

PROPERTY MANAGEMENT PLATFORM

JULY 2023

Overview

The Property Management Platform (PMP) solution is designed to streamline property management operations. The PMP aims to automate and optimize various aspects of property management, including tenant management, lease tracking, rent collection, maintenance requests, customer relationship management and reporting.

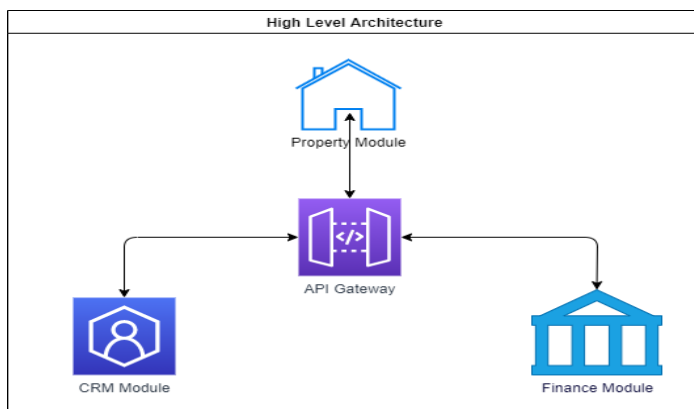
Additionally, the platform will enable the onboarding and management of various service providers, including utility service providers, recreation providers, garbage collection providers, insurance providers, financial providers, security providers, and maintenance and repairs services providers.

The PMP will be implemented in phases with the first phase incorporating rent management.

The summary technologies that will be leveraged upon include:

- a. Open source solution for CRM and Finance module
- b. Proprietary source code for the property management module
- c. Cloud hosting on AWS/ Azure/ GCP/ Cloud Agnostic
- d. PHP and Node.js for backend
- e. Android/ Progressive Web App for mobile platform

System Architecture



Technical Requirements

Property Module

This module includes the following:

- a. Register all property details and supporting documents
- b. Register tenants with complete KYC
- c. System based Tenant application approval by landlord/ property manager
- d. System based notification to tenant on on-boarding/leaving/lease expiry vide email/sms
- e. Add and manage different user levels with different access to modules
- f. Book/ Manage / View tenants supports tickets about bills, security, maintenance etc. including notification of resolving the reported issues
- g. Efficient Management of tenant leases by capturing all relevant details on the system
- h. Simple and intuitive application
- i. Categorize tenants into active / non-active
- j. System supports onboarding of tenants through message of onboarding which also gives them access to their customized account details
- k. Provide summary of occupancy and available units with respective details to aide in letting of the same
- l. Manage scheduled maintenance from service providers
- m. Manage repairs tickets for turnaround time and cost management – tenants and caretakers generate these tickets
- n. Manage service provider evaluations quarterly
- o. System based payment processing and approvals at different levels
- p. The system should be able to provide a detailed tenancy schedule, per property and at any given time
- q. Customer relationship Management integration through a system where tenants can submit their queries and concerns for action by the property manager
- r. Manage pre-qualified service providers and their details for ease in procuring services.

Customer Relationship Management (CRM) system (Third party)

Contact Management:

- Centralized contact database to store and manage customer information.
- Ability to capture and track contact details, communication history, and preferences.

- Segmentation and grouping of contacts based on various criteria.

Lead and Opportunity Management:

- Lead tracking and qualification to manage potential sales opportunities.
- Conversion of leads into opportunities and assignment to sales representatives.
- Opportunity pipeline management with stages, probability, and forecasting.

Sales Automation:

- Sales process management with configurable workflows and automation.
- Account and opportunity management to track sales activities and progress.
- Sales forecasting, quotas, and target setting.
- Sales performance analytics and reporting.

Marketing Automation:

- Campaign management for creating and executing marketing campaigns.
- Lead generation and nurturing through email marketing, landing pages, and web forms.
- Campaign tracking, analytics, and ROI measurement.
- Integration with email marketing platforms and social media channels.

