

# Lease Management System

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**ABSTRACT** - With the prevailing the power technology field, there is a necessary need to embrace and appreciate the power of technology. Even during this Era Housing sector remains to be the punisher for failing to meet the challenges of change by employing a new plan that facilitates easy management on lease houses. Hence there is ought to develop a Lease Management System that will make the job easier for the managers so that all their work can be efficient and effective. We made a decision to develop a Lease Management System. This system affects the whole workflow with the transparency of information. With this system, Property owners have a far visibility of their occupied and vacant units. With this system we will be able to record every flat details, vacant flats, total revenue generated by each tenet per building per flat, tenant details, their contracts, maintenance record keeping, track deadlines and store lease agreements. The system was developed in such way that it has the most user friendly interface possible. For individuals out there faced management difficulties here is the good solution for you, This system enabling paperless work order management and saving time for those who face management challenges. The Lease Management System is made for you.

**Keywords:** embrace, vigilant, Lease Management System, tenant, effective, efficient

## I. INTRODUCTION

Because of the continuous development of technology and rapid increase of computer speed, information Management technology aroused more and more people attention. Lease Management System is designed to help the users to find houses according to their needs, the focus of this project is essentially managing and giving housing for low income, medium and high incomes households. With this system it also have a portal for customer complaints relating to the buildings such as electricians, plumbers, technicians etc will be provided by us to the customer after registering on the portal. Various technical services will be provided on this portal. Also there will be automation of time consuming processes for bills, disbursements and reconciliations. Lease agreements are binding legal documents. The terms of a lease agreement cannot be changed, and both the tenant and property owner must honor the agreement. Our system providing a form called contract in which if the tenant is interested to take the property or house on lease then it is compulsory for them to sign the contract and do the legalities.

## II. STATEMENT OF THE PROBLEM

We have found that over the years property managers/landlords have drawbacks in maintaining and managing their customer data and their records. Managing

become troublesome because of these issues that include:

1. Data Security is not assured Data is being recorded in books/papers which may get easily lost or destroy.
2. Lack of using computerized in lease management system Property managers use the manual system in recording or maintaining their property and data
3. There is no database to store information As data is stored on tangible files, data can be loss or damage is very high. Lack of these crucial needs makes management of the tenants and houses very troublesome as some tenants may end up not paying rent.
4. Data growth Data increase day to day. Storing and maintaining all data manually is extremely troublesome

### 2.1 PROJECT OUTCOMES

1. Took a house on the lease according to their budget and facilities required.
2. To develop a system that enables the users to add, edit, search and delete data from the database.
3. Digitally signing the contract.
4. Leaseholders can register their issues related to their house such as electricity drawback, water drawback, etc, on the portal and see the progress on it.

5. Most significantly this portal is accessible and straightforward to use by anyone inside the globe just by writing the url in the search engine.

## 2.2 LITERATURE REVIEW

Literature review is a text written by someone to consider the critical points of current knowledge including substantive findings moreover as theoretical and methodological contributions to a specific topic. Main goals are to situate this study inside the body of literature and to provide context for the actual reader.

### 2.2.1 The role of objected oriented programming

The concept of object-oriented modeling is changing into progressively practical because of its ability to thoroughly represent complex relationships as well as to represent data and data processes in a consistent manner. This concept has been implemented in computer software engineering; starting from system analysis, system design, operating system, computer programming and database management system.

### 2.2.2 The role of relational database management system

Database Management System (DBMS) has replaced the classification system information management by having a pool of information that may be shared by multiple application programs and users at a same time. DBMS also offers logical and physical informational independence, so that changing of information structure or application program will not affect one another.

## 2.3 METHODOLOGY

The term Methodology means that technique and procedure adopted by conducting a look study. It outlines how data going to be collected and the tools for collecting data, system methodology, the proposed system input and output, users and systems development tools.

### 2.3.1 QUESTIONNAIRES

We created a series of questionnaires that we distributed to business owners (landlords) in order to get a better understanding of how the system will operate. This method appeals to us because it provides more knowledge from a variety of sources and allows for greater flexibility in the form of the ability to restructure inquiries.

