MINI PROJECT – II
(2018-19)

Mastrooms

Software Requirement Specification

Institute of Engineering & Technology

Team Members

Akshay Kumar Katiha
(161500054)
Devesh Upadhyay
(161500196)
Satyam Singh
(151500456)

Supervised By

Name : Mr Subhash Chand Agrawal
Asst. Professor
Department of Computer Engineering & Applications

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1. Introduction –

This document is a Software Requirement Specification (SRS) for the Online Renting Solution Based web project. This is the initial draft for the SRS and it will be used for the extensions. This document is prepared by following IEEE conventions for software requirement specification.
Mastrooms is a web based application which aims to provide a platform for all type of users so that they can book their rooms and rent their rooms.

1.1 Purpose –

The purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements.

1.2 Scope –

This project aims to provide:-

- Our goal is to change the way people stay away from home.

- Real Estate sector is growing rapidly and there is plenty of such type of technology in this field. People are constantly changing their locations in service and business because of megatrends like digitalization, sustainable solutions and more agile organizations.

- This project aims to provide a platform for rooms for tenants in new cities and to rent property online without any paying for Brokers.

- It would be useful for student to save their precious time and play a great role for tourists, and anyone who is new in the city for first time and want room for accomodation.

1.3 Definitions, Acronyms, and Abbreviations –

- **SRS** - A software requirements specification (SRS) is a complete description of the intended purpose of the software under development. The SRS fully describes what the software will do and how it will be expected to perform.
  An SRS minimizes the time and effort required by developers to achieve desired goals and also minimizes the development cost.

- **Software Development Life Cycle (SDLC) –**
  The software development life cycle (SDLC) is a conceptual model, used in project management, to describe the stages and tasks involved in each step of a project to write and deploy software.

- **Database –**
  A database is an organized collection of data, stored and accessed electronically. Data can be defined as raw facts and figures.

- **Database Management System –**
  The database management system (DBMS) is the software that interacts with end users, applications, and the database itself to capture and analyze data. A general-purpose DBMS allows the definition, creation, querying, update, and administration of databases.
  Ex- Sqlite, Mysql, Postgresql, Oracle etc

- **Diagrams –**

  - **Use Case Diagrams –**
    A use case diagram is a graphic depiction of the interactions among the elements of system. A use case is a methodology used in system analysis to identify, clarify, and organise system requirements.

  - **Sequence Diagrams –**
    A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development.

❖ **Data Flow Diagrams –**
A DFD shows what kind of information will be input to and output from the system, how the data will advance through the system, and where the data will be stored. It does not show information about process timing or whether processes will operate in sequence or in parallel, unlike a traditional structured flowchart which focuses on control flow, or a UML activity workflow diagram, which presents both control and data flows as a unified model.

❖ **Entity Flow Diagrams –**
ER model is commonly formed to represent things that a business needs to remember in order to perform business processes. Consequently, the ER model becomes an abstract data model, that defines a data or information structure which can be implemented in a database, typically a relational database.

- **Abbreviations –**
  - Database – Db
  - Database Management System – DBMS
  - Python – Py
  - Entity Relationship Diagram – ER
  - Data Flow Diagram – DFD
  - Acknowledgement – ack

1.4 References –

- www.lucidchart.com
- www.creately.com
- https://docs.djangoproject.com
- https://www.codingforentrepreneurs.com
- https://tutorial.djangogirls.org

1.5 Overview –

The rest of SRS contains Hardware, Software Requirements, functional requirements, non-functional requirements, Use-Case Diagrams, Data Flow Diagrams, Entity Relationship (ER) diagram that briefly explain about the software being developed. The SRS document is devised in a manner that is easier to write, review, and maintain. It is organized into independent sections and each section is organized into modules or units.

2. General Description –

This section will give an overview of the whole system. The system will be explained in its context to show how the system interacts with other systems and introduce the basic functionality of it. At last, the constraints and assumptions for the system will be presented.

