PHASE II: SMART HOUSE RENTING MANAGEMENT SYSTEM.

BUSINESS PROCESS MODOLING.

Project Title: Smart House Renting Management System
Course: PL/SQL Capstone Project (INSY 8311)

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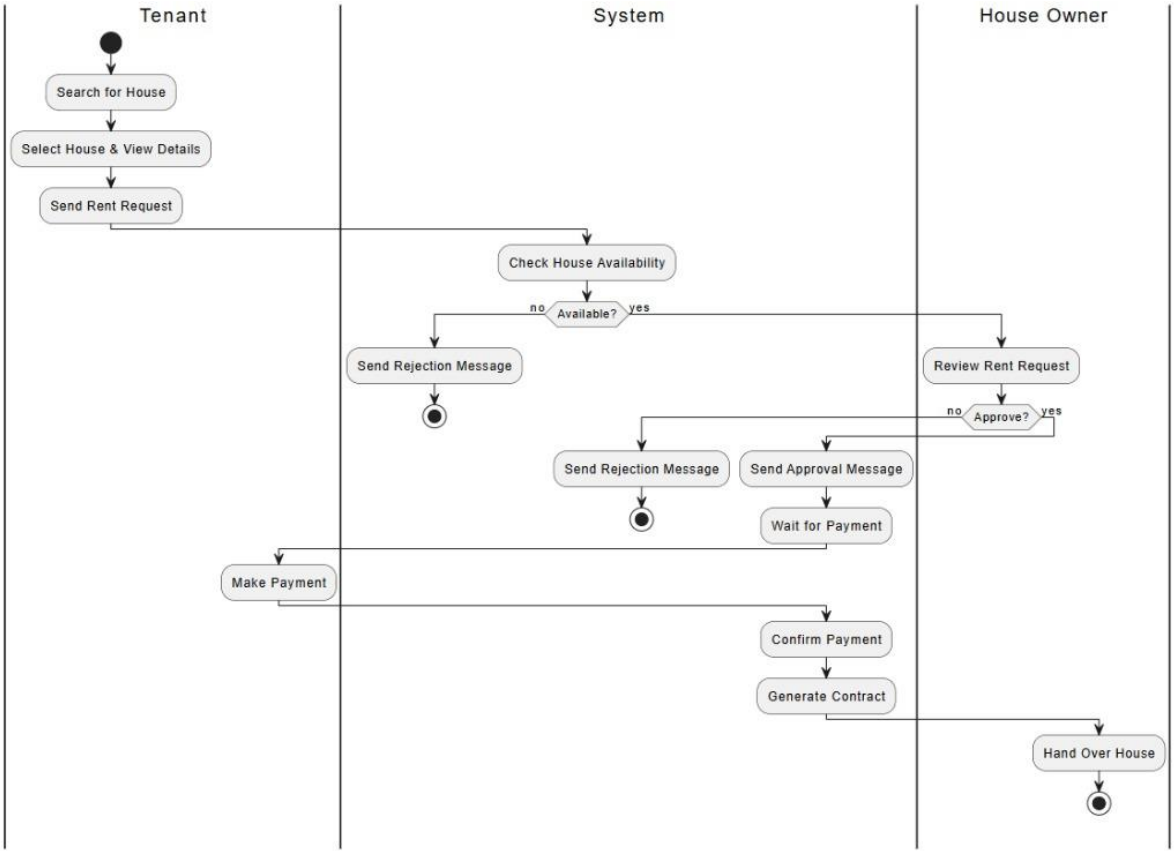
Phase 2 Focus: Understanding and modeling how the system works before building the database



Introduction

In this phase, we were asked to model a real-world **business process** that shows how information moves between people and systems. This is part of **Management Information Systems (MIS)**.

The main goal is to **visualize how our house rental management system works** --- step by step --- and to understand how different users interact with it. We used a **process diagram with swim-lanes** to clearly show which part is done by the **Tenant, Property Manager, PL/SQL System, or Vendor**.

This helps us:

- Know what the system should do.
- Plan how the database will support each activity.
- Make sure everyone's role is clear.

Explaining the Diagram Step by Step

1.Tenant (Top Lane)

This is the person who wants to rent a property.

i. **Start:** The tenant begins the process.

ii. **Search for Properties:** The tenant looks for available rental properties through online listings or agent.

iii. **Submit Rental Application:** They choose a property and submit their personal and financial information.

iv. **Sign Digital Lease:** If approved, the tenant signs the lease agreement electronically.

v. **Pay Security Deposit & First Month Rent:** The tenant makes initial payments to secure the property.

vi. **Move into Property:** The tenant receives keys and moves in.

vii. **Monthly Rent Payments:** Throughout the lease, the tenant pays rent monthly.

viii. **Report Maintenance Issues:** The tenant submits repair requests as needed.

ix. **Renew or Move-out Decision:** When lease ends, the tenant decides to renew or move out.

2. PL/SQL Rental System

This is the automated system that processes information and handles business logic.

i. **Perform Auto Background Check:** The system automatically screens tenant applications.

ii. **Generate Digital Lease Agreement:** Creates customized lease contracts.

iii. **Update Property Status:** Changes property status from "Available" to "Rented".

iv. **Schedule Monthly Rent Invoices:** Automatically generates rent due notices.

v. **Auto-Prioritize Maintenance Requests:** Classifies repair urgency automatically.

vi. **Send Renewal Notices:** Proactively notifies tenants 60 days before lease end.

3. Property Manager

The manager oversees operations and ensures everything runs smoothly.

i. **Review Application Details:** Manually reviews tenant applications after system screening.

ii. **Assign Maintenance Vendors:** Coordinates with repair service providers.

iii. **Schedule Final Inspection:** Conducts move-out property assessment.

iv. **Process Security Deposit:** Handles deposit refunds or deductions.

This ensures there are no mistakes in tenant selection and property maintenance.

4. Vendor

Service providers who handle property maintenance and repairs.

Perform Maintenance: Vendors complete repair work assigned by the property manager.

Update Completion Status: Vendors report when maintenance is finished.

Why This Process is Useful for MIS

This process supports **Management Information Systems (MIS)** in several ways:

i. **Improves decision-making:** Property managers get real-time data on occupancy rates, payment status, and maintenance needs.

ii. **Automates routine tasks:** The system handles background checks, invoice generation, and renewal reminders automatically.

iii. **Tracks financial performance:** Automated payment tracking and reporting help monitor rental income and expenses.

iv. **Clear responsibility allocation:** Each participant (tenant, manager, system, vendor) has defined roles and responsibilities.

v. **Enhances tenant experience:** Quick maintenance response and automated communications improve satisfaction.

Conclusion

To sum it up, **this diagram clearly shows how the house rental management process works** --- from when a tenant starts searching for a property to ongoing management and eventual move-out or renewal. By using **swim lanes**, we made it easy to understand who does what.

This phase is very important because:

- It helps us design the database tables and relationships properly.
- It shows us how to implement business logic in PL/SQL procedures and functions.
- It improves rental operations by making everything efficient and automated.
- It demonstrates how technology can transform traditional property management.

Understanding this process will guide us as we start creating our database using PL/SQL in the coming phases, ensuring we build a system that meets real-world rental management needs while leveraging database automation capabilities.