Reporting and Analytics:

- Predefined and customizable reports and dashboards.
- Sales analytics, pipeline analysis, and forecasting.
- Customer segmentation and profiling.
- Marketing campaign performance analysis.

Collaboration and Communication:

- Internal communication features like team collaboration and messaging.
- Sharing of customer information, notes, and documents across the organization.
- Activity feeds and notifications for real-time updates on customer interactions.

Integration and API:

- Integration with other systems such as email, finance and property management module
- Open APIs and webhooks to facilitate data exchange and custom integrations.
- Data synchronization and real-time updates between CRM and integrated systems.

Security and Access Control:

- Role-based access control to restrict data access based on user roles.
- Data encryption and security measures to protect customer information.
- Audit logging and activity tracking for compliance and accountability.

Financial Module (Third Party Integration)

- a. Billing and invoice generation based on lease details – Monthly, Quarterly, Semiannual, Annual, One off.
- b. Capture all utility bills details including units' consumption for tenants and billed separately.
- c. Separate financial records and accounting for various incomes and their respective expenditures i.e., rent, service charge etc.
- d. Previewing billings once done to check on any errors before generating invoices. After previewing and ensuring the billings are in order, the system alerts the accountant that billings are ready for posting to individual tenant's accounts as well as commercial properties.
- e. Receive payments via different channels (M-pesa, bank, cheque, cash etc)
- f. Reconcile payments from tenants
- g. View all financial reports and tenants statements
- h. Automated chart of accounts and other financial reports
- i. Property Manager Commission statements and reports
- j. Issue credit and debit memos to correct overbilled/underbilled rent and service charge
- k. Produce a tenant/property detailed trial balance bearing the following information:
 - Balance brought forward
 - Billings which includes; rent, service charge, VAT, security deposit, utility deposits, legal fees
 - Payments which includes; rent, service charge, VAT, security deposit, utility deposits, legal fees
 - Balance
- l. Email and SMS invoices
- m. On-prompt reminders to tenants for due rent
- n. Quarterly statements to tenants from the system
- o. Aged analysis reports of receivables

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- p. Separate analytics and infographic reporting for rent and service charge
- q. Apply discounts on rent for either all tenants or specific tenants for a specific period and specific property
- r. Accounting of the properties independent of each other. This will allow pulling of data and financial reports per property. I.e. income statement, balance sheet etc.

Presentation Layer

- **Web Application:** A responsive web application accessible through web browsers.
- **Mobile Application:** Native or hybrid mobile applications for iOS and Android platforms.

Application Layer

- **User Management:** Handles user authentication, authorization, and user profile management.
- **Property Management:** Manages property listings, including creation, update, deletion, and search functionalities.
- **Tenant Management:** Handles tenant information, lease agreements, rental payments, and communication.
- **Maintenance and Repairs:** Manages maintenance requests, assigns tasks to service providers, and tracks request status.
- **Communication:** Facilitates communication between users, including messaging, notifications, and alerts.
- **Reporting and Analytics:** Provides reporting capabilities to generate financial reports, property performance analysis, and other relevant data insights.
- **Integration:** Handles integration with external systems, such as payment gateways, CRM tools, accounting software, and service provider platforms.

Data Layer

- **Relational Database:** Stores structured data related to users, properties, tenants, payments, maintenance requests, and other relevant information.
- **Database Management System:** Manages the relational database, handles data querying, indexing, and ensures data consistency and security.

Cloud Infrastructure

- **Virtual Machines:** Provision virtual machines to host the application and database servers.

- **Load Balancer:** Implement load balancing to distribute incoming requests across multiple application servers for optimal performance and availability.
- **Cloud Storage:** Utilize cloud storage services for storing user-uploaded files, documents, and media assets.
- **Networking:** Configure secure network connectivity between the components and apply appropriate security measures.

