

Project Design Phase
Proposed Solution Template

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| Date | 19 February 2026 |
| Team ID | LTVIP2026TMIDS76399 |
| Project Name | IntelliSQL: Intelligent SQL Querying with LLMs Using Gemini Pro |
| Maximum Marks | 2 Marks |

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

| S.No. | Parameter | Description |
|-------|--|---|
| 1. | Problem Statement (Problem to be solved) | Non-technical users face difficulty in accessing and analyzing data stored in relational databases because they lack SQL knowledge. This results in dependency on technical teams, slow decisionmaking, and inefficient data usage. There is a need for a system that allows users to query databases using natural language instead of SQL. |
| 2. | Idea / Solution description | The proposed solution is a Text-To-SQL-LLM-App that converts user queries written in natural language into structured SQL queries using a Large Language Model (LLM). The generated SQL query is executed on the connected database, and the results are displayed in a user-friendly format. This enables users to interact with databases easily without requiring technical expertise. |

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| 3. | Novelty / Uniqueness | Unlike traditional database tools that require SQL knowledge, this system provides a conversational interface for querying databases. The integration of LLM-based natural language understanding improves query accuracy and flexibility. The solution supports dynamic schema interpretation and reduces the need for predefined query templates. |
| 4. | Social Impact / Customer Satisfaction | The system improves accessibility to data for non-technical users such as students, managers, and analysts. It reduces dependency on IT teams and enhances productivity. Faster and simpler data access leads to better decision-making and higher customer satisfaction. |
| 5. | Business Model (Revenue Model) | The solution can be offered as a Software-as-a-Service (SaaS) platform with |
| | | subscription-based pricing. Organizations can be charged based on the number of users, queries, or database size. Additional revenue can be generated through enterprise customization and API integration services. |
| 6. | Scalability of the Solution | The system is scalable as it can be deployed on cloud infrastructure and support multiple users simultaneously. It can be extended to support different database types such as MySQL, PostgreSQL, and SQLite. The LLM-based architecture allows easy enhancement for handling complex queries and large datasets. |