

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

1. INTRODUCTION

1.1 Project Overview

UNESCO World Heritage Sites are places recognized for their cultural or natural importance. These sites tell the story of human history and natural wonders. Our project focuses on exploring data related to these sites using Tableau, a powerful data visualization tool. The goal is to help people understand patterns, insights, and trends in heritage preservation across the world.

1.2 Purpose

The purpose of this project is to analyze and visualize heritage site data in an interactive and meaningful way. By using Tableau, we aim to bring awareness about world heritage, show which countries have the most sites, highlight endangered sites, and help in understanding how cultural and natural heritage is spread across the globe.

2. IDEATION PHASE

2.1 Problem Statement

To build a data visualization dashboard that helps analyze UNESCO World Heritage Sites by country, continent, type, status, and year of inscription using Tableau.

2.2 Empathy Map Canvas

We focused on what heritage enthusiasts, educators, and travelers:

- Think & Feel: Curious about history, want to explore diverse cultures
- See: Data in boring tables, hard to understand insights
- Hear: News about endangered sites or new additions
- Say & Do: Look for maps, stats, and visual stories online
- Pain: Difficult to access meaningful information easily
- Gain: A clear, engaging, visual experience that educates and inspires

2.3 Brainstorming

We listed ideas like:

- Creating maps of heritage site locations
- Showing trends over time
- Comparing cultural vs natural sites
- Using filters to allow users to explore their interests
- Highlighting endangered sites

3. REQUIREMENT ANALYSIS

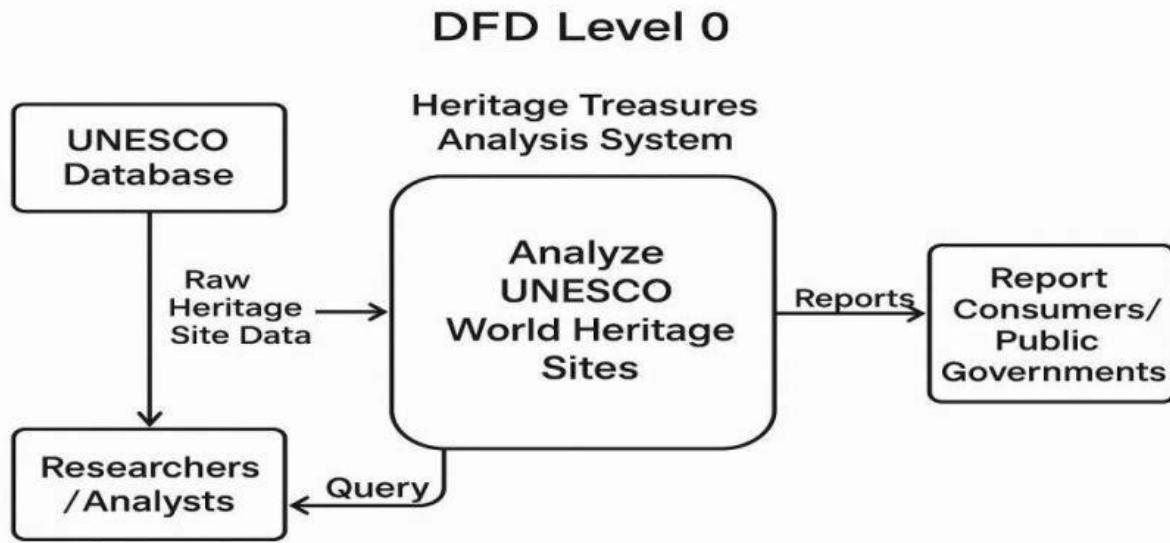
3.1 Customer Journey Map

Stage	Action	Tool	Emotion	Opportunity
Discover	User finds our dashboard	Tableau Public	Curious	Impress with visuals
Explore	Filters by country/type	Filters	Engaged	Add story sections
Learn	Sees endangered sites	Graphs	Surprised	Promote awareness
Share	Shares dashboard	Link	Proud	More reach & impact

3.2 Solution Requirement

- Dataset of UNESCO heritage sites
- Tableau for dashboard creation
- Charts: maps, bar charts, line graphs, pie charts
- Filters: country, type, year, status

3.3 Data Flow Diagram



3.4 Technology Stack

- **Frontend:** Tableau Public, python
- **Backend:** flask(data-based project)
- **Preprocessing Tool:** Excel / Google Sheets

• **DataSource:** <https://www.kaggle.com/datasets/ujwalkandi/unesco-world-heritage-sites/data?select=whc-sites2019.csv>

4. PROJECT DESIGN

4.1 Problem-Solution Fit

The problem was that raw heritage site data was hard to interpret. The solution was to make it interactive and visual, helping users understand it easily.