Security and Compliance

- **Encryption:** Implement encryption algorithms to secure data at rest and in transit.
- **Authentication and Authorization:** Use secure authentication mechanisms, such as multi-factor authentication, and role-based access control (RBAC) to control user access.
- **Security Monitoring:** Implement logging and monitoring mechanisms to detect and respond to security threats or anomalies.
- **Regular Security Audits:** Conduct periodic security audits and vulnerability assessments to identify and address potential vulnerabilities.

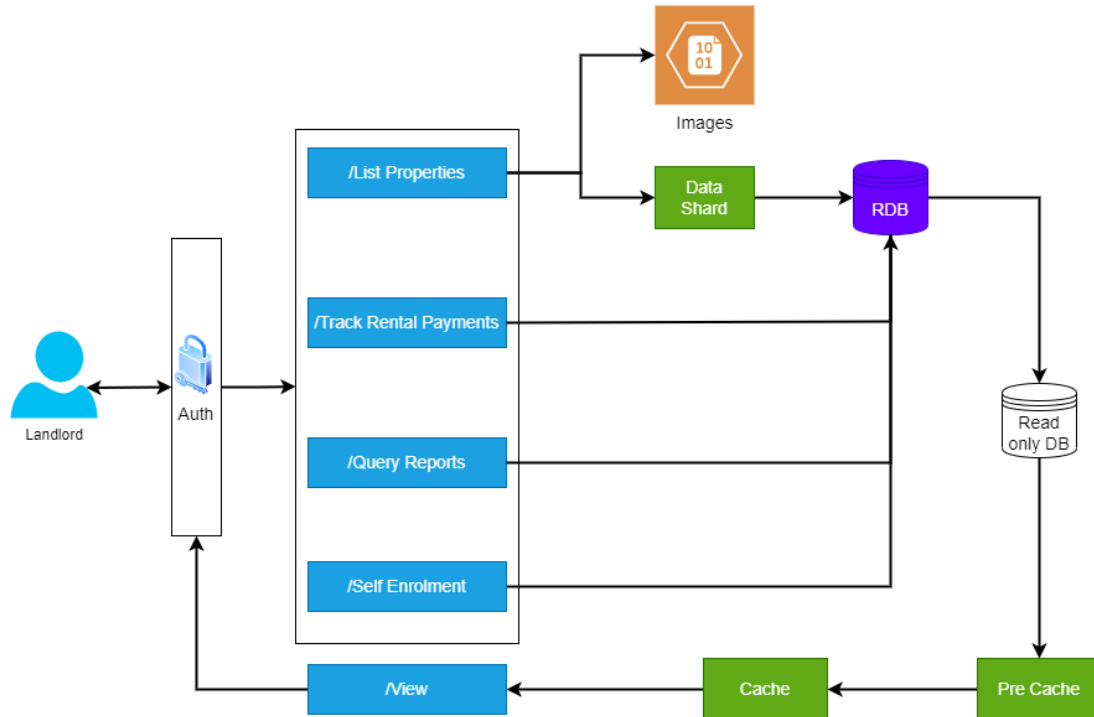
Technology Stack

- **Front-end:** HTML, CSS, JavaScript, and a modern front-end framework such as React or Angular.
- **Back-end:** A server-side programming language like Node.js or Python, and a web application framework like Express.js or Django.
- **Database:** A relational database management system (RDBMS) like MySQL or PostgreSQL.
- **Integration:** APIs and libraries for integrating with external systems, such as payment gateways, CRM tools, and accounting software.