This method is preferred because it allows for more direct communication between the two parties.

This method also includes the following:

1. Allows for clarity.
2. In comparison to interviews, it also has high response rate
3. Also helps in obtaining the maximum range and scope of detail

### 2.3.2 SECONDARY DATA COLLECTION

This information will be gathered from existing sources,

such as books, the internet, journals, and magazines, which have already been collected and analysed by other researchers. We can compare the data to the primary data before making a decision and drawing a conclusion.

## 2.3.3 SYSTEM DEVELOPMENT TECHNICAL DESCRIPTION

### Development of Technology Options

This system is predicted on Browser/ server structure design of the system. It takes java Angular.js, Node.js, express.js these three framework as the main technology to complete the interactive work page and database data, within which foremost work is input and output, modify, storage and query; it prospects for the employment of jQuery + HTML5+CSS3+Ajax asynchronous communication. The server aspect uses MYSQL as the database, Tomcat is the WEB server. The operating environment of the system is Window10, other operating systems, such as Linux are also supported.

## JAVASCRIPT FRAMEWORKS

### 1. AngularJS

AngularJS is a Google-maintained open source JavaScript framework that allows developers to create single-page applications. Developers' lives are made much easier by AngularJS, which is built on top of JavaScript. Our main concept behind using AngularJS in web development application is to make our web application modular and maintainable. With Angularjs The size of our applications shrinks to a few KBs after using minified files, and pages load much faster.

It also helps us in the development of HTML, CSS, and JavaScript-based web applications. AngularJS allowed us to customize Document Object Model (DOM) elements .Back-end communication is handled, and views and controllers play an important role in the UI's creation. Dependency injection is a valuable feature that allows us to load new modules as needed.

Here are few benefits of using Angularjs

1. Two-way Binding – Angularjs has a very clean method for binding data to HTML elements, using its powerful scope mechanism
2. Extensibility- This framework architecture allows us to easily extend almost every aspect of the language to provide our own custom implementations in our system.
3. Compatibility- Angularjs is a JavaScript-based framework with a close relationship to jQuery. This makes it easier to start integrating Angularjs into our environment and reuse existing code within the AngularJs framework's structure.

### 2. NODE.JS

Nodejs is Environment that is based on google's V8 javascript engine and executes it.

We can write all our code of our server-side in node.js, including the webserver and the server-side scripts and any supporting web application functionality. The fact that webserver and supporting web application scripts are running together in the same server side application allows for much tighter integration between the webserver and the script.

Here are few benefits of Node.js

1. Fast Implementation- It's very simple to set up Node.js and start developing with it. You can install node.js and have a working server in a matter of minutes.
2. Event-Driven Scalability- When it comes to handling web requests, Node.js has its own set of rules. Instead of having multiple threads waiting to process web requests, Node.js processes them all in the same thread using the basic event model. This gives Node.js webserver the ability to do things that traditional webserver can't.
3. Extensibility- Node.js has a large user base and a very active development community. People are constantly creating new modules to extend the functionality of Node.js. In addition, installing and including new modules in Node.js is very simple; we can extend a Node.js project to include new functionality in minutes.

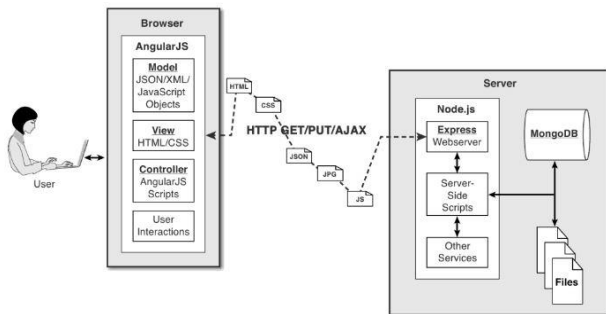


Figure 1 provides very basic diagram to how Node.js to Angular.js stack fits into the basic website/web application model.

