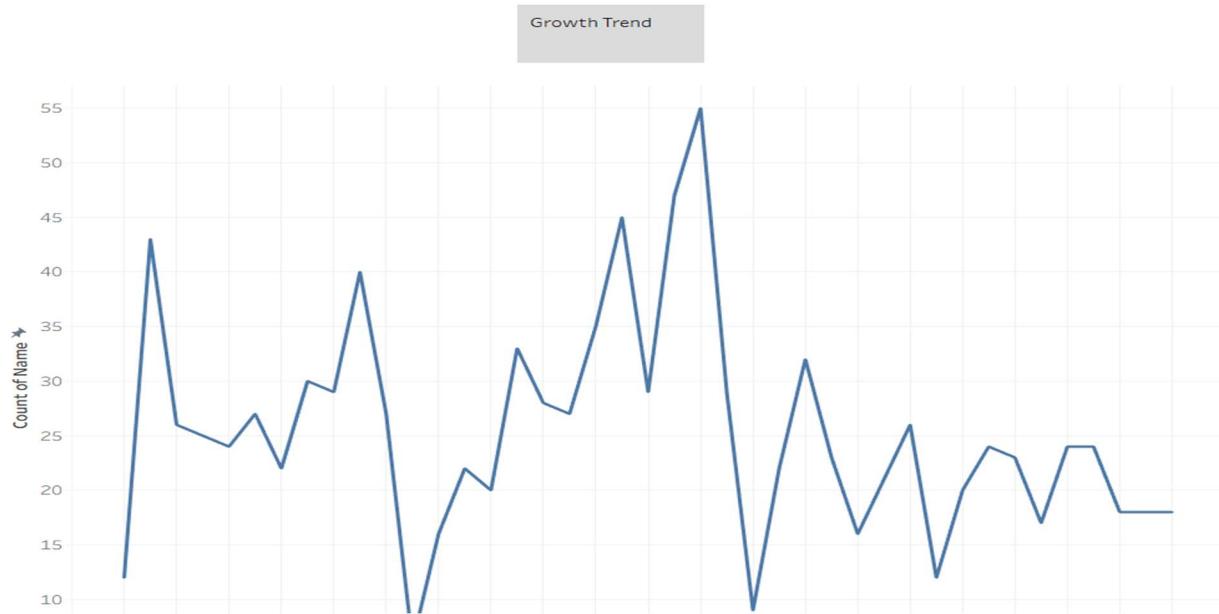


Category-wise Distribution



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Year-wise Growth Trend



Conclusion

Conclusion

Europe and North America have the highest number of heritage sites. Cultural category dominates globally. Growth trend incre..

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8. ADVANTAGES & DISADVANTAGES

ADVANTAGES:

- **Interactive Visualization** – Tableau dashboards allow dynamic filtering and drill-down analysis for better user interaction.
- **Clear Data Representation** – Complex UNESCO heritage data is converted into simple visual formats like maps, bar charts, and trend lines.
- **Better Decision Support** – Helps policymakers and researchers understand regional distribution and growth patterns.
- **Time Efficient Analysis** – Large datasets (1000+ records) can be analyzed quickly without manual calculations.
- **Storytelling Capability** – Tableau Story feature presents insights in a structured and logical sequence.
- **User-Friendly Interface** – Easy navigation with filters for Country, Region, Category, and Year.

DISADVANTAGES:

- **Dependent on Dataset Quality** – Inaccurate or incomplete data may lead to misleading insights.
- **Limited Predictive Analysis** – The project mainly focuses on descriptive analytics, not advanced forecasting.
- **Performance Issues with Large Data** – Very large datasets may slightly affect dashboard response time.
- **Requires Tableau Knowledge** – Users need basic understanding of Tableau to modify or enhance dashboards.
- **No Real-Time Integration** – The project uses static CSV data instead of live API integration.

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9. CONCLUSION:

The project successfully demonstrates how Tableau can be used to analyze and visualize global heritage data effectively. The interactive dashboards and story provide deep insights into UNESCO World Heritage Sites and support better understanding of global heritage distribution and trends.

10. FUTURE SCOPE:

The project can be enhanced in the future by integrating real-time UNESCO data for automatic updates. Predictive analytics can be added to forecast future heritage site trends. Advanced geographic visualizations such as heatmaps can improve spatial analysis. The dashboard can also be published on Tableau Public for wider accessibility. Additionally, integrating tourism and sustainability data can provide deeper insights into the global impact of World Heritage Sites.

11. APPEND

Dataset Link:

<https://drive.google.com/file/d/1UqF7gt90xuYkkioxCcHMhb0zCWylWAXI/view?usp=sharing>

GitHub Link:

<https://github.com/Banavathu/Heritage-Treasures-An-In-Depth-Analysis-of-UNESCO-World-Heritage-Sites-In-Tableau>

Project Demo Link:

https://drive.google.com/file/d/1F6dooNRE8TWp63zg9w31D4Mm-hQGW6I_/view?usp=sharing

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