Annexure 1

Project Report

On

**Student Record Management System (SQLite)**

Submitted

In Partial Fulfilment of

**BACHELOR OF COMPUTER APPLICATIONS (BCA)**

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**Annexure 2**

**Declaration**

I do hereby declare that this project work entitled “Student Record Management System (SQLite)” submitted by me for the partial fulfillment of the requirement for the award of **MASTER OF COMPUTER APPLICATIONS** is a record of my own work. The report embodies the finding based on my study and observation and has not been submitted earlier for the award of any degree or diploma to any Institute or University.

**SIGNATURE**

Name: Ayush Das

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Date:07/07/2025

Annexure 3

**Certificate from the Guide**

This certifies that Mr. Ayush Das (24/SCA/BCA(AI&ML)/012) completed the project report titled "Student Record Management System (SQLite)" under my supervision in order to partially fulfil the requirements for the degree of **BACHELOR OF COMPUTER APPLICATIONS** at Manav Rachna International Institute of Research and Studies, Faridabad.

Signature of the Guide

Name: Dr. Shruti Gupta

Date: 07.7.25

**Head of Department**

**Prof. Dr. Suhail Javed Quraishi**

**ACKNOWLEDGEMENT**

I gratefully acknowledge for the assistance, cooperation, guidance and clarification provided by Ms./Mr. Shruti Gupta during the development of Student Record Management System (SQLite). My extreme gratitude to **Dr. Raj Kumar, Associate Professor & TPO** who guided us throughout the project. Without his willing disposition, spirit accommodation, frankness, timely clarification and above all faith in us, this project could not have been completed in due time. His readiness to discuss all important matters at work deserves special attention of.

I would like to extend my sincere gratitude to **Prof. (Dr.) Suhail Javed Quraishi – HOD, Prof. (Dr.) Rashmi Agrawal – Associate Dean and Prof. (Dr.) Brijesh Kumar – Dean** for their valuable teachings and advice. I want to thank all the department faculty members for their cooperation and support. I want to thank non-teaching staff of the department for their cooperation and support.

This opportunity is a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, to attain desired career objectives. I hope to continue cooperation with all of you in the future.

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1. **INTRODUCTION**

This project titled “Student Record Management System” is a simple yet practical application built using Python and SQLite. It is designed to manage basic student records in a structured and organized way. The system allows users to perform CRUD (Create, Read, Update, Delete) operations through a command-line interface.

Python was chosen due to its simplicity and powerful built-in libraries, and SQLite was selected as the database for lightweight and local data storage.

1. **OBJECTIVES**

* Develop a basic student management application using Python.
* Perform standard database operations like add, view, search, update, and delete.
* Implement a simple CLI interface for user interaction.
* Practice using the sqlite3 module in Python for database management.
* Build a project suitable for academic submission and real-world demonstration.

1. **TOOLS & TECHNOLOGIES USED**

* Programming Language: Python 3.x
* Database: SQLite
* Module: sqlite3
* IDE/Editor: Visual Studio Code / PyCharm / IDLE
* Platform: Cross-platform (Windows/Linux/Mac)

1. **SYSTEM DESIGN OVERVIEW**

The system is a console-based application. It displays a menu with the following options:

1. Add Student
2. View All Students
3. Search Student
4. Update Student
5. Delete Student
6. Exit

The student data includes:

* Roll Number (Primary Key)
* Name
* Branch

All records are stored in a SQLite database file named student.db.

1. **FUNCTIONALITIES IMPLEMENTED**

a. Add Student

* Takes user input and inserts the new record into the SQLite database.
* Checks for duplicate roll numbers (as it's the primary key).

b. View All Students

* Displays a list of all students currently stored in the database.

c. Search Student

* Allows searching for a student by roll number and displays the record if found.

d. Update Student

* Allows updating name and branch by entering an existing roll number.

e. Delete Student

* Removes a student record from the database based on roll number.

1. **SAMPLE CODE SNIPPET**

Using sqlite3 module to insert a new student:

import sqlite3  
conn = sqlite3.connect('student.db')  
c = conn.cursor()  
c.execute("INSERT INTO students (roll, name, branch) VALUES (?, ?, ?)", (roll, name, branch))  
conn.commit()

1. **OUTPUT (EXAMPLE)**

==== Student Record System ====

1. Add Student
2. View All Students
3. Search Student
4. Update Student
5. Delete Student
6. Exit

Enter choice (1-6): 1  
Enter Roll Number: 101  
Enter Name: Anjali  
Enter Branch: CSE  
Student added successfully!

1. **LEARNING OUTCOMES**

* Gained hands-on experience in Python programming.
* Learned how to use SQLite as a backend for storing data.
* Understood the basics of CRUD operations and database management.
* Applied problem-solving and modular coding practices.

1. **FUTURE SCOPE**

* Add GUI using Tkinter for a better user interface.
* Upgrade to a web-based version using Flask or Django.
* Add validation, error handling, and export features (CSV/PDF reports).
* Implement login authentication for admin access.

1. **CONCLUSION**

This mini project successfully demonstrates how Python can be used to develop simple database-driven applications. It is a practical implementation of CRUD operations using SQLite and showcases a real-world use case of managing records in a lightweight and efficient manner.

1. **BIBLIOGRAPHY**

The following resources were referenced and consulted during the development of this project:

1. GeeksforGeeks Python Tutorials  
   <https://www.geeksforgeeks.org/python-programming-language>
2. Python Official Documentation – sqlite3  
   <https://docs.python.org/3/library/sqlite3.html>
3. W3Schools – Python SQLite Tutorial  
   <https://www.w3schools.com/sql/sql_python.asp>
4. Stack Overflow – Community Discussions and Solutions  
   <https://stackoverflow.com/>
5. TutorialsPoint – Python Database Access  
   <https://www.tutorialspoint.com/sqlite/sqlite_python.htm>
6. Real Python – Working with SQLite in Python  
   <https://realpython.com/python-sql-libraries/>
7. SQLite Official Documentation  
   <https://www.sqlite.org/docs.html>

These sources provided guidance on Python syntax, database operations, and programming best practices.