



# House Management System



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## Index

Chapter-1: Introduction.....	3
1.1 Background of the Study.....	3
1.2 Existing System.....	3
1.3 Problems of Existing System .....	3
1.4 Proposed Solution .....	3
Chapter-2: Facts Finding Techniques .....	3
2.1 Objectives: .....	3
2.2 Questionnaires:.....	3
2.3 Secondary Data Collection:.....	3
Chapter-3: Methodology .....	4
3.1 Waterfall Model: .....	4
Chapter-4: System Analysis .....	4
4.1 Feasibility Study .....	4
4.2 Requirement and analysis .....	5
4.3 Design .....	5
4.4 Economic Feasibility.....	5
4.5 Technical Feasibility .....	5
Chapter-5: Requirements Analysis .....	5
5.1 User Requirements .....	5
5.2 Functional Requirements .....	5
5.3 Non-Functional Requirements .....	5
5.4 Hardware Requirements.....	5
5.5 Software Requirements .....	5
Chapter-6: Diagrams .....	6
6.1 Use Case Diagram.....	6
6.2 Use Case Descriptions.....	7
6.4 Activity Diagram.....	12
6.5 Sequence Diagram .....	13
Chapter-7: Evaluation .....	14
Chapter-8: Conclusion .....	14

## Chapter-1: Introduction

### 1.1 Background of the Study

Home is one of the basic needs for human being. From the four need of human being as its need people who have no home may live through paying rent for other people who have more houses. But here what we have to understand is that the relation between the person who rented house and the renter. There are different renters who have different behavior that show different characteristics on rented people. Some renters may have a positive relationship others may not. Here those renters who have bad behavior may show unpleasant or bad behavior on rented peoples. But here what we have thought is that how those rented people for renter that have bad behavior we live together.

### 1.2 Existing System

Currently the most property managers manage property and tenants details on papers. Once customers find a vacant house, they can request manager of the houses indicating the size of the house they would like rented to them. The property manager can email them back giving them all the details about the house they are requesting. The details include room, house office, paying guest also. House rent management system used to avoid the time consuming and the process.

### 1.3 Problems of Existing System

Currently the most property managers manage property and tenants details on papers. Once customers find a vacant house, they can request manager of the houses indicating the size of the house they would like rented to them. The property manager can email them back giving them all the details about the house they are requesting. The details include room, house office, paying guest also. House rent management system used to avoid the time consuming and the process.

### 1.4 Proposed Solution

House Management System now makes the life of hotel staff and managers easy by making all the operations computerized, accurate and expedited. Staff can focus more on the customer service and satisfaction with seamless integration of online reservation system and backend operations systems. Managers have sufficient data and reports to gather clear picture of the business at individual property and group level.

## Chapter-2: Facts Finding Techniques

### 2.1 Objectives:

It will use this technique to collect information about how the current system operates and its processes. This involves systematically watching and recording the behavior and characteristics of operations and processes.

It gives more detailed and context related information and can adapt to event as they occur however the method may be time consuming.

### 2.2 Questionnaires:

I will prepare a number of questionnaires whereby I will submit them to business owners (Landlords) to get a deeper insight of how the system is going to work. I prefer this method because it gives more information from various individuals and offers greater flexibility as the opportunity to restructure questions. This technique is preferred because it will provide a closer contact between the users and the developer hence dispelling the probability of the completed system being rejected by user(s).