2.1 Product Perspective –

This project is eventually intended for the user who rent their property and anyone who is new in the city for first time and looking for rooms to stay. Project will be deployed to web and all users will access by use of the website. Website will be main user interface where users can operate all the provided functionality. There will be cloud server where all the user data is kept and all the execution is done. Website will only be the interface for the user data and the execution of provided functionalities.
To use product, users are required to register through the web interface. Whenever a new user registered, all the required data will be created in the database. Later, user will be able to login and logout the system anytime he/she wants.

The following are the main features of our website –

- **See online rooms in your area :**
  The system allows the user to very efficiently Search the room online on their respective area and book them .

- **Without brokers :**
  The system allows the user to rent property online without paying for Brokers.

- **Notify about room booked :**
  The system will notify its user whenever the room is booked it can notify the owner of the property and gives all the details about user like Name, Ph. no. etc. so the renter can contact the user.

- **Reduce time :**
  The system allows to reduce the precious time of student or anyone who looking for rooms to searching the rooms which are affordable with having good facilities.

2.2 Product Functions –

This product will contain the following functionality :

- The owner will be able to rent their property online and decide a place where they can rent their property. This will help all those users who are searching rooms.
- It will show all the information can be fill in the website by the owner of their property and photograph of their property. So the user easily see the details and contact them.
- It will send the notification if the room is booked.
- It will provide a platform for anyone who is new in the city and search the room for stay.
- It will use the online payment module through with this website in future reference .

2.3 User Characteristics –

- This product will facilitate all Tenants and Room hunters , who are new in a city looking for Rooms or Flats.This project will provide the platform to the users where they need not to worry about the searching rooms using Brokers.
- User will get the 1000+ options to compare the rooms, which can be filtered as user requirements.
- This project is very much beneficial to those bachelors who suffers from the situation where landlord are not giving roms for bachelors.

2.4 General Constraints –

- Other languages constraints : We are going to develop our website in English only.
- The complete functionality of the website will be visible to the registered users and owners of property only.
- We will deploy our website on the single server. So, if our server crashes then we are unable to provide the services to the user.

2.5 Assumptions and Dependencies –

➢ **Assumptions for the project are as follows-**

- Internet is available when user will use website.
- Information must be updated on the regular basis.
- Only true information will be circulated by the owner, no fake information.

➢ **Dependencies for the project are as follows-**

- Mobile data must be available.
- Web browser.
- Web server.
- Details of the properties must be updated by the owners.

3. Specific Requirements –

This section contains all of the functional and quality requirements of the system. It gives a detailed description of the system and all its features.This section will give the requirements that are used to guide the project's software design, implementation, and testing.

3.1 External Interface Requirements –

This section provides a detailed description of all inputs into and outputs from the system. It also gives a description of the hardware, software and communication interfaces and provides basic prototypes of the user interface.

3.1.1 User Interfaces –

- User will interact with the interface of the website.To see the complete functionality, the user must have an account in our database.By logging in, the user will be able to:
    - ❖ Student can search rooms of their own choice whenever they are free
    - ❖ User can rent their property anytime.
    - ❖ Get notifications of the booking going around them.

3.1.2 Hardware Interfaces –

Since neither the mobile application nor the web portal have any designated hardware, it does not have any direct hardware interfaces. Some of the basic requirements of our project may be:

- Minimum 4GB RAM that will run all frameworks and tools simultaneously during development phase.
- A web browser that supports HTML, CSS, JavaScript, JSON, AJAX, Python etc.

3.1.3 Software Interfaces –

Software tools going to be used during development phase of this project:

Software used	Description
Operating System	We are using Windows as OS because it is easy to use and user- friendly
Database	MySql : To make database because it is open source.
Framework	Django
Web Browser	Chrome : To test the functionality of our website
Other	Visual Studio, GitLab, Python Idle

3.1.4 Communications Interfaces –

The communication between the different parts of the system is important since they depend on each other. The communication is achieved by different modules of the system working together so that the website is responsible on any device for any user.

