

Project Design Phase-II

Technology Stack (Architecture & Stack)

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| Date | 31 January 2026 |
| Team ID | LTVIP2026TMIDS28462 |
| Project Name | Heritage Treasures: An In-Depth Analysis of UNESCO World Heritage Sites in Tableau |
| Maximum Marks | 4 Marks |

Technical Architecture:

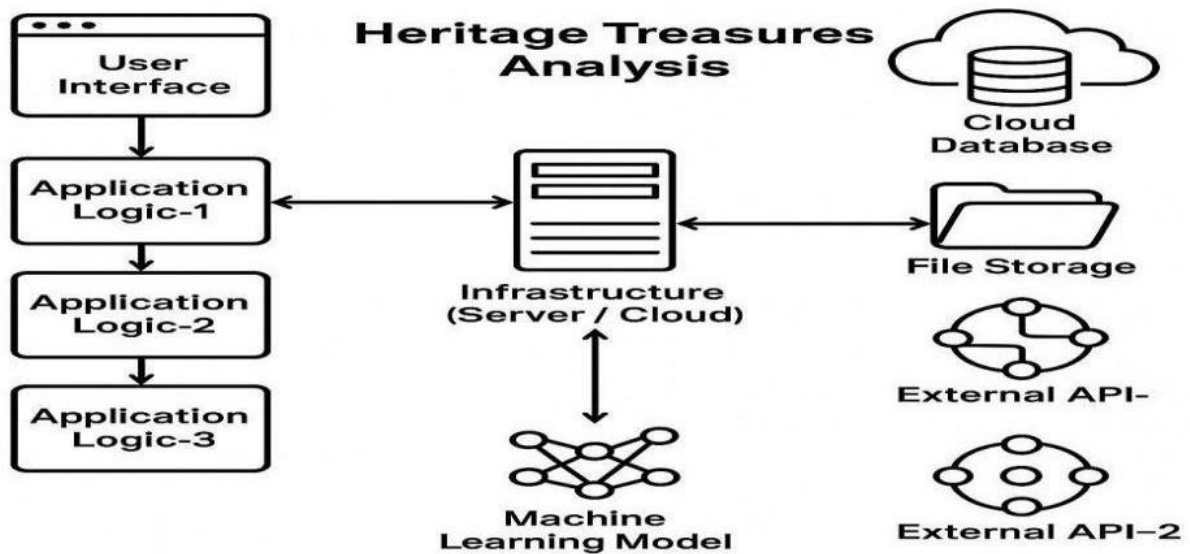


Table 1: Components & Technologies :

| S.No | Component | Description | Technology |
|------|---------------------|--|------------------------|
| 1 | User Interface | Interface for researchers and public to interact | React JS / HTML / CSS |
| 2 | Application Logic-1 | Processes analysis requests and filters data | Python |
| 3 | Application Logic-2 | Speech to text processing for voice based input (if any) | IBM Watson STT Service |
| 4 | Application Logic-3 | Conversational assistant for query support | IBM Watson Assistant |
| 5 | Database | Stores heritage site data | MySQL |
| 6 | Cloud Database | Cloud-based backup and scalability | IBM Cloudant |
| 7 | File Storage | Stores reports and visual assets | IBM Block Storage |
| 8 | External API-1 | Fetches current environmental/weather info | IBM Weather API |
| 9 | External API-2 | Validates user identity (optional) | Aadhar API |

Table 2: Application Characteristics :

| S.No | Characteristics | Technology |
|------|--------------------------|---|
| 1 | Open-Source Frameworks | React JS, Scikit-learn, TensorFlow |
| 2 | Security Implementations | SHA-256, OAuth 2.0, IAM Controls, OWASP Standards |
| 3 | Scalable Architecture | Microservices and Kubernetes-based deployment |
| 4 | Availability | Load Balancers, Multi-zone cloud deployment |
| 5 | Performance | Use of Redis cache, CDNs, optimized queries |