

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

|               |  |
|---------------|--|
| Date          | 2 February 2026                        |
| Team ID       | LTVIP2026TMID8993                      |
| Project Name  | Gemini Historical Artifact Description |
| Maximum Marks | 4 Marks                                |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task)   |
|--------|-------------------------------|--|
| FR-1   | Access Web Application        | Open application in browser.<br>Display project title and interface (Streamlit UI).                    |
| FR-2   | Image Upload                  | Upload artifact image (jpg, jpeg, png).<br>Preview uploaded image on screen.                           |
| FR-3   | Text Prompt Input             | User enters artifact name or description.<br>Accept user text in input box.                            |
| FR-4   | AI Description Generation     | Send image + prompt to Gemini API.<br>Generate artifact description using AI model.                    |
| FR-5   | Display Output                | Show generated historical description.<br>Display origin, period, material, and cultural significance. |
| FR-6   | Error Handling                | Show error if image not uploaded.<br>Show API or processing error message.                             |
| FR-7   | Interesting Fact Feature      | Show historical fact while processing.<br>Inform user that generation is in progress.                  |

**Non-functional Requirements:**

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

| FR No. | Non-Functional Requirement | Description  |
|--------|----------------------------|--|
| NFR-1  | Usability                  | The application should have a simple and easy-to-use interface so beginners can upload an image and generate description without training. |
| NFR-2  | Security                   | The Gemini API key must be stored securely in the .env file and not exposed in the source code or GitHub.                                  |
| NFR-3  | Reliability                | The system should consistently generate artifact descriptions without crashing or producing empty output.                                  |

|       |              |   |
|-------|--------------|---|
| NFR-4 | Performance  | The AI response should be generated within a few seconds after clicking the generate button.              |
| NFR-5 | Availability | The web application should be accessible whenever the server and internet connection are available.       |
| NFR-6 | Scalability  | The system should support multiple users generating descriptions at the same time without major slowdown. |