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

Date	19 February 2026
Team ID	LTVIP2026TMIDS49230
Project Name	Gemini Pro Financial Decoder
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the Gemini Pro Financial Decoder.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	File Upload & Data Integration	The system shall allow users to upload financial documents (CSV/XLSX). The system shall validate file format and provide clear error messages for unsupported files.
FR-2	Data Loading & Preprocessing	The system shall read CSV files using pd.read_csv and Excel files using pd.read_excel. The system shall convert uploaded data into structured Pandas DataFrames for processing.
FR-3	AI-Powered Financial Analysis	The system shall pass structured financial data to Google Gemini API using predefined prompt templates for Balance Sheet, P&L;, and Cash Flow. The system shall return detailed AI-generated summaries.
FR-4	Summary Generation & Display	The system shall display AI-generated summaries clearly on the Streamlit UI. Summaries shall highlight key financial metrics, trends, and insights in plain language.
FR-5	Data Visualization	The system shall generate line charts for numerical financial data using Streamlit charts. The system shall allow users to visually interpret key metrics and trends from their uploaded documents.
FR-6	PDF Report Generation & Export	The system shall automatically generate a downloadable PDF report using ReportLab after AI analysis. The PDF shall include the AI summary, key metrics, and visual insights.

Non-Functional Requirements:

Following are the non-functional requirements of the Gemini Pro Financial Decoder.

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	The Streamlit interface shall be intuitive and easy to navigate for all user types — analysts, executives, and journalists — even without technical knowledge. File upload, analysis, and export shall be accessible within 3 clicks.
NFR-2	Security	The Google API key shall be stored securely using environment variables and not hardcoded in the application. Uploaded financial documents shall not be stored permanently on any server.
NFR-3	Reliability	The application shall handle invalid file formats and API failures gracefully with clear user-friendly error messages. The AI analysis shall consistently return accurate and relevant financial summaries.
NFR-4	Performance	The AI-generated summary shall be returned within 30 seconds for standard financial documents. Streamlit charts shall render within 5 seconds of data upload. PDF report generation shall complete within 10 seconds.
NFR-5	Availability	The application shall be accessible via a web browser whenever the Streamlit server is running. The Google Gemini API dependency shall be monitored, and fallback messages displayed if the API is unavailable.
NFR-6	Scalability	The system shall handle financial documents up to 50MB in size without performance degradation. The architecture shall support future addition of new financial document types and additional Gemini model versions.