User Roles and Permissions

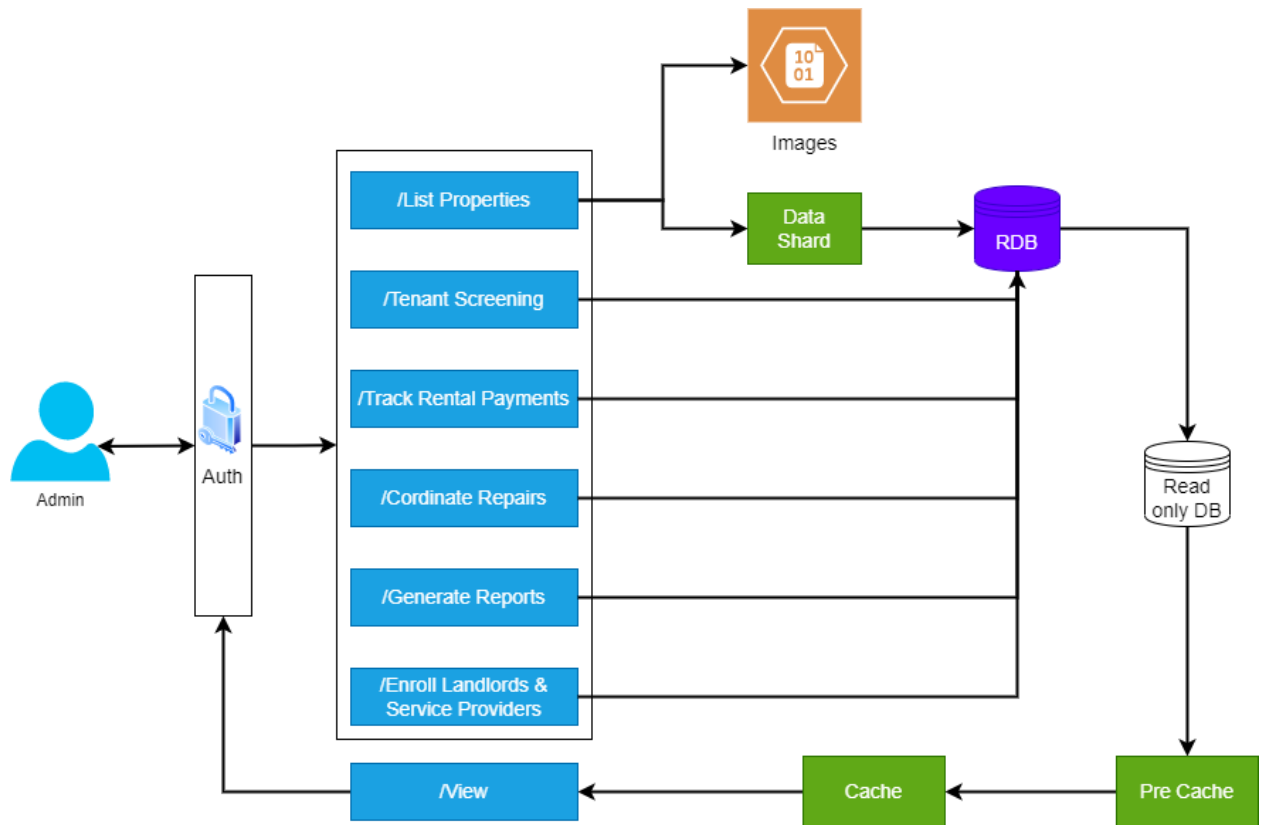
The PMP will support multiple user roles with specific permissions:

