



A Project Report

on

LAND RECORD MANAGEMENT SYSTEM

Submitted in partial fulfillment of requirements for the award of the course

of

MGB1201 – PYTHON PROGRAMMING

Under the guidance of

Mrs.S.RAJESWARI M.E.

Assistant Professor / CSE

Submitted By

SAMINATHAN S (8115U23ME038)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

K.RAMAKRISHNAN COLLEGE OF ENGINEERING
(Autonomous)

TRICHY-621 112

DECEMBER 2024



K. RAMAKRISHNAN COLLEGE OF ENGINEERING
(Autonomous Institution affiliated to Anna University, Chennai)

TRICHY-621 112

BONAFIDE CERTIFICATE

Certified that this project report on “**LAND RECORD MANAGEMENT SYSTEM**” is the bonafide work of **SAMINATHAN S(8115U23ME038)** who carried out the project work during the academic year 2024 - 2025 under my supervision.

SIGNATURE

Dr. T. M. NITHYA, M.E.,Ph.D.,
HEAD OF THE DEPARTMENT
ASSOCIATE PROFESSOR
Department of CSE
K.Ramakrishnan College of
Engineering (Autonomous)
Samayapuram–621112.

SIGNATURE

Mrs.S.RAJESWARI M.E.
SUPERVISOR
ASSISTANT PROFESSOR
Department of CSE
K.Ramakrishnan College of Engineering
(Autonomous)
Samayapuram–621112.

Submitted for the End Semester Examination held on.....

INTERNAL EXAMINER

EXTERNAL EXAMINER



DECLARATION

I declare that the project report on “**LAND RECORD MANAGEMENT SYSTEM**” is the result of original work done by us and best of our knowledge, similar work has not been submitted to “**ANNA UNIVERSITY CHENNAI**” for the requirement of Degree of **BACHELOR OF ENGINEERING**. This project report is submitted on the partial fulfilment of the requirement of the completion of the course **MGB1201 – PYTHON PROGRAMMING**

Signature

SAMINATHAN S

Place: Samayapuram

Date:



ACKNOWLEDGEMENT

It is with great pride that I express our gratitude and in-debt to our institution “**K.Ramakrishnan College of Engineering (Autonomous)**”, for providing us with the opportunity to do this project.

I glad to credit honourable chairman **Dr. K. RAMAKRISHNAN, B.E.**, for having provided for the facilities during the course of our study in college.

I would like to express our sincere thanks to our beloved Executive Director **Dr. S. KUPPUSAMY, MBA, Ph.D.**, for forwarding to our project and offering adequate duration in completing our project.

I would like to thank **Dr. D. SRINIVASAN, B.E, M.E., Ph.D.**, Principal, who gave opportunity to frame the project the full satisfaction.

I whole heartily thanks to **Dr. T. M. NITHYA, M.E.,Ph.D.**, Head of the department, **COMPUTER SCIENCE AND ENGINEERING** for providing her encourage pursuing this project.

I express our deep expression and sincere gratitude to our project supervisor **Mrs.S.RAJESWARI M.E.**, Department of **COMPUTER SCIENCE AND ENGINEERING**, for his incalculable suggestions, creativity, assistance and patience which motivated us to carry out this project.

I render our sincere thanks to Course Coordinator and other staff members for providing valuable information during the course.

I wish to express our special thanks to the officials and Lab Technicians of our departments who rendered their help during the period of the work progress.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISION OF THE INSTITUTION

To achieve a prominent position among the top technical institutions

MISSION OF THE INSTITUTION

M1: To bestow standard technical education par excellence through state of the art infrastructure, competent faculty and high ethical standards.

M2: To nurture research and entrepreneurial skills among students in cutting edge technologies.

M3: To provide education for developing high-quality professionals to transform the society.

VISION OF THE DEPARTMENT

To create eminent professionals of Computer Science and Engineering by imparting quality education.

MISSION OF THE DEPARTMENT

M1: To provide technical exposure in the field of Computer Science and Engineering through state of the art infrastructure and ethical standards.

M2: To engage the students in research and development activities in the field of Computer Science and Engineering.

