REAL ESTATE MANAGEMENT SYSTEM

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In

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BY

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CERTIFICATE

This is to certify that **M. Archana(19281A0546)** of the IV B. Tech (CSE) has satisfactorily completed the dissertation work for Major Project work entitled **"REAL ESTATE MANAGEMENT SYSTEM"** towards the partial fulfillment of B.Tech degree in the academic year 2022-2023.

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ABSTRACT

The Real Estate Web Application is an interactive, effective and revenue-generating website designed for the Real Estate Management System.The main objective of this website is to display the unlimited number of land listings on the website.The purpose of the Real Estate Management System is to automate the existing manual system by the help of full fledged computer software fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation.

It contains searching management for buyer's to search for land.The searching management not only provides an easy and convenient way to search for listings but also display the entire list of land in a customized grid format.The buyer can then view the complete specification of each land with its features, description and photographs.The application also provides drag and drop control to save a list of selected land listings while browsing other options on the Real Estate Website.

There are hundreds of Real Estate Websites on the World Wide Web but the intension of designing this application is to develop something new, innovative and efficient.Basically the application describes how to manage for good performance and better services for the clients.

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CHAPTER 1

INTRODUCTION

1.1 About the project

The main purpose of this project is to develop a website for “Real Estate Management System”. This website is online real estate management to maintain all the land details online.It acts as an interface between the buyer and seller. It brings the real management online enabling real estate management participants to benefit from the internet.

The Real Estate Management System has been developed to override the problems prevailing in the practicing manual system.This software is supported to eliminate and in some cases reduces the hardships faced by this existing system.

This online management system help you to get best land by just sitting at home or anywhere.People can book their favorite land online just after a few clicks.This web application is user friendly.This can be used from anywhere at anytime.

Our site mainly deals with the land.In dealing with the land two fields are mandatory.Those are Admin and User.Here user can be the land seller or land buyer.

The overall website is managed and controlled by the admin. The admin will login into the website and frequently upload the latest land listings into the website. The land seller can also upload about the land property.The customers or land buyer’s can have glance on the land properties available on the website.

This application gives the better experience for the customer by reducing the manual work and time.

1.2 EXISTING SYSTEM WITH DRAWBACKS

The existing system is manual-largely paper based and lacks standards.It requires manpower, so the existing system is very uneconomical.

DRAWBACKS

- Increased time
- High labour charges
- Increased uncertainity
- Data security is less

1.3 PROPOSED SYSTEM WITH ADVANTAGES

The proposed system is a web application that can be accessed by anyone from anywhere at any time in the world.The proposed system builds a direct communication between the land seller and land purchaser.

ADVANTAGES

- This website can be proved to be very beneficial, it is inexpensive.
- It is quick and easy.
- Less time.
- A new feature of saving the selected property listing in a drag-drop tool .
- As nowadays it is obvious that everyone is having a mobile phone, it is very convenient for the Customer to read/access the shared content. This is a web-based application which will save time for Customer.

CHAPTER 2

LITERATURE SURVEY

In older days when we want to purchase land we can not directly communicate with the owners.We must contact with the help of mediators,but the mediators takes much amount, it is also time consuming process and the land dealing procedure consist of many steps likes finding an agent,appoint correct meeting time, location and so on.Till now there is no security in online real estate management system, registration form improves the security by limiting the user.

The existing sites are:

1. www.99acres.com[1] : The site can be navigated by anybody. No issue of security is implemented.

2. www.indiaproperty.com[2] : It was launched in 2006.

These websites provide features like search property, add property and gives different offer which will be beneficial to user. But even with these features there are certain required aspects which make these sites limited.

In our application the admin manages the website.Not only admin but also seller can add, update, delete the land that is kept for sale.But here in the site the admin can only view the number of customers registered in the site and the number of plots has been sold.And the drawbacks present can be removed in our website and new features were added.

CHAPTER 3

ANALYSIS

The goal of system analysis is to determine where the problem is in an attempt to fix the system. This step involves breaking down the system in different pieces to analyze the situation, analyzing project goals, breaking down what needs to be created and attempting to engage users so that definite requirements can be defined.

3.1 Hardware and Software requirements

Hardware requirements:

The following are the hardware requirements which we have used in our project.

- RAM : 1 GB or more.
- Processor needed : i3 or above
- Hard disk : 40 GB or more.
- Monitor : Any Monitor.
- Keyboard : Standard Keyboard.
- Mouse : Two or Three Button Mouse.

Software Requirements:

The following are software requirements.

- Operating System : Windows XP, 7 or Higher windows .
- Technology : Python,Django,HTML,CSS,Javascript,Django,MySQL.
- Browser : Google chrome or any.
- Web Server : XAMPP Server.

3.2 Functional Requirements and Non Functional Requirements:

Functional Requirements:

Functional requirements are associated with specific functions, tasks or behaviors of the system. The functional requirements address the quality characteristic of functionality while the other quality characteristics are concerned with various kinds of non-functional requirements. Because non-functional requirements tend to be stated in terms of constraints on the results of tasks which are given as functional requirements (e.g ,constraints on the speed or efficiency of a given task), a task-based functional requirements statement is a useful skeleton upon which to construct a complete requirements statements.

This database describes the following:

- Maintaining and Updating report.
- Details of the admin, category, products, customer bookings.
- View the details through the application connected to the database.
- Modification of data if necessary.

Non-Functional Requirements:

Non-functional requirements are requirements that specify criteria that can be used to judge the operation of a system, rather than specific behaviors. This should be contrasted with functional requirements that specify specific behavior or functions.

Following are the non-functional requirements:

Consistency: The application provides consistent user interface design to customers. The designs of the screen are standardized and consistent that makes the customer feel comfortable to use it.

Convenience: The application gives convenience to the customer to store all the details through the application connected to the database. Also facilitates the customer to modify the details if required and can view the details.

Availability: The content must be available to authorized customers. This website provides customer to login and view the details of the product.

Security: Administrators can only perform administrative tasks on pages they are privileged to access. Customers will not be allowed to access the administrator pages. This site provides password access control to avoid unauthorized customers to login.

Reliability: The application provides an effective method to maintain the back-end to store all the details securely. All details are managed by this application effectively.

Size: The performance of the project depends on the size of the project. We put lots of effort in reducing lines of code. In this project the storage space is utilized efficiently.

Scalability: Scalable software can remain stable while adapting to changes, Upgrades, overhauls and resource reduction. Scalability is an attribute of a tool or a system to increase its capacity and functionalities based on its users demand.

3.3 Module Description

The modules used in this system are:

- Admin module
- User module

1. **Admin:** Admin holds the authority to manage ,update information of the website and can also check the list of registered clients.

2. **User :** User can be the land seller or land buyer.

- **Land seller:** Land seller can view the home page,about us,contact us pages their own and other seller land properties. And he can edit profile,login,logout,change password and add or delete land property.

- **Land buyer:** Land buyer can view the home page,about us,contact us pages and land properties status wise, area wise .He can edit profile,login,logout change password,if interested in the land can contact the land seller for further documents.

CHAPTER 4

DESIGN

4.1 Block Diagram :

A block diagram is a diagram of a system in which the principal parts or functions are represented by blocks connected by lines that show the relationships of the blocks. They are heavily used in engineering in hardware design, electronic design, software design, and process flow diagrams.

Block diagrams are typically used for higher level, less detailed descriptions that are intended to clarify overall concepts without concern for the details of implementation. Contrast this with the schematic diagrams and layout diagrams used in electrical engineering, which show the implementation details of electrical components and physical construction.

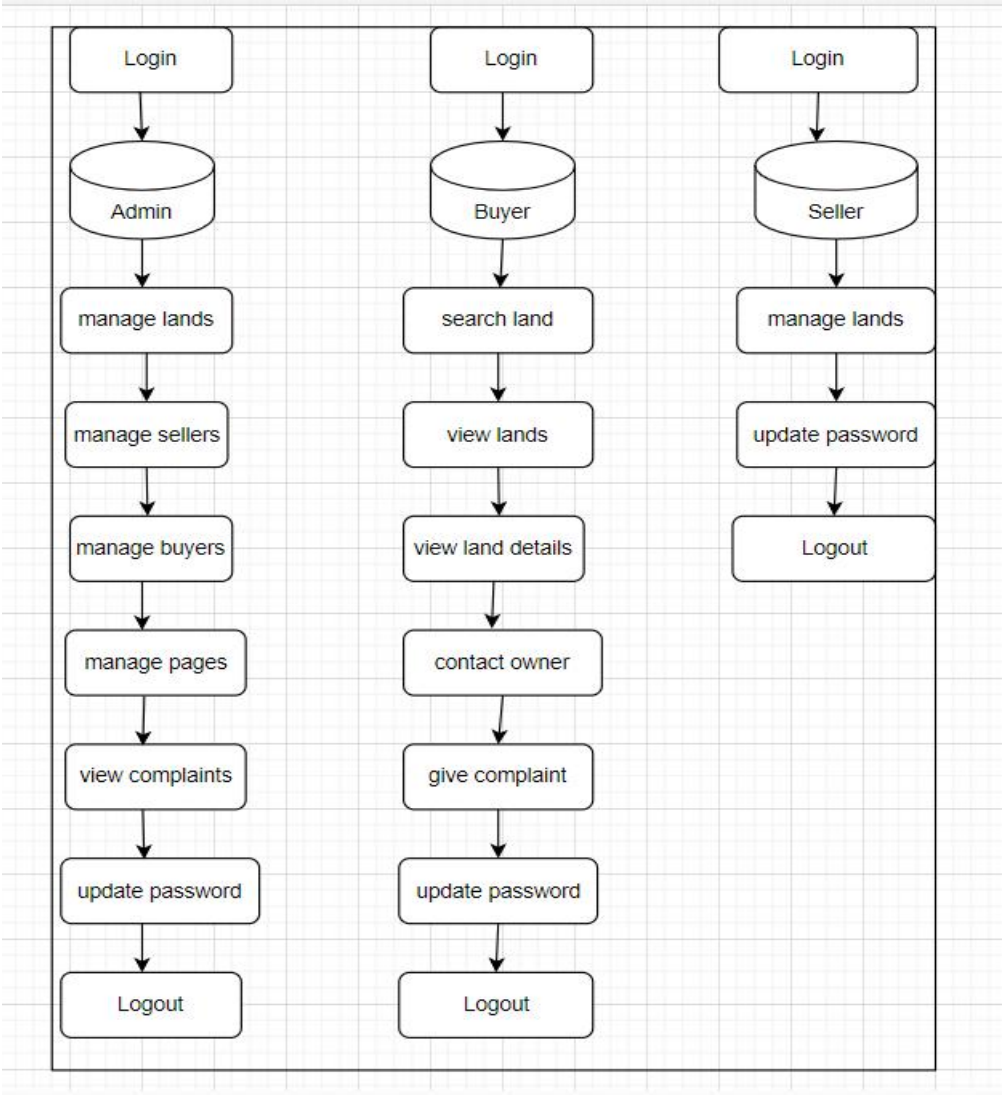


Figure: 4.1 Block Diagram

4.2 Data Flow Diagram:

A data flow diagram is graphical tool used to describe and analyze movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. This is known as the logical data flow diagrams. The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations. Each component in a DFD is labeled with a descriptive name. Process is further identified with a number that will be used for identification purpose. Each process in lower-level diagrams can be broken down into a more detailed DFD in the next level. The top-level diagram is often called as "context diagram".

DFD Symbols:

In the DFD, there are four symbols:

1. Square defines a source (originator) or destination of system data.

2. An arrow identifies data flow. It is the pipeline through which the information flows.Data move in a specific direction from an origin to a destination.

3. A circle or a bubble represents a process that transforms incoming data flow into outgoing data flow .

4. An Open Rectangle is a data store , data at rest or a temporary repository of data.

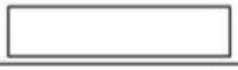
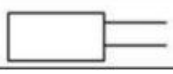
Symbol	Elementary
	Process or transforms data
	Data Flow
	Source or Destination
	Data Store

Figure: 4.2.1 DFD Symbols

Constructing A DFD:

It contains a single process, but it plays a very important role in studying the current system. The context diagram defines the system that will be studied in the sense that it determines the boundaries. Anything that is not inside the process identified in the context diagram will not be part of the system study. It represents the entire software element as a 9 single bubble with input and output data indicated by incoming and outgoing arrows respectively.

A DFD is also known as a "bubble chart" has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. So it is the starting point of the design to the lowest level of detail. A DFD consists of a series of bubbles joined by data base system.