a. Landlords



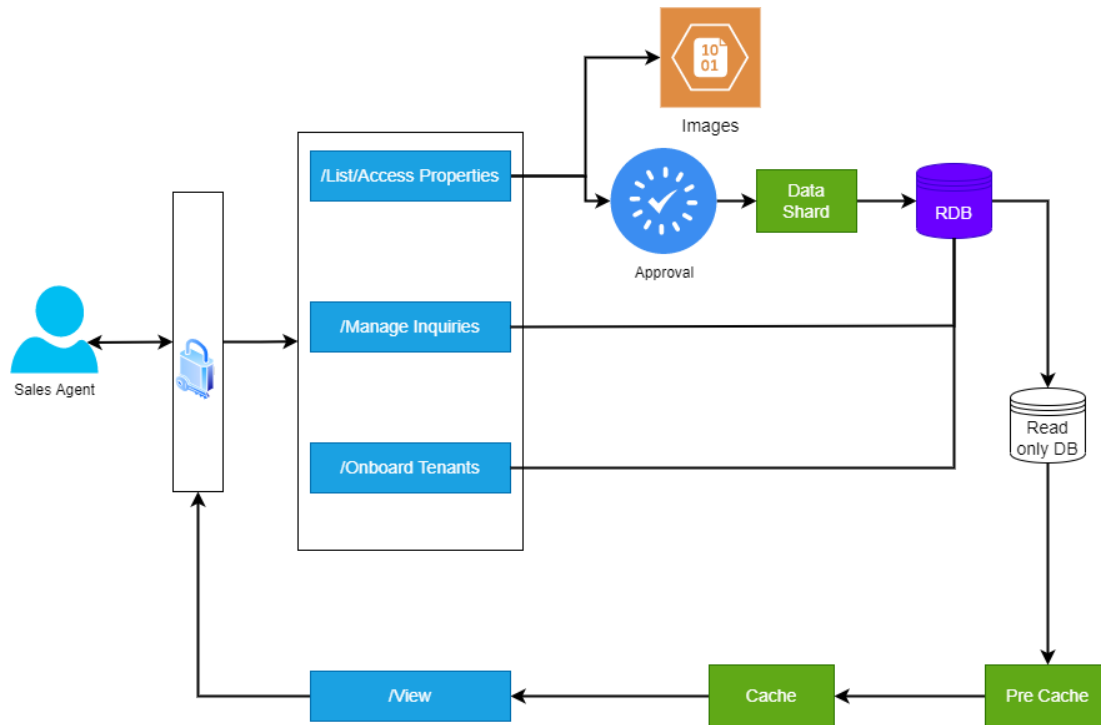
- Create and manage property listings.
- View and update property details, such as rental rates, lease agreements, and tenant information.
- Track and process rental payments.
- Access financial reports and statements related to their properties.

b. Property Managers



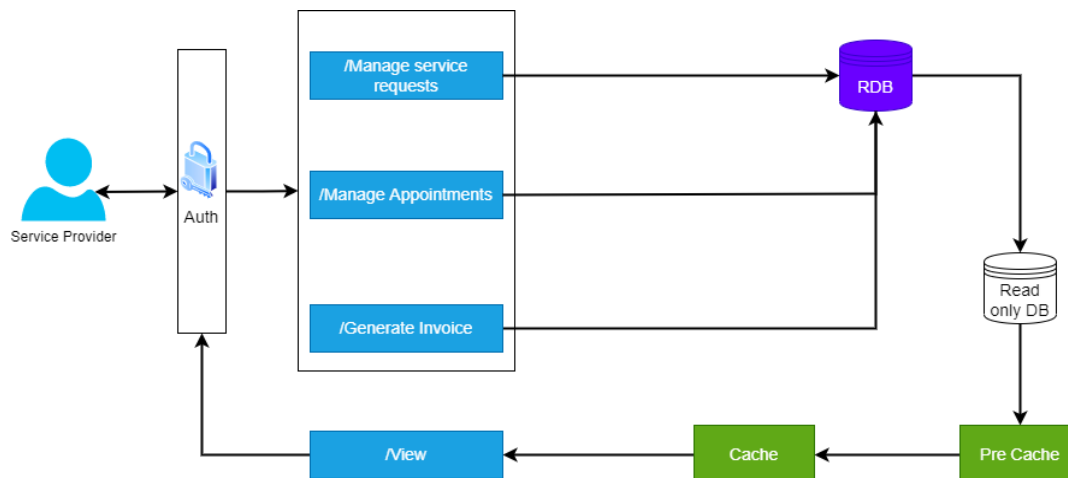
- Manage multiple properties and associated tasks.
- Communicate with landlords, realtors, and sales agents.
- Handle tenant applications, screenings, and lease agreements.
- Collect and track rental payments.
- Coordinate maintenance and repairs requests.
- Generate financial reports and statements for landlords.