M3: To empower the learners to involve in industrial and multi-disciplinary projects for addressing the societal needs.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

Our graduates shall

PEO1: Analyse, design and create innovative products for addressing social needs.

PEO2: Equip themselves for employability, higher studies and research.

PEO3: Nurture the leadership qualities and entrepreneurial skills for their successful career.



PROGRAM OUTCOMES

Engineering students will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write



11. effective reports and design documentation, make effective presentations, and give and receive clear instructions.
12. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
13. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- **PSO1:** Apply the basic and advanced knowledge in developing software, hardware and firmware solutions addressing real life problems.
- **PSO2:** Design, develop, test and implement product-based solutions for their career enhancement.



ABSTRACT

The "Land Record Management System" is a Python-based project designed to streamline the management, storage, and retrieval of land-related records. This system addresses the challenges of manual land record maintenance, such as inefficiencies, errors, and data security concerns, by providing a digital solution. It offers features such as adding, updating, deleting, and searching land records, ensuring accurate and up-to-date information. The system is designed with a user-friendly interface and robust backend support, making it accessible to users with minimal technical expertise. It enhances data security, reduces redundancy, and improves the accessibility of land-related information. This project aims to digitize and modernize traditional land record management processes, contributing to more efficient and transparent record-keeping systems.



ABSTRACT WITH POs AND PSOs MAPPING

ABSTRACT	POs MAPPED	PSOs MAPPED
<p>The "Land Record Management System" is a Python-based project designed to streamline the management, storage, and retrieval of land-related records. This system addresses the challenges of manual land record maintenance, such as inefficiencies, errors, and data security concerns, by providing a digital solution. It offers features such as adding, updating, deleting, and searching land records, ensuring accurate and up-to-date information. The system is designed with a user-friendly interface and robust backend support, making it accessible to users with minimal technical expertise. It enhances data security, reduces redundancy, and improves the accessibility of land-related information. This project aims to digitize and modernize traditional land record management processes, contributing to more efficient and transparent record-keeping systems.</p>	<p>PO1 PO2 PO3 PO12</p>	<p>PSO1</p>

Note: 1- Low, 2-Medium, 3- High

SUPERVISOR/HEAD OF THE DEPARTMENT



TABLE OF CONTENTS

CHAPTER No.	TITLE	PAGE No.
	ABSTRACT	vi
1	INTRODUCTION	1
	1.1 Objective	1
	1.2 Overview	2
	1.3 python Programming concepts	3
2	PROJECT METHODOLOGY	4
	2.1 Proposed Work	4
	2.2 Block Diagram	6
3	MODULE DESCRIPTION	8
	3.1 add_land_record()	8
	3.2 view_land_records()	8
	3.3 update_ownership()	8
	3.4 delete_land_record()	9
	3.5 search_land_record()	9
4	RESULTS AND DISCUSSION	10
5	CONCLUSION	15
	REFERENCES	16
	APPENDIX	18



CHAPTER 1

INTRODUCTION

1.1 Objective

The primary objective of the "Land Record Management System" is to digitize and streamline the management of land-related data, eliminating the inefficiencies and inaccuracies of traditional manual record-keeping methods. By providing functionalities such as adding, updating, deleting, and searching records, the system ensures accurate and up-to-date information while minimizing the risks of human error. It offers a centralized platform that simplifies record management for administrators and improves accessibility for authorized users, thereby enhancing operational efficiency.

This system is designed with future scalability in mind, allowing integration with advanced technologies like Geographic Information Systems (GIS) and blockchain. GIS integration could enable visual mapping of land records, providing detailed geospatial insights for planning, development, and dispute resolution. Similarly, incorporating blockchain could ensure greater data security, immutability, and transparency, making the system more reliable for sensitive land-related transactions. These upgrades could address growing demands for more secure, transparent, and technology-driven land management solutions in the future.

The long-term vision for this project includes its application in government departments, real estate management, and urban planning. As a foundation for land digitization, it could serve as a stepping stone toward comprehensive e-governance platforms, facilitating streamlined property tax collection, legal verifications, and public access to land information. The system's adaptability ensures it can be enhanced to meet future challenges, making it a valuable asset for modernizing



land management processes.