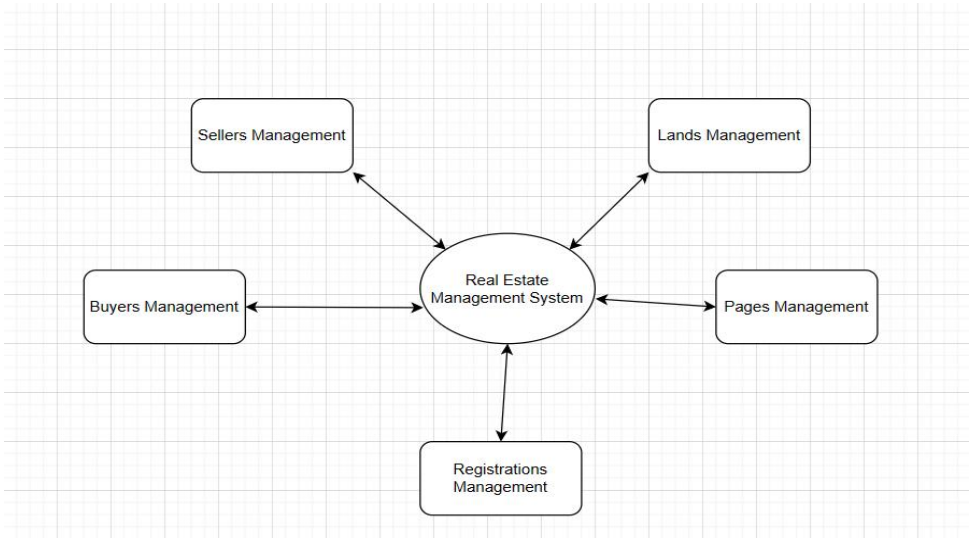


Figure: 4.2.2 Level-0 DFD

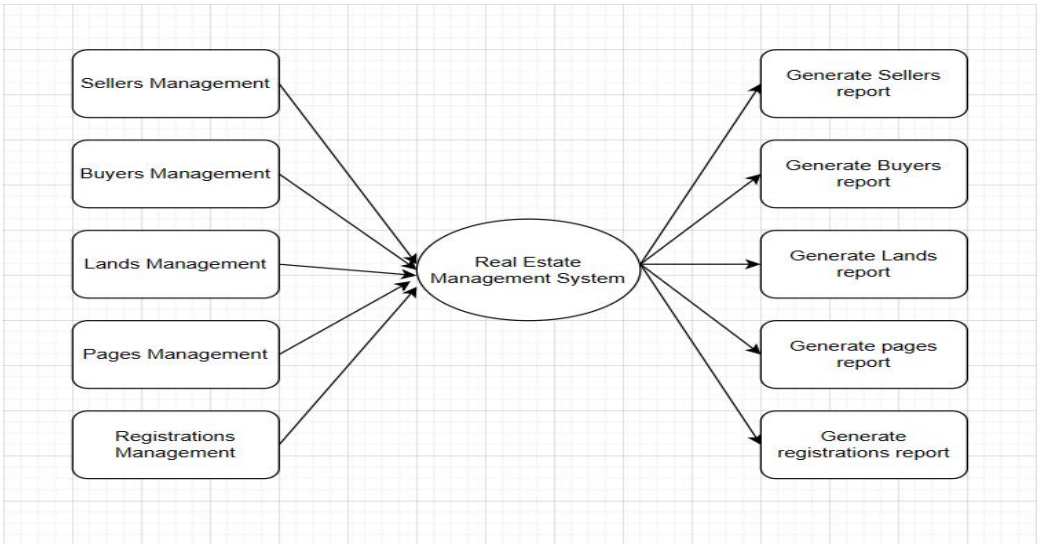


Figure: 4.2.3 Level-1 DFD

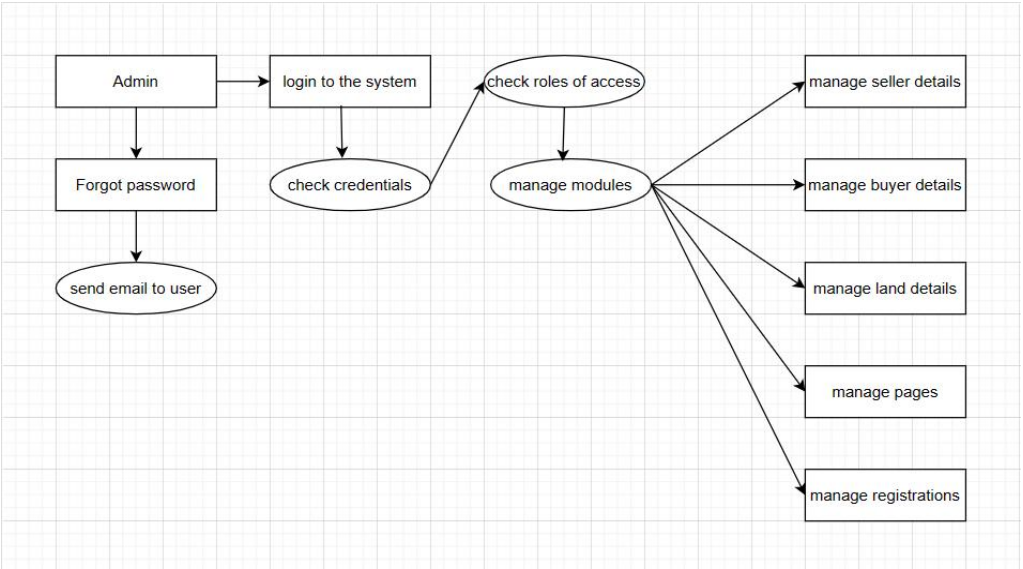


Figure: 4.2.4 Level-2 DFD

4.3 ER Diagram:

The Entity-Relationship Data Model (ERD) perceives the real world as consisting of basic objects, called entity & relationship among these objects.

It was developed to facilitate database design by allowing specification of an enterprise schema, which represents overall logical structure of a database. The ERD model is very useful in mapping the meaning & interactions of the outside world enterprises onto a conceptual schema.

The ERD model consists of the following major components

- ELLIPSE represents attributes.
- RECTANGLE represents entity- sets.
- DIAMONDS represents relationship sets.
- LINES link attributes to entity sets to relationships.

Elements in ER diagram

There are three basic elements in ER diagram.

- Entity
- Attribute
- Relation

There are more elements which are based on the main elements. They are weak entities, multi valued entities, derived attributes, weak relationship and recursive relationship. Cardinality and ordinality are two other notations used in ER diagrams.

- **Entity:** An entity can be a person, place, and event or object that is relevant to a given system. They are represented by a rectangle and named using nouns.

- **Weak Entity**: A weak entity is an entity that depends on the existence of another entity. It can be defined as an entity that cannot be identified by its own attributes.

- **Attribute:** An attribute is a property, or characteristic of an entity, relationship or another attribute.

- **Multi valued Attribute:** If an attribute can have more than one value, it is called a multi valued attribute.

- **Derived Attribute:** 12 An attribute based on another attribute.

- **Relationship:** A relationship describes how entities interact.

- **Cardinality:** Cardinality specifies how many instances of an entity relate to one instance of another entity. Cardinality specifies the maximum number of relationships.

- One-Many
- Many-Many
- One-One

- **Ordinality:** Ordinality describes the relationship as either mandatory or optional. Ordinality specifies the absolute minimum number of relationships.

- **Database key:** Keys are used to establish and identify relation between tables. They also ensure that record within it can be uniquely identified by combination of one or more fields within a table.

- **Super key:** Super key is defined as a set of attributes within a table that uniquely identifies each record with in table. Super key is super set of candidate key.

- **Candidate key:** Candidate key is defined as the set of fields from which primary key can be selected. It is an attribute or set of attributes that can act as a primary key for a table to uniquely identify each record in the table.

- **Primary key:** Primary key is a candidate key that is most appropriate to become main key of the table. It is a key that identify each record in a table.

- **Composite key:** Key that consists of two or more attributes that uniquely identify an entity occurrence is called composite key . composite key is not a simple key in its own.

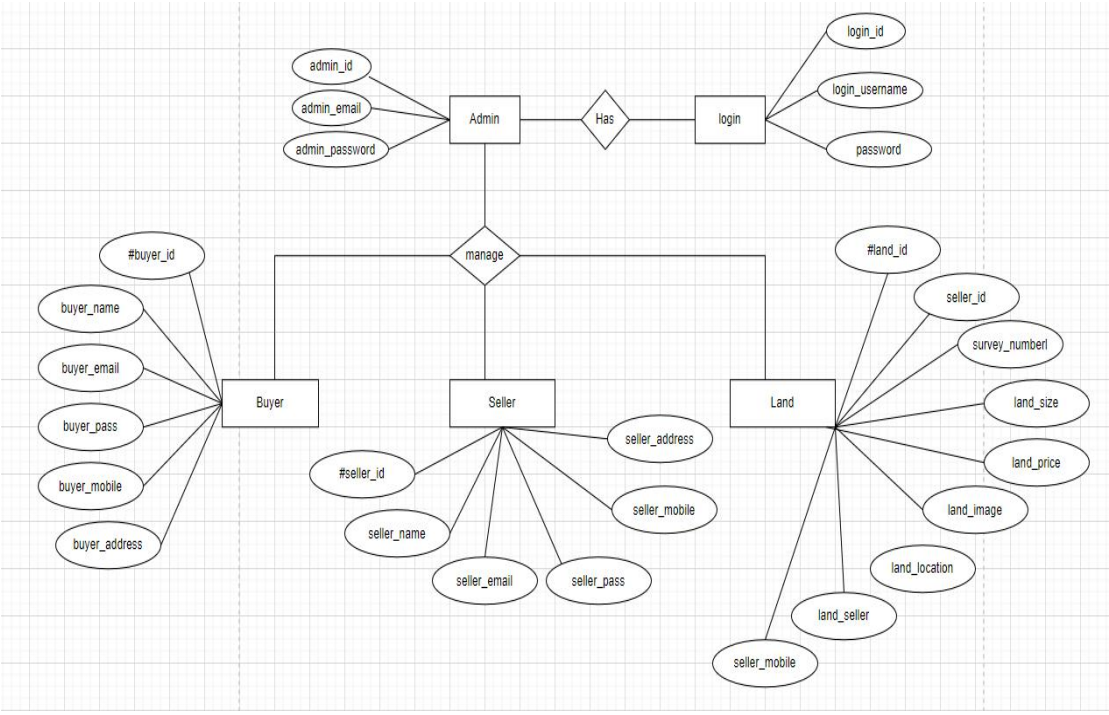


Figure: 4.3 ER Diagram

4.4 UML Diagrams:

UML stands for Unified Modeling Language. UML is a language for specifying, visualizing and documenting the system. This is the step while developing any product after System analysis. The goal from this is to produce a model of the entities involved in the project which later need to be built. The representation of the entities that are to be used in the product being developed need to be designed.

There are various kinds of methods in software design:

They are as follows:

1. Use Case Diagram
2. Class Diagram
3. Sequence diagram
4. Activity Diagram

4.4.1 Use Case Diagram:

Use case diagrams model behavior within a system and helps the developers understand of what the user require. The stick man represents what's called an actor. Use case diagram can be useful for getting an overall view of the system and clarifying who can do and more importantly what they can't do. Use case diagram consists of use cases and actors and shows the interaction between the use case and actors.

- The purpose is to show the interactions between the use case and actor.
- To represent the system requirements from user's perspective.
- An actor could be the end-user of the system or an external system.

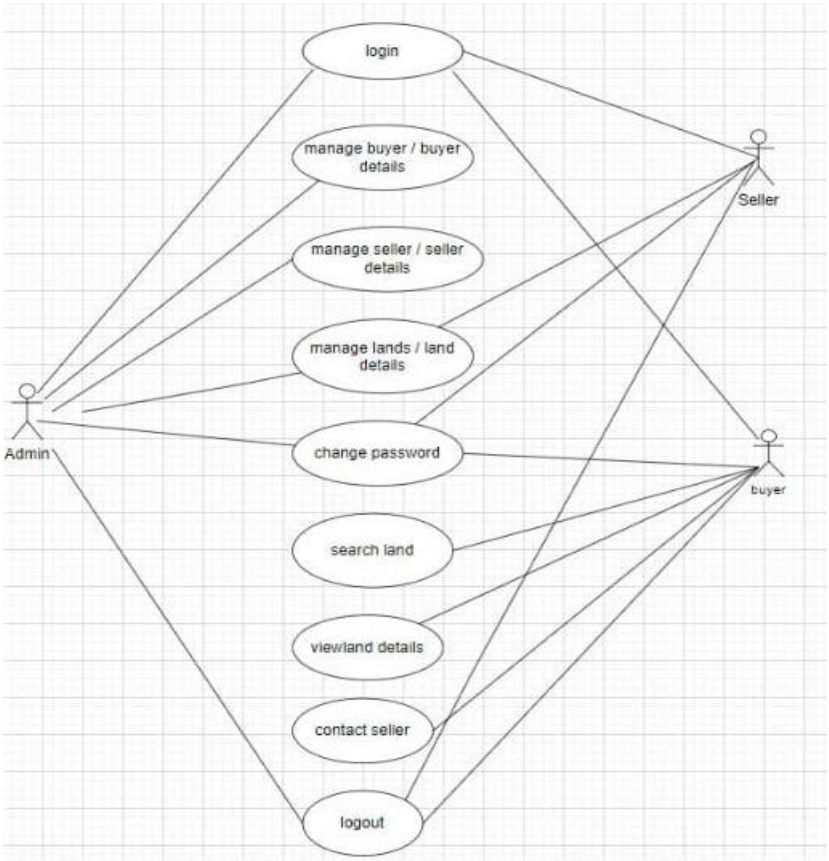


Figure- 4.4.1 Use case Diagram

4.4.2 Class Diagram:

Class is nothing but a structure that contains both variables and methods. The Class Diagram shows a set of classes, interfaces, and collaborations and their relationships. There is most common diagram in modeling the object oriented systems and are used to give the static view of a system. It shows the dependency between the classes that can be used in our system. The interactions between the modules or classes of our projects are shown below. Each block contains Class Name, Variables and Methods.

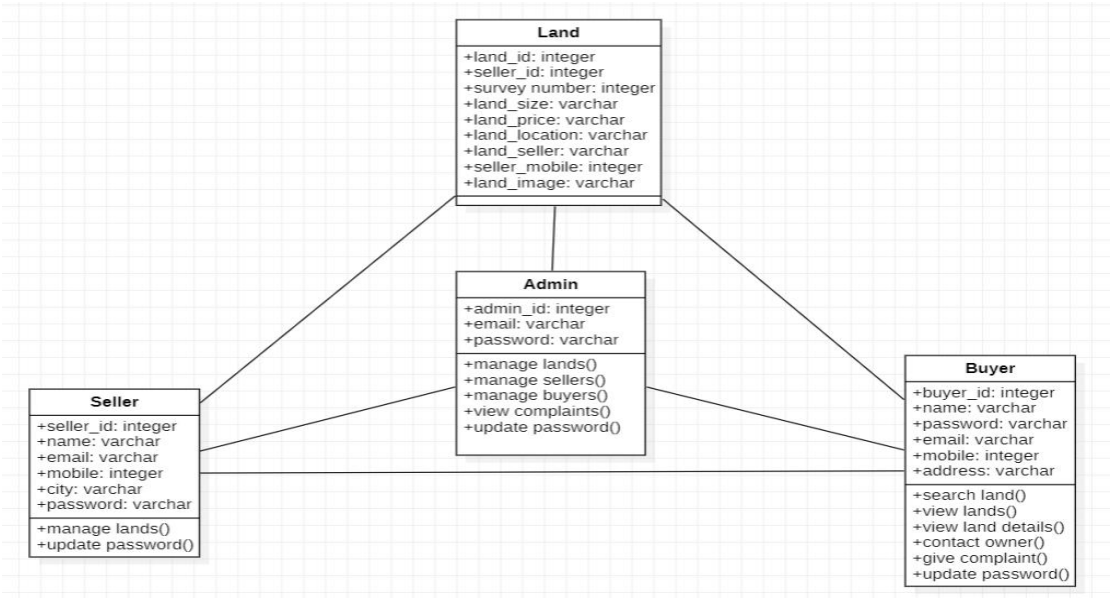


Figure-4.4.2 Class Diagram

4.4.3 Sequence Diagram:

Sequence diagram and collaboration diagram are called interaction diagrams. An interaction diagram shows an interaction, consisting of set of objects and their relationship including the messages that may be dispatched among them. A sequence diagram is an introduction that empathizes the time ordering of messages. Graphically a sequence diagram is a table that shows objects arranged along the X-axis and messages ordered in increasing time along the Y-axis.