3.2 Functional Requirements –

This section includes the requirements that specify all the fundamental actions of the software system.The detailed description of inputs entered, data processed, output obtained and error handling methods are:

- **Inputs :**
  Input to the website will include the details of user (login / Signup), details of the property.

- **Processing :**
  Processing will be done on the basis of input data like details of the properties and the student search them.

- **Outputs :**
  Output generated from the processed data will include notifying both owner and the user on booking the room. So the user contact them.

- **Error Handling :**

❖ If the Fixture module is not working properly, we will redesign our algorithms so that the new designed algorithms are compatible to handle the bugs found earlier.

❖ If Payment Gateway Module is not working properly, we will disable it from our website and try to communicate with the given gateway provider to fix it as soon as possible.

3.3 Non Functional Requirements –

This section will provide the detail of project which is working behind the scene to give proper functioning of different modules of the website.

- **Performance :** The system must be interactive and the delays involved must be less .So in every action-response of the system, there are no immediate delays.

- **Reliability :** As the system provide the right tools for discussion, problem solving it must be made sure that the system is reliable in its operations and for securing the sensitive details.

- **Availability :** If the internet service gets disrupted while sending information to the server, the information can be send again for verification.

- **Security :** The main security concern is for users account hence proper login mechanism should be used to avoid hacking. The user registration is way to spam check for increasing the security. Hence, security is provided from unwanted activities.

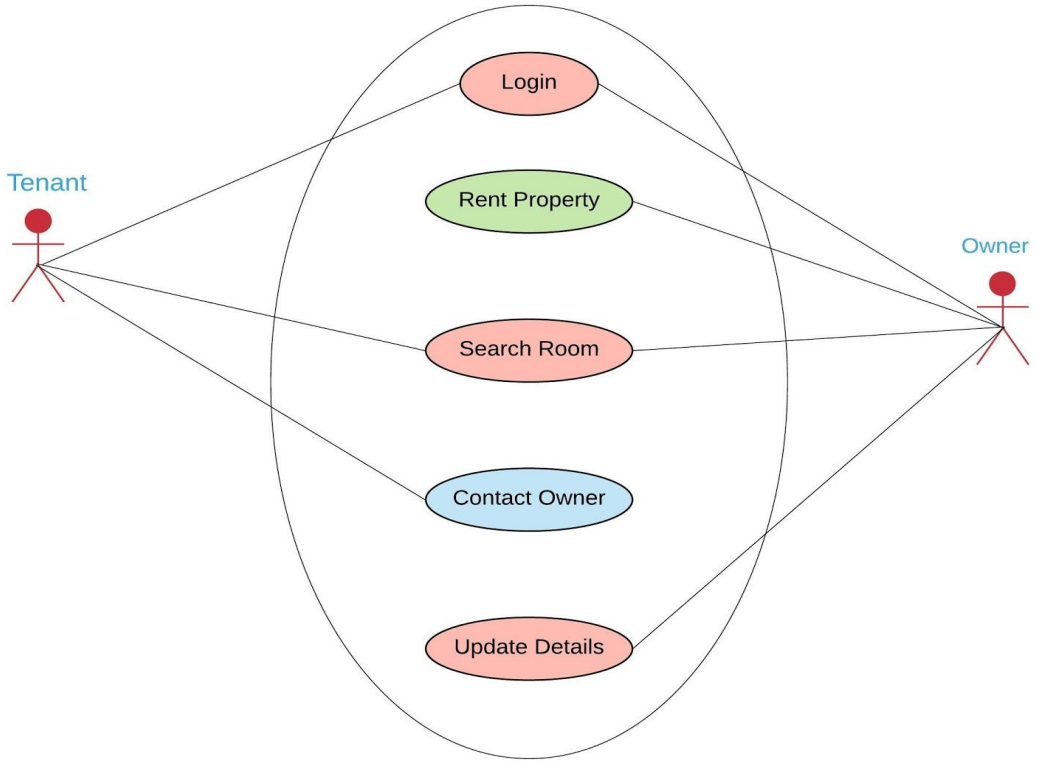
- **Maintainability :** We will be updating our website from time to time so that user may get best experience from our website.