1.2 Overview

The "Land Record Management System" is a Python-based project designed to modernize and simplify the process of managing land-related data. Traditionally, land records are maintained manually, leading to inefficiencies, errors, and limited accessibility. This project aims to digitize the process, offering a user-friendly interface for administrators to add, update, delete, and retrieve land records efficiently. By centralizing data, it ensures better organization, faster access, and improved reliability, making it a practical solution for individuals and organizations involved in land management.

The system employs robust backend functionality to handle large datasets securely and accurately. Designed to be accessible even for users with minimal technical expertise, it provides a straightforward yet effective platform for managing complex records. Advanced search and filtering options ensure that users can quickly retrieve the information they need, reducing time and effort compared to traditional methods. Its emphasis on data accuracy and consistency addresses long-standing issues like redundancy and outdated records.

This project is a step toward the broader goal of digital transformation in land management. It has potential applications in various fields, including real estate, government land administration, and urban planning. Furthermore, the system can be expanded in the future with advanced features like GIS integration for mapping and blockchain for enhanced data security and transparency. As land management becomes increasingly critical in growing urban and rural areas, this system provides a scalable and sustainable foundation for efficient record-keeping.



1.3 Python Programming Concepts

In the Land Record Management System, several key Python concepts are utilized to ensure smooth functionality. Functions are used to modularize tasks like updating ownership, deleting records, and searching for land details. Parameters are passed into these functions to perform dynamic operations based on user input. Strings are heavily used for prompts and error messages, while formatted strings display data dynamically. Conditional statements check query results and validate user input, ensuring proper execution. Loops, such as the while loop, maintain the menu interface, allowing users to repeatedly interact with the system. User inputs are gathered using the `input()` function, and results are displayed using `print()`.

The system also relies on the SQLite database, where SQL queries like `UPDATE`, `DELETE`, and `SELECT` manipulate the land records. Tuples are used in SQL queries to pass data securely and prevent SQL injection. Error handling is done by checking the number of affected rows, providing feedback if the operation fails. Data types such as strings for textual data (owner names, locations) and floats for numeric data (land area) ensure proper handling of user input. Although lists are not directly used, they could be beneficial for temporary storage of multiple records. These concepts work together to create an efficient, user-friendly system for managing land records.

Hence, we use structures such as functions, lists, strings, database, conditional statements, loops, input output, tuple, and datatypes.



CHAPTER 2

PROJECT METHODOLOGY

2.1 Proposed Work

The proposed work of the Land Record Management System aims to develop a comprehensive solution for managing land records efficiently. The system will provide users with an easy-to-use interface for adding, updating, deleting, and searching land records based on survey numbers. The key objective is to automate and streamline the process of managing land ownership, land area, and location details, ensuring accuracy and eliminating the need for manual paperwork.

In the proposed system, the backend will be built using SQLite, where all land records will be stored in a structured database format. This database will support key operations such as adding new records, updating ownership, deleting outdated records, and retrieving information based on user queries. A menu-driven interface will guide users through various options, and each task will be performed by executing SQL queries, ensuring data integrity and efficiency.

Additionally, the system will feature user-friendly input prompts for collecting relevant land information, such as owner details, land area, and survey number. Validation checks will be implemented to ensure that the correct data is entered, and informative messages will be provided for success or error cases (e.g., "Ownership updated successfully!" or "Record not found"). The project also aims to ensure scalability and flexibility, enabling future enhancements, such as generating reports or adding advanced features like geographic location mapping.



The system will also provide the option for users to perform CRUD (Create, Read, Update, Delete) operations seamlessly, with proper feedback provided for every action. By using this system, users can avoid traditional, manual land record management methods, reducing human error, and increasing the efficiency of land record tracking. This proposed work will lay the foundation for a more organized, scalable, and easily maintainable land record management solution.



2.2 Block Diagram

The flow diagram for the Land Record Management System begins with the user initiating the program and selecting an option from the menu. The system checks for the database setup to ensure it is ready for operations. If the setup is successful, the program proceeds to take user input, allowing them to choose actions such as adding a new land record, viewing existing records, updating ownership, deleting a record, or searching for a specific land record. Each of these options leads to corresponding database operations using SQL queries to manipulate the records, like inserting, updating, deleting, or retrieving data.

