Project Design Phase
Problem – Solution Fit Template

Date	
Team ID	PNT2025TMID09657
Project Name	Rentease-HOUSE RENT APP USING MERN
Maximum Marks	2 Marks

Problem – Solution Fit Template:

1. Discovery and Problem Analysis

This initial phase focuses on understanding the core problems and user needs.

- **Problem Statement:** The process begins by clearly defining the issues. For a house rental app, this includes challenges like tenants struggling to find accurate listings, owners finding it difficult to vet applicants, and the lack of a streamlined, secure application process.

- **User Research:** We conduct interviews, surveys, and competitive analysis to understand the behaviors and pain points of both tenants and owners. An **Empathy Map** is created to visualize their thoughts, feelings, and actions.

- **Requirements Gathering:** The output of this phase is a detailed list of **functional** (e.g., user registration, property search) and **non-functional** (e.g., security, performance) requirements.

2. Solution Design and Planning

This phase translates the requirements into a concrete plan for the application.

- **Solution Brainstorming:** Potential solutions are explored to address the identified problems. For example, a unified dashboard for owners to manage applications and a robust search filter for tenants.

- **Technical Architecture:** A technical blueprint is created, often using a framework like the **MERN stack**. This defines the database structure (MongoDB), backend logic (Node.js/Express.js), and frontend user interface (React.js). A **Data Flow Diagram** is created to show how data moves through the system.

- **User Experience (UX) and User Interface (UI) Design:** Wireframes and mockups are created to design the user journey and visual layout. This ensures the application is intuitive and aesthetically pleasing.

3. Development and Implementation

This is the phase where the application is built based on the design plans.

- **Agile Development:** The project is broken down into small, manageable sprints. A **product backlog** is created, which is a prioritized list of features to be developed.

- **Sprint Planning:** Each sprint has a defined scope with specific **user stories**, which are small tasks written from a user's perspective (e.g., "As a tenant, I want to search for properties by location").

- **Coding and Testing:** The development team writes code for the frontend, backend, and database. Continuous testing is performed to ensure the application is functional, reliable, and secure.

4. Deployment and Maintenance

The final phase involves launching the application and ensuring its long-term success.

- **Deployment:** The application is launched and made available to users.

- **Monitoring:** The application's performance, availability, and security are continuously monitored.

- **Feedback and Iteration:** User feedback is collected and used to identify new features and improvements. The cycle then restarts with a new discovery phase to evolve the application.