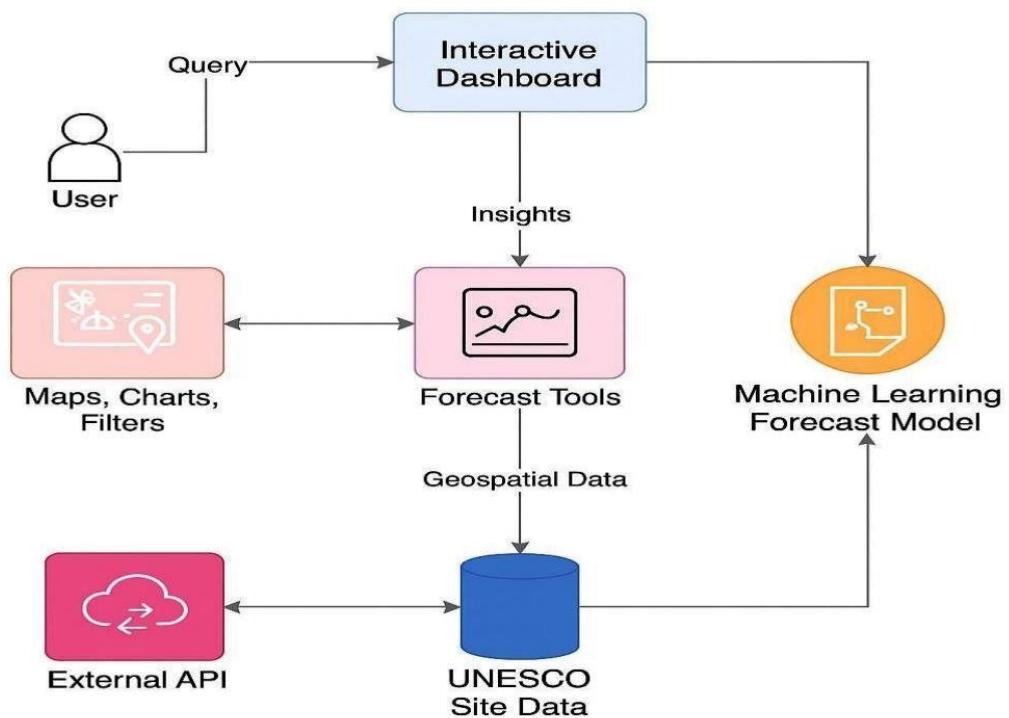
4.2 Proposed Solution

An interactive Tableau dashboard that shows insights such as:

- Number of heritage sites per country
- Growth over time
- Endangered sites
- Cultural vs Natural site comparisons

4.3 Solution Architecture

- Data collected from UNESCO
- Preprocessing to clean and prepare
- Imported into Tableau
- Dashboards created using maps, filters, and charts
- Published on Tableau Public for public access



5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Week Task

- 1 Data Collection and Understanding
- 2 Data Cleaning and Preprocessing
- 3 Creating Dashboards in Tableau
- 4 Designing Story Slides
- 5 Final Testing and Review
- 6 Documentation and Report Writing

