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

Date	31 Jan 2026
Team ID	LTVIP2026TMIDS61540
Project Name	Heart Disease Analysis
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	Health Data Upload	Upload heart disease dataset via CSV/Excel file and store it in MySQL database
FR-2	Database Integration	Connect MySQL database with Tableau for real-time or scheduled data access
FR-3	Data Visualization	Generate interactive dashboards analyzing heart disease risk factors
FR-4	Demographic Analysis	Visualize heart disease trends based on Age, Gender, Race, and BMI
FR-5	Lifestyle Risk Analysis	Analyze impact of Smoking, Alcohol, and Physical Activity on heart disease

Non-functional Requirements:

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

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	The dashboard should provide an intuitive, easy-to-use interface with clear visualizations, filters, and interactive features suitable for healthcare professionals and non-technical users.
NFR-2	Security	Secure database connection with authentication. Tableau Public publishing should not expose sensitive patient data. Role-based access control for internal dashboards (if deployed in hospital/government setup).
NFR-3	Reliability	The system should handle large healthcare datasets efficiently without crashes or data loss during visualization or filtering.
NFR-4	Performance	Dashboards should load within 2-5 seconds under normal data volume and filter operations. SQL queries must be optimized for fast data retrieval.

NFR No.	Non-Functional Requirement	Description
NFR-5	Availability	The published dashboard and Flask web integration should be accessible with minimal downtime (target availability $\geq$ 99%).
NFR-6	Scalability	The system should support increasing health data volume (new patient records, additional health parameters) without major redesign.
NFR-7	Data Accuracy	Visualizations must reflect accurate data validated against source database metrics.
NFR-8	Responsiveness	Dashboard layout must adapt to desktop, tablet, and mobile devices for better accessibility.