### 2.3.4 DEVELOPMENT TOOLS

The main development tools employed in this system are:

1. The development tool of JAVA and JSP is MyEclipse 8.6, that integrates a lot of plug-ins, but also the support integration of the three frameworks of SSH, can greatly accelerate the development of efficiency.
2. Aptana Studio, Dreamweaver and WebStorm are the development tools for JAVASCRIPT and Hyper Text Markup language, which were the primary alternative for the development of the language and the advantage was the income.
3. SQLYOG, the database assistant tools, are often simply to work on the database, and do not have to

compelled to write command line every time;

4. Visio and Rose are employed in the project as design tools.

### 3 EXPRESS.JS

Built on top of Node.js, Express.js is a web application framework. It offers a simple user interface with all of the tools needed to create a web application. With a huge range of modules available on npm that you can directly plug into Express as needed, Express.js adds flexibility to an application. It facilitates the management of data flow between the server and the routes in the server-side applications.

It is primarily responsible for the backend in our application. Mean Stack is an open-source JavaScript software stack that is widely used in the market to create dynamic websites and web applications. MEAN stands for MongoDB, Express.js, and Node.js in this case.

Some Features of Express.js

1. A web application's development speed is accelerated by using Express.
2. It can also be used to make single-page, multi-page, and hybrid mobile and web applications.
3. Templating engines like Pug, Mustache, and EJS can all be used with Express.
4. Model-View-Controller (MVC) is a design pattern used by Express.
5. It makes integrating MongoDB, and MySQL databases a effortless.

## III. SYSTEM ANALYSIS AND REQUIREMENT MODELLING

Much of the activities involved at this stage were of a technical nature, possibly requiring a certain level of expertise in designing systems, as well as a strong understanding of computer-related technology and the various facilities provided by vendors. Despite these challenges, a system cannot be designed in isolation without the active involvement of the user.

Information collected during the Questionnaires was utilized systematically during system design. System design is a creative process that requires both logical and lateral thinking. The logical approach helps make systematic improvements toward the end product while keeping in mind the capabilities of the personnel and the equipment at each design step.

### 3.1 EXISTING SYSTEM

According to our research we found out that currently, majority of the property managers manage property or tenants details on paper. When customer discovers a vacant property, they can contact the property manager by phone or email, indicating the details of property they want

to get on lease.

Then the property manager can respond the email with all details about the property they are interested in.

The actual details are as follows:

1. Property offers.
2. Lease Contract.
3. Deposit paid.
4. Terms and condition to follow acceptance.

### 3.2 PROBLEM WITH THE EXISTING SYSTEM

In the current system, storing and documenting the information of user different activities is entirely manual and requires a consuming a lot of paper work.

Every property has a different file comes with its details such as property size, name, ID, occupant, status. It also has the details of the lessee first name and last name, phone numbers, date of payment, amount of payment, and balance.

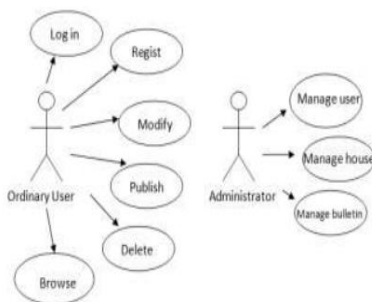
The current system has a text based user interface, which is less user friendly than a graphical user interface and because of the system is manually implemented which makes the whole process time extremely slow.

The Transaction are not safe because a paper can be lost or damaged. As a result the system needs to be more reformed to provide more benefits and flexibility. Our system eliminates the majority of the existing system limitations.

### 3.3 SYSTEM USE CASE ANALYSIS

Lease Management System permits users to have two identities:

Normal users and Administrators, each kind of identity are very suitable to operate, fast. Any user can browse, view information, if you wish to publish personal information, it should be registered, log and so use. The basic information of these users has their unified management of the administrator. System site use case diagram shown in Figure2.

