

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

Date	20 February 2026
Team ID	LTVIP2026TMIDS52185
Project Name	Intelligent SQL Querying with LLMs Using Gemini Pro
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 Registration & Authentication	Registration through form, Gmail login, LinkedIn login
FR-2	User Confirmation	Email verification, OTP confirmation
FR-3	Natural Language Query Input	User enters natural language question to generate SQL
FR-4	LLM-based SQL Generation	Gemini Pro converts natural language into schema-aware SQL query
FR-5	Query Validation & Security	SQL syntax validation,
FR-6	Query Execution	Execute generated SQL query on connected database
FR-7	Result Display & Explanation	Display query results and provide simple explanation
FR-8	Query History Management	Store and retrieve previously executed queries

**Non-functional Requirements:**

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

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	User-friendly interface enabling non-technical users to interact easily.
NFR-2	<b>Security</b>	Secure authentication, encrypted communication, SQL injection prevention.
NFR-3	<b>Reliability</b>	Accurate SQL generation with minimal failure rate.
NFR-4	<b>Performance</b>	Fast response time for query generation and execution.
NFR-5	<b>Availability</b>	System accessible 24/7 with minimal downtime.

NFR-6	<b>Scalability</b>	System capable of handling increasing number of users and large databases.
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