c. Realtors, Photographers and Sales Agents



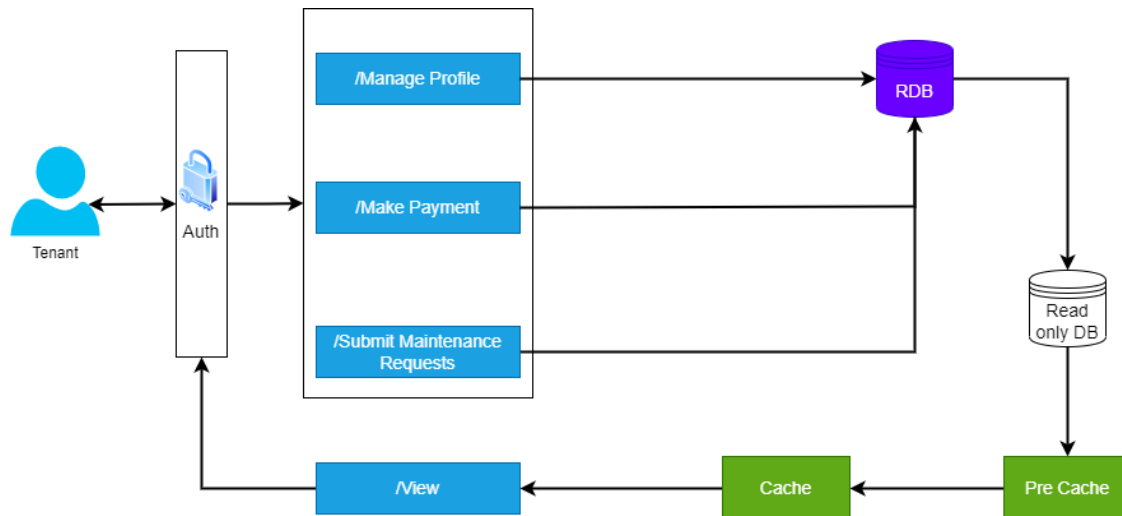
- Access property listings.
- Update property details, including availability and pricing.
- Manage client inquiries and showings.
- Facilitate lease or sale negotiations.
- Communicate with landlords, property managers, and potential tenants/buyers.

d. Service Providers



- Register and onboard as service providers.
- Update service offerings, pricing, and availability.
- Receive and manage service requests.
- Coordinate appointments and assignments.
- Generate invoices and track payments.

e. **Tenants:** Can access their rental information, make online payments, and submit maintenance requests.



f. **Administrators:** Manage user accounts, system configurations, and security settings.

Property Management Features

A. User Authentication and Authorization

- Implement a secure authentication system to verify user identities.
- Use role-based access control to define user permissions.
- Store user credentials securely using hashing and salting techniques.

B. Property Listing Management

- Create, update, and delete property listings.
- Include details such as location, size, amenities, rental rates, and lease terms.
- Upload photos and videos of properties.
- Set availability and update status (e.g., available, vacant, booked, under maintenance).

C. Tenant Management

- Handle tenant applications and screenings.

- Maintain tenant profiles and contact information.
- Manage lease agreements and renewals.
- Track rental payments and generate rent invoices.
- Communicate with tenants regarding maintenance requests or lease-related matters.

D. Maintenance & Repairs and Service Providers Management

- Receive and process maintenance requests from tenants or property managers.
- Assign service providers to tasks based on availability and expertise.
- Onboard utility service providers
- Track the status of maintenance and repair tasks.
- Communicate with tenants and service providers regarding updates or issues.

E. Financial Management

- Track rental income and expenses.
- Generate financial reports, including balance sheets and income statements.
- Manage invoices, receipts, and payments.
- Calculate and generate rent invoices for tenants.
- Integrate with accounting software for seamless financial management.

