

Project Design Phase
Problem – Solution Fit Template

Date	19 February 2026
Team ID	LTVIP2026TMIDS41804
Project Name	IntelliSQL: Intelligent SQL Querying with LLMs Using Gemini Pro
Maximum Marks	2 Marks

Problem – Solution Fit Template:

The Problem–Solution Fit means identifying a real problem faced by users and ensuring that the proposed solution effectively addresses it. For the Text-To-SQL-LLM-App, the problem is the difficulty faced by non-technical users in querying relational databases due to the requirement of SQL knowledge. This results in dependency on technical teams, delayed decision-making, and inefficient data utilization. The proposed solution uses a Large Language Model (LLM) to convert natural language queries into structured SQL statements, enabling users to access and analyze data easily without requiring technical expertise. This alignment between user needs and system functionality confirms that the solution effectively solves the customer’s problem.

Purpose:

- ☐ Solve the problem of database accessibility by enabling users to query data using natural language instead of SQL.
- ☐ Increase solution adoption by aligning with existing user behavior of asking questions in plain language.
- ☐ Improve communication between users and databases through accurate and automated SQL generation.
- ☐ Build user trust by reducing frequent errors, technical dependency, and delays in data retrieval.

- ❑ Understand and enhance the current data interaction process for non-technical users.

Template:

Problem – Solution Fit Template (Text-To-SQL-LLM-App)			
Solution Fit (PSF)	1. PROBLEM Most organizational data is stored in relational databases that require SQL knowledge to access-es. Non-technical users such as managers, analysts, and domain experts face difficulty in retrieving information because they cannot write SQL queries. This leads to dependency on technical teams, delayed decision-making and inefficient data utilization. Existing database tools are complex and designed for natural language interaction.	2. CUSTOMER / TARGET USERS <ul style="list-style-type: none"> Business analysts Non-technical users Data analysts Students and researchers Small and medium enterprises (SMEs) 	6. CUSTOMER / TARGET USERS CS <ul style="list-style-type: none"> Business analysts Non-technical users Data analysts Students and researchers Small and medium enterprises (SMEs)
	2. CURRENT SITUATION (Existing Behavior) <ul style="list-style-type: none"> Users depend on database administrators or developers to generate SQL queries Data access requires multiple communication steps Manual query writing causes syntax and logic errors. 	3. CUSTOMER PAIN POINTS <ul style="list-style-type: none"> Lack of SQL expertise Time-consuming data retrieval High dependency on technical staff Risk of incorrect query results 	7. PROBLEM-SOLUTION FIT RC <ul style="list-style-type: none"> Faster than behavior of SQL Reduces response time Minimizes human errors Enables self-service data access
Perceived Solution Fit (PSF)	4. CUSTOMER PAIN POINTS <ul style="list-style-type: none"> Lack of SQL expertise → time-consuming different Time-consuming data retrieval High dependency on technical staff Risk of incorrect query results 	4. PROPOSED SOLUTION The Text-To-SQL-LLM-App provides a natural language interface for databases. Users can enter queries in plain English, which are converted into accurate SQL queries using a Large Language Model (LLM). The system executes the generated SQL on the database and displays the results in a user-friendly format.	8. VALUE PROPOSITION <ul style="list-style-type: none"> Easy database interaction Faster decision-making Reduced operational costs Minimizes human errors Increase productivity and data
	9. CHANNELS OF USE TL <ul style="list-style-type: none"> Web-based application Business dashboards Enterprise systems Educational platforms 	10. EXPECTED IMPACT <ul style="list-style-type: none"> Improved data accessibility Increased adoption of data tools Higher user satisfaction Reduced workload on IT teams 	PURPOSE: <ul style="list-style-type: none"> Solve the problem of database accessibility Increase solution adoption by aligning with ESQ Improve communication between users and databases Promote data-driven decisions

References:

- <https://www.idealhackers.network/problem-solution-fit-canvas/>
- <https://medium.com/@epicantus/problem-solution-fit-canvas-aa3dd59cb4fe>