- **Portability :** The website will be available on every device (except wearables) as we are using Bootstrap to make our website responsive.

3.4 Diagrams –

This section aims to represent the functionality of website with the help of diagrams.

3.4.1 Use Cases :



USE CASE	DESCRIPTION
Login :	Tenant and Owner can login to see full functionality
Rent Property :	Owner can rent their property online at any time.
Search Rooms:	Anybody can search for rooms
Contact Owners :	Tenants can directly contact owners.
Update Details:	Owner can further update or delete their property.

3.5 Inverse Requirements –

There are no useful inverse requirements for this product.

3.6 Design Constraints Requirements –

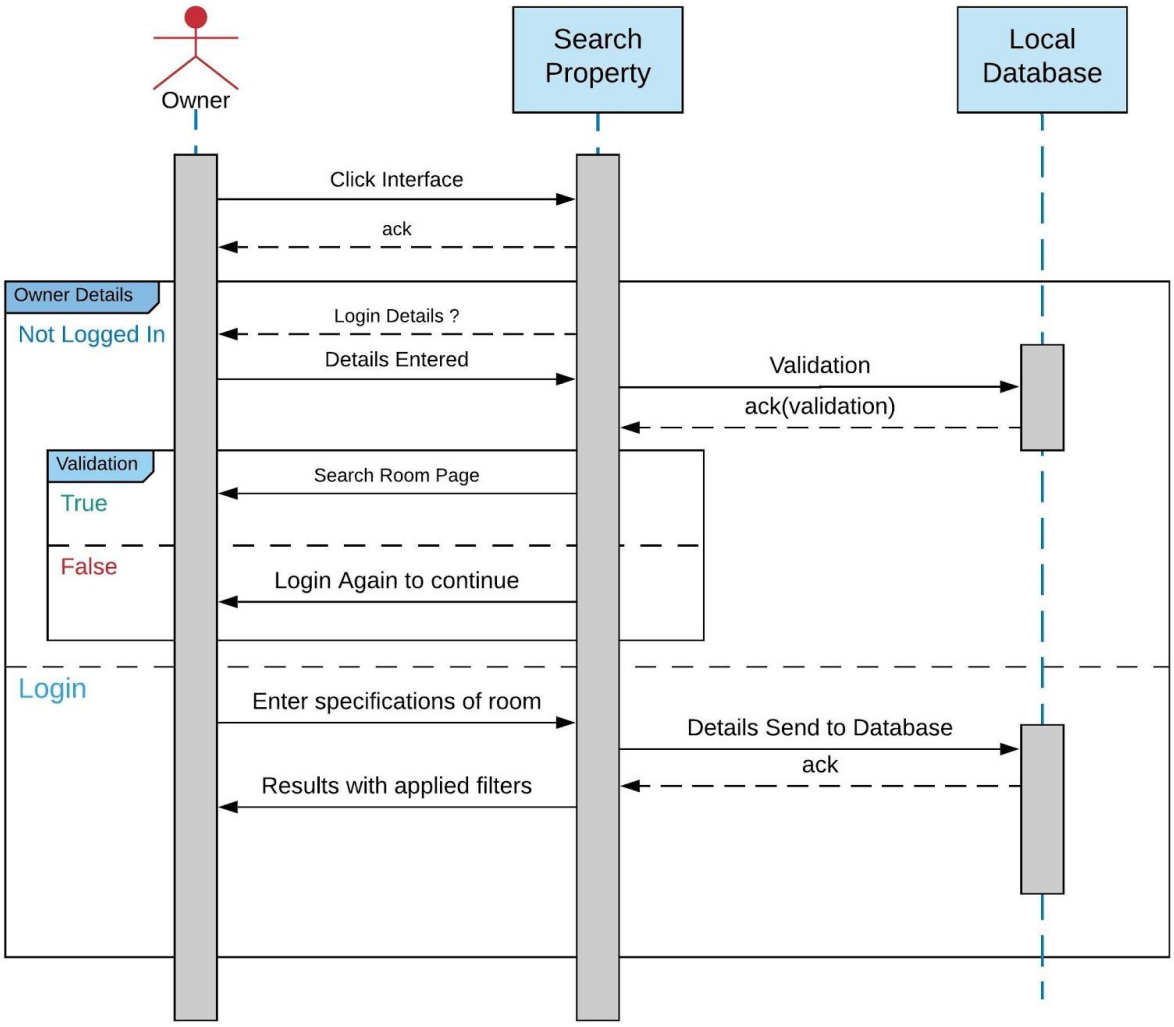
- This project will be developed using Python as a scripting language along with HTML, CSS, JavaScript and Bootstrap.
- This project will use open source tools to built the website.

