SOFTWARE REQUIREMENTS SPECIFICATION

**For**

**REAL-ESTATE LISTINGS**

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# Introduction

## Purpose

The main objective of this document is to illustrate the requirements of the project Real-estate listings. The document gives the detailed description of the both functional and non-functional requirements proposed by the client. The purpose of this project is to provide a friendly environment to maintain the contact free service to the client as well as to the owner of the property. The main purpose of this project is to maintain easy circulation system using computers and to provide contact free services. This project describes the hardware and software interface requirements using ER diagrams and UML diagrams.

## Document Conventions

* + - Entire document should be justified.
    - Convention for Main title

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* + - Convention for Sub title

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* + - Convention for body

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## Scope of Development Project

Real-estate listings is basically updating or managing real estate listings, property details, and client inquiries details into an internet-based application so that the client can know the details of their property listing, agent profile and contact information, property details and image galleries, price of the property, comparison between the property.

The project is specifically designed for both the client and the owner. The owners can be able to upload their property details as well as their contact information. Whereas the client can go through the property details, the images and he can be able to contact the owner to know more about his property. In this project, adding of new properties and updating of the current property can also be done. Once if the property is been sold, it would be updated as sold and no one else can buy the sold property.

The project can be easily implemented under various situations. We can add new features as and when we require, making reusability possible as there is flexibility in all the modules.

The language used for developing the project is Java as it is quite advantageous than other languages in terms of performance, tools available, cross platform compatibility, libraries, cost (freely available), and development process.

## Definitions, Acronyms and Abbreviations

JAVA -> platform independence SQL-> Structured query Language ER→Entity Relationship

UML -> Unified Modeling Language

IDE-> Integrated Development Environment SRS-> Software Requirement Specification

## References

* + - Websites

**https://www.investopedia.com/terms/m/multiple-listing-service-mls.asp**

[**https://www.colibrirealestate.com/career-hub/blog/**](https://www.colibrirealestate.com/career-hub/blog/)

# Overall Descriptions

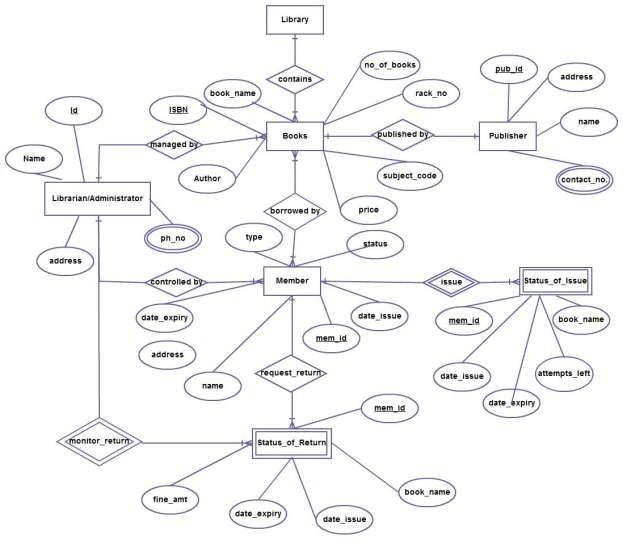
## Product Perspective

Use Case Diagram of Library Management System

This is a broad level diagram of the project showing a basic overview. This System will provide a search functionality to facilitate the search of resources. This search will be based on various categories viz. Price, location. Further the owner can add/update the property details and the images. The users of the system can request issue/buy for which they would have to follow certain criteria.

## Product Function

Entity Relationship Diagram of Real-estate Listing



The Online Real-estate listing provides online real time information about the list of property details, the contact information and the owners information. The main purpose of this project is to reduce the manual work. This software is capable of managing the sellers property details, users information, sold and unsold properties of the owner, payment gateways. The owner will act as the administrator to control his property in his account. The users status of buying/selling is maintained in the real-estate database. The clients details can be fetched by the owner from the database as and when required. The valid members are also allowed to view their account information.