6. FUNCTIONAL AND PERFORMANCE TESTING

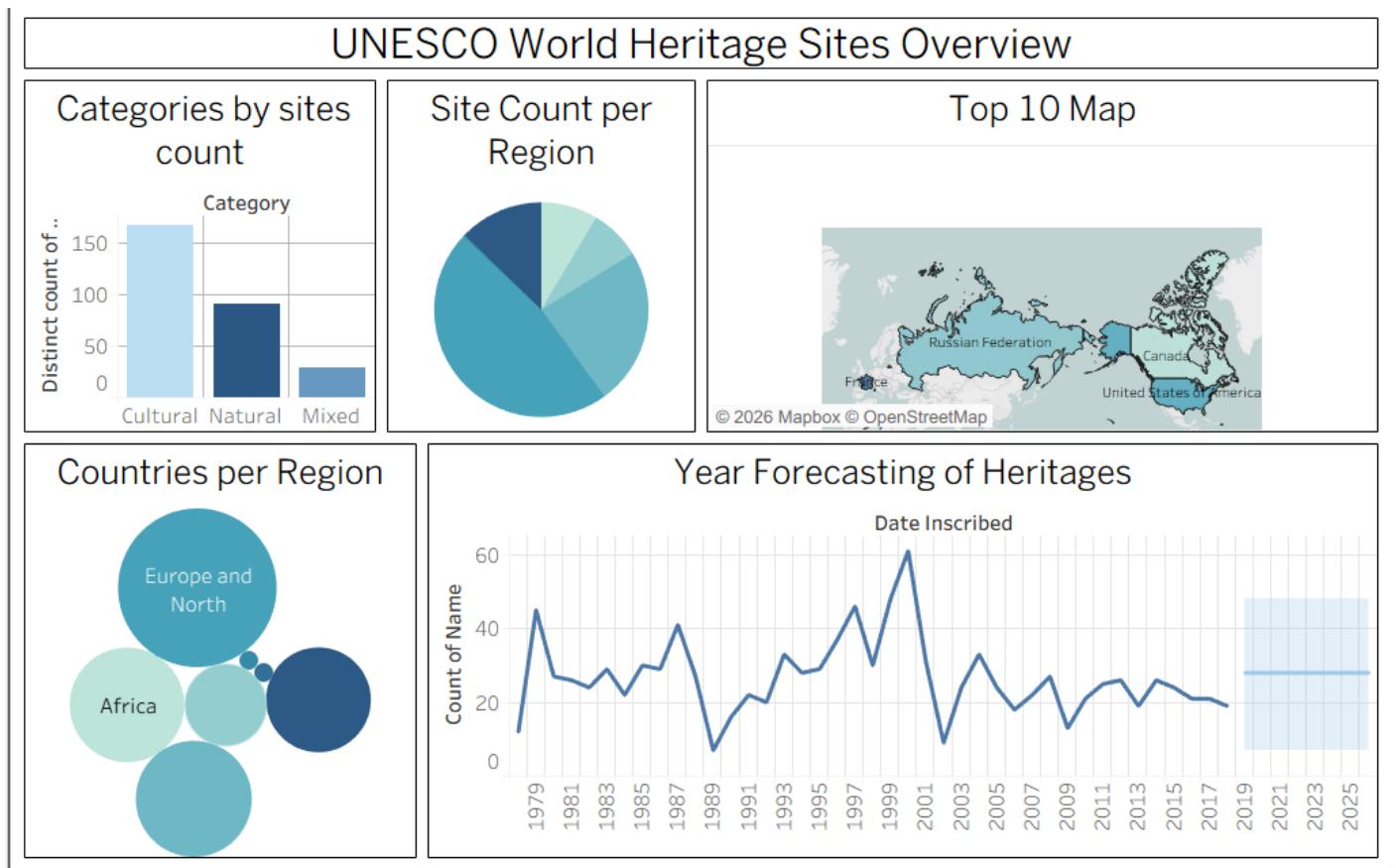
6.1 Performance Testing

We tested the dashboard on different devices and browsers. It loaded quickly and worked well. Filters and visuals responded smoothly, and no lag was noticed.