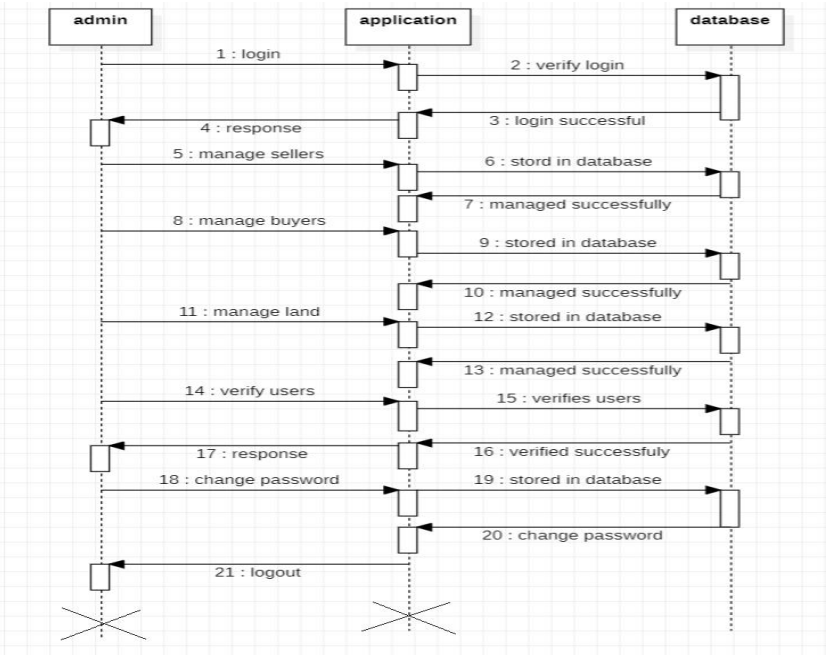


Figure: 4.4.3.1 Sequence Diagram for Admin

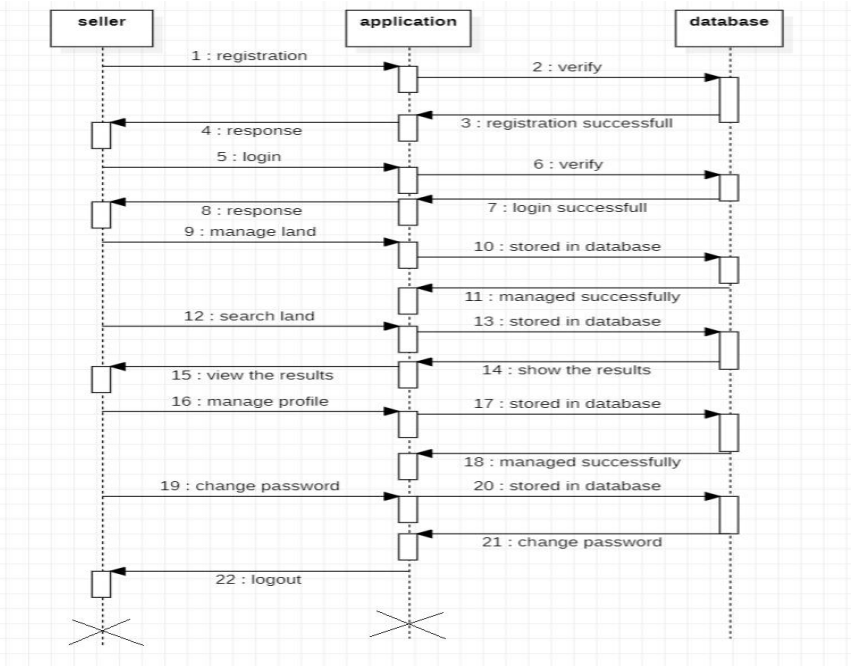


Figure: 4.4.3.2 Sequence Diagram for Seller

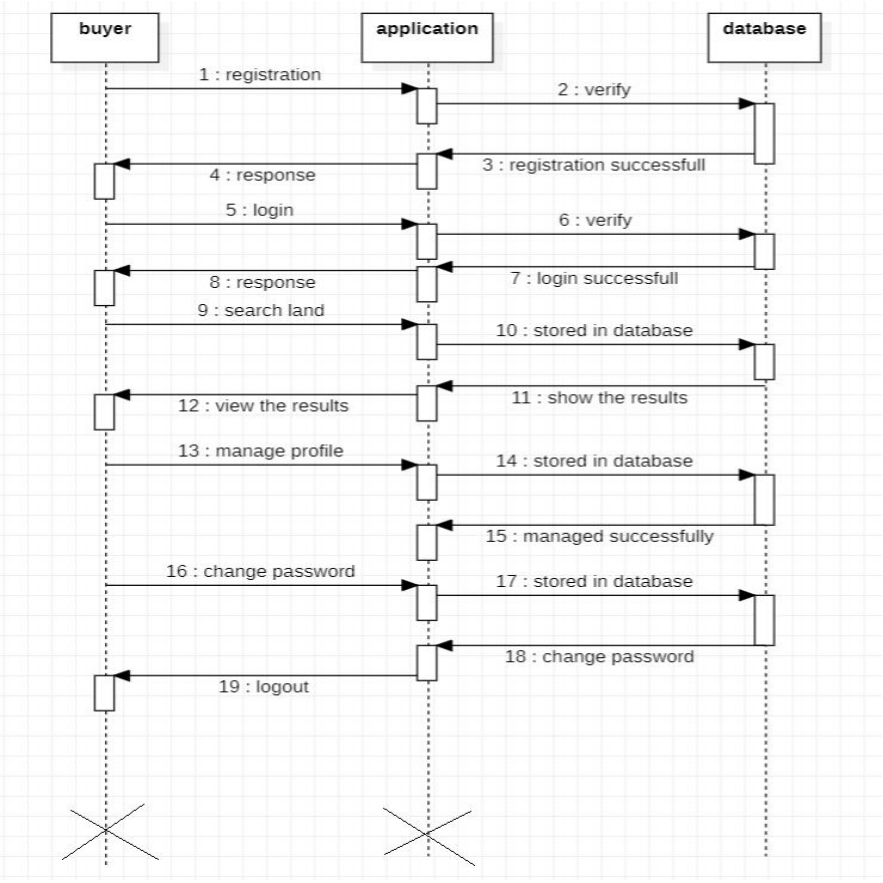


Figure : 4.4.3.3 Sequence Diagram for Buyer

4.4.4 Activity Diagram:

An Activity Diagram is a behavioral diagram that shows the flow or sequence of activities through a system. The terms activity diagram and process flow are often used Interchangeably. However, the term activity diagram is typically more restrictive as it refers to one of thirteen standard Unified Model Language (UML) diagrams. Activity Diagrams are one of the most commonly used diagrams since its notation and origin are based on the widely known flowchart notation.

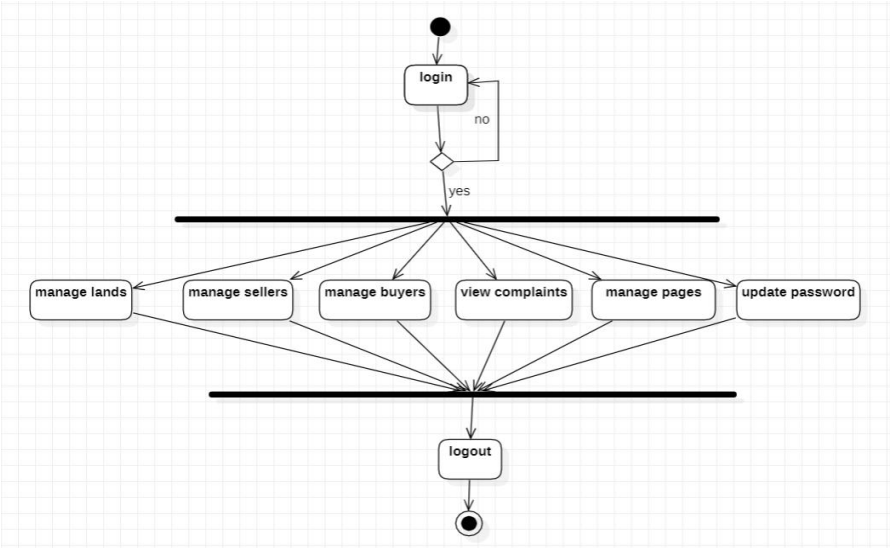


Figure-4.4.4.1 Activity Diagram for Admin

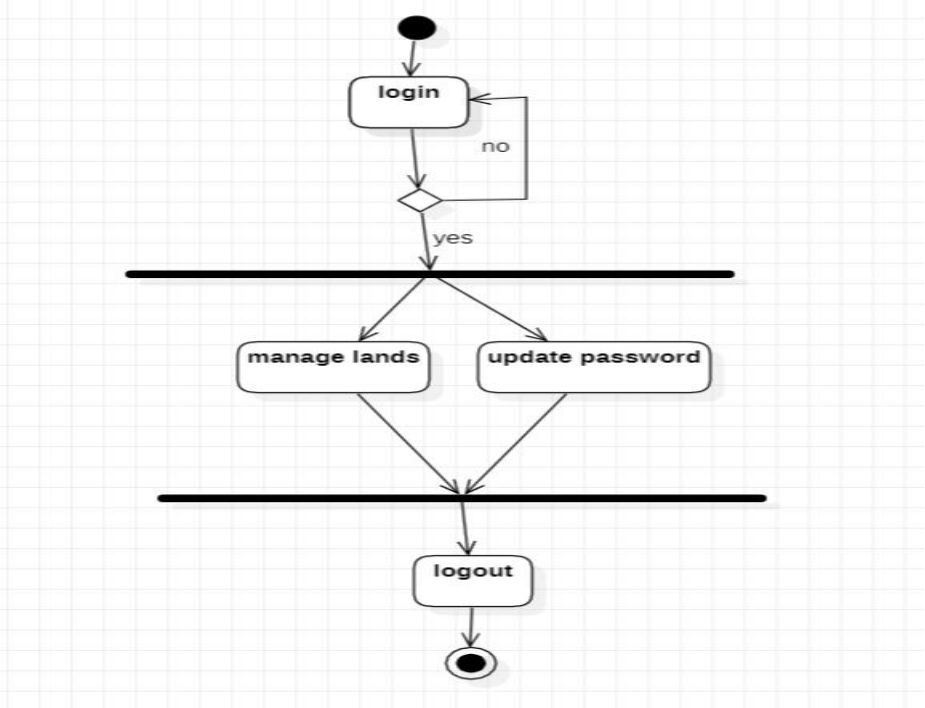


Figure-4.4.4.2 Activity Diagram for seller

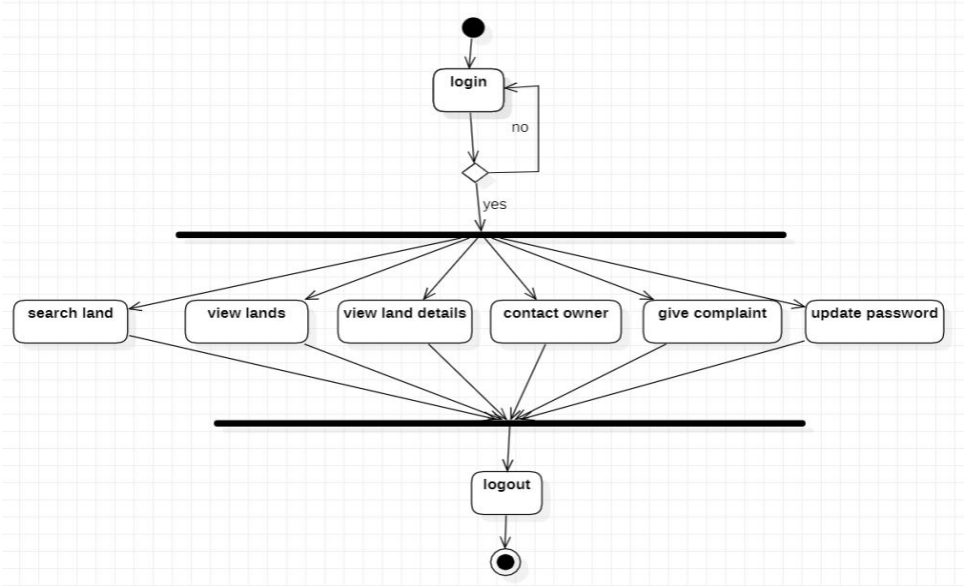


Figure-4.4.4.3 Activity Diagram for buyer

4.5 Database Dictionary:

A data dictionary, or Metadata Repository, as defined in the IBM Dictionary of Computing, is a "centralized repository of information about data such as meaning, relationships to other data, origin, usage, and format. The term can have one of several closely related meanings pertaining to databases and database management systems (DBMS).

- A document describing a database or collection of databases.
- An integral component of a DBMS that is required to determine its structure.
- A piece of middleware that extends or supplants the native data dictionary of a DBMS.

The terms data dictionary and data repository indicate a more general software utility than a catalogue. A catalogue is closely coupled with the DBMS software.

It provides the information stored in it to the user and the DBA, but it is mainly accessed by the various software modules of the DBMS itself, such as DDL and DML compilers, the query optimizer, the transaction processor, report generators, and the constraint enforcer. On the other hand, a data dictionary is a data structure that stores metadata, i.e., (structured) data about information. The software package for a stand-alone data dictionary or data repository may interact with the software modules of the DBMS, but it is mainly used by the designers, users and administrators of a computer system for information resource management. These systems maintain information on System hardware and software configuration, documentation,application and users as well as other information relevant to system administration.

If a data dictionary system is used only by the designers, users, and administrators and not by the DBMS Software, it is called a passive data dictionary. Otherwise, it is called an active data dictionary or data dictionary. When a passive data dictionary is updated, it is done so manually and independently from any changes

to a DBMS (database) structure. With an active data dictionary, the dictionary is updated first and changes occur in the DBMS automatically as a result.

Data Tables:

Table name: Admin

Table Description: In this the Admin should give the corresponding details in the table and the details should be valid.

Primary Key: admin_id

Table:4.5.1 Admin Table

	admin_id	email	password
Edit Copy Delete	1	archanaarchu5757@gmail.com	abcd

Land Details

Table name: Land Details

Table Description: In this the Admin and Seller should give the corresponding details about the land in the table and the details should be valid.

Primary Key: land_id

Table:4.5.2 Land Details Table

	land_id	survey_number	land_image	land_size	land_price	land_location	land_seller	seller_mobile
Edit Copy Delete	1	30B/A	land-1.jpg	200sqfts	2000000	Gouravelli	Amrutha	987654312
Edit Copy Delete	2	37/1/1/2	land-2.jpg	500sqmts	1200000	Akkannapet	Komala	767589957
Edit Copy Delete	3	321A/1	land-1_2bBUxv4.jpg	20sqmts	20000	Choutapalli	Venkaiah	87654312
Edit Copy Delete	5	3-4-5-6A1	f1_fAcyYSb.jpg	300sqfts	500000	Jangoan	Hanumaiah	787878787
Edit Copy Delete	6	288/A/2	454521.jpg	450sqfts	6000000	Nandaram	Ramaiah	765465454

Seller Details

Table name: Seller Details

Table Description: In this the Seller should give the corresponding details about the land in the table and the details should be valid.