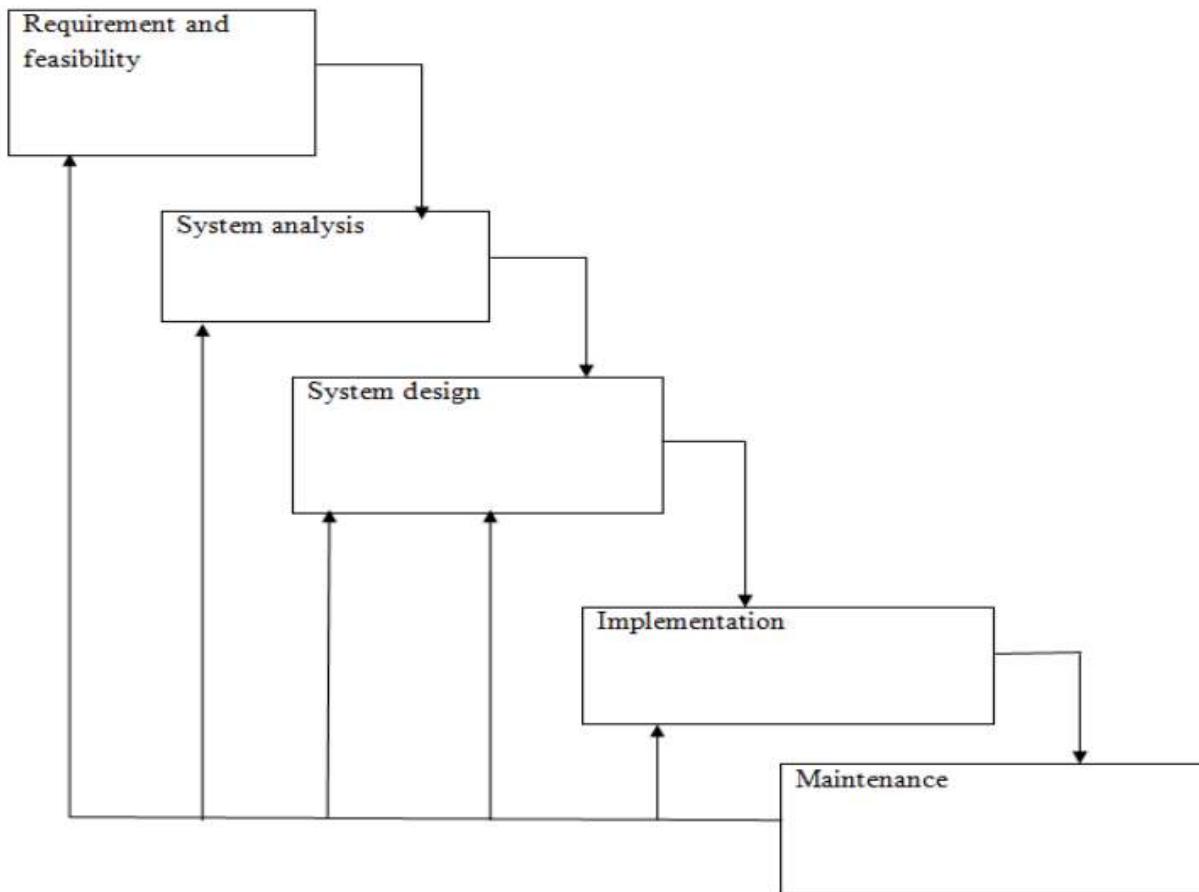
### 2.3 Secondary Data Collection:

This data I will collect from existing sources e.g. books, internet, journals and magazines that was collected by other researchers and analysis was done. It is from that data that I will then compare with the primary data and make a decision and conclusion.

## Chapter-3: Methodology

### 3.1 Waterfall Model:

It is comprised of the stages that the developer will use when developing the system. It is a sequential model hence, the name waterfall. The developer has to finish with one stage before going to the next one. It comprises of the feasibility study, analysis phase, design phase, coding phase, testing phase, implementation phase and finally the maintenance phase. It is a simple model and easy to use and understand. With waterfall development based methodologies, the analysts and users proceed sequentially from one phase to the next. The deliverables from each phase are voluminous and are presented to the project sponsor for approval as the project moves from phase to phase. Once the phase is approved by the sponsor it ends and the next phase begins.



**Figure 3.0 waterfall diagram**

## Chapter-4: System Analysis

### 4.1 Feasibility Study

Here, I will carry out a study to gain an understanding of the customers (tenants) current system and problems experienced in this system through interviews, observations, and participations. I will use the obtained data to determine the viability of the system being proposed in terms of technical, economic and social feasibility.

#### **4.2 Requirement and analysis**

At this stage, I will gather information about what the customer needs and define the problems the system is expected to solve. I will also include customers' business context, products functions and its compatibility. I will gather requirement such as software like the programming language to use, database model and hardware needed such as laptop, printers etc.

#### **4.3 Design**

At this stage, I will make an overall design of the system architecture and physical design which includes User Interface and Database design. It is at this stage that I will identify any faults before moving onto the next stage. The output of this stage is the design specification which is used in the next stage of implementation.

#### **4.4 Economic Feasibility**

This includes an evaluation of all incremental costs and benefits expected if proposed system is implemented. Costs-benefit analysis which is to be performed during economic feasibility delineates costs for project development and weighs them against benefits of system.