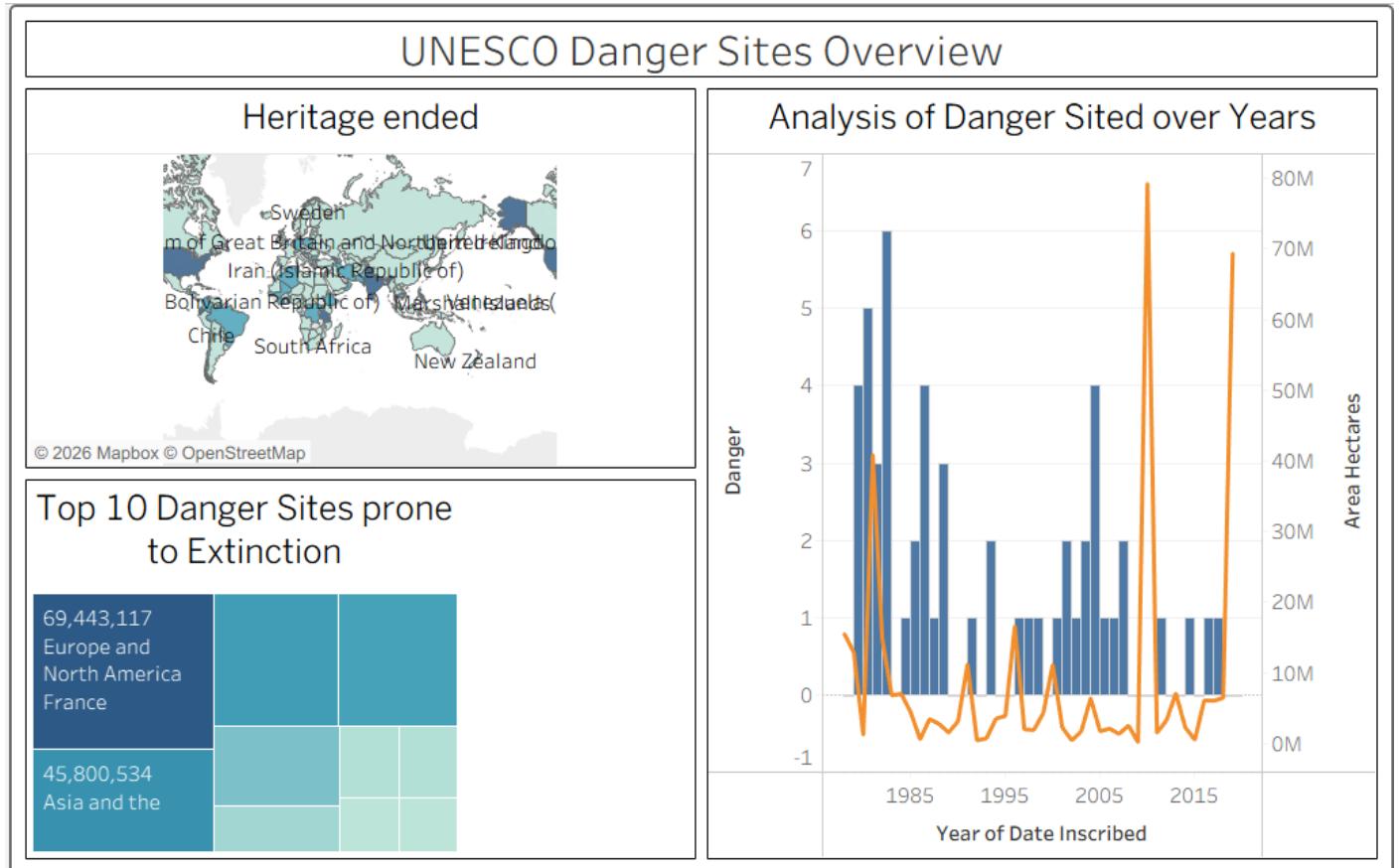
7. RESULTS

7.1 Output Screenshots

Dashboard-1



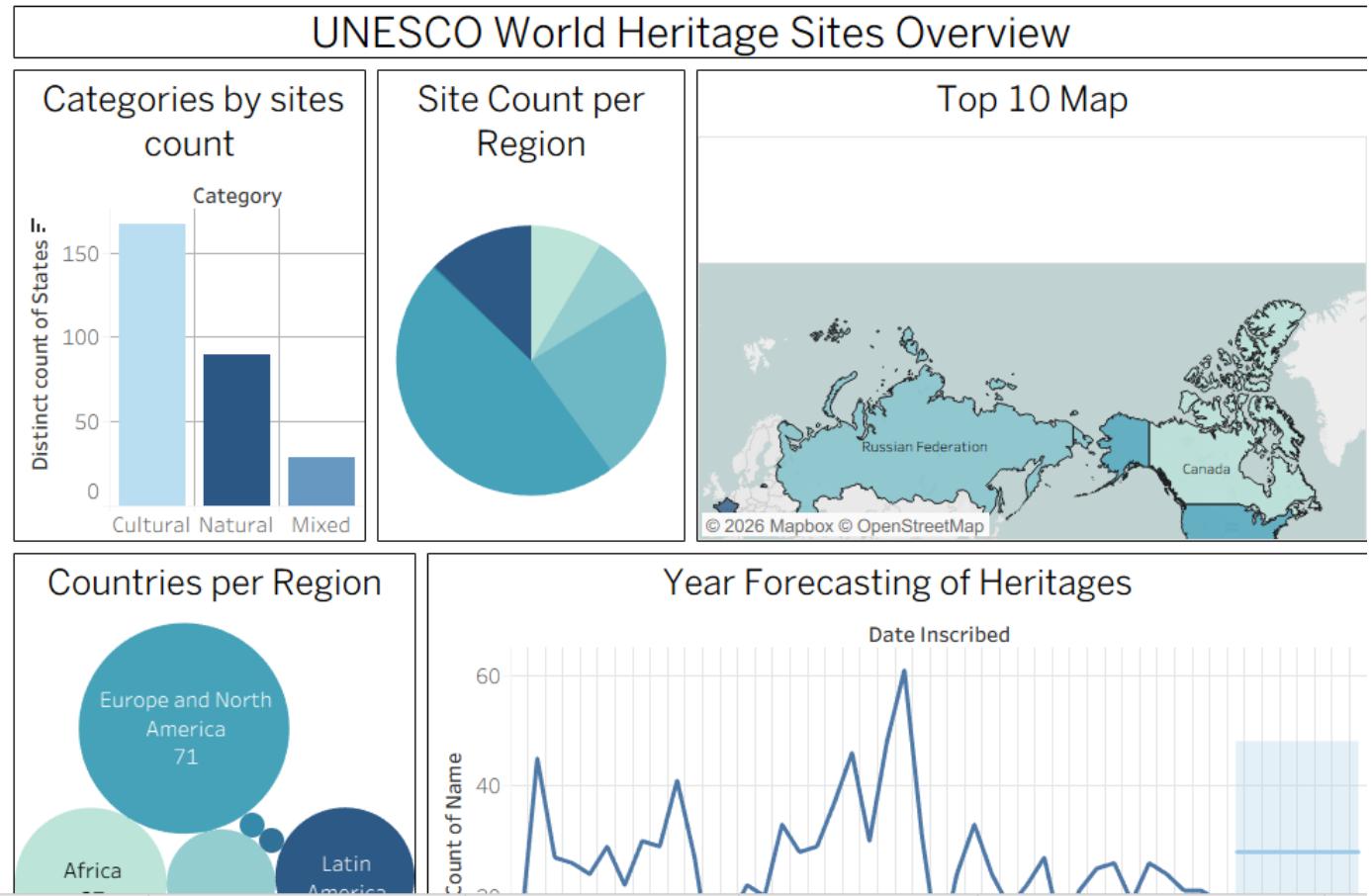
Dashboard-2



Story

UNESCO

< UNESCO World Heritage Sites >
Top Danger Sites & Trends



8. ADVANTAGES & DISADVANTAGES

Advantages

- Easy to understand visual data
- Interactive filters for personalized views
- Helps raise awareness about endangered sites
- Can be accessed publicly and shared

Disadvantages

- Static dataset (not live updating)

- No prediction or AI involved
- Depends on the accuracy of source data

9. CONCLUSION

The project successfully transformed a raw heritage dataset into a rich, interactive visual experience using Tableau. Users can now explore, learn, and appreciate world heritage more easily. This project shows how data science can help in promoting culture and history.