Primary Key: seller_id

Table:4.5.3 Seller Details Table

	id	Full_Name	Email_Address	Telephone_Number	Complaint
Edit Copy Delete	1	Archana	archana@gmail.com	2147483647	Seller mobile number is invalid number
Edit Copy Delete	2	HariCharan	hari@gmail.com	2147483647	There is no response from seller when we called.

Seller Land Details Table:

Table:4.5.4 Seller land details table

	land_id	seller_id	survey_number	land_size	land_price	land_location	land_seller	seller_mobile	land_image
Edit Copy Delete	1	3	30B/C	200sqmts	20,00,000	HSB	Aruna	987654321	land-2_zVs7oZV.jpg
Edit Copy Delete	2	3	342-A/C	200sqmts	2000000	Hsb	Veerayya	887766554	land-1_lkyPnik.jpg
Edit Copy Delete	3	1	12-12-A	135sqft	1202000	Gandhinagar	Subbayya	768768767	ADMIN-USECASE.png
Edit Copy Delete	4	1	90/A-D	120sqft	20000000	Gandipalli	Sindhu	987789987	11.mdj

Buyers Details

Table name: Buyer Details

Table Description: In this the buyer should give the corresponding details in the table and the details should be valid.

Primary Key:buyer_id

Table:4.5.5 Buyer Details Table

	userid	username	password	email	mobile	address
Edit Copy Delete	1	Poojitha	abc	poojithadonakonda@gmail.com	2147483647	Hzb
Edit Copy Delete	6	Rani	rani	rani@gmail.com	2147483647	Knr
Edit Copy Delete	9	Alisha	alis	alis@gmail.com	2147483647	Hsb
Edit Copy Delete	13	Archana	archu	archanaarchu5757@gmail.com	2147483647	HSB
Edit Copy Delete	16	Rani	rani	rani@gmail.com	2147483647	Hsb
Edit Copy Delete	24	akshitha	abc	a@gmail.com	2147483647	hsb
Edit Copy Delete	25	asd	asd	a@gmail.com	2147483647	Hsb

Complaint Table

Table name: Complaint Table

Table Description: In this the complaints given by the user/buyer is stored.

Primary key: complaint_id

Table:4.5.6 complaints Table

	id	Full_Name	Email_Address	Telephone_Number	Complaint
Edit Copy Delete	1	Archana	archana@gmail.com	2147483647	Seller mobile number is invalid number
Edit Copy Delete	2	HariCharan	hari@gmail.com	2147483647	There is no response from seller when we called.

Forget Password Table

Table:4.5.7 forgot password Table

email	otp
archanaarchu5757@gmail.com	7405
archanaarchu5757@gmail.com	3084
poojithadonakonda@gmail.com	9362
poojithadonakonda@gmail.com	7400
poojithadonakonda@gmail.com	9134
poojithadonakonda@gmail.com	5569
poojithadonakonda@gmail.com	3163
poojithadonakonda@gmail.com	3371
archanamaddela46@gmail.com	6978
archanaarchu5757@gmail.com	8654
archanaarchu5757@gmail.com	8823
archanaarchu5757@gmail.com	6632

CHAPTER 5

IMPLEMENTATION

5.1 TECHNOLOGIES USED

5.1.1 Python:

Introduction

- Python[3] is a widely-used, interpreted, object-oriented, and high-level programming language with dynamic semantics, used for general-purpose programming.

- Python[3] is an interpreted language. This means that it inherits all the described advantages and disadvantages. Of course, it adds some of its unique features to both sets.

- If you want to program in Python[3], you'll need the Python interpreter. You won't be able to run your code without it. Fortunately, Python is free. This is one of its most important advantages.

- Due to historical reasons, languages designed to be utilized in the interpretation manner are often called scripting languages, while the source programs encoded using them are called scripts.

Python goals:

In 1999, Guido van Rossum defined his goals for Python:

- an easy and intuitive language just as powerful as those of the major competitors;

- open source, so anyone can contribute to its development;

- code that is as understandable as plain English;

- suitable for everyday tasks, allowing for short development times.

About 20 years later, it is clear that all these intentions have been fulfilled. Some sources say that Python is the most popular programming language in the world, while others claim it's the second or the third.Either way, it still occupies a high rank in the top ten of the PYPL Popularity of Programming Language and the TIOBE Programming Community Index. Python[3] isn't a young language anymore. It is mature and trust worthy. It's not a one-hit wonder. It's a bright star in the programming firmament, and time spent learning Python[3] is a very good investment.

What makes python so special?

- **Why Python?**

There are many reasons – we've listed some of them already, but let's enumerate them again in a more practical maner:

- It is easy to learn – the time needed to learn Python[3] is shorter than for many other languages; this means that it's possible to start the actual programming faster;

- It is easy to teach – the teaching work load is smaller than that needed by other languages; this means that the teacher can put more emphasis on general (language- independent) programming techniques, not wasting energy on exotic tricks, strange exceptions and incomprehensible rules;

- It is easy to use for writing new software –it's often possible to write code faster when using Python[3];

- It is easy to understand - it's also often easier to understand someone else's code faster if it is written in Python;

- It is easy to obtain, install and deploy – Python[3] is free, open and multiplatform; notall languages can boast that.

- It is easy to learn-the time needed to learn python is shorter than for many other languages; this means that its possible to start the actual programming faster.

➢ **Where can we python in action ?**

We see it every day and almost everywhere. It's used extensively to implement complex Internet services like search engines, cloud storage and tools, social media and so on.Whenever you use any of these services, you are actually very close to Python[3], although you wouldn't know it.

Many developing tools are implemented in Python[3]. More and more everyday-use applications are being written in Python. Lots of scientists have abandoned expensive proprietary tools and switched to Python[3]. Lots of IT project testers have started using Python[3] to carry out repeatable test procedures. The list is long.

5.1.2 Django:

Introduction:

The Django[4] web framework is a free, open source framework that can speed up development of a web application being built in the Python programming language.

Django[4]—pronounced “Jango,” named after the famous jazz guitarist Django Reinhardt—is a free, open source framework that was first publicly released in 2005. Django[4] facilitates “rapid development and clean, pragmatic design.” The Django web framework, deployed on a web server, can help developers quickly produce a web frontend that’s feature-rich, secure and scalable.

Starting with the Django[4] web framework is more efficient way to build a web app than starting from scratch, which requires building the backend, APIs, javascript and sitemaps. With the Django[4] web framework, web developers can focus on creating a unique application and benefit from greater flexibility than using a web development tool.

- **Benefits of Django:**

Enhance Security:

Web apps are frequent targets of hackers, especially applications that store user login information or financial data. Django[4] offers features to help protect your application and your users.

One of the biggest risks for sites that accept user-entered data is that a malicious user will inject code with their data that can have a disastrous effect on your system. To protect against attacks like these, Django templates automatically escape common HTML characters in any user-entered field. For example, it will automatically convert '<' to '<' to make it difficult to inject malicious code into your program. Django protects from SQL injection in a similar way, reinterpreting unauthorized commands so that users can't sneak their own code into your database.

Web developers can also count on Django APIs to automatically use cross-site request forgery (CSRF) protection to insert user-specific secret tokens into POST requests. As a result, web developers can prevent malicious users from duplicating other POST requests to masquerade as authorized users.

The protection of Django[4] goes beyond its explicit security features: security efforts are enhanced by the extensive experience and expertise of the Django user base. If you build your entire web app from scratch, you run the risk of accidentally introducing a security vulnerability into your module. Django packages are widely used, open source and well reviewed by web developers, so you can be more confident that they'll protect your data.

Django[4] Web Framework offers a shortcut to full integration with your application's database. It provides CRUD (create, read, update, delete) functionality, HttpResponse and cross-site scripting, supplies user management capabilities, offers software administration features and more. You import the packages, connect to your database and then get back to work developing the parts of your application that make your product unique.

Create dynamic pages with templates:

Because Django is designed to be used for web app development, it needs a way to easily create dynamic HTML that displays your user's unique data. The Django application produces that dynamic HTML with a built-in templating engine called the Django template language (DTL)[7].

An HTML template allows Django developers to combine static elements (including design elements such as colors, logos, or text) with data (such as user

names or locations) to create a new web page on the fly. With model-view-controller (MVC), if you want your application to greet a user by name when they log in, you can build a template that displays the static text (“Welcome to the site, X”) then use a dynamic placeholder to automatically display the user’s first name from your database. When the page renders, it will combine the dynamic elements with the static ones to create a seamless user experience

5.1.3 HTML:

HTML[5] is a hypertext mark-up language that is in reality a backbone of any website. Every website can't be structured without the knowledge of HTML. If we make our web page only with the help of HTML, then we can't add many of the effective features in a web page, for making a web page more effective we use various platforms such as CSS. So here we are using this language to make our web pages more effective as well as efficient. And to make our web pages .dynamic we are using JavaScript.

5.1.4 CSS:

CSS[5] Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web pages. They can be used to define text styles, table sizes, and other aspects of Web pages that 35 previously could only be defined in a page's HTML. The basic purpose of CSS is to separate the content of a web document (written in any mark-up language) from its presentation (that is written using Cascading Style Sheets CSS gives the option of selecting various style schemes and rules according to the requirements and it also allows the same HTML document to be presented in more than one varying style.

5.1.5 JavaScript:

JavaScript is considered to be one of the most famous scripting languages of all time. JavaScript, by definition, is a Scripting Language of the World Wide Web. The main usage of JavaScript is to add various Web functionalities, Web form validations, browser detections, creation of cookies, and so on.JavaScript is one of the most popular scripting languages and that is why it is supported by almost all web browsers available today like Firefox.

We used the browser Opera or Internet Explorer. JavaScript is considered to be one of the most powerful scripting languages in use today. It is often used for the development of client- side web development. JavaScript is used to make web pages more interactive and dynamic. JavaScript is a lightweight programming language and it is embedded directly into the HTML code. JavaScript, as the name suggests, was influenced by many languages, especially Java.

The advantages of JavaScript: -

- Embedded within HTML.
- The minimal syntax is easy to learn.

- Performance sign for simple, small programs.

5.1.6 MYSQL:

MYSQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MYSQL is developed, marketed, and supported by MYSQL, which is a Swedish company. MYSQL is becoming so popular because of many good reasons.

- MYSQL is released under an open-source license. So, you have nothing to pay to use it.

- MYSQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.

- MYSQL uses a standard form of the well-known SQL data language.

- MYSQL works on many operating systems and with many languages including PHP, PERL, C,C++, JAVA, etc.

- MYSQL works very quickly and works well even with large data sets.

- MYSQL is very friendly to PHP, the most appreciated language for web development.

- MYSQL is customizable. The open-source GPL license allows programmers to modify the MYSQL software to fit their specific environment.

5.2 FRONTEND DESIGN:

Homepage:

- The homepage of the application (figure 5.2.1) is common to all the system users. This interface is available through the web application at the time of login. The feature of the homepage is to allow Admin to login in their computers.

Home

Each page links to an individual page.

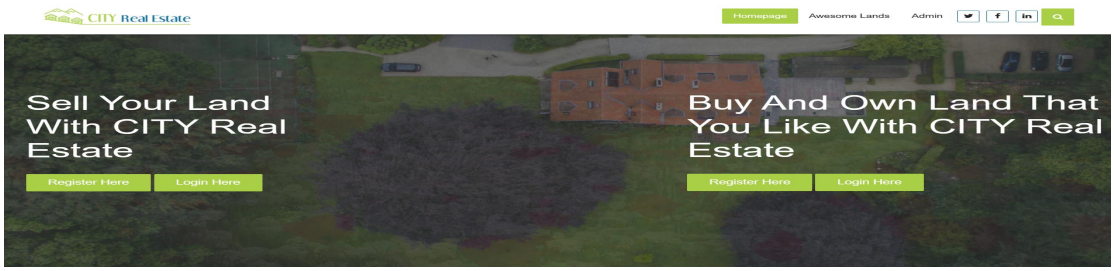


Figure:5.2.1 Screenshot for Homepage

Land Gallery:

- The figure:5.2.2 represents the land gallery page. Here every user who registered and unregistered users are also able to view the types of lands that are present in website,but they are unable to view the details of the land,only the images of lands are visible to them.

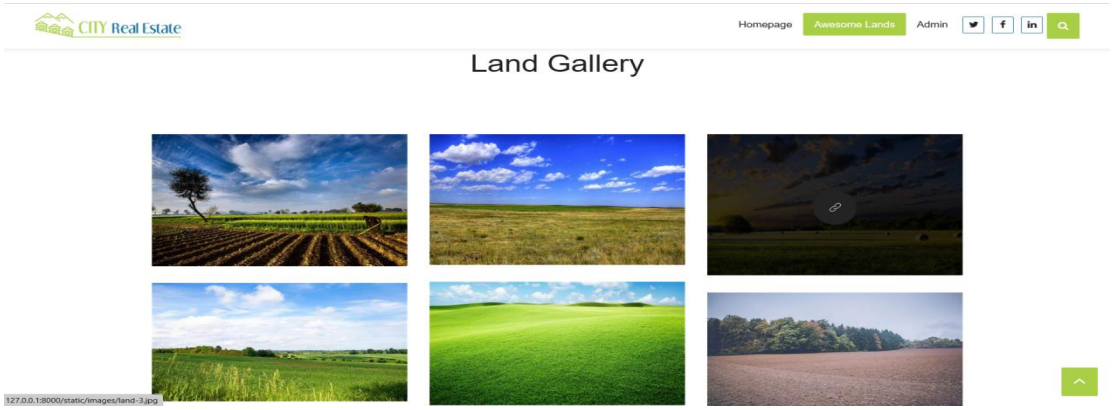


Figure:5.2.2 Screenshot for land gallery

Admin login:

- The figure:5.2.3 represents the admin login page. Here the admin enters his/her login credentials.On clicking the login button admin will enter into the admin portal.

