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**School of Computer Sciences & Engineering**

**Department of Computer Science & Application**

**Field Project Synopsis**

**On**

# ‘Library Management System’

# By

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Under the Guidance of

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**Abstract**

**A Library Management System is a system that is used to maintain the records of the library. It contains work like the number of the available books, the number of books issued, the number of books to return or renew, add new book, delete a book. It helps to maintain a database that is useful to enter new books and records of books borrowed by the members with the respective submission dates. It will reduce the manual work done by the librarian to maintain the record of the library. It allows maintaining the resources in a more operative manner that will help to save the time. It is also convenient for the librarian to manage the process of books allocation. It is useful for students as well as a librarian to keep the constant track of the availability of all books in a library.**

**Introduction**

**A Python and SQL library management system (LMS) is helps to manage a library's daily operations. It can help with tasks like:**

* **Adding, updating, viewing, and removing books**
* **Issuing and returning books**

**This intermediate project is user-friendly and allows users to add, delete, view, issue, and return books. The project uses Python coding to interface with a MySQL database for storing and accessing book inventory It uses the free software’s like Python 3.13 and MySQL. This makes it cost effective.**

**To create a library management system in Python, you can install the MySQL connector using the command prompt. You'll also need to create two SQL tables: one for books and one for issue details. Thus, it will help organization in better utilization of resources.**

**Technologies Used:**

* **Python: The core programming language used for the development of the Library Management System.**
* **MySQL Database: The database management system used to store and manage library-related data.**
* **MySQL Connector: A Python library to facilitate connectivity between the Python application and the MySQL database.**

**System Architecture**

**The architecture of a Library Management System (LMS) built using Python and SQL**

**Hardware & Software requirements**

**Software Requirements:**

**MySQL server:**

**MySQL server must be installed in computer. It will be used for accessing data of project. Tables will be made in server in which data