Final Project Report Template

1. Introduction

1.1. Project overviews

The UNESCO World Heritage List stands as a testament to the extraordinary cultural and natural wealth of our planet. These sites, recognized for their "outstanding universal value," offer a glimpse into human history, artistic achievements, and the breathtaking beauty of the natural world. This project, "Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau," aims to leverage the power of data visualization to explore, understand, and communicate the fascinating stories behind these invaluable sites. This project delves into the rich tapestry of UNESCO World Heritage Sites, leveraging the power of Tableau to transform complex data into compelling visual narratives. Our goal is to create an interactive exploration of these invaluable cultural and natural treasures, fostering a deeper understanding of their significance and global distribution.

1.2. Objectives

Data Consolidation: We will compile a comprehensive dataset encompassing key attributes of each World Heritage Site, including location, designation year, type (cultural, natural, mixed), and inscription criteria.

Visual Exploration: Utilizing Tableau, we will construct interactive maps, charts, and dashboards to visualize the global distribution of sites, temporal trends in inscription, and comparative analyses of site categories.

Insight Generation: We will analyze the data to uncover patterns and trends, such as the geographical concentration of sites, the evolution of the World Heritage List over time, and the prevalence of specific inscription criteria.

Interactive Storytelling: Through interactive dashboards, users will be empowered to explore the data independently, filter by region or type, and gain personalized insights.

2. Project Initialization and Planning Phase

2.1. Define Problem Statement

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	**China**	Protect the heritage sites of three categories	Some heritage sites are facing threats like flooding and rising humidity	There are human activities like overtourism and industrialization	World heritage is very important for the society,its our responsibility to keep it safe
PS-2	**Thailand**	Protect the heritage sites of three categories	Some heritage sites are facing threats like poaching land right conflicts	There are human activities and climate changes potencially leading to the sites being listed as in danger by UNESCO	The management of thailands heritage should be carefull and protect the sites as well
PS-3	**Brazil**	Protect and promote heritage sites	Some heritage sites are facing threats like natural disasters lack of funding and	Many historical sites suffering from lack of funding this can lead to the deterioration of	World heritage is of important fundamental for

		of three categories	uncontrolled development	buildings monuments and other assests	peoples creative and peace

2.2. Project Proposal (Proposed Solution)

Project Overview	
Objective	To map and visualize the geographical distribution of UNESCO World Heritage Sites worldwide.
Scope	This includes information on site names, locations, categories (cultural, natural, mixed), criteria for inscription, and year of inscription.
Problem Statement	
Description	This project leverages the power of Tableau to transform raw data about UNESCO World Heritage Sites into an interactive and visually compelling dashboard.
Impact	Visualizations will help people grasp the global distribution, diversity, and significance of these sites.
Proposed Solution	
Approach	Explore the data to identify patterns, trends, and outliers. Use Tableau's interactive features to drill down into specific data points.
Key Features	Geospatial Visualization, Site Categorization , Site Attribute Display , "World Heritage in Danger" Visualization, Temporal Analysis

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	Laptop	Hp RYZEN 5
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	476 GB
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy

Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	format	Ms Excel

2.3. Initial Project Planning

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-1	Data collection & extraction from database	SCRUM-1	Downloading the datasets	2	High	D.Sreelakshmi	3-3-2025	13-3-2025
Sprint-1	Data preparation	SCRUM-3	Explanation video links	1	High	D.Sreelakshmi	3-3-2025	13-3-2025
Sprint-1	Data Visualization	SCRUM-5	No. Of Unique visualizations Visualizations	2	High	D.Sreelakshmi	3-3-2025	13-3-2025
Sprint-1	Dashboard	SCRUM-8	Responsive And design Of Dashboard Dashboard 2:	2	High	D.Sreelakshmi	3-3-2025	13-3-2025
Sprint-2	Story	SCRUM-11	No Of Scenes Of Story	1	High	D.Sreelakshmi	14-3-2025	18-3-2025
Sprint-3	Performance Testing	SCRUM-13	No Of Visualizations/Graphs Utilization Of Data Filters	2	High	S.Jyothika S.Mohammadi	19-3-2025	20-3-2025
Sprint-4	Web Integration	SCRUM-16	Go To Dashboard/Story,Click On Share Button On The Top Ribbon Dashboard And Story Embed with UI With Flask	2	High	B.Narasimhulu S.Mohammadi	21-3-2025	22-3-2025

3.Data Collection and Preprocessing Phase

3.1. Data Collection Plan and Raw Data Sources Identified

Data Collection Plan Template

Section	Description

Project Overview	To develop an interactive and insightful Tableau dashboard that provides a comprehensive analysis of UNESCO World Heritage Sites, fostering greater understanding, appreciation, and awareness of these invaluable cultural and natural and mixed treasures.
Data Collection Plan	From the Excel sheet which contains the data of project is the source connected to the Tableau.
Raw Data Sources Identified	Country Name ,Date Inscribed ,Countries listed in Danger under UNESCO,ID no.,Region etc,.