3.7 Logical Database Requirements –

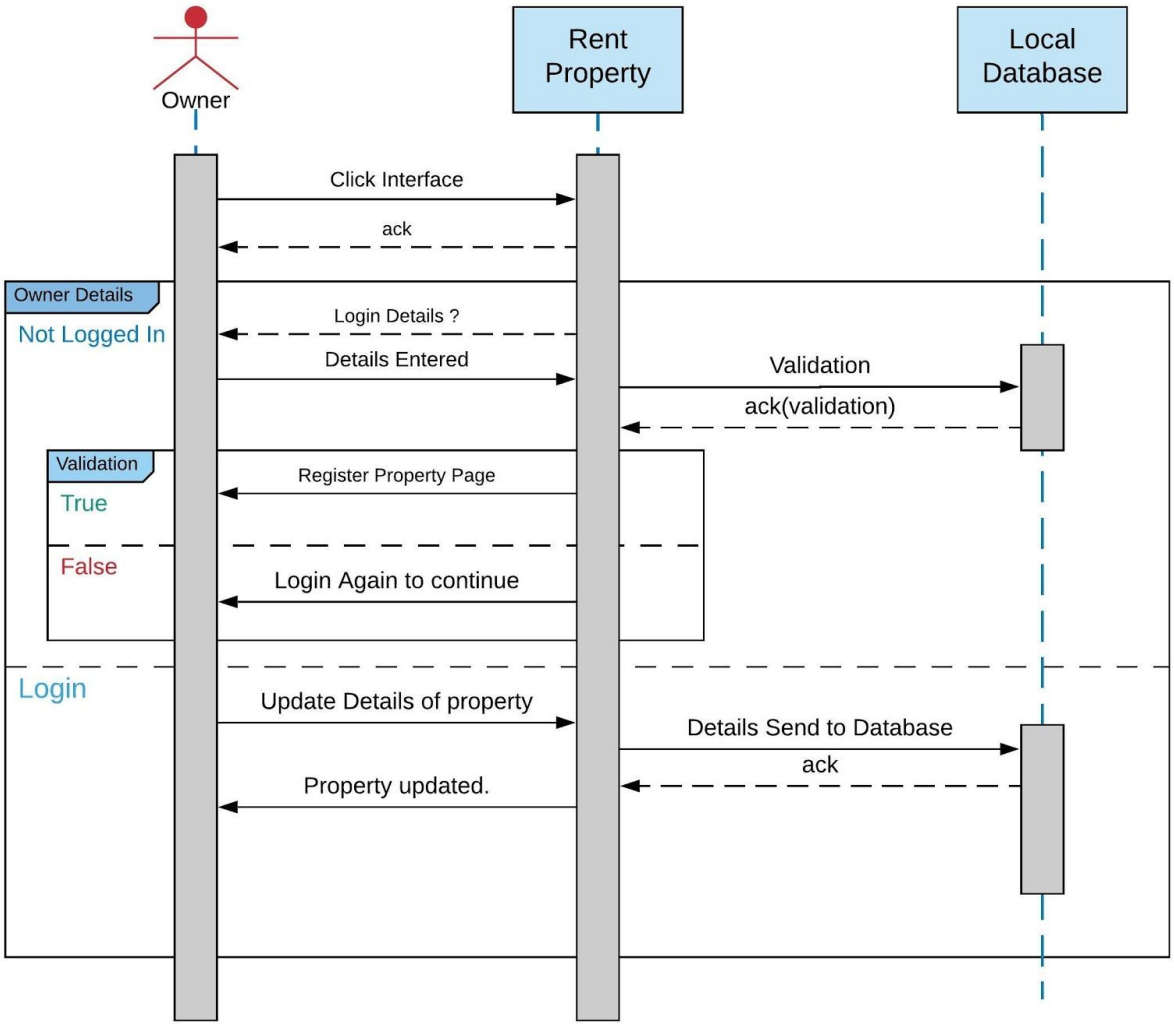
- In the database, integer, varchar and date type of information will be stored.
- In the database images will be stored by storing the URL to decrease the operations on DBMS.
- Stored informations will be used nearly all of the time especially login, join and organise events and tournament.