10. FUTURE SCOPE

- Add real-time data updates using APIs
- Include images or videos of sites
- Build a mobile-friendly version
- Enable AI-based recommendations or predictions

Web Integration:

Source Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1" />
  <title>UNESCO Global Heritage Explorer</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet" />
  <link href="https://cdnjs.cloudflare.com/ajax/libs/animate.css/4.1.1/animate.min.css" rel="stylesheet" />
  <link href="https://unpkg.com/aos@2.3.1/dist-aos.css" rel="stylesheet" />
<style>
:root {
  --primary-gold: #c5a059;
  --deep-navy: #0f172a;
  --slate-800: #1e293b;
  --bg-light: #f8fafc;
  --text-main: #334155;
}

```

```
body {  
    background: var(--bg-light);  
    background-image: radial-gradient(#cbd5e1 0.5px, transparent 0.5px);  
    background-size: 24px 24px;  
    color: var(--text-main);  
    font-family: 'Inter', system-ui, -apple-system, sans-serif;  
    transition: all 0.4s ease;  
    scroll-behavior: smooth;  
}  
  
.dark-mode {  
    background: var(--deep-navy);  
    background-image: radial-gradient(#334155 0.5px, transparent 0.5px);  
    color: #f1f5f9;  
}  
  
.navbar {  
    background: rgba(15, 23, 42, 0.9) !important;  
    backdrop-filter: blur(10px);  
    border-bottom: 1px solid var(--primary-gold);  
}  
  
.header {  
    text-align: center;  
    margin-top: 2rem;  
    margin-bottom: 4rem;  
    padding: 4rem 2rem;  
    background: linear-gradient(135deg, #0f172a 0%, #1e293b 100%);  
    color: white;  
    border-radius: 2rem;  
    border: 1px solid rgba(197, 160, 89, 0.3);  
    box-shadow: 0 25px 50px -12px rgba(0, 0, 0, 0.5);  
}  
  
.header h1 {  
    font-weight: 800;
```

```
color: var(--primary-gold);
text-transform: uppercase;
letter-spacing: -1px;
}

.tableau-card {
background: rgba(255, 255, 255, 0.9);
backdrop-filter: blur(12px);
border-radius: 1.5rem;
border: 1px solid rgba(226, 232, 240, 1);
box-shadow: 0 10px 15px -3px rgba(0, 0, 0, 0.1);
padding: 2rem;
margin-bottom: 4rem;
transition: all 0.3s ease;
}

.dark-mode .tableau-card {
background: rgba(30, 41, 59, 0.8);
border-color: rgba(197, 160, 89, 0.2);
}

.tableau-card:hover {
transform: translateY(-5px);
box-shadow: 0 20px 25px -5px rgba(0, 0, 0, 0.2);
}

.title-bar {
font-size: 1.8rem;
font-weight: 700;
margin-bottom: 2rem;
color: var(--deep-navy);
border-left: 5px solid var(--primary-gold);
padding-left: 1rem;
}

.dark-mode .title-bar { color: var(--primary-gold); }
```

```

.scroll-indicator {
  position: fixed;
  top: 0; left: 0; height: 5px;
  background: var(--primary-gold);
  z-index: 10000;
}

footer {
  background: var(--deep-navy);
  border-top: 2px solid var(--primary-gold);
  padding: 3rem;
  color: white;
  margin-top: 5rem;
}
</style>
</head>
<body>
  <div class="scroll-indicator" id="scrollIndicator"></div>

  <nav class="navbar navbar-expand-lg sticky-top navbar-dark">
    <div class="container">
      <a class="navbar-brand fw-bold" href="#">UNESCO <span style="color:var(--primary-gold)">VISUALIZER</span></a>
      <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarNav">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarNav">
        <ul class="navbar-nav ms-auto align-items-center">
          <li class="nav-item"><a class="nav-link" href="#dashboard1">Overview</a></li>
          <li class="nav-item"><a class="nav-link" href="#dashboard2">Danger Analysis</a></li>
          <li class="nav-item"><a class="nav-link" href="#story">The Story</a></li>
          <li class="nav-item"><button class="btn btn-outline-warning ms-lg-3" onclick="toggleMode()">Toggle Mode</button></li>
        </ul>
      </div>
    </div>
  </div>

```

