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

Date	31 January 2026
Team ID	LTVIP2026TMIDS26163
Project Name	Explore with AI: Custom Itineraries for Your Next Journey
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	User Input Handling	1. • Enter destination through text input field 2. • Enter number of days 3. • Enter number of nights 4. • Click “Generate Itinerary” button
FR-2	Input Validation	5. • Validate all fields are filled 6. • Validate days and nights are numeric 7. • Restrict maximum trip length to 15 days 8. • Ensure nights are less than number of days 9. • Display warning messages for invalid inputs
FR-3	AI-Based Itinerary Generation	10. • Build structured AI prompt dynamically 11. • Send request to Gemini API 12. • Generate day-wise itinerary 13. • Generate travel tips section 14. • Generate food recommendations 15. • Generate hotel/stay suggestions
FR-4	Itinerary Display	16. • Display generated itinerary in structured format 17. • Show sections (Morning, Afternoon, Evening, Night) 18. • Display headings clearly 19. • Maintain emoji-based structured layout

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The system shall provide a simple and intuitive interface that allows users to generate itineraries without technical knowledge.
NFR-2	**Security**	The system shall securely manage API keys using environment variables or Streamlit secrets and not expose them in the frontend.
NFR-3	**Reliability**	The system shall handle API failures or invalid inputs gracefully without crashing.
NFR-4	**Performance**	The system shall generate the itinerary within a reasonable time (typically under 10–15 seconds depending on API response).
NFR-5	**Availability**	The system shall be accessible online via Streamlit deployment and available to users whenever the hosting service is running.
NFR-6	**Scalability**	The system shall support multiple users generating itineraries concurrently without affecting performance significantly.