Project Design Phase
Proposed Solution Template

Date	27 February 2026
Team ID	LTVIP2026TMIDS90853
Project Name	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)	Many non-technical users, business analysts, and students struggle to write complex SQL queries to retrieve data from databases. Writing SQL requires technical knowledge, understanding of database schemas, joins, and syntax rules. This creates a barrier for decision-making and slows down productivity.
2.	Idea / Solution description	The proposed solution is an AI-powered web application that converts natural language queries into optimized SQL queries using Large Language Models (LLMs) like Gemini Pro. Users simply type their question in plain English (e.g., "Show top 5 customers by sales"), and the system generates the correct SQL query automatically. The system also supports database connection, schema upload (PDF), query execution, and result visualization through an interactive dashboard.
3.	Novelty / Uniqueness	Unlike traditional query builders, this system leverages advanced LLM capabilities to understand context, table relationships, and business intent. It reduces the need for technical expertise and provides intelligent SQL generation with validation and optimization. Integration of schema-based understanding and real-time query execution makes it smarter than basic SQL generators.
4.	Social Impact / Customer Satisfaction	The solution empowers non-technical users to access and analyze data without depending on developers. It increases efficiency in organizations, improves decision-making speed, and enhances learning for students. Businesses can reduce dependency on database experts, leading to higher productivity and cost savings.
5.	Business Model (Revenue Model)	The platform can follow a SaaS (Software as a Service) model. Revenue streams include: 1) Subscription plans (Basic, Pro, Enterprise), 2) API usage-based pricing, 3) Custom enterprise

		deployment, 4) Educational licensing for colleges and training institutes.
6.	Scalability of the Solution	The solution is highly scalable as it is cloud-based. It can support multiple users simultaneously using scalable API infrastructure. Future expansion can include support for multiple databases (MySQL, PostgreSQL, MongoDB), multilingual query input, enterprise analytics integration, and AI-powered optimization features.