```
</nav>

<div class="container py-4">
  <div class="header animate__animated animate__fadeIn">
    <h1 class="display-3">World Heritage Treasures</h1>
    <p class="lead opacity-75">Visualizing the preservation of human history and natural wonder</p>
  </div>

  <div class="tableau-card" id="dashboard1" data-aos="fade-up">
    <div class="title-bar">Site Distribution Overview</div>
    <div class='tableauPlaceholder' id='viz1751201541883'>
      <object class='tableauViz' style='display:none;'>
        <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F'>
        <param name='embed_code_version' value='3'>
        <param name='name' value='dashboard1_17716219088170/UNESCOWorldHeritageSiteOverview'>
        <param name='toolbar' value='yes'>
      </object>
    </div>
  </div>

  <div class="tableau-card" id="dashboard2" data-aos="fade-up">
    <div class="title-bar">Vulnerability & Danger Analysis</div>
    <div class='tableauPlaceholder' id='viz1751201813353'>
      <object class='tableauViz' style='display:none;'>
        <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F'>
        <param name='embed_code_version' value='3'>
        <param name='name' value='dashboard2_17716220051490/UNESCODangerSitesOverview'>
        <param name='toolbar' value='yes'>
      </object>
    </div>
  </div>

  <div class="tableau-card" id="story" data-aos="fade-up">
    <div class="title-bar">UNESCO Heritage Story</div>
    <div class='tableauPlaceholder' id='viz1751201963895'>
```

```

<object class='tableauViz' style='display:none;'>
  <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F'/>
  <param name='embed_code_version' value='3'/>
  <param name='name' value='story2_17717621452180/UNESCO'/>
  <param name='toolbar' value='yes'/>
  <param name='display_count' value='yes'/>
  <param name='language' value='en-US'/>
</object>
</div>
</div>
</div>

<footer class="text-center">
  <p class="mb-0 fw-light">Data Source: UNESCO World Heritage List</p>
  <p class="small opacity-50">&copy; 2026 Digital Heritage Project | Tableau Public Integration</p>
</footer>

<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"></script>
<script src="https://unpkg.com/aos@2.3.1/dist-aos.js"></script>
<script>
  AOS.init({ duration: 800, once: true });

const loadTableau = (id) => {
  const div = document.getElementById(id);
  const viz = div.getElementsByTagName('object')[0];
  if (viz) {
    viz.style.display = 'block';
    viz.style.width = '100%';
    viz.style.height = window.innerWidth < 768 ? '600px' : '850px';
    const script = document.createElement('script');
    script.src = 'https://public.tableau.com/javascripts/api/viz_v1.js';
    viz.parentNode.insertBefore(script, viz);
  }
};

// Initialize all visualizations

```

```
window.onload = () => {
    loadTableau('viz1751201541883');
    loadTableau('viz1751201813353');
    loadTableau('viz1751201963895');
};

function toggleMode() { document.body.classList.toggle('dark-mode'); }

window.onscroll = () => {
    const winScroll = document.documentElement.scrollTop;
    const height = document.documentElement.scrollHeight -
document.documentElement.clientHeight;
    document.getElementById("scrollIndicator").style.width = (winScroll / height) * 100 +
"%";
};
</script>
</body>
</html>
```

LINKS ☺:

Dashboard-1

: https://public.tableau.com/views/dashboard1_17716219088170/UNESCOWorldHeritageSiteOverview?:language=en

Dashboard-2

: https://public.tableau.com/views/dashboard2_17716220051490/UNESCODangerSitesOverview?:language=en-

[US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link](#)

Story

: https://public.tableau.com/views/story2_17717621452180/UNESCO?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Dataset Link : <https://www.kaggle.com/datasets/ujwalkandi/unesco-world-heritage-sites/data?select=whc-sites2019.csv>

Github Repository Link : <https://github.com/VasthaviSreya-Thumu/Heritage-Treasures>

Youtube Repository Link : <https://youtu.be/gnp3Rs3bfrM>