#### **4.5 Technical Feasibility**

Here, I will carry out a study to gain an understanding of the customers (tenants) current system and problems experienced in this system through interviews, observations, and participations. I will use the obtained data to determine the viability of the system being proposed in terms of technical, economic and social feasibility.

### **Chapter-5: Requirements Analysis**

#### **5.1 User Requirements**

It entailed user involvement and statements of facts and assumptions that define the expectations of the system in terms of mission objectives, environment, constraints and measures of effectiveness and suitability. Basically the users:

1. A system that improves on the efficiency of information storage and retrieval.
2. A system that is easy to learn and use
3. A system that is fast in processing transactions
4. A system that is flexible, safe and convenient

#### **5.2 Functional Requirements**

This is a necessary task, action or activity that was accomplished. The proposed system is able to:

1. Allow administrator to add a houses, tenant and defaulters details.
2. Allow the administrator to delete houses, tenants and defaulters details.
3. Allow the administrator to search data in the database.

#### **5.3 Non-Functional Requirements**

Requirements on usability, reliability, performance, supportability, security, recovery, interface, implementation, operation, and legal.

1. The system will be a screen-based application.
2. Menus should be organized in a hierarchical manner (usability)
3. The system will be password-protected. (Security)
4. HMS will be backed up daily. (Back up)

#### **5.4 Hardware Requirements**

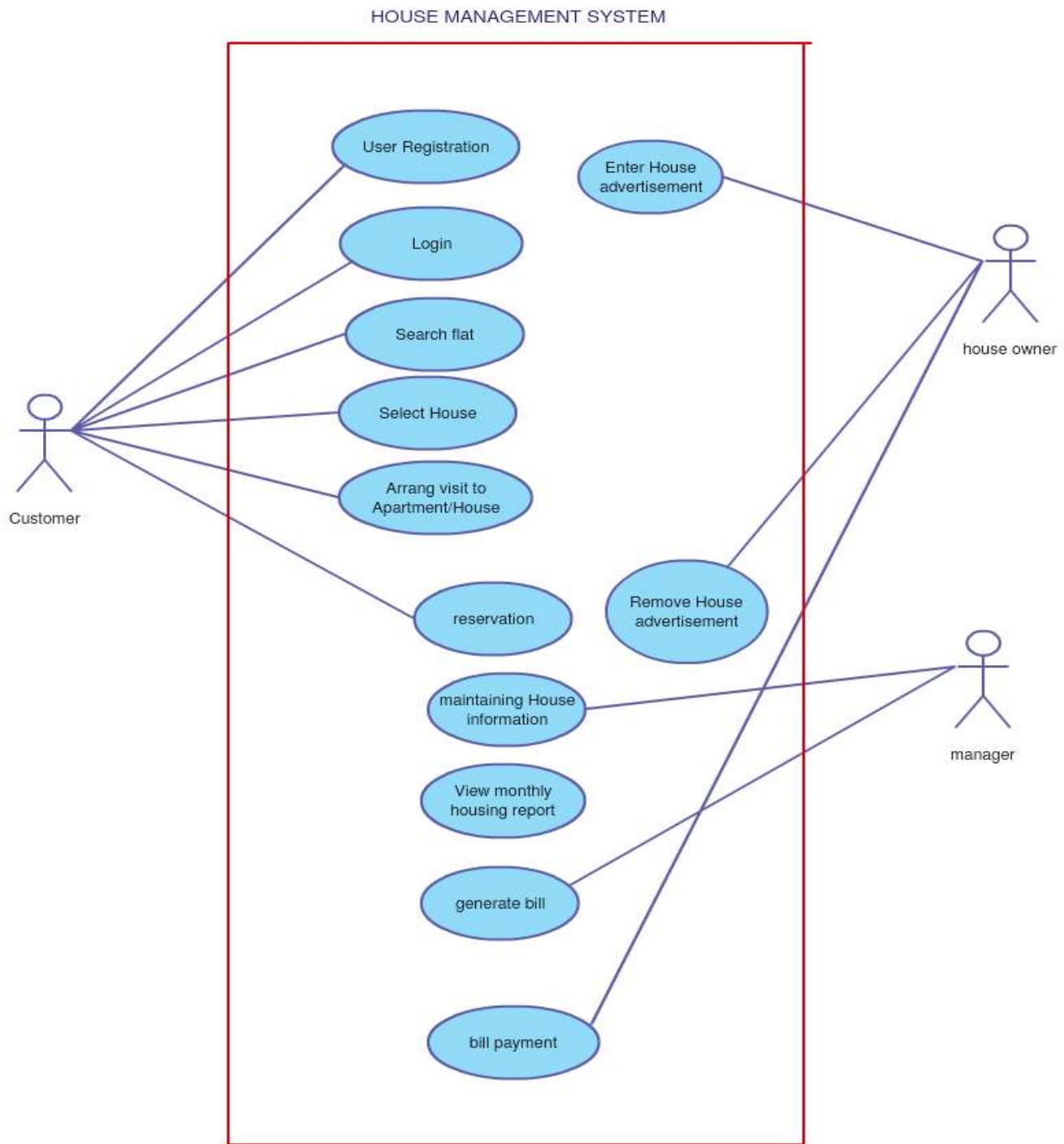
1. Intel(R) Core or higher
2. Memory 4GB or higher RAM
3. 1.40 Hz or Faster
4. 32/64 bit operating system, x86/x64-based processor