4. Analysis Models -- This section will contain sequence diagram Data flow Diagram and ER Diagram to show the functionality of the website

Search Rooms Sequence Diagram :

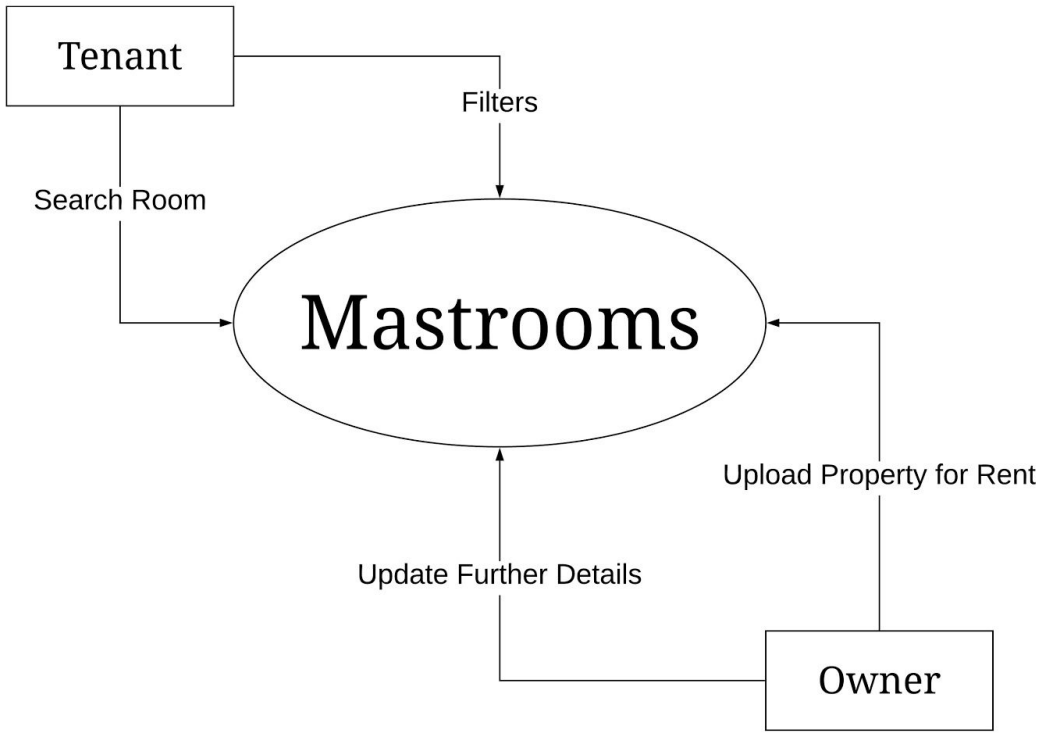


Update Rooms Sequence Diagram :

