

# Project Design Phase

## Solution Architecture

Date	06 Nov 2025
Team ID	FE7F7B420961141A91F48E734450581D
Project Name	CRM Application for Jewel Management
Maximum Marks	4 Marks

### Overview:

The **Solution Architecture** defines how the CRM Application for Jewel Management will be designed, integrated, and deployed.

It ensures that all system components — **frontend, backend, database, APIs, and cloud services** — work together seamlessly to provide a **scalable, secure, and high-performing CRM system** tailored for jewelry businesses.

The architecture follows a **modular, layered approach**, enabling flexibility, easy maintenance, and future scalability.

### Key Architectural Considerations:

Aspect	Implementation Approach
Scalability	Use of cloud deployment and microservices for modular expansion.
Security	JWT for authentication, HTTPS encryption, role-based access.
Performance	Load balancing, caching (Redis), and optimized database queries.
Availability	Deployed on cloud (AWS/Firebase) with auto-scaling.
Data Backup	Automated cloud backups for customer and inventory data.

## **Data Flow Description:**

### **1. User Interaction:**

The user (admin, staff, or customer) interacts with the system through the web interface.

### **2. Request Handling:**

The frontend sends requests (e.g., fetch customer data, create invoice) to the backend via **RESTful APIs**.

### **3. Business Logic Execution:**

The backend processes requests, applies business rules (e.g., reward calculation), and interacts with the database.

### **4. Database Operations:**

Data is stored, retrieved, or updated in the **MySQL/MongoDB database** based on the request.

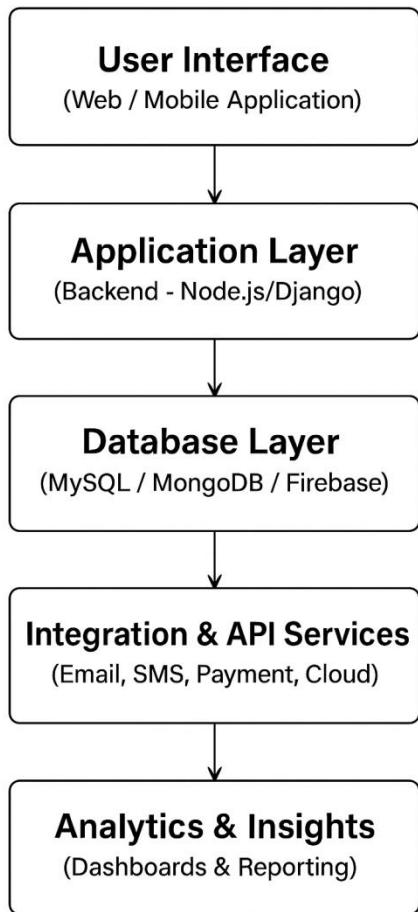
### **5. Response Delivery:**

Processed data or confirmation is sent back to the frontend, which displays it in a user-friendly format.

### **6. External Integrations:**

- SMS/Email notifications via third-party APIs.
- Payments through Stripe/PayPal.
- Analytics and reports generated for admin users.

## Solution Architecture diagram:



## Solution Architecture Description:

The **Solution Architecture** of the *CRM Application for Jewel Management* defines the overall structure, technology stack, and data flow of the system. It ensures that all components — **frontend**, **backend**, **database**, and **integrations** — work together efficiently to deliver a **secure, scalable, and user-friendly CRM solution** tailored for jewelry businesses. The **Solution Architecture** of the CRM Application for Jewel Management is a **modular, service-oriented design** that integrates all core business functions into a single, efficient system. It ensures **smooth communication, secure data handling, and business process automation**, ultimately helping jewelry businesses manage customer relationships and operations effectively.