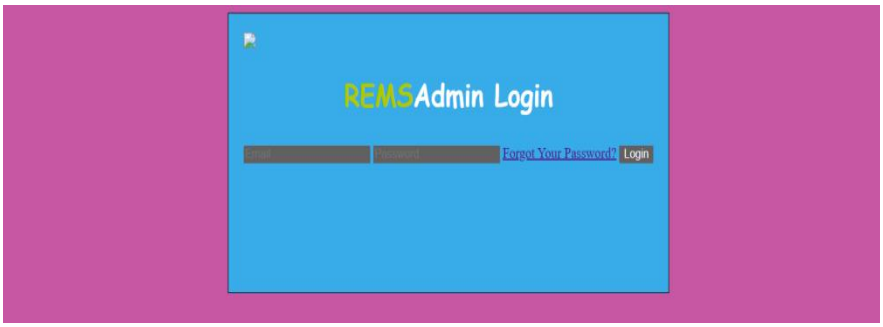


Figure:5.2.3 Screenshot for Admin login page

Seller registration page:

- The figure:5.2.4 represents the seller registration page. Here the seller has to enter his/her details to register.

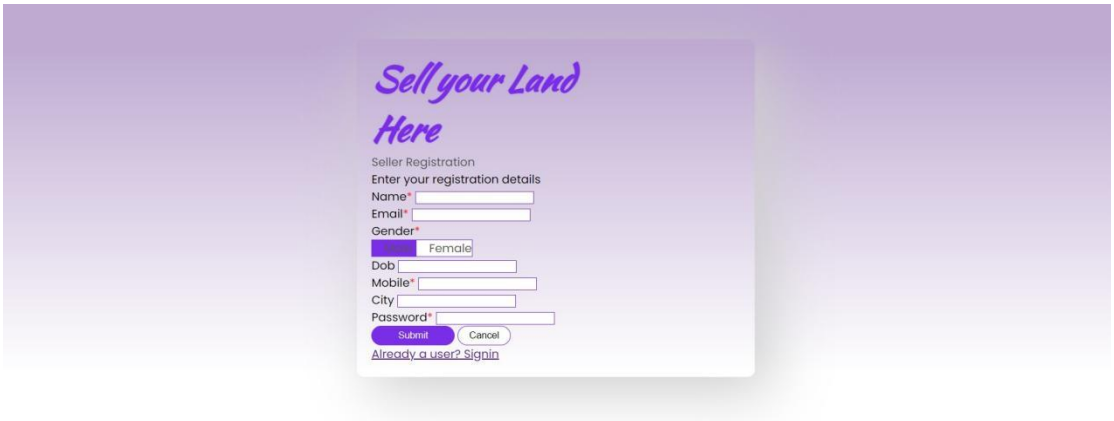


Figure:5.2.4 Screenshot for Seller registration page

Seller login:

- The figure:5.2.5 represents the seller login page. Here the seller enters his/her login credentials.On clicking the login button seller will enter into the seller dashboard.

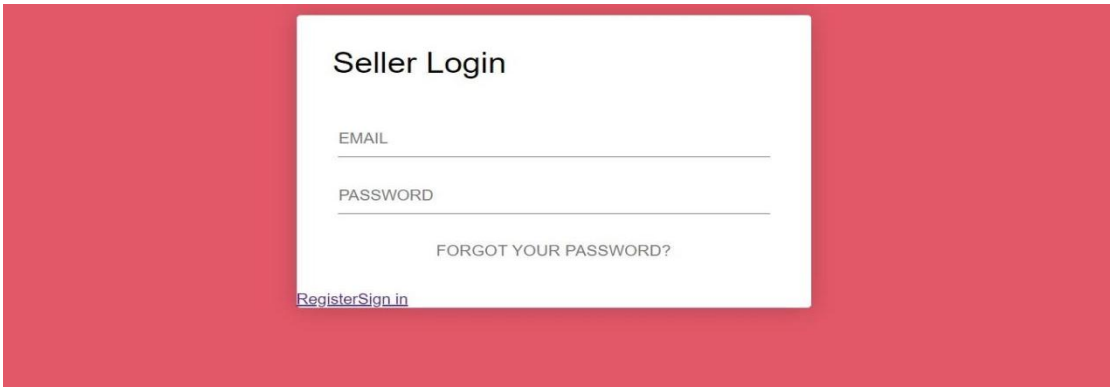


Figure:5.2.5 Screenshot for Seller login page

Buyer registration:

- The figure;5.2.6 represents the buyer registration page. Here the buyer has to enter his/her details to register.

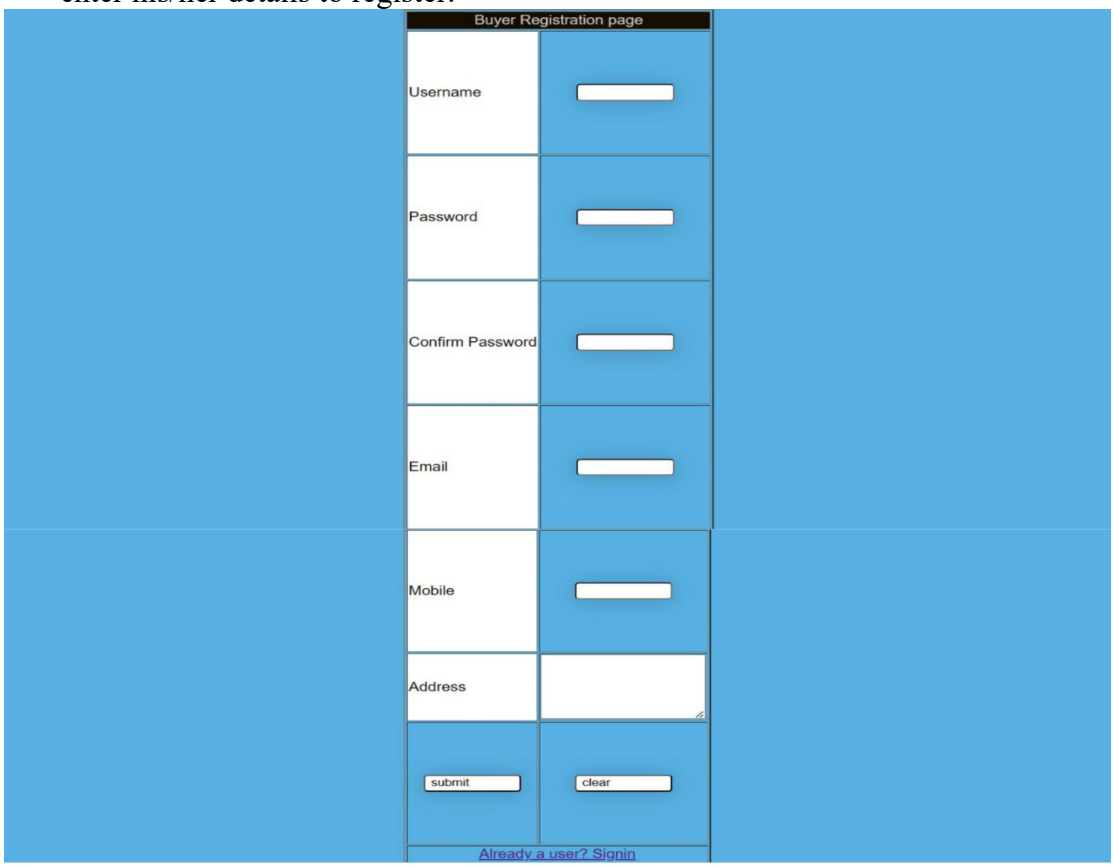


Figure:5.2.6 Screenshot for buyer registration page

Buyer login:

- The figure:5.2.7 represents the buyer login page. Here the buyer enters his/her login credentials.On clicking the login button buyer will enter into the admin portal.

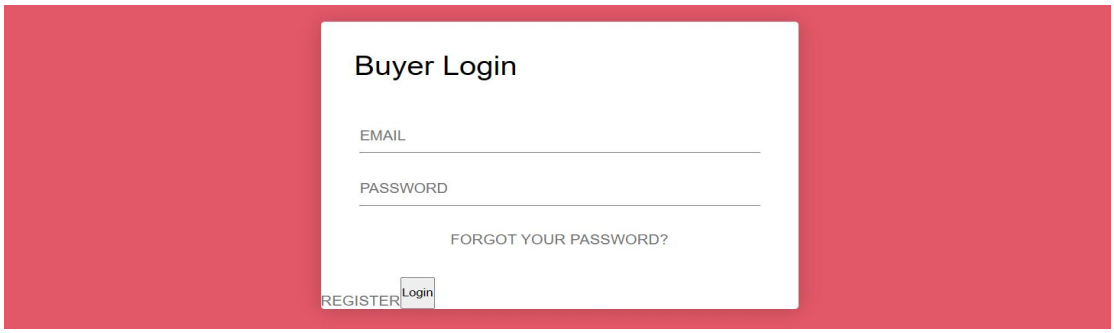


Figure:5.2.7 Screenshot for Buyer login page

CHAPTER 6

TESTING

Testing is the process of evaluating a system or its components with the intent to find whether it satisfies the specified requirements or not. If the changes made in the code are frequently then automation testing should be performed. Sometimes it happens that on making changes in the one module can harm the other module so its important to test the whole module after making changes. By using manual process we can test the image & font-size.

Software testing is the act of examining the artifacts and the behavior of the software under test by validation and verification.It is the process of evaluation of a software item to detect differences between given input and expected output. Also to assesses the feature of a software item. Testing assesses the quality of the product. Software testing is a process that should be done during the development process. In other words software testing is a verification and validation process.

Verification

Verification is the process to make sure that product satisfies the conditions imposed at tester of the development phase. In other words, to make sure the product behaves the way we want it to.

Validation

Validation is the process to make sure the product satisfies the specified requirements at the end of the development phase. In other words, to make sure the product is built as per customer requirements.

Basics of software testing

There are two basics of software testing: black box testing and white box testing.

6.1 BLACK BOX TESTING

Black box testing is a testing technique that ignores the internal mechanism of the system and focuses on the output generated against any input and execution of the system. It is also called functional testing. It is the powerful testing technique because it exercises a system end-to- end.

Advantages of Black box testing

- Used to verify contradictions in actual system and specifications.
- Test cases can be designed as soon as the functional specifications are complete.
- Well suited and No need of technical knowledge.
- Efficient for large code segments.

- There is no need for the tester to have detailed functional knowledge of system.

Disadvantages of Black Box Testing

- The test input needs to be from large sample space.
- Chances of having unidentified paths during this testing.
- Test cases are challenging to design without having clear functional specifications.
- It is a highly probability of repeating tests already performed by the programmer.
- There are chances of having unidentified paths during the testing process.

6.2 WHITE BOX TESTING

White box testing is a testing technique that takes into account the internal mechanism of a system. It is also called structural testing and glass box testing.

Advantages of White Box Testing

- Testing can commence even before the GUI is ready.
- Code optimization by finding hidden errors.
- White box tests cases can be easily automated.
- It can provide stability and usability of the test cases.
- Testing can start early in SDLC even if GUI is not available. Testing is more thorough as all code paths are usually covered.

It shows the error message while executing the code.

Disadvantages of White Box Testing

- White box testing can be quite complex and expensive.
- Developers who usually execute white box test cases detest it. The white box testing developers is not detailed can lead to production errors.
- It identifies error in the hidden code and thus makes debugging process swift.
- White-box testing is time-consuming, bigger programming applications take the time to test fully.

In white box testing each and every phase of the program is checked. Software tester who knows the code conducts white box testing. At the time of white box testing, we have encountered an error of “name top not defined”. Then we have worked on the

error, we realized that we have not defined name top sign. Hence at the time of white box testing we are thrown with an error.

6.3 TEST CASES

The test cases are used to validate the each module every time whenever user enters the input in to the system then we can provide the results either pass or fail with expected result and the actual result. A test case is an input and an expected result. This can be as pragmatic as 'for condition x your derived result is y'; where as other test cases described in more detail the input scenario and what results might be expected. It can occasionally be a series of steps but with one expected result or expected outcome.

DATABASE TESTING:

This test involves testing whether the values entered through the forgets stored and saved in the database correctly or not.

ACCEPTANCE TESTING:

Testing to verify a product meets customer specified requirements. The acceptance test suite is run against supplied input data. Then the results obtained are compared with the expected 32 results of the client. A correct match was obtained.

Test cases:

Test case1: Admin Login (successful)

Test case: Admin logged (successful).

Test Description: Provide Admin right by checking the details.

Pre Condition: Database connectivity.

Action Performed: Entered valid login details without leaving any field.

Expected Results: Successful login.

Condition Verified: Yes.

Result: Success.

6.4 TEST RESULTS

Test cases are done on every page on this website. All the test cases are passed successfully. No ,defects were encountered.

- The figure:6.4.1 represents the buyer registration page. Here the buyer has to enter all his/her details to register,this figure shows that buyer has to enter all the required fields.

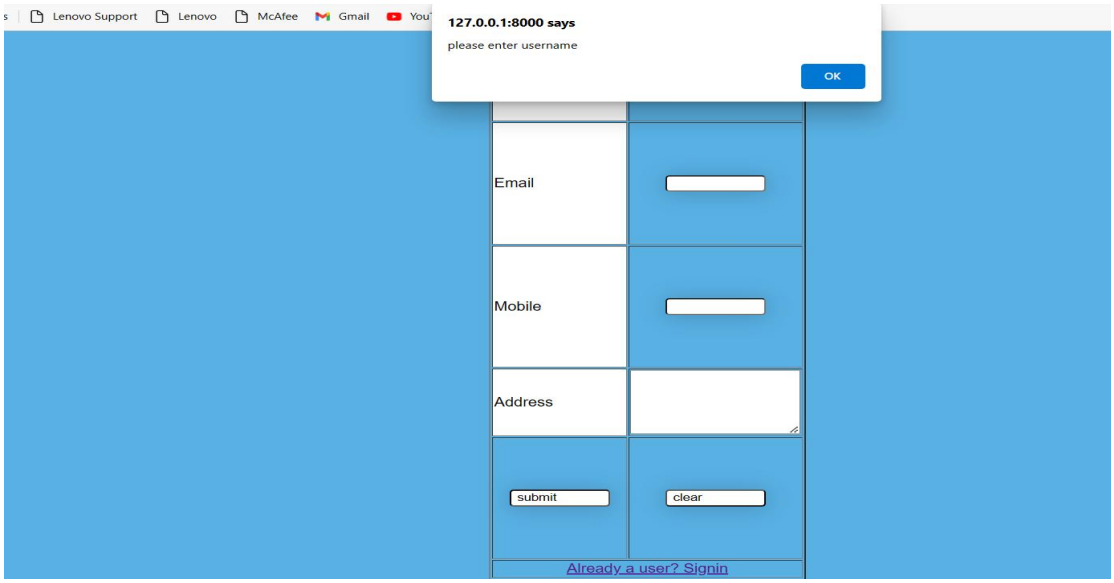


Figure:6.4.1 Screenshot for buyer registration testing-1

- The figure:6.4.2 represents the buyer registration page. Here the buyer has to enter all his/her details to register,this figure shows that buyer has to enter the email in valid format.