Raw Data Sources Template

Source Name	Description	Location/URL	Format	Size	Access Permissions
Dataset	The Dataset contains Various Heritage Treasures of the Different countries ,regions as well as category of the Heritage treasures of World UNESCO.	Link of projectdata.xlsx	xlsx	14.8 KB	Public
…	…	…	…	…	…

3.2. Data Quality Report

Data Source	Data Quality Issue	Severity	Resolution Plan
UNESCO World Heritage Sites 2019	The data is not properly organised where the datatypes are incorrect and some columns doesn't have the data accurate and there are unneccesary columns with null values	High	Cleaned the data also eliminated the unneccesary columns, incorrect datatypes and added some extra columns for better visualizations.

3.3. Data Exploration and Preprocessing

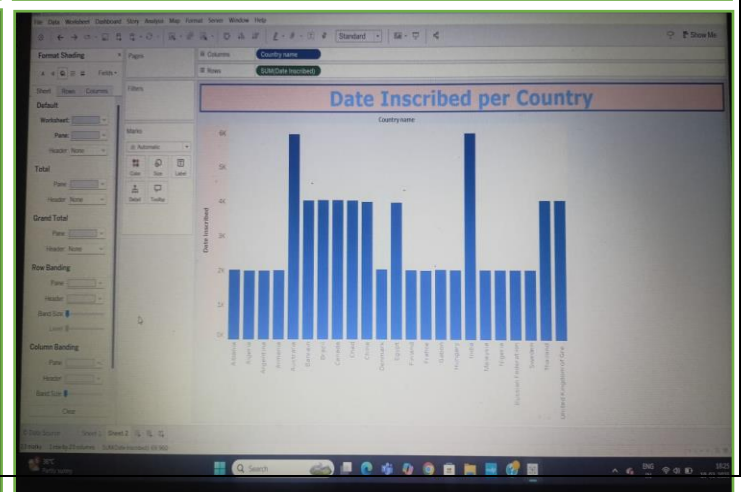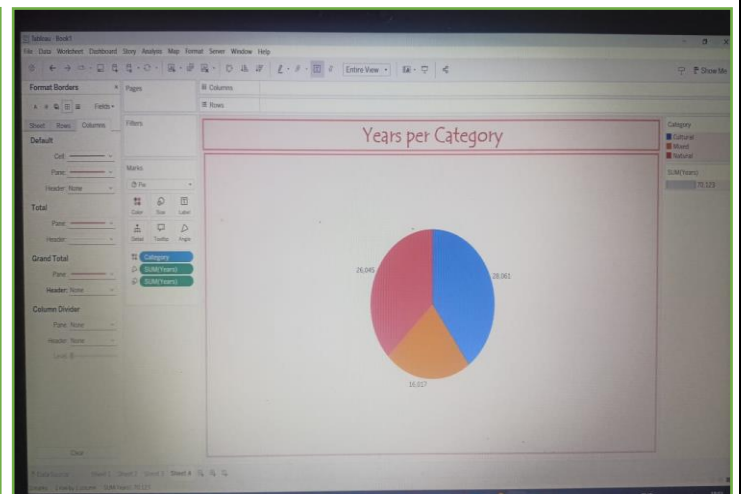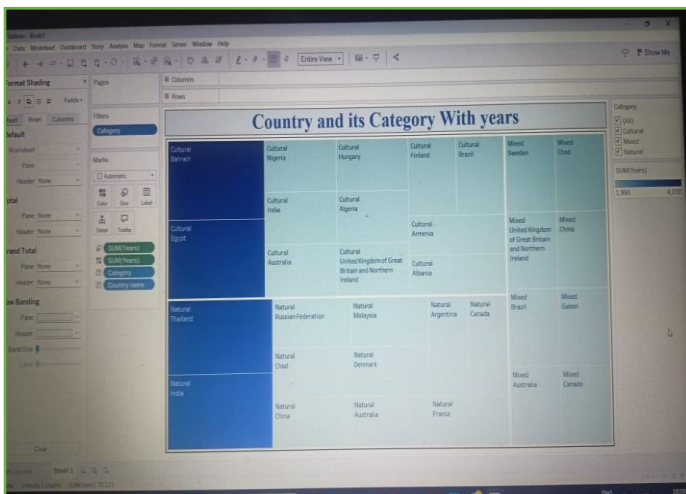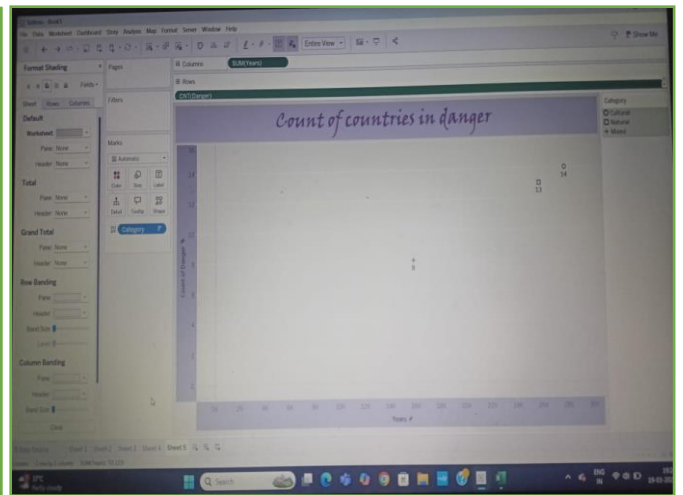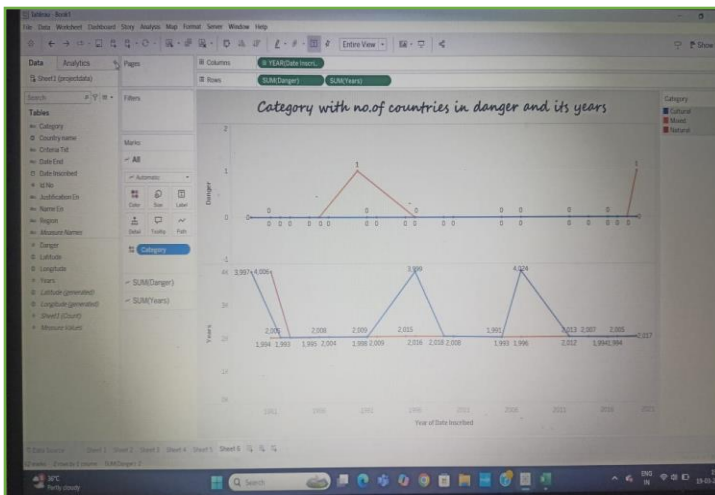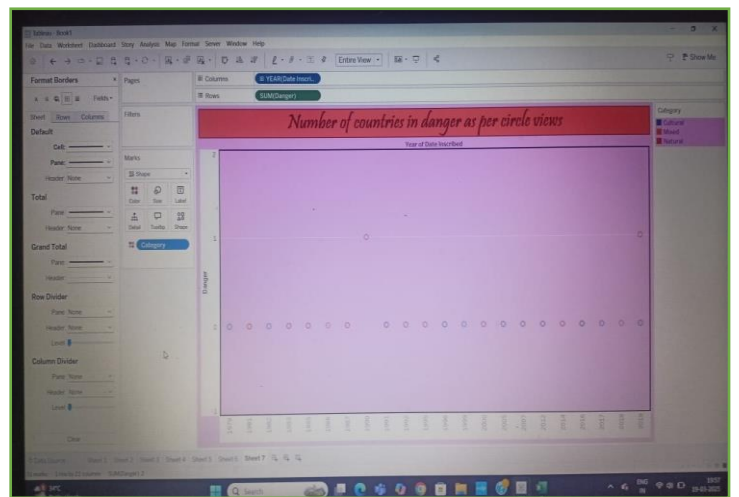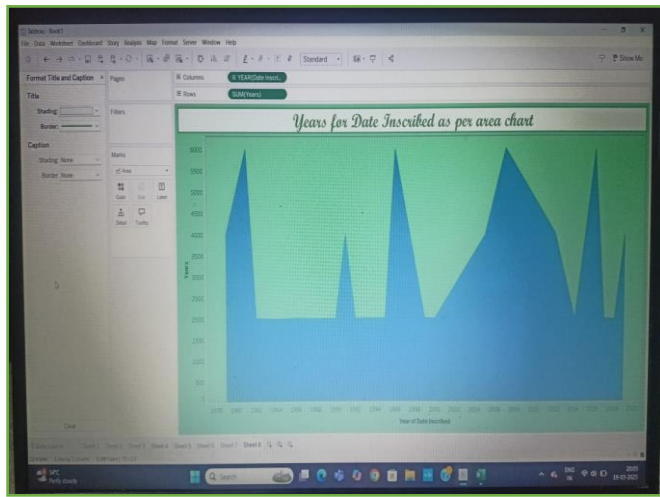| Section	Description
Data Overview	This is the authoritative source for information on World Heritage Sites. The core data is typically structured, making it suitable for analysis in Tableau.The data for this project is primarily obtained from UNESCO, and contains a wealth of geographical, categorical, and temporal data. This data can be enriched by supplemental data from other sources. By understanding the data's characteristics, you can create a robust and insightful Tableau dashboard.