In cases where the user inputs an invalid option, the system will prompt for a valid choice again. If the input is valid, the respective operation is executed, and feedback is provided to inform the user about the success or failure of the operation. The system ensures continuous interaction with the user, looping back to the menu after each operation until the user chooses to exit. Throughout the process, the flow diagram represents the smooth interaction between user inputs, database actions, and appropriate feedback, ensuring a seamless and efficient experience for managing land records.

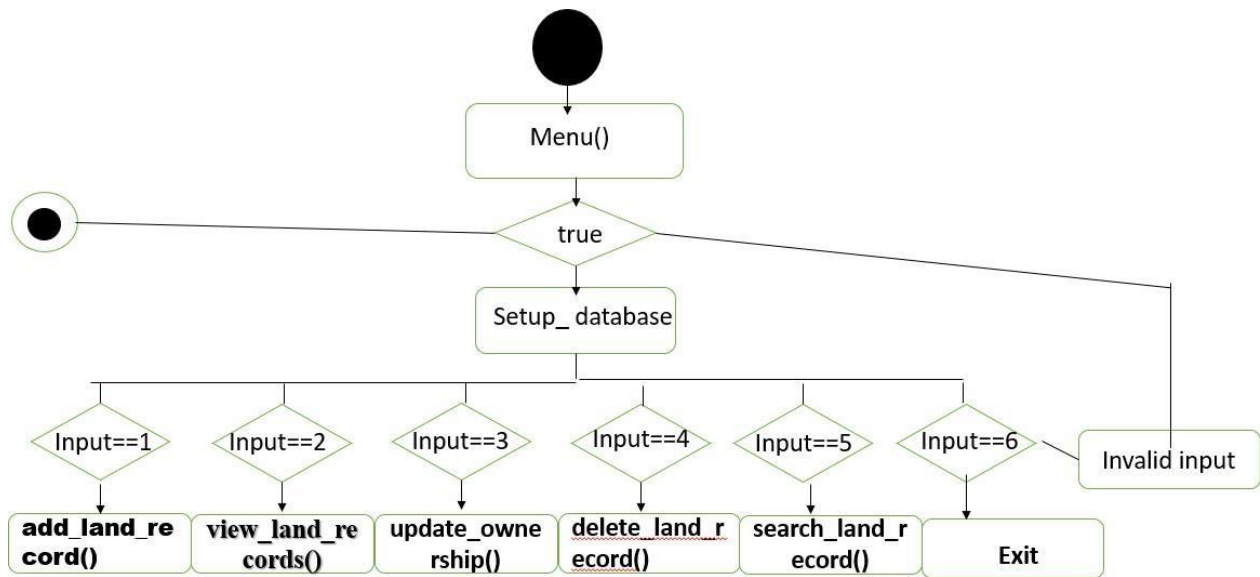


Fig : block diagram



CHAPTER 3

MODULE DESCRIPTION

3.1 Module 1: `add_land_record()`

The `add_land_record()` function inserts a new land record into the database using user-provided details like the owner's name, land area, location, and survey number. It constructs an SQL INSERT statement with these values and executes it to add the record to the `land_records` table. Upon successful insertion, the function provides feedback to confirm the action. If an error occurs, such as data integrity issues, the system notifies the user. This function ensures new records are properly stored for future retrieval or modification.

3.2 Module 2: `view_land_records()`

The `view_land_records()` function retrieves and displays all the land records stored in the database. It executes a simple SQL SELECT query to fetch all entries from the `land_records` table. Once the data is retrieved, the function iterates through the records and presents them to the user in a readable format. This allows the user to view the complete list of land records, including details such as the owner's name, land area, location, and survey number. If no records are found, the function will notify the user that the database is empty.

3.3 Module 3: `update_ownership()`

The ``update_ownership()`` function updates the ownership details of a land record in the database. It accepts the survey number and the new owner's name as inputs. The function constructs an SQL ``UPDATE`` query to change the ``owner_name`` in the ``land_records`` table



for the given survey number. After executing the query, it checks if any records were updated. If successful, a confirmation message is displayed; otherwise, the user is notified that no matching record was found for the provided survey number.