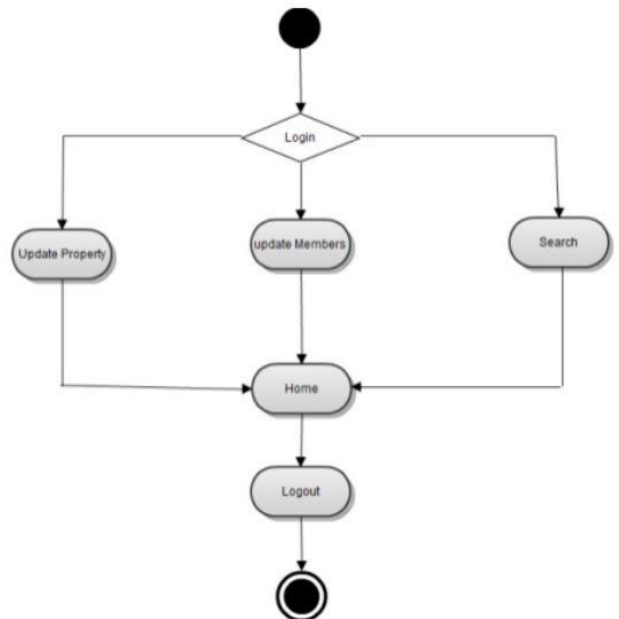


### 3.4 ACTIVITY DIAGRAM

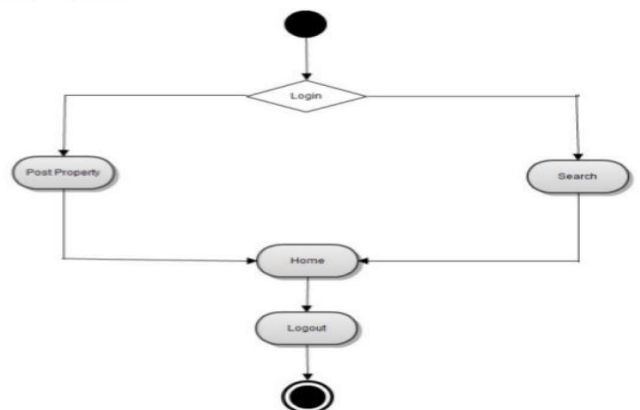
Activity diagrams are graphical representations of workflows of sequential activities and actions that allow for selection, iteration, and concurrency. Activity diagrams are used in the Unified Modeling Language to describe the business and operational step-by-step workflows of system

components. The overall flow of control is represented by an activity diagram.

#### Name of the activity diagram : Owner



#### Name of the activity diagram: Member



### 3.5 USER DETAILED REQUIREMENT

User Detailed Requirements can be divided into two parts:

Normal user module and administrator module.

1. The normal user module:
  - a. Non registered users module: browse, search building information, browse the website news bulletin.
  - b. Registered user module: browse, search, publish, modify and delete house information, browse the website news bulletin, modify personal identification information, however also can edit their personal information.
2. Administrator module:
  - a. House management: to look the released details of the building data, and may delete, modify, etc.
  - b. User information management: to look the website system registered members, and may be made to delete, modify, etc.

3. Management of reports announcement: add, modify, browse, delete announcement.

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### 3.6 REQUIREMENT ANALYSIS

Requirement analysis concerns customer needs and objectives in the context of planned client use, environments and identified system characteristics to determine requirement for system functions.

#### 3.6.1 USER REQUIREMENT

It requires user involvement and statements of facts and assumptions that outlines the expectations of the system in terms of mission objectives, 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 simple to learn and use
3. A system that is quick in processing transactions
4. A system that is flexible, safe and convenient

#### 3.6.2 FUNCTIONAL REQUIREMENT

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

1. Enable administrator to add a homes, tenant and defaulters details.
2. Enable administrator to delete homes, tenants and defaulters details.
3. Enable the administrator to look data in the database.
4. Enable the administrator to edit data in the database.

## IV. CONCLUSION

Thus, we developed a system that replaces all manual and paper work in the lease management system by allowing users to sign lease contracts and saves all information digitally. we have also provided a much more efficient system for managing the leasing of flats and houses to lessees. Not only that, but with this system, the leaseholder can register any problems with their house, such as an electrical or water issue. This system also allows the lessee to choose the apartment based on his/her preferences, such as budget, environment, security, and various amenities. system portal is also accessible and straightforward to use by anyone inside the globe just by writing the url in the search engine.

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