Data Cleaning	Handle missing values, duplicates, and correct errors as well as datatype for each category/field.
Data Transformation	This process involves reshaping, aggregating, and enriching the data to derive meaningful insights. Initially, the dataset may contain raw information about UNESCO World Heritage Sites, including site names, categories, countries, and years inscribed. Data transformation begins with aggregating relevant measures, such as counting the number of sites per country or calculating the time elapsed since inscription.
Data Type Conversion	The dataset, containing information about various UNESCO World Heritage Sites, often comes with fields that are initially assigned incorrect data types, hindering proper analysis. For instance, the "Year Inscribed" field, which should be treated as a numerical or date field, might be imported as a string. To rectify this, a conversion to an integer or date data type is necessary, enabling time-based analyses and calculations.
Column Splitting and Merging	column splitting and merging are essential data transformation techniques to refine and restructure the dataset for enhanced analysis. Column splitting is particularly useful when a single column contains multiple pieces of information that need to be separated. For example, if a "Location" column combines city, region, and country, splitting this column into individual "City," "Region," and "Country" columns allows for more granular filtering and analysis.
Data Modeling	This process involves creating relationships between different tables, defining hierarchies, and establishing appropriate data types. The core data model revolves around a central table containing information about each UNESCO World Heritage Site, including its name, category, country, and year inscribed.
Save Processed Data	After meticulously cleaning, transforming, and modeling the UNESCO World Heritage Sites data within Tableau, the next crucial step is to save the processed data for efficient future use and sharing. This involves exporting the refined dataset in a format that preserves the transformations and ensures compatibility with Tableau's visualization capabilities.

4. Data Visualization

4.1. Framing Business Questions

1. What is the overall trend in date inscriptions - is it increasing, decreasing, or fluctuating?

2. What is the current status of countries in danger?

3. What caused the sudden increase in "Danger" in 1999, specifically in the "Natural" category?

4. What are the reasons for the variation in the count of countries in danger across different years?

5. What are the implications of a country being classified into a particular category?

6. If "Years" refers to the years a site has been listed as "in danger," what are the specific dangers being considered?

7. Why are certain regions or continents more affected by "Danger" than others? What factors contribute to this geographic disparity?

8. What are dates inscribed per country?

4.2. Developing Visualizations

Years for Date Inscribed as per area chart

Number of countries in danger as per circle views

Category with no.of countries in danger and its years

Count of countries in danger

Country and its Category With years

Years per Category

NUMBER OF COUNTRIES IN DANGER

Date Inscribed per Country

7.3 No of Visualization:8

8. Conclusion/Observation

This project, "Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau," successfully transformed raw data into a dynamic and interactive exploration of our planet's most treasured cultural and natural landmarks. By harnessing the power of Tableau, we were able to reveal compelling insights and patterns that would have remained hidden in static datasets.

9.Future Scope

Building upon the foundation of this project, several avenues can be explored to expand its scope and impact. Here's a look at potential future directions:

- ❖ Enhanced Data Integration and Enrichment
- ❖ Advanced Analytics and Visualization
- ❖ User-Centric Development and Customization
- ❖ Collaborative Platforms and Community Engagement

By pursuing these future directions, this project can evolve into a powerful tool for promoting the understanding, appreciation, and preservation of UNESCO World Heritage Sites for generations to come.

10. Appendix

10.1. Source Code(if any)

10.2. GitHub & Project Demo Link:

Project demo link:

https://drive.google.com/file/d/1w2CFidc4DV4gbIHZlDyUGpeai0-KdrTv/view?usp=drive_link

Github Link:

https://github.com/Divutesree/Heritage-Treasures--An-In-Depth-Analysis-of-UNESCO-World-Heritage-Sites-in-Tableau