3.4Module 4: delete_land_record()

The delete_land_record() function deletes a land record from the database based on the given survey number. It takes the survey number as input and constructs an SQL DELETE query to remove the record from the land_records table. After executing the query, the function checks if any rows were affected. If the deletion is successful, a confirmation message is displayed; otherwise, the user is informed that no record was found for the given survey number.

3.5Module 5: search_land_record()

The search_land_record() function retrieves a specific land record from the database based on the provided survey number. It takes the survey number as input and executes an SQL SELECT query to find the record in the land_records table. If a matching record is found, the function displays the details of the land record, including the owner, area, location, and survey number. If no record is found, the user is informed that no matching record exists for the given survey number.



CHAPTER 4

RESULTS AND DISCUSSION

```
f2349@krce.ac.in ▾ Support Logo
CTP2813...
1 import sqlite3
2
3 def setup_database():
4     with sqlite3.connect("land_records.db") as conn:
5         conn.execute("""
6             CREATE TABLE IF NOT EXISTS land_records (
7                 survey_number TEXT PRIMARY KEY,
8                 owner_name TEXT NOT NULL,
9                 land_area REAL NOT NULL,
10                location TEXT NOT NULL
11            )
12            """)
13
14 def add_land_record(owner_name, land_area, location, survey_number):
15     with sqlite3.connect("land_records.db") as conn:
16         try:
17             conn.execute("""
18                 INSERT INTO land_records (survey_number, owner_name,
19                 land_area, location)
20                 VALUES (?, ?, ?, ?)
21                 """, (survey_number, owner_name, land_area, location))
22             print("Land record added successfully!")
23         except sqlite3.IntegrityError:
24             print("Error: Survey number already exists.")
```

```
f2349@krce.ac.in ▾ Support Logo
CTP2813...
25 def view_land_records():
26     with sqlite3.connect("land_records.db") as conn:
27         records = conn.execute("SELECT * FROM land_records").fetchall()
28         if records:
29             print("\n---Land Records---")
30             for record in records:
31                 print(f"Survey Number: {record[0]}, Owner: {record[1]},
32                 Area: {record[2]} sq. meters, Location: {record[3]}")
33             else:
34                 print("No land records found.")
35
36 def update_ownership(survey_number, new_owner):
37     with sqlite3.connect("land_records.db") as conn:
38         cursor = conn.execute("""
39             UPDATE land_records
40             SET owner_name = ?
41             WHERE survey_number = ?
42             """, (new_owner, survey_number))
43         if cursor.rowcount > 0:
44             print("Ownership updated successfully!")
45         else:
46             print(f"No record found for survey number {survey_number}.")
47
48 def delete_land_record(survey_number):
49     with sqlite3.connect("land_records.db") as conn:
```



```
f2349@krce.ac.in ▾ Support Logout

CTP2813... Submit

49 .....cursor*=conn.execute("DELETE FROM land_records WHERE
survey_number=?",*(survey_number,))
50 .....if cursor.rowcount>0:
51 .....print("Land record deleted successfully!")
52 .....else:
53 .....print(f"No record found for survey number {survey_number}.")
54
55 def search_land_record(survey_number):
56 .....with sqlite3.connect("land_records.db") as conn:
57 .....record*=conn.execute("SELECT * FROM land_records WHERE
survey_number=?",*(survey_number,)).fetchone()
58 .....if record:
59 .....print(f"Survey Number: {record[0]}, Owner: {record[1]},
Area: {record[2]} sq. meters, Location: {record[3]}")
60 .....else:
61 .....print(f"No record found for survey number {survey_number}.")
62
63 def menu():
64 .....setup_database()
65 .....while True:
66 .....print("\n--- Land Record Management System ---")
67 .....print("1. Add Land Record")
68 .....print("2. View All Land Records")
69 .....print("3. Update Ownership")
70 .....print("4. Delete Land Record")

Terminal Test cases
```

```
f2349@krce.ac.in ▾ Support Logout

CTP2813... Submit

70 .....print("4. Delete Land Record")
71 .....print("5. Search Land Record")
72 .....print("6. Exit")
73 .....choice*=input("Enter your choice:")
74 .....if choice=='1':
75 .....owner_name*=input("Enter owner name:")
76 .....land_area*=float(input("Enter land area (in sq. meters):"))
77 .....location*=input("Enter location:")
78 .....survey_number*=input("Enter survey number:")
79 .....add_land_record(owner_name, land_area, location,
survey_number)
80 .....elif choice=='2':
81 .....view_land_records()
82 .....elif choice=='3':
83 .....survey_number*=input("Enter survey number to update
ownership:")
84 .....new_owner*=input("Enter new owner's name:")
85 .....update_ownership(survey_number, new_owner)
86 .....elif choice=='4':
87 .....survey_number*=input("Enter survey number to delete:")
88 .....delete_land_record(survey_number)
89 .....elif choice=='5':
90 .....survey_number*=input("Enter survey number to search:")
91 .....search_land_record(survey_number)
92 .....elif choice=='6':
```



```
92  v .....elif choice == '6':  
93  .....print("Exiting the system. Goodbye!")  
94  .....break  
95  v .....else:  
96  .....print("Invalid choice. Please try again.")  
97  
98  menu()
```