#### **5.5 Software Requirements**

1. Operating System-windows 7/8/10
2. Microsoft Office Power point-Used during presentation
3. Microsoft visual basic 6

## Chapter-6: Diagrams

### 6.1 Use Case Diagram



## 6.2 Use Case Descriptions

<b>Use Case Name:</b>	Schedule visit
<b>Actor(s):</b>	Prospect Tenant
<b>Purpose:</b>	Booking landlord time for visiting the apartments.
<b>Overview:</b>	Prospect tenant (after a visitor phone petition) chooses a date and time available for visiting the apartments.

<b>Use Case Name:</b>	Send rental application
<b>Actor(s):</b>	Prospect Tenant
<b>Purpose:</b>	Renting an apartment
<b>Overview:</b>	Prospect tenant can rent an apartment sending the solicitation form and required digital documents. Prospect tenant must provide a credit card to pay the security deposit and prepaid rent.

<b>Use Case Name:</b>	Check payment status
<b>Actor(s):</b>	Landlord, Staff, Manager
<b>Purpose:</b>	To clearly know the payment status of an apartment.
<b>Overview:</b>	Landlord can check the payment status to know whether the tenant pays the rent or the apartment payment is on time.

<b>Use Case Name:</b>	Check room availability
<b>Actor(s):</b>	Landlord, Tenant, Staff, Manager
<b>Purpose:</b>	To check the apartment availability and basic information.
<b>Overview:</b>	Landlord can check whether the apartment is available and view the basic information related to the apartment.

<b>Use Case Name:</b>	Request inspection
<b>Actor(s):</b>	Tenant, Staff, Manager
<b>Purpose:</b>	To submit a request to inspect the building.
<b>Overview:</b>	Shows the process of requesting inspections. Tenant will submit the request in order to be processed by the landlord.

<b>Use Case Name:</b>	Request maintenance
<b>Actor(s):</b>	Tenant, Staff, Manager
<b>Purpose:</b>	To submit a request to fix accidental apartment problems.
<b>Overview:</b>	Shows the process of requesting maintenance. Tenant will make an appointment, set a schedule, and fill out a maintenance form for repairing the accidental maintenance problems.
<b>Use Case Name:</b>	Submit feedback form
<b>Actor(s):</b>	Tenant, Staff, Manager

<b>Purpose:</b>	To provide a real-time feedback.
<b>Overview:</b>	After the accidental maintenance, tenants will fill out a feedback form and submit it. This form will help apartment managers improve their work.

<b>Use Case Name:</b>	Request an apartment change
<b>Actor(s):</b>	Tenant, Staff, Manager
<b>Purpose:</b>	Requesting the landlord for moving from the present apartment to another
<b>Overview:</b>	Tenant chooses a new apartment and the date to move and send the solicitation to the landlord for studying

<b>Use Case Name:</b>	Request lease termination
<b>Actor(s):</b>	Tenant, Staff, Manager
<b>Purpose:</b>	Requesting the landlord for moving out from the present apartment and finishing the lease.
<b>Overview:</b>	Tenant report landlord the date to move out.

<b>Use Case Name:</b>	Pay rent
<b>Actor(s):</b>	Tenant, Staff, Manager
<b>Purpose:</b>	Allows Customer to make payments online.
<b>Overview:</b>	Customers use the AMS to pay the rent.