## User Classes and Characteristics

The system provides different types of services based on the type of users [Client/Owner]. The Owner will be acting as the controller and he will have all the privileges of his property. The client can be have the ability to view the property details and to buy the property.

The features that are available to the Owners are:-

* + - A Owner can be able to sell his property
    - Can view the number of clients who visited his profile
    - Can sell his property to the client
    - Add property and the information to the database
    - Edit the information of existing property
    - Can check the report of the issued property

The features that are available to the Clients are:-

* + - Can view the different categories of property in the website
    - Can view the List of properties available in his surroundings
    - Can view the property owned by him
    - Can put a request for a new property
    - Can view the history of property issued to him previously
    - Can search for a particular property

## Operating Environment

The product will be operating in windows environment. The Real-estate listing is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer, Google Chrome, and Mozilla Firefox. Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

The hardware configuration include Hard Disk: 40 GB, Monitor: 14” Color monitor. The basic input devices required are keyboard, mouse and output devices are monitor etc.

## Assumptions and Dependencies

The assumptions are:-

* + - The coding should be error free
    - The system should be user-friendly so that it is easy to use for the users
    - The information of all users, seller (Owner) and buyers (Client) must be stored in a database that is accessible by the website
    - The user should have a basic computer knowledge and internet connection
    - Users must have their correct usernames and passwords to enter into their accounts to sell or buy

The dependencies are: -

* + - The specific software due to which the product will be run
    - On the basis of listing requirements and specification the project will be developed and run
    - The website must implement security measure to protect user data and property information
    - The users should have proper understanding of the website
    - The information of all the users must be stored in a database
    - Any update regarding the land from the seller is to be recorded to the database and the data entered should be verified

## Requirement

Software Configuration:-

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database.

Operating System: Windows NT, windows 98, Windows XP Language: Java Runtime Environment, Net beans 7.0.1 (front end) Database: MS SQL Server (back end)

Hardware Configuration:- Processor: Pentium(R)Dual-core CPU Hard Disk: 40GB

RAM: 512 MB or more

## Data Requirement

The inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the user receiving the details of their accounts. In this project the inputs will be the queries as fired by the users like create an account, selecting property and putting into account. Now the output will be visible when the user requests the server to get details of their account in the form of time, date and which property are currently owned by the users.

# External Interface Requirement

## GUI

The software provides good graphical interface for the user and they can operate on the system, performing the required task such as adding, update, viewing the details of the properties.

* + - It allows user to view quick reports in between particular time.
    - It provides document verification and search facility based on different criteria.
    - All the documents provided with the software must fit into this graphical user interface and accomplish to the standard defined
    - The design should be simple and all the different interfaces should follow a standard template
    - The user interface should be able to interact with the user module and a part of the interface must be dedicated to the login/logout module

Login Interface:-

In case the user is not yet registered, he can enter the details and register to create his account. Once his account is created he can ‘Login’ which asks the user to type his username and password. If the user entered either his username or password incorrectly then an error message appears.

Search:-

The client can enter the location where he is looking to buy the property.

Categories View:-

Categories view shows the categories of properties available and provides ability to the owner to add/edit or delete category from the list.

Owner’s Control Panel:-

This control panel will allow the owner to add/remove his property; add, edit, or remove a resource. And manage lending options.

# System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing:-

* User authentication and validation of members using their unique member ID
* Proper monitoring by the administrator which includes updating account status, showing a popup if the member attempts to issue number of properties that exceed the limit provided by the regal policy’s.
* Proper accountability which includes not allowing a member to see other member’s account. Only administrator will see and manage all member accounts
* The real estate listing project will encompass various features that cater to the needs of real estate professionals. These features will streamline property management, enhance lead generation, and provide valuable insights for making informed decisions
* Keep a record of all the detail about the land/property, including address, square footage, cost, features, uploading of photo, and virtual tours.
* Land/property search and filtering: Implement an advanced search engines that follows the exact location, type, specific neighborhood
* Capture leads through forms, land/property inquiries. Integrate with Multiple Listings (MLS) to access and manage listings seamlessly and also Integrate with Customer relationship management (CRM) systems to manage client relationship, track interactions, and provide personalized service.