Figure:6.4.2 Screenshot for buyer registration testing-2

- The figure:6.4.3 represents the buyer registration page. Here the buyer has to enter all his/her details to register,this figure shows that the password and confirm password entered by buyer are not same.

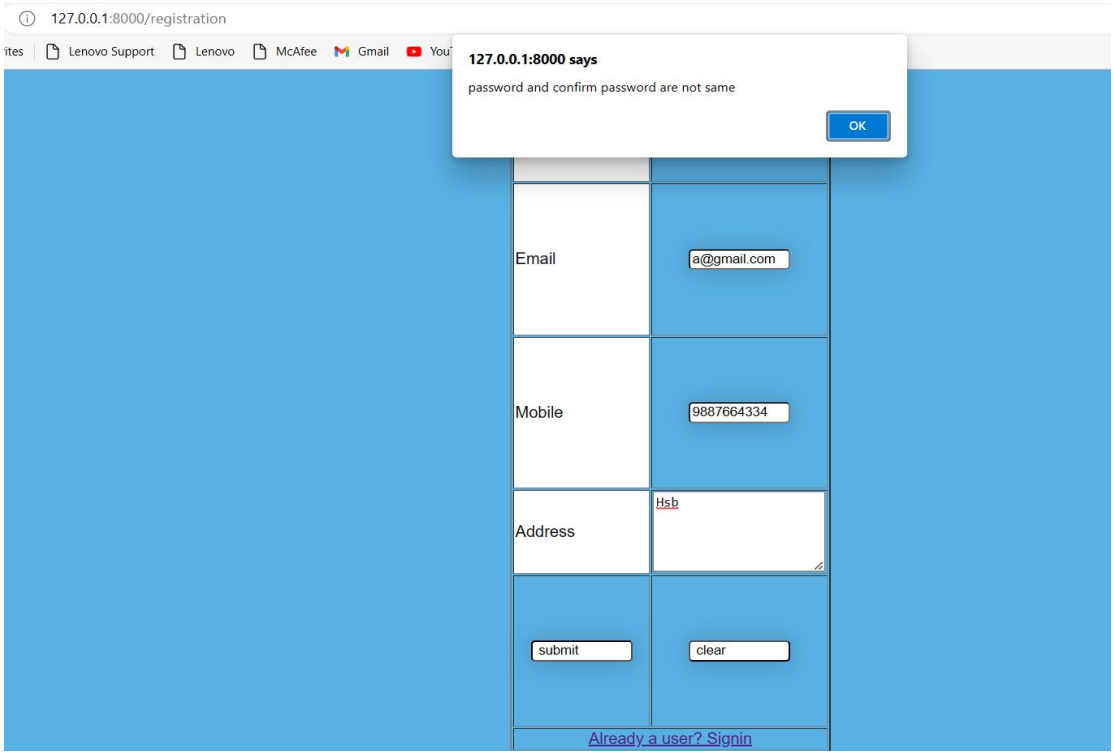


Figure:6.4.3 Screenshot for buyer registration testing-3

- The figure:6.4.4 represents the seller registration page. Here the seller has to enter all his/her details to register,this figure shows that buyer has to enter the email in valid format.

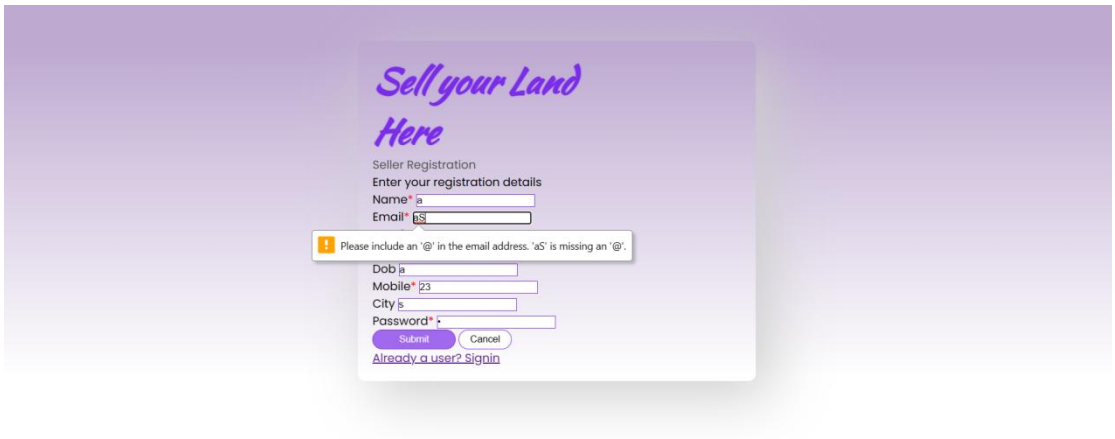


Figure:6.4.4 Screenshot for seller registration testing-1

- The figure:6.4.5 represents the seller registration page. Here the seller has to enter all his/her details to register,this figure shows that seller has to enter all the required fields.

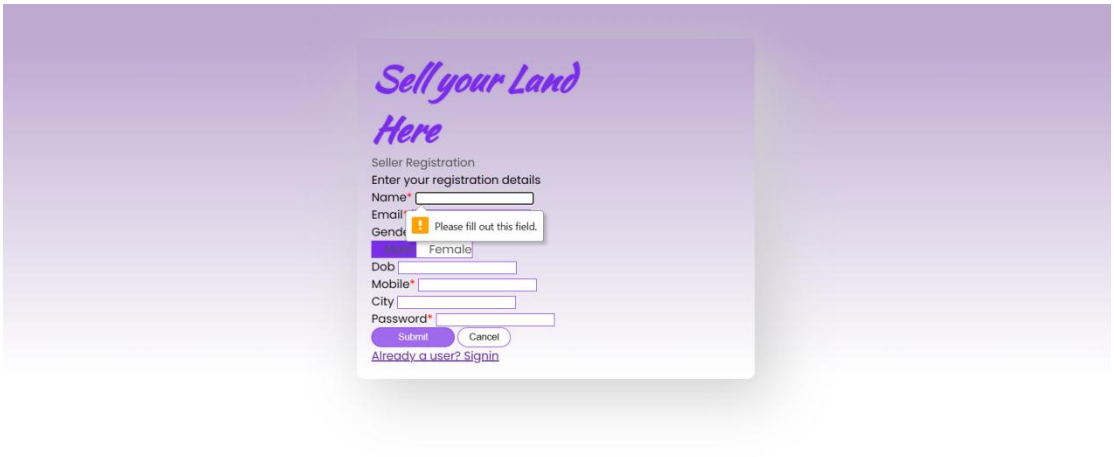


Figure:6.4.5 Screenshot for seller registration testing-2

CHAPTER 7

RESULTS

The result screenshots are as follows:

Screenshot for Homepage:

- The figure:7.1 shows the homepage of the website, the feature of the homepage is to allow the Buyer, Seller and Admin to navigate through the site.

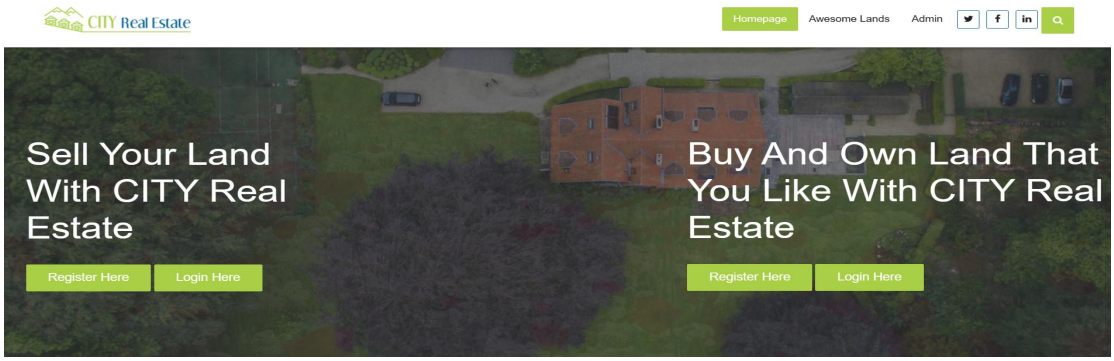


Figure:7.1 Screenshot of Homepage

Screenshot for buyer registration:

- The Figure:7.2 shows the registration page of the buyer,where buyer has to enter his/her details to register.

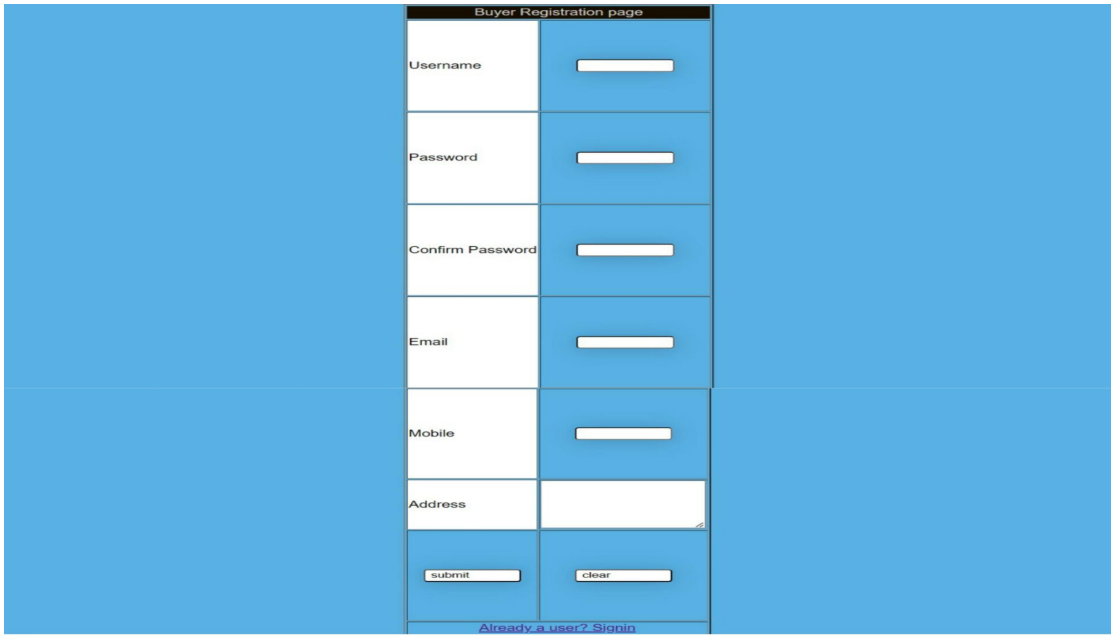


Figure:7.2 Screenshot for buyer registration

Screenshot for login successfully:

BUYER DASHBOARD:

The below are the screenshots of results in buyer dashboard where buyer can view the results of lands and other pages after successful login.

- The figure:7.3 represents the buyer login page. Here the buyer has entered the valid credentials to login.

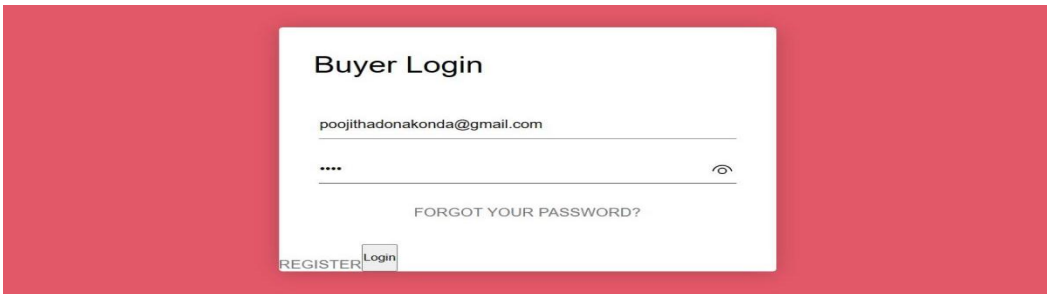


Figure:7.3 Screenshot for buyer login page

- The figure:7.4 represents the buyer dashboard. By clicking the login button the buyer is redirected to the buyer dashboard if the entered credentials are valid.

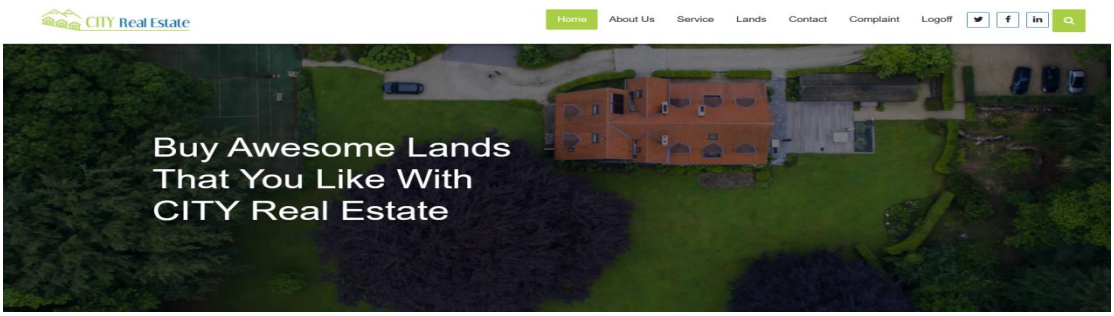


Figure:7.4 screenshot for successful buyer login

- The figure:7.5 represents the about us page in buyer dashboard.Here buyer can see the details of the website owner.

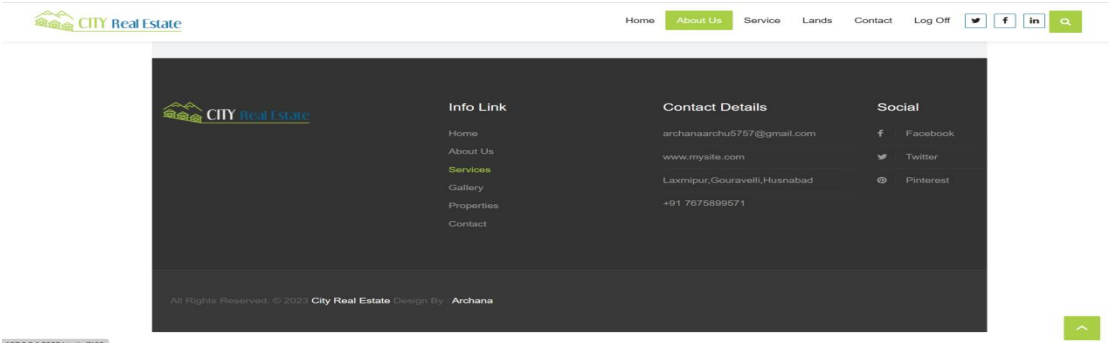


Figure:7.5 screenshot of about us page

- The figure:7.6 represents the services page in buyer dashboard.Here buyer can view the services offered by the website.