<b>Use Case Name:</b>	Login
<b>Actor(s):</b>	Tenant, Landlord, Staff, Manager
<b>Purpose:</b>	To use different levels of security access to protect user's information.
<b>Overview:</b>	Based on the different security levels of users, the system only provides proper information to users.

<b>Use Case Name:</b>	Edit apartment information
<b>Actor(s):</b>	Staff, Manager
<b>Purpose:</b>	To manage apartment information.
<b>Overview:</b>	Staff or manager check/update apartment information, such as rental fee.

<b>Use Case Name:</b>	Process tenant registration
<b>Actor(s):</b>	Staff, Manager
<b>Purpose:</b>	Renting an apartment for a new tenant
<b>Overview:</b>	Landlord enters the entire tenant's data and the Document Manager System is sent all the necessary data to generate the lease.

<b>Use Case Name:</b>	Process lease termination
<b>Actor(s):</b>	Staff, Manager

<b>Purpose:</b>	Releasing the apartment, calculating the amount the former tenant will get or pay and making the Document Manager System know about the lease termination.
<b>Overview:</b>	Landlord enters any damage to the apartment and the apartment conditions or required services to be in perfect conditions. The system calculates the former tenant's final balance.

<b>Use Case Name:</b>	Renew the lease
<b>Actor(s):</b>	Automatic process
<b>Purpose:</b>	Report to the tenant the lease renewal and any increase in the rent.
<b>Overview:</b>	70 days before the lease expires, the system report to the tenant, the lease will be automatically renewed and the new rent.

<b>Use Case Name:</b>	Send renewal notice
<b>Actor(s):</b>	Staff, Manager
<b>Purpose:</b>	To send an email to notify tenant that the lease is expiring.
<b>Overview:</b>	Staff or manager sends an email to remind tenant to renew the apartment lease.

<b>Use Case Name:</b>	Run Credit Report
<b>Actor(s):</b>	None, everyday process
<b>Purpose:</b>	Keep tenants reported about the payment status.
<b>Overview:</b>	Runs a credit report on tenants to ensure that all tenants have settled their debts and are able to pay rent, report about fines for lateness, etc.

<b>Use Case Name:</b>	Process tenant's apartment change request
<b>Actor(s):</b>	Staff, Manager
<b>Purpose:</b>	Accepting a tenant's apartment change request
<b>Overview:</b>	The landlord accepts the change petition, so a new lease must be signed.

<b>Use Case Name:</b>	Record regular maintenance
<b>Actor(s):</b>	Staff, Manager
<b>Purpose:</b>	To make sure each tenant knows the maintenance schedule.
<b>Overview:</b>	An email about regular seasonal/annual maintenance will be sent to all the tenants in order to notify tenants in advance for the inconvenience, so they can make a slight change for their schedule.

<b>Use Case Name:</b>	Schedule inspection
<b>Actor(s):</b>	Staff, Manager
<b>Purpose:</b>	To program an external inspection of the building.

<b>Overview:</b>	Landlord selects an external inspector and fixes the inspection date and time. The inspection is notified to the tenants.
<b>Use Case Name:</b>	Enter inspection results
<b>Actor(s):</b>	Staff, Manager
<b>Purpose:</b>	To enter the inspection result in order to make them know to the tenants.
<b>Overview:</b>	Landlord enters the inspection results to the system. Tenants can also pull out the inspection results from the system.

<b>Use Case Name:</b>	Store occupancy verification
<b>Actor(s):</b>	Manager
<b>Purpose:</b>	To verify rental applications entered by staff.
<b>Overview:</b>	Allows the manager to verify rental occupation, cost and profits.

<b>Use Case Name:</b>	Send eviction notice
<b>Actor(s):</b>	Manager
<b>Purpose:</b>	To send an email about eviction notice.
<b>Overview:</b>	Manager checks the apartment and tenant status, and then sends an eviction notice.

<b>Use Case Name:</b>	Record pest control
<b>Actor(s):</b>	
<b>Purpose:</b>	To eliminate pest to make apartments cleaner.
<b>Overview:</b>	Landlord will regularly (seasonal) eliminate pest, including mice, cockroaches, and bugs.

This is an included use case. So, it does not have a responsible actor.

<b>Use Case Name:</b>	Record emergency test
<b>Actor(s):</b>	
<b>Purpose:</b>	To test the facilities to make apartments safer.
<b>Overview:</b>	Landlord will regularly test the fire alarm/sprinkler and make the facilities usable.