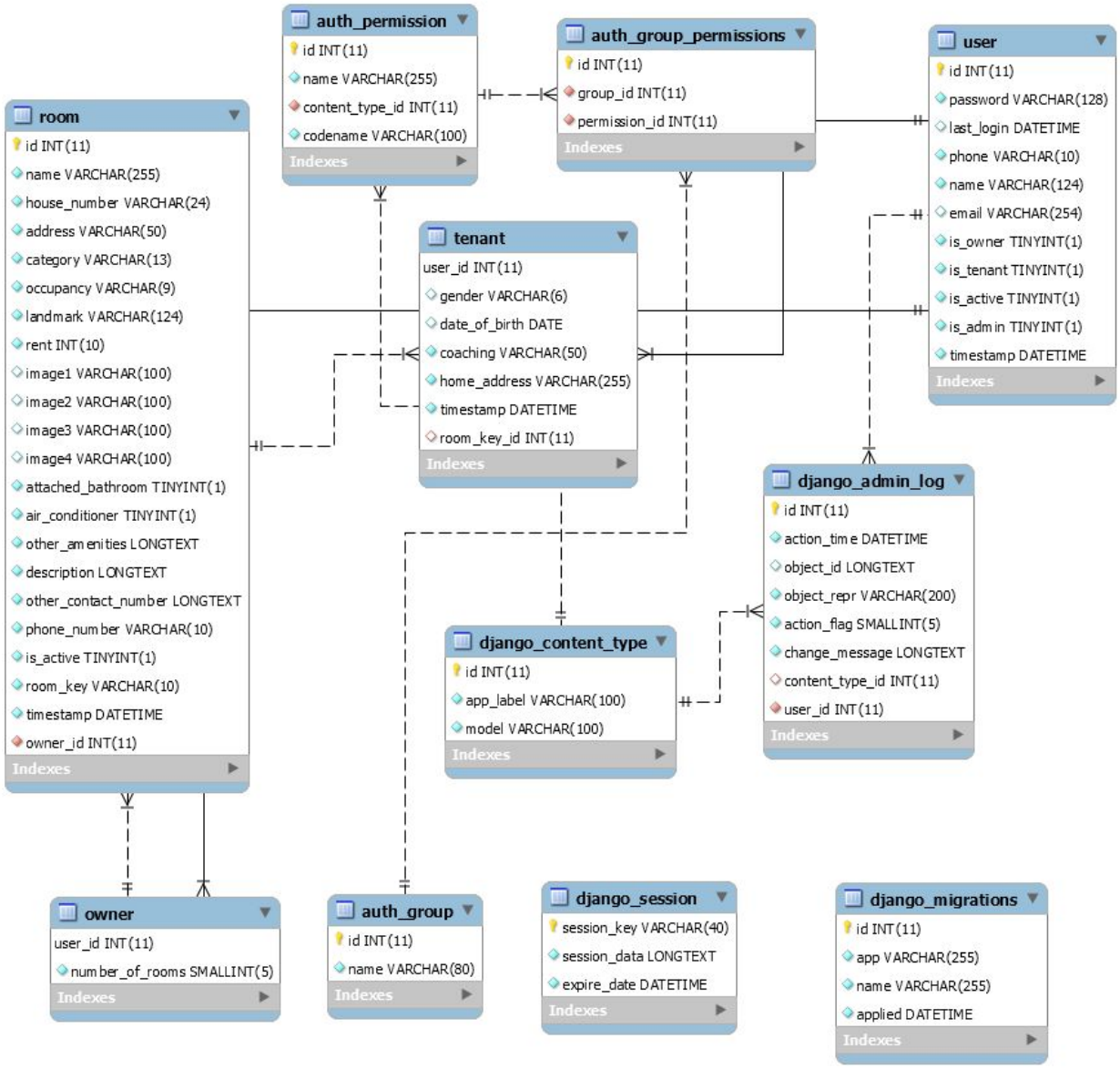


4.2Data Flow Diagrams (DFD) –

➢ **Level 0 DFD :**



4.3Entity Relationship Diagrams (ERD) –



5. Change Management Process –

We will discuss our project with tenants and owners.We will try to understand the changes required in our SRS. Anybody who is suffering from Room hunting or Flat hunting problem may submit the changes by means of mail, direct contact or by social platforms.We will gather all the information according to the requirement requested by Tenants and Owners and make changes by verifying it .