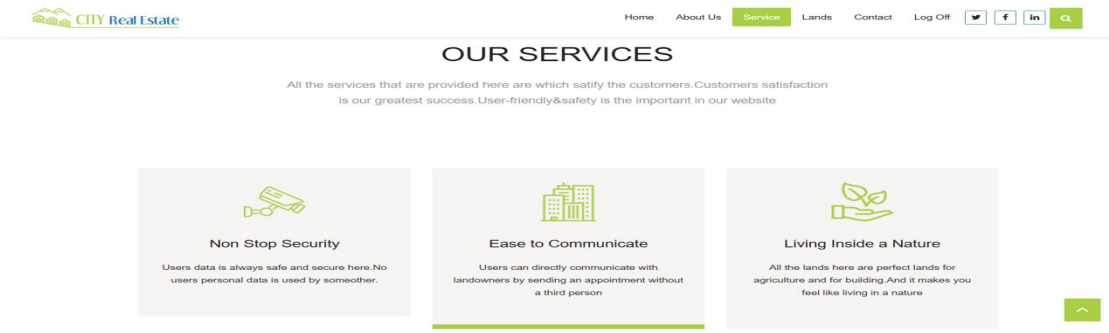


Figure:7.6 screenshot for services page

- The figure:7.7 represents the land details page in buyer dashboard. Here buyer can view the lands and land details that are present in the website.

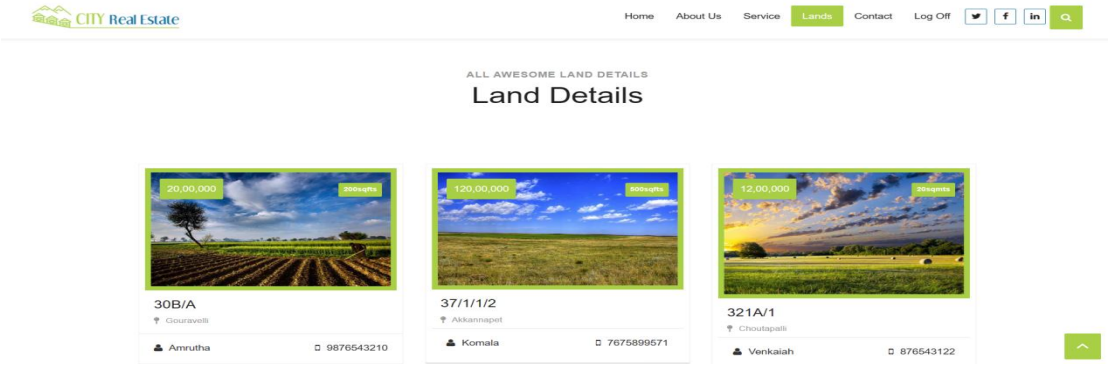


Figure:7.7 screenshot for land details

- The figure:7.8 represents the contact us page in buyer dashboard. Here buyer can view the contact details of the website owner.

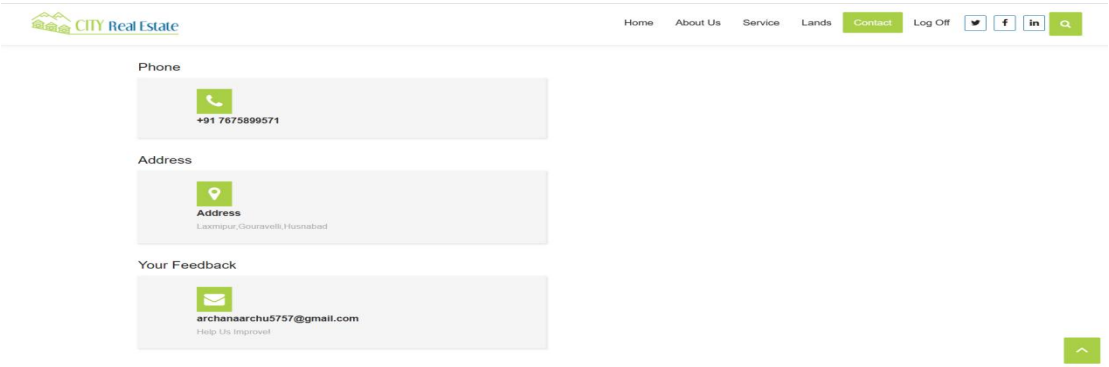


Figure:7.8 screenshot for contact us page

- The figure:7.9 represents the happy users feedback in buyer dashboard.Here buyer can view the other buyers opinion given.

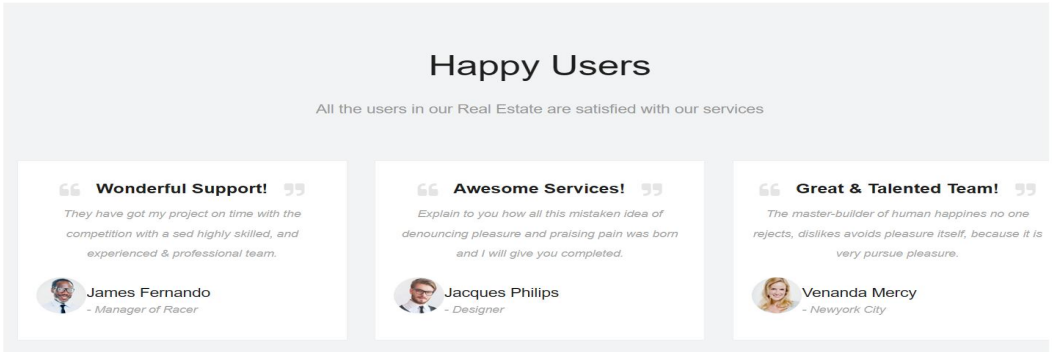


Figure:7.9 screenshot for happy users

- The figure:7.10 represents the complaint page in buyer dashboard. Here buyer can fill the complaint form and give the complaint,if any and by clicking submit,it can be sent to admin.

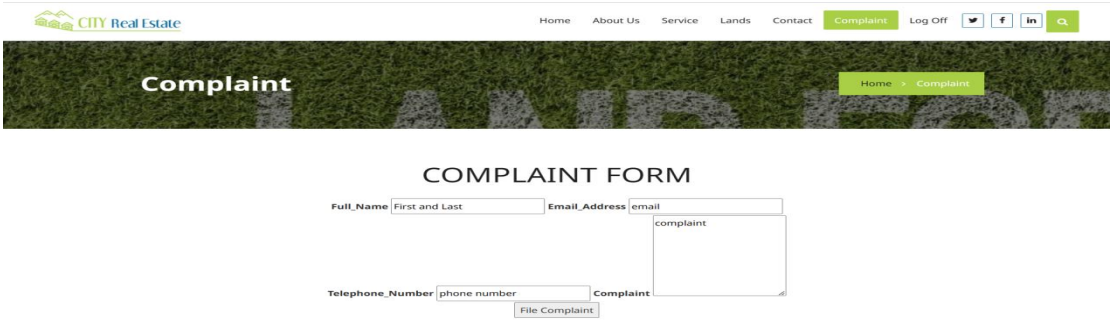


Figure:7.10 screenshot for complaint form

ADMIN DASHBOARD:

The below screenshots are the results that are viewed and managed by the admin after successful login.

- The figure:7.11 represents the admin login page. Here admin has entered the valid credentials.

Figure:7.11 Screenshot for admin login page

- The figure:7.12 represents the admin dashboard. By clicking the login button the admin is redirected to the admin dashboard if the entered credentials are valid.

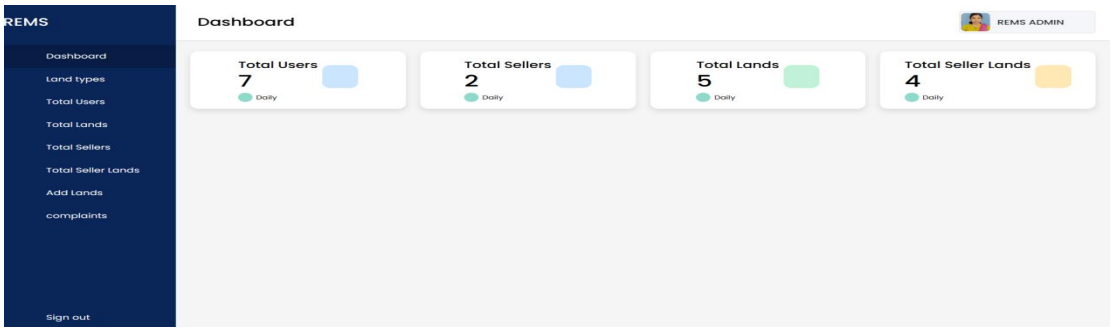


Figure:7.12 screenshot for successful admin login

- The figure:7.13 represents the total users page in admin dashboard. Here admin can view all registered buyers and able to edit or delete the buyer.

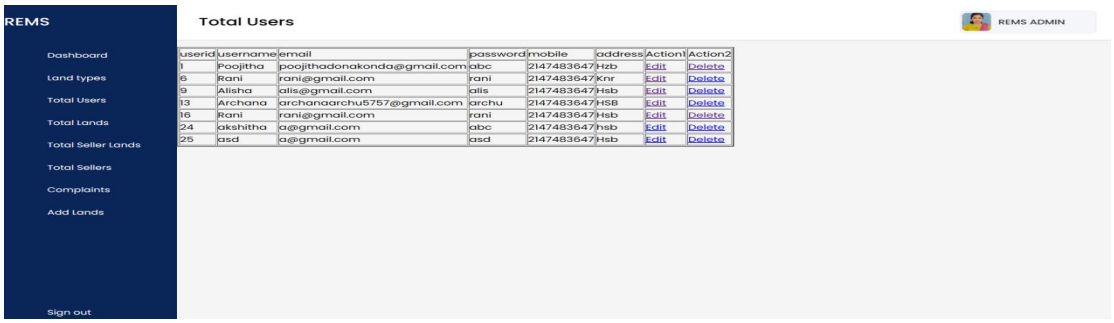


Figure:7.13 screenshot for total users

- The figure:7.14 represents the total lands page in admin dashboard. Here admin can view all the lands added by him/her and manage them.

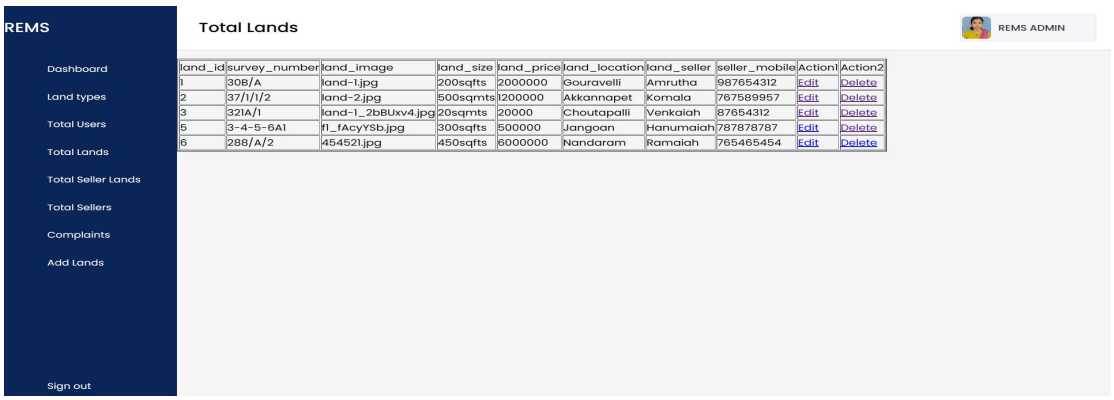


Figure:7.14 screenshot for total lands

- The figure:7.15 represents the total sellers lands page in admin dashboard. Here admin can view all the lands added by seller and manage them.

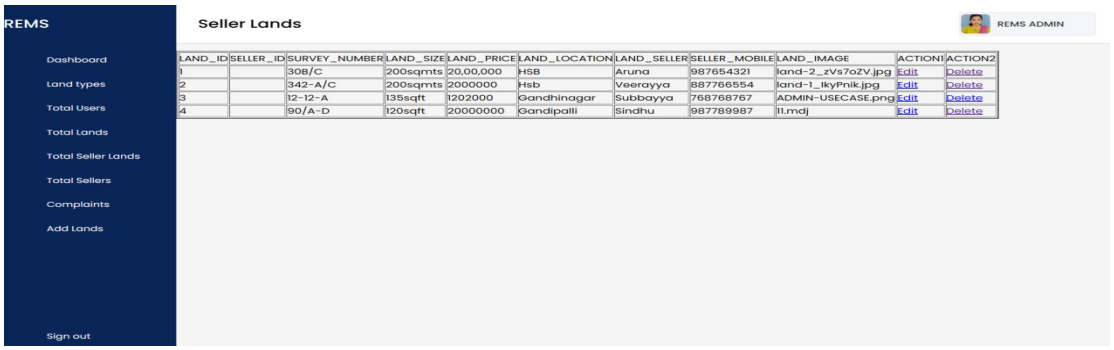


Figure:7.15 screenshot for total seller lands

- The figure:7.16 represents the total sellers page in admin dashboard. Here admin can view all sellers who are registered in website and manage them.

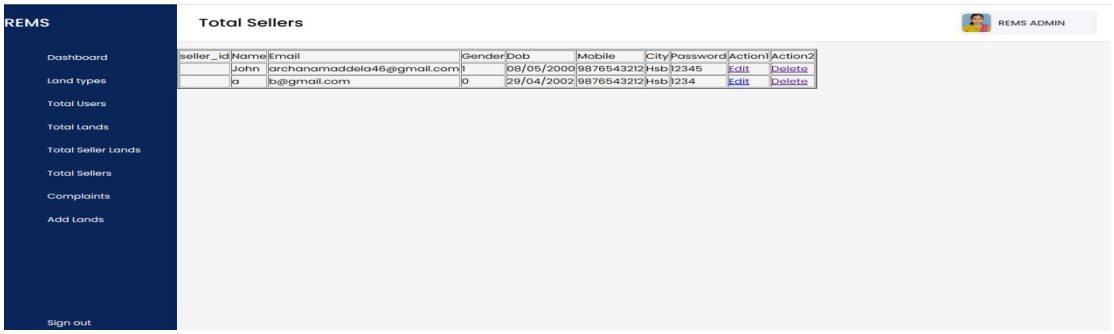


Figure:7.16 screenshot for total sellers

- The figure:7.17 represents the complaints page in admin dashboard. Here admin can view the complaints given by the buyers.