Result:

```
f2349@krce.ac.in ▾  
CTP2813...  
76 .....land_area==float(input("Enter land area (in sq.  
77 .....location==input("Enter location: ")  
78 .....survey_number==input("Enter survey number: ")  
79 .....add_land_record(owner_name, land_area, location,  
survey_number)  
80 .....elif choice== '2':  
81 .....view_land_records()  
82 .....elif choice== '3':  
83 .....survey_number==input("Enter survey number to up  
ownership: ")  
84 .....new_owner==input("Enter new owner's name: ")  
$ python CTP28132.py name  
--- Land Record Management System ---  
1. Add Land Record  
2. View All Land Records  
3. Update Ownership  
4. Delete Land Record  
5. Search Land Record  
6. Exit  
Enter your choice: 1  
Enter owner name: asan  
Enter land area (in sq. meters): 4200  
Enter location: trichy  
Enter survey number: 12345  
Land record added successfully!  
Enter input:
```



f2349@krce.ac.in ▾ Support **Logout**

CTP2813... Submit

```
1  import sqlite3
2
3  v def setup_database():
4  v     ....with sqlite3.connect("land_records.db") as conn:
5     .....conn.execute("""
6     .....CREATE TABLE IF NOT EXISTS land_records (
7     .....survey_number TEXT PRIMARY KEY,
8     .....owner_name TEXT NOT NULL,
9     .....land_area REAL NOT NULL,
10     .....location TEXT NOT NULL
11     .....)
```

```
4. Delete Land Record
5. Search Land Record
6. Exit
Enter your choice: 2

--- Land Records ---
Survey Number: 12345, Owner: asan, Area: 4200.0 sq. meters, Location: trichy

--- Land Record Management System ---
1. Add Land Record
2. View All Land Records
3. Update Ownership
4. Delete Land Record
5. Search Land Record
6. Exit
```




CHAPTER 5

CONCLUSION

The Land Record Management System project successfully addresses the challenges of managing land records by providing a user-friendly, efficient, and organized platform for maintaining and updating land data. By incorporating features such as adding, viewing, updating, deleting, and searching land records, the system ensures seamless data management and easy access to critical information. The use of SQLite as the database backend allows for secure and reliable storage of land details, such as owner information, land area, location, and survey numbers. The implementation of these functionalities enhances the accuracy and speed of land record management, reducing the dependency on manual processes.

In the future, this project could be further enhanced by integrating additional features such as cloud storage for data accessibility across different locations, user authentication for secure access, and more advanced search capabilities. Moreover, expanding the system to include mapping and geospatial information could further improve the functionality, providing a more comprehensive land management solution. Overall, this system provides a robust foundation for efficient land record management and can be adapted for larger-scale implementation in various regions.



REFERENCES:

SQLite Documentation SQLite Database. (n.d.). Retrieved from <https://www.sqlite.org/docs.html>

- This is the official documentation for SQLite, providing detailed explanations on how to use and manage databases effectively.

Python Official Documentation Python Software Foundation. (n.d.). Python Documentation.

Retrieved from <https://docs.python.org/>

- The official Python documentation includes in-depth explanations on libraries like sqlite3 and various Python features used in the project.

