Date	**20-06-2025**
Team ID	**LTVIP2025TMID29567**
Project Name	**LEASE MANAGEMENT**
Maximum Marks	

CHAPTER -4

PROJECT DESIGN

4.1 - Existing System (Problem Solution Fit):

In many organizations, lease management is still handled through manual processes or basic spreadsheet tools, which leads to inefficiencies, errors, and compliance risks. Here's a breakdown of the current landscape and how a Lease Management System (LMS) addresses these challenges:

Problems in the Existing System

Challenge	Description
Fragmented Data	Lease documents and tenant info are scattered across emails, folders, and spreadsheets.
Missed Deadlines	No automated alerts for renewals, rent reviews, or compliance checks.
Limited Visibility	Stakeholders lack real-time access to lease status, financials, and occupancy.
Manual Reporting	Financial reports and lease summaries require time-consuming manual compilation.
Compliance Risks	Difficulty adhering to standards like ASC 842 or IFRS 16 without integrated tools.

Solution Fit: What LMS Offers

LMS Feature	How It Solves the Problem
Centralized Lease Repository	All lease data stored in one secure, searchable platform.
Automated Notifications	Alerts for key dates like renewals, expirations, and payments.

Role-Based Access	Ensures secure, permission-based collaboration across teams.
Integrated Compliance Tools	Built-in support for accounting standards and audit trails.
Analytics & Dashboards	Real-time insights into lease performance, occupancy.

4.2 - Proposed System (Proposed Solution) :

The Proposed Lease Management System (LMS) is a centralized, cloud-based platform designed to overcome the limitations of manual lease tracking and fragmented data management. It offers automation, transparency, and scalability for managing property leases, tenant interactions, and financial compliance.

✅ **Key Features of the Proposed System**

Feature	Description
Centralized Dashboard	Real-time overview of lease status, payments, and property occupancy
Automated Alerts	Notifications for lease renewals, rent due dates, and compliance deadlines
Digital Lease Contracts	E-signature support and version control for lease agreements
Tenant Portal	Self-service access for payments, documents, and maintenance requests
Role-Based Access Control	Secure permissions for admins, managers, and tenants
Compliance Tools	Built-in support for ASC 842, IFRS 16, and GASB 87 standards
Reporting & Analytics	Customizable dashboards for financial insights and lease performance
Integration APIs	Connects with ERP, CRM, and accounting systems

How It Solves Existing Problems

Existing Challenge	LMS Solution
Manual record-keeping	Digital repository with search and filter capabilities
Missed deadlines	Automated reminders and calendar sync
Limited visibility	Real-time dashboards and mobile access
Compliance risks	Standardized workflows and audit trails
Poor communication	In-app messaging and centralized notifications

4.3 - Solution Architecture:

The **Solution Architecture** defines how the proposed Lease Management System will be structured to meet business needs, ensure scalability, and support integration across modules and external systems. It outlines the **logical components**, **data flow**, and **technology stack** that enable the system to function cohesively.

Layered Architecture Overview

Layer	Components & Responsibilities
Presentation Layer	Web & mobile interfaces (React.js / Angular), user dashboards, tenant portals
Application Layer	Business logic for lease creation, approval workflows, payment processing, notifications
Data Layer	Relational DB (PostgreSQL / MySQL) for structured data; MongoDB for document storage
Integration Layer	RESTful APIs, GraphQL, Webhooks for ERP/CRM/accounting system connectivity
Security Layer	OAuth 2.0, JWT, SSL/TLS encryption, role-based access control
Analytics Layer	Power BI / Tableau for lease performance, occupancy trends, financial forecasting
Infrastructure Layer	Cloud hosting (AWS / Azure), containerization (Docker), orchestration (Kubernetes)

Key Architectural Principles

- **Modularity**: Each module (e.g., lease, tenant, payment) is independently deployable
- **Scalability**: Cloud-native design supports growing portfolios
- **Security-first**: Encryption, access control, and audit trails
- **Interoperability**: Open APIs for seamless integration

LEASE MANAGEMENT