This is an included use case. So, it does not have a responsible actor.

## 6.3 Class Diagram

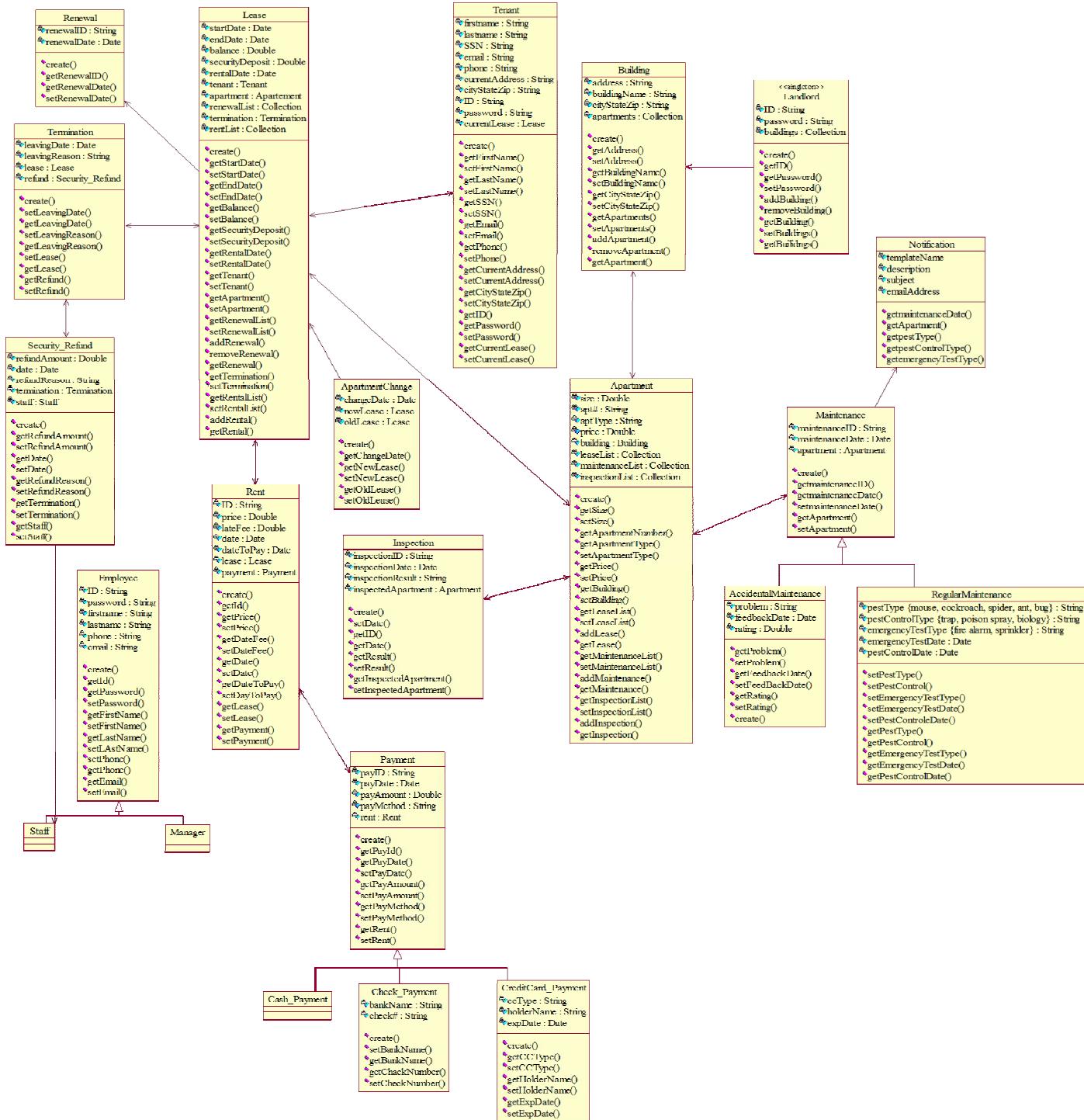


Fig: Class Diagram for House Management system

## 6.4 Activity Diagram

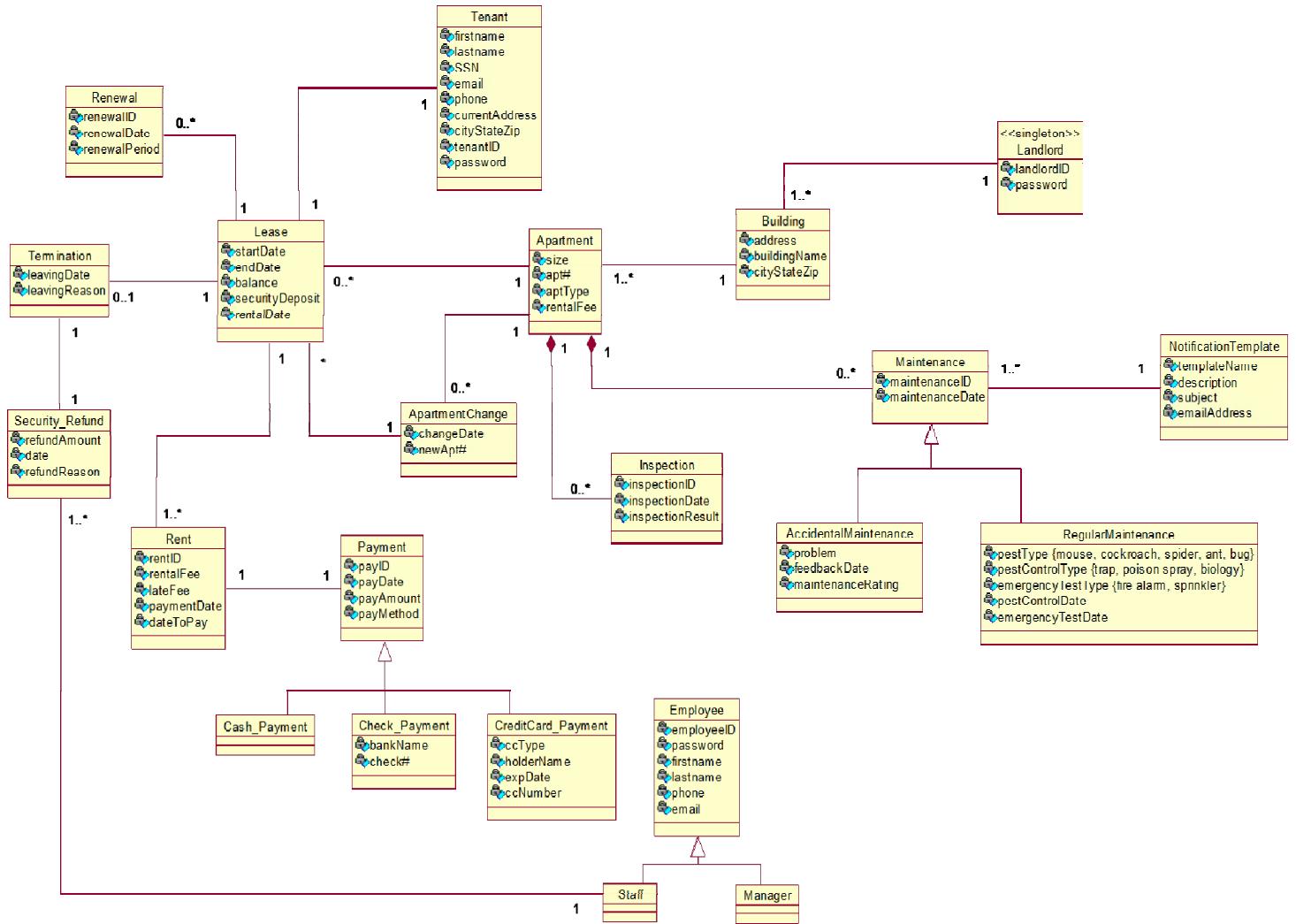


Fig: Activity Diagram for House Management system

## 6.5 Sequence Diagram

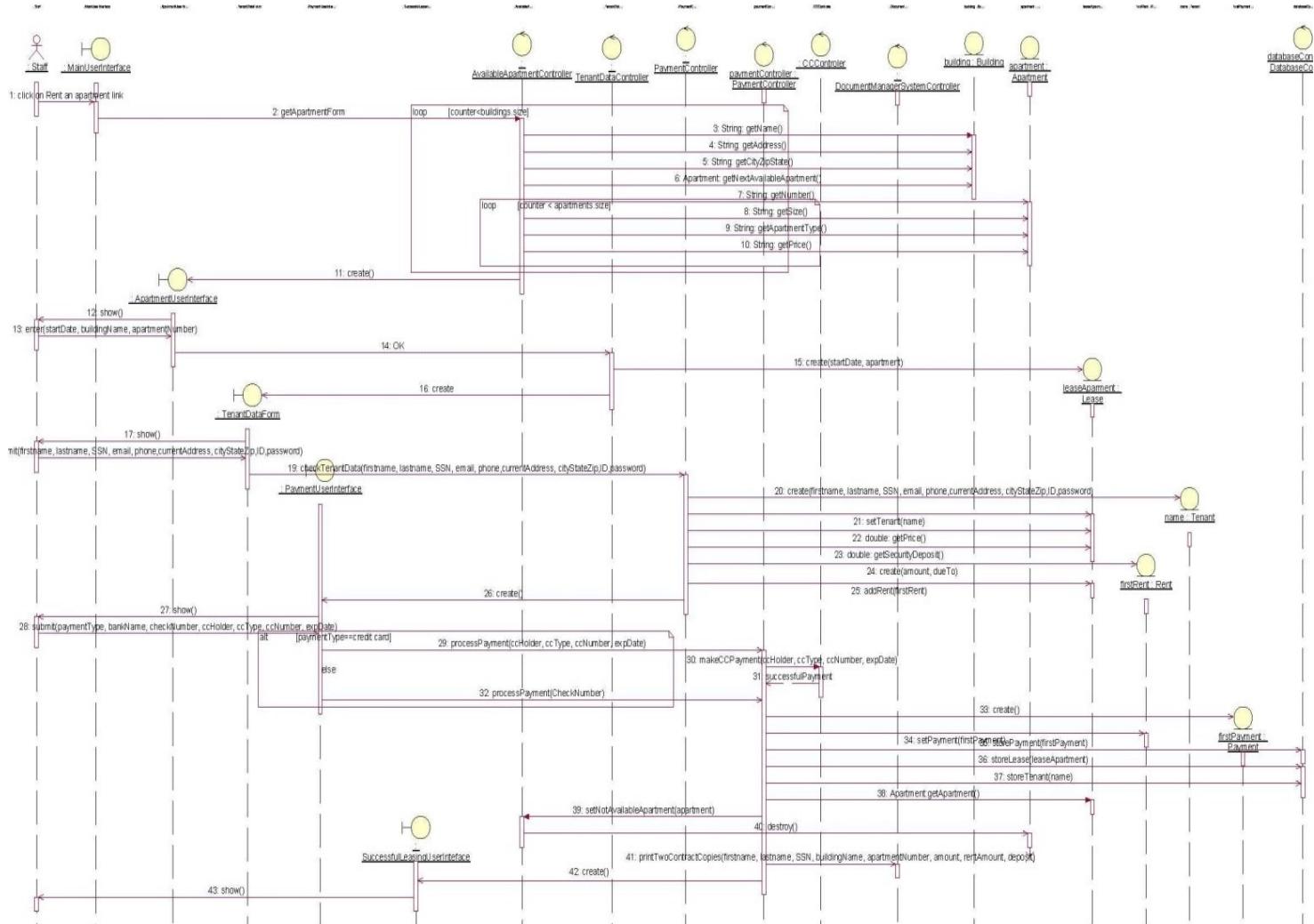


Fig: Sequence Diagram for House Management system

## **Chapter-7: Evaluation**

An online web portal to manage the rental property, facilitate tenants to view all listed property, search for their need using key words such as property type, location etc. Landlords need to have provision to post /update their property details with admin approval. Besides they required feature that would enable the tenant to view the complete details of the property, shortlist their preferred and register to book for a site visit. Member registration form and inquiry form to contact the admin for marketing are required in the application. Registered members must be provision to book for a site visit, view their recently viewed, site visits as well as reviewed sites in their member account.

## **Chapter-8: Conclusion**

This absolutely fantastic rental management system for house owners. It is suitable for any kind of houses for rent. Landlords will no longer have a cumbersome time searching through voluminous book records trying to update their tenant's details but instead are presented with an intuitive management dashboard that gives them an insight about their tenants and houses. with this system we can;

- List all the houses you have
- Add tenants
- Generate monthly invoices for your tenants
- Collect rent from your tenants
- View payment statistics and easily tell which tenants have paid, not paid and have balances.

With this system you can make a lot of informed decisions while managing your rental houses.