Database Management Systems: Concepts and Design Date, C. J. (2004). *Database Management Systems: Concepts and Design* (3rd ed.). Pearson Education.

- A textbook offering foundational knowledge on database management, including relational database design and SQL queries.

Building Web Applications with Python and SQLite Pradeep Gohil. (2018). *Building Web Applications with Python and SQLite*. Packt Publishing.

- This book focuses on web development using Python and SQLite, which can be useful if you want to expand your project to a web-based application in the future.

Land Record Management Systems hah, S. M., & Sharma, S. (2017). *Land Records Management System: A Case Study and Its Implementation*. International Journal of Computer Science and Information Technology.

- A research paper discussing the concepts, challenges, and implementation of land record management systems.

Python for Data Science Handbook VanderPlas, J. (2016). *Python Data Science Handbook*. O'Reilly Media.



- A helpful resource if you intend to integrate more data analysis or machine learning features into your system in the future.

Geospatial Information Systems (GIS) and Land Records Gupta, P. (2019). *Geospatial Information Systems and Land Records: Applications in Urban Planning*. Springer.

- This book explores the integration of GIS with land records management, which can be a potential future enhancement for your system.



APPENDIX

(Coding)

```
import sqlite3

with sqlite3.connect("land_records.db") as conn:

    cursor = conn.execute("""

UPDATE land_records

SET owner_name = ?

WHERE survey_number = ?

""", (new_owner, survey_number))

if cursor.rowcount > 0:

    print("Ownership updated successfully!")

else:

    print(f"No record found for survey number {survey_number}.")


def delete_land_record(survey_number):

    with sqlite3.connect("land_records.db") as conn:

        cursor = conn.execute("DELETE FROM land_records WHERE survey_number =

        ?", (survey_number,))

    if cursor.rowcount > 0:

        print("Land record deleted successfully!")

    else:

        print(f"No record found for survey number {survey_number}.")
```



```
def search_land_record(survey_number):  
    with sqlite3.connect("land_records.db") as conn:  
        record = conn.execute("SELECT * FROM land_records WHERE survey_number =  
                                ?", (survey_number,)).fetchone()  
        if record:  
            print(f"Survey Number: {record[0]}, Owner: {record[1]}, Area: {record[2]} sq.  
                  meters, Location: {record[3]}")  
        else:  
            print(f"No record found for survey number {survey_number}.")  
  
def menu():  
    setup_database()  
    while True:  
        print("\n--- Land Record Management System ---")  
        print("1. Add Land Record")  
        print("2. View All Land Records")  
        print("3. Update Ownership")  
        print("4. Delete Land Record")  
        print("5. Search Land Record")  
        print("6. Exit")  
        choice = input("Enter your choice: ")  
        if choice == '1':  
            owner_name = input("Enter owner name: ")  
            land_area = float(input("Enter land area (in sq. meters): "))  
            location = input("Enter location: ")
```



```
survey_number = input("Enter survey number: ")

add_land_record(owner_name, land_area, location, survey_number)

elif choice == '2':

view_land_records()

elif choice == '3':

survey_number = input("Enter survey number to update ownership: ")

new_owner = input("Enter new owner's name: ")

update_ownership(survey_number, new_owner)

elif choice == '4':

survey_number = input("Enter survey number to delete: ")

delete_land_record(survey_number)

elif choice == '5':

survey_number = input("Enter survey number to search: ")

search_land_record(survey_number)

elif choice == '6':

print("Exiting the system. Goodbye!")

break

else:

print("Invalid choice. Please try again.")

menu()
```



\$ python CTP28132.py name

- Land Record Management System

1. Add Land Record
2. View All Land Records
3. Update Ownership
4. Delete Land Record
5. Search Land Record
6. Exit

Enter your choice: 1

Enter owner name: asan

Enter land area (in sq. meters) : 4200

Enter location: trichy

Enter survey number: 12345

Land record added successfully!

- Land Record Management System

1. Add Land Record
2. View All Land Records
3. Update Ownership
4. Delete Land Record
5. Search Land Record
6. Exit

Enter your choice: 2

Land Records --

Survey Number: 12345, Owner: asan, Area: 4200.0 sq. meters, Location: trichy