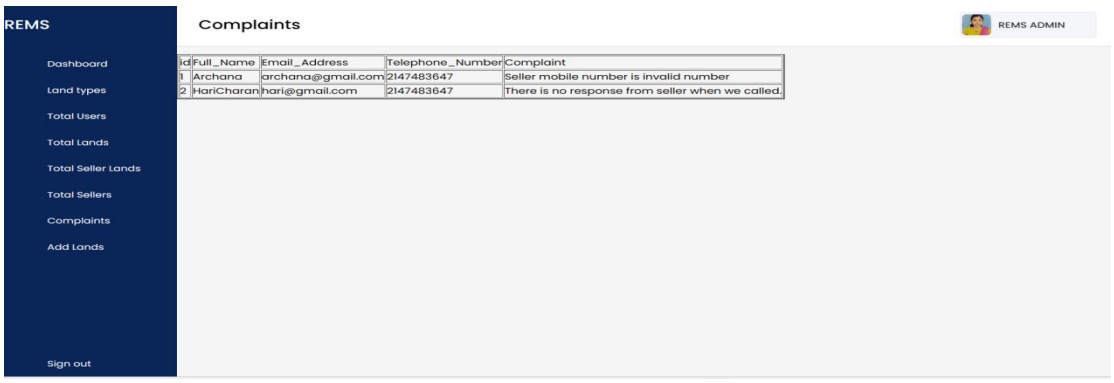


Figure:7.17 screenshot for complaints

- The figure:7.18 represents the add land page in admin dashboard. Here admin can add the lands.

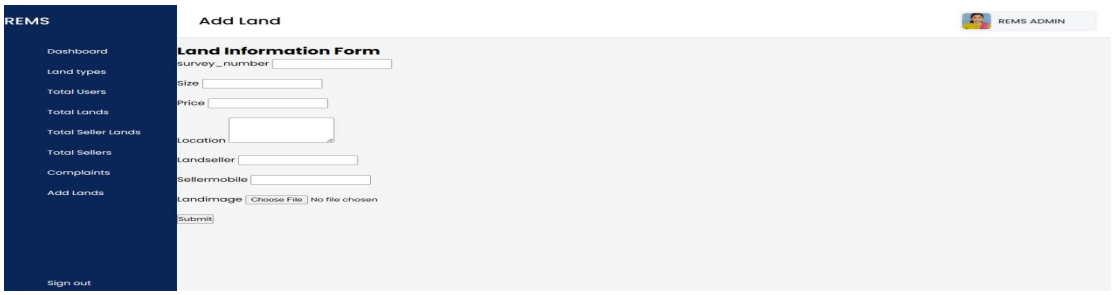


Figure:7.18 screenshot for add land by admin

- The figure:7.19 represents the edit land page in admin dashboard. Here admin can edit the land details or image if needed.

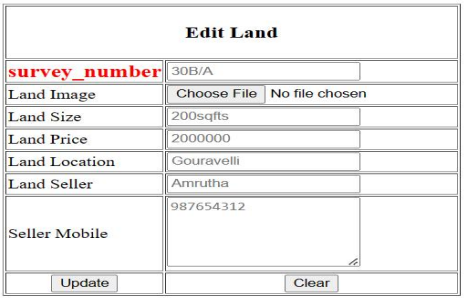


Figure:7.19 screenshot for edit land

- The figure:7.20 represents the seller page in admin dashboard. Here admin can edit the seller details if needed.

Figure:7.20 screenshot for edit seller

- The figure:7.21 represents the edit user page in admin dashboard. Here admin can edit the buyer details if needed.

Figure:7.21 screenshot for edit buyer

SELLER DASHBOARD:

The below are the screenshots of the results of seller dashboard after successful login of a seller. And the edit land is same for both admin and seller.

The figure:7.22 represents the seller login page. Here seller has entered the valid credentials.

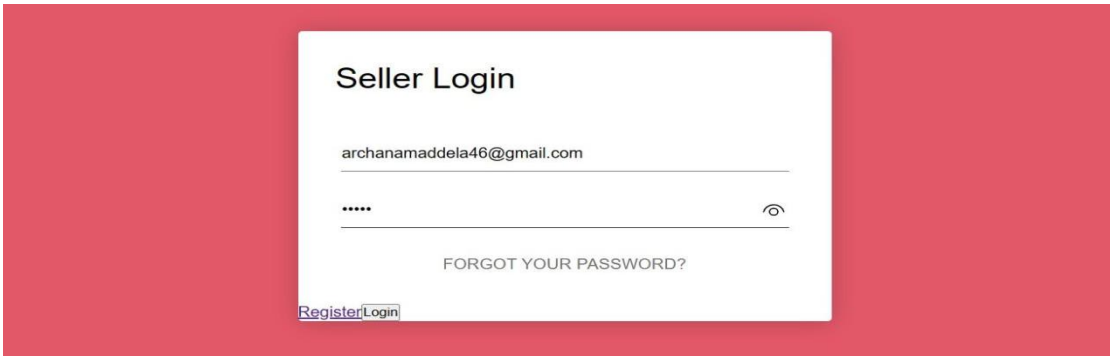


Figure:7.22 Screenshot for seller login page

- The figure:7.23 represents the seller dashboard. By clicking the login button the seller is redirected to the seller dashboard if the entered credentials are valid.

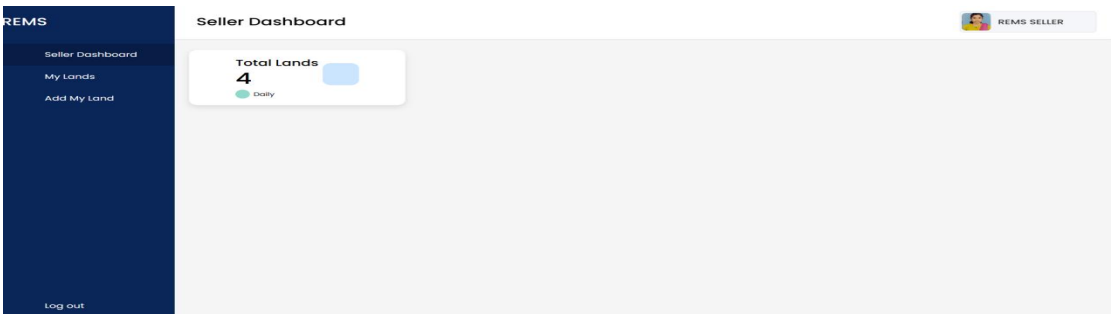


Figure:7.23 screenshot for seller successful login

- The figure:7.24 represents the sellers lands page in seller dashboard. Here seller can view all the lands added by him/her and manage them.

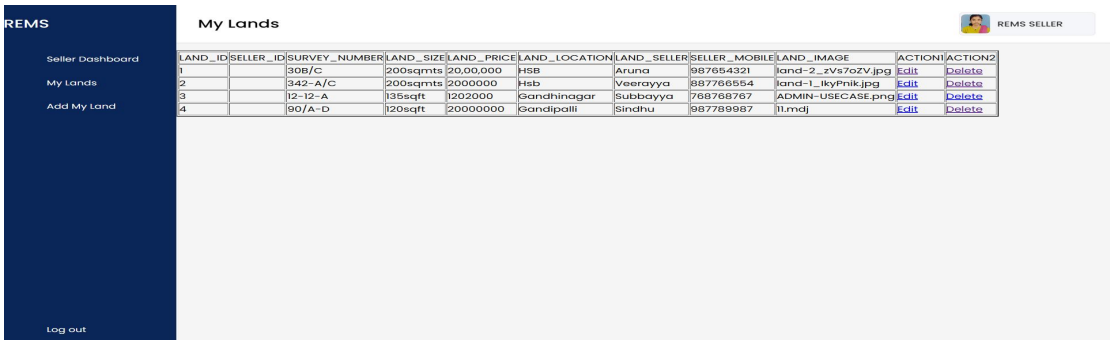


Figure:7.24 screenshot for seller lands

- The figure:7.25 represents the add land page in seller dashboard. Here seller can add the lands of him/her.

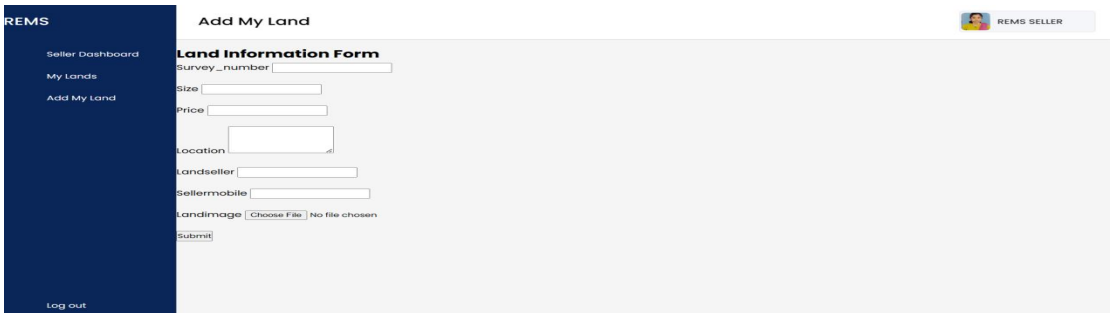


Figure:7.25 screenshot for add land by seller

Results of forgot password and password recovery:

- The figure:7.26 represents the forgot password form. Here admin/buyer/seller can enter his/her registered email.And by clicking on reset password the user will receive a otp to their registered email.The user will get this if they click on forgot password in login page.

Figure:7.26 screenshot for forgot password

- The figure:7.27 represents the email received by the user for password recovery..The email consists of a one time password.

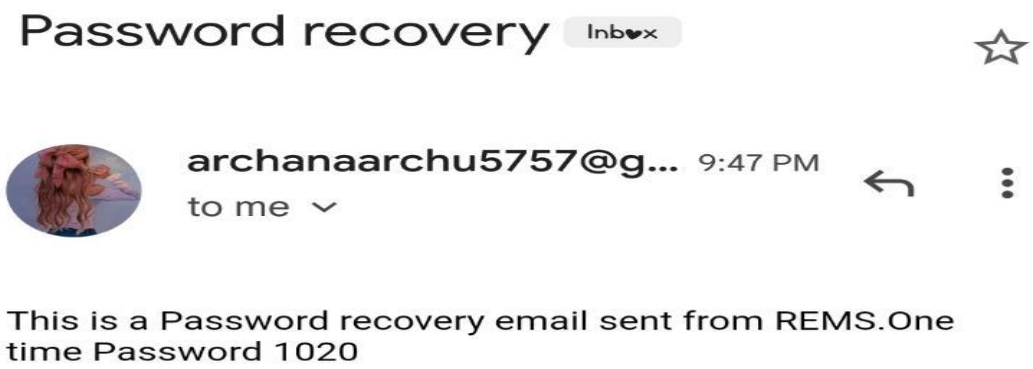


Figure:7.27 screenshot for password recovery email

- The figure:7.28 and figure:7.29 represents both the otp verification form and change password form respectively .We will get this when we click on reset password in forgot password form and we have to enter the otp received to our in this form for verification and if it is verified, we can change password.By clicking submit the password will be changed.

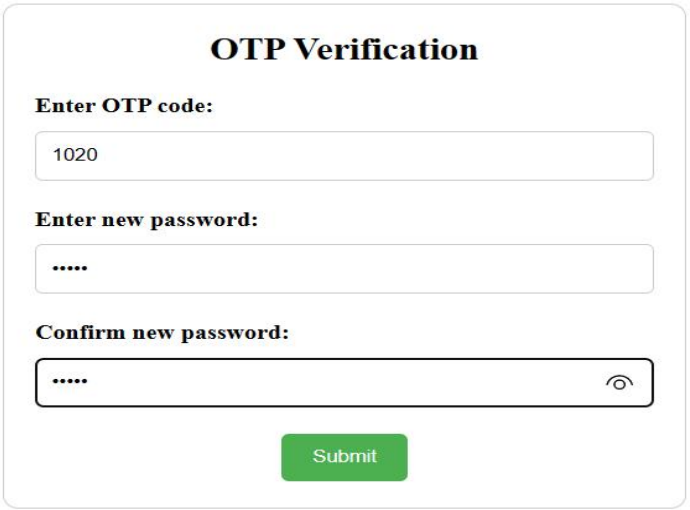


Figure:7.28 screenshot for otp verification
Figure:7.29 screenshot for change password

CHAPTER 8

CONCLUSION

- The project we developed a web application for " REAL ESTATE MANAGEMENT SYSTEM".

- This application helps in maintaining the land details. Admin and Seller can upload the details of the land in the application. Buyer can login to the website and can view the land details which are available in the website. It saves the money and time of the user in the busy schedule. And it is the best way to search required land plots as it is easy process through an online system.The applications give solutions to most of the problems that were identified when performing the tasks like maintaining the data manually. Handling the data manually may not have the data security, and may have the data redundancy which can be overcome by this automation developed by us.

- This application is convenient, effective and easy there by, improving the performances like data security, non-redundancy.

CHAPTER 9

FUTURE SCOPE AND ENHANCEMENTS

- There is a lot of scope for its extension which could be made to the project if it is going to be developed as commercial product.In doing this, we can get a better architecture design which will improve code efficiency and running performance.
- This project just deals with the Home page and Search page to search for property listings, more functionality can be added for searching the agents and offices making it a complete application. The feature of providing Google Maps within this application adds up to the functionality of the website.
- With the advancement of technology, dynamic maps can be generated using other technologies which can help the buyer locate a particular area where the property is located in the Google Map. Inclusion of all these features would make the application feature rich. The advantages of putting these functionalities in the project are described in detail in the following sections.
- If we are going to develop commercial real estate web application based on this project, we can add some more feature as the following:
  - We can save the search criteria for the buyers. This will help the buyers to use the same search criteria rather than creating a new criterion every time the buyer performs the search.
  - By using the AdRotator web control we could add more advertisement on the web site or links to other web site.
  - Add agent and company and also their search functionality.
  - Displaying the search results on Google Maps locating the area where the property listing is located.
  - Add the functionality of call button where the buyer can call the seller directly from the website by just clicking on it
  - Refine this web site and make it friendly and pretty.

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[4] Django Reinhardt, https://en.wikipedia.org/wiki/Django_(web_framework) ,It was released publicly under a BSD license in July 2005.

[5] https://www.free-css.com/assets/files/free-css-templates/download/, HTML and CSS templates of our website are from free-css website.

[6] Sample codes are from: docs.djangoproject.com .

[7] DTL language , https://docs.djangoproject.com/en/4.2/ref/templates/language/ .

[8] https://az764295.vo.msecnd.net/stable/6261075646f055b99068d3688932416f2346dd3b/VSCodeUserSetup-x64-1.73.1.exe ,Visual studio code.