

Project Design Phase
Problem – Solution Fit Template

Date	19 February 2026
Team ID	LTVIP2026TMIDS76399
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)		
Problem (PSF)	Customer / Target Users	Customer / Target Users
1. PROBLEM Most organizational data is stored in relational databases that require SQL knowledge to access. 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 analystsNon-technical usersData analystsStudents and researchersSmall and medium enterprises (SMEs)	6. CUSTOMER / TARGET USERS <ul style="list-style-type: none">Business analystsNon-technical usersData analystsStudents and researchersSmall 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 queriesData access requires multiple communication stepsManual query writing causes syntax and logic errors.	3. CUSTOMER PAIN POINTS <ul style="list-style-type: none">Lack of SQL expertiseTime-consuming data retrievalHigh dependency on technical staffRisk of incorrect query results	7. PROBLEM-SOLUTION FIT <ul style="list-style-type: none">Faster than behavior of SQLReduces response timeMinimizes human errorsEnables self-service data access
4. CUSTOMER PAIN POINTS <ul style="list-style-type: none">Lack of SQL expertise -> time-consuming differentTime-consuming data retrievalHigh dependency on technical staffRisk 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 interactionFaster decision-makingReduced operational costsMinimizes human errorsIncrease productivity and data access
9. CHANNELS OF USE <ul style="list-style-type: none">Web-based applicationBusiness dashboardsEnterprise systemsEducational platforms	10. EXPECTED IMPACT <ul style="list-style-type: none">Improved data accessibilityIncreased adoption of data toolsHigher user satisfactionReduced workload on IT teams	PURPOSE: <ul style="list-style-type: none">Solve the problem of database accessibilityIncrease solution adoption by aligning with ESQLImprove communication between users and databasesPromote data-driven decisions

References:

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