F. Communication and Collaboration

- Provide messaging and notification system for users to communicate.
- Allow sharing of documents and files.
- Send automated reminders for rental payments, lease renewals, and maintenance requests.

G. Reporting and Analytics

- Generate comprehensive reports on property performance, occupancy rates, rental income, and expenses.
- Provide dashboard reporting on Payments (e.g. paid, on time, delayed, part paid, paid, interest, late payment)
- Provide analytics on market trends, property demand, and financial projections.
- Enable customizable reports based on user requirements.

Service Provider Management Features

A. Registration and Onboarding

- Allow service providers to register and provide necessary information.
- Verify and approve service provider applications.
- Collect and store relevant documents and certifications.

B. Service Offering Management

- Enable service providers to update their service offerings, pricing, and availability.
- Specify service areas and preferences.
- Set up appointment scheduling and availability.

C. Service Request Management

- Receive and manage service requests from property managers and tenants.
- Assign service providers based on availability, location, and expertise.
- Track service request status and completion.

D. Invoicing and Payments

- Generate invoices for services provided.
- Track and manage payments from property managers or tenants.
- Provide a payment gateway for secure transactions.

System Integration

- Integrate with external systems such as accounting software, payment gateways, financial management and customer relationship management (CRM) tools.
- APIs or webhooks to enable data exchange and synchronization with external systems.
- Enable data synchronization and seamless information flow between systems.

Project Implementation Schedule

Number of days to launch: 101

Disclaimer: The duration of each phase and the overall project timeline will depend on the project size, team size, complexity of requirements, and other factors.

Project Initiation Phase- 3 days

- Defining project objectives, scope, and deliverables.
- Identifying key stakeholders and establishing communication channels.
- Setting up project management tools and establishing project documentation.

Requirements Gathering and Analysis Phase- 5 days

- Gathering functional and non-functional requirements.
- Analyzing requirements and creating a detailed requirements specification document.
- Prioritize requirements and identify any dependencies or constraints.

System Design Phase- 10 days

- Defining the system architecture, including the client-server structure and database design.
- Create detailed design documents for each system component.
- Identify integration points with third-party systems and plan the integration approach.

Development Phase - 70 days

- Setting up the development environment, including version control, development servers, and necessary software.
- Implementing the backend server-side application using the chosen programming language and framework.
- Developing the frontend user interface, ensuring responsiveness and usability across different devices.
- Implementing the database schema and developing a data access layer for efficient data storage and retrieval.
- Developing integration components for seamless communication with third-party systems.
- Conducting regular code reviews and unit testing to ensure quality and adherence to requirements.

Testing and Quality Assurance Phase- 10 days

- Develop a comprehensive test plan and test cases based on the requirements.
- Conduct functional testing to verify system behavior and ensure all requirements are met.
- Perform integration testing to validate data exchange and synchronization with external systems.
- Conduct performance testing to assess system scalability, response times, and resource usage.
- Perform security testing to identify and address potential vulnerabilities.
- Document and track issues or bugs and ensure they are resolved before deployment.

Deployment Phase- 3 days

- Preparing the production environment, including infrastructure setup, networking, and security configurations.
- Performing the deployment of the backend application, frontend user interface, and database.

- Configuring integration components and establishing connections with third-party systems.
- Conducting thorough testing in the production environment to validate system functionality and performance.
- Training end-users on system usage and providing documentation for reference.
- Conducting a final review and obtaining sign-off for deployment readiness.

Post-Deployment Phase - 6 months

- Monitoring the system in the live environment and addressing any issues or bugs that arise.
- Providing ongoing support and maintenance, including regular updates and bug fixes.
- Gathering user feedback and incorporating necessary enhancements or feature requests.
- Conducting periodic system audits and security checks.
- Planning for future releases and improvements based on user feedback and business requirements.