Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	27 February 2026
Team ID	LTVIP2026TMIDS66231
Project Name	IntelliSQL: Intelligent SQL Querying with LLMs using Gemini Pro
Maximum Marks	4 marks

Technical Architecture:
The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Critical element designed for users to input natural language queries and receive SQL output, ensuring an intuitive and informative experience.	HTML, CSS, JavaScript
2.	Application Logic	Involves a robust backend system responsible for processing natural language queries, calling Gemini Pro API, and returning generated SQL.	Python
3.	Database	Involves the storage and management of structured data used to validate and execute generated SQL queries.	SQLite / MySQL
4.	LLM Integration	Involves managing API calls to Gemini Pro for translating natural language to SQL, including prompt engineering and response parsing.	Google Gemini Pro API
5.	Framework	It is a crucial part of our program as it is responsible for connecting the frontend with the backend and routing API requests.	Python Flask

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology

1.	Open-Source Frameworks	Open-source frameworks accelerate development and ensure the reliability of IntelliSQL's backend pipeline.	Python's Flask
2.	Scalability	System can handle increasing query loads and support multiple concurrent users via stateless REST API design.	REST APIs, load balancing
3.	Performance	Regular performance testing, monitoring, and optimization ensure accurate SQL generation with minimal latency.	Query accuracy metrics, response time benchmarks
4.	Availability	Application can be deployed on cloud or web servers, making it available at all times with minimal downtime.	High speed Linux-based web servers