# Other Non-functional Requirements

## Performance Requirement

The proposed system that we are going to develop will be used by the clients to buy a property directly from the owner. Where as there would be no intermediate between the client and the owner of the property. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the users.

* + - The performance of the system should be fast and accurate
    - Real-estate listing shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period. Thus it should have inbuilt error testing to identify invalid username/password
    - The system should be able to handle large amount of data. Thus it should accommodate high number of users without any fault

## Safety Requirement

## The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

## Security Requirement

* + - System will use secured database
    - Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
    - System will have different types of users and every user has access constraints
    - Proper user authentication should be provided
    - No one should be able to hack users’ password

## Requirement attributes

* + - There may be multiple owners creating the their own property, all of o them will have the right to create changes to the system. But the clients or other users cannot do changes
    - The project should be open source
    - The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database
    - The user be able to easily download and install the system

## Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data. This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

## User Requirement

The users of the system are the owners and the clients who act as users to maintain the system. The clients are assumed to have basic knowledge of the computers and internet browsing. The owners of the system should have more knowledge of the internals of the system and is able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

The admin provides certain facilities to the users in the form of:-

* + - Backup and Recovery
    - Forgot Password
    - Data migration i.e. whenever user registers for the first time then the data is stored in the server
    - Data replication i.e. if the data is lost in one branch, it is still stored with the server
    - Auto Recovery i.e. frequently auto saving the information
    - Maintaining files i.e. File Organization
    - The server must be maintained regularly and it has to be updated from time to time

# Other Requirements

## Data and Category Requirement

## There are different categories of users namely sellers, buyers, etc. Depending upon the category of user the access rights are decided. It means if the user is an seller then he can be able to modify the data, delete, append the details about the property or land that need to be sold. All other users like buyers have the rights to retrieve the information about the lands. Similarly there will be different categories of properties or lands available. According to the categories of lands or properties their relevant data should be displayed. The categories and the data related to each category should be coded in the particular format.

## Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; M: Member; N: Non-functional Requirement; O: Operating environment, Owner; P: Performance, Perspective, Purpose, Property; R: Requirement, Requirement attributes; S: Safety, Scope, Security, System features; U: User, User class and characteristics, User requirement;

## Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

* + - Administrator: A login id representing a user with user administration privileges to the software
    - User: A general login id assigned to most users
    - Client: Intended users for the software
    - SQL: Structured Query Language; used to retrieve information from a database
    - SQL Server: A server used to store data in an organized format
    - Layer: Represents a section of the project
    - User Interface Layer: The section of the assignment referring to what the user interacts with directly
    - Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed
    - Data Storage Layer: The section of the assignment referring to where all data is recorded
    - Use Case: A broad level diagram of the project showing a basic overview
    - Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system’s cases, their attributes, and the relationships between the classes
    - Interface: Something used to communicate across different mediums
    - Unique Key: Used to differentiate entries in a database

## Class Diagram

A class is an abstract, user-defined description of a type of data. It identifies the attributes of the data and the operations that can be performed on instances (i.e. objects) of the data. A class of data has a name, a set of attributes that describes its characteristics, and a set of operations that can be performed on the objects of that class. The classes’ structure and their relationships to each other frozen in time represent the static model. In this project there are certain main classes which are related to other classes required for their working. There are different kinds of relationships between the classes as shown in the diagram like normal association, aggregation, and generalization. The relationships are depicted using a role name and multiplicities. Here ‘Owner’, ‘Clients’ and ‘Property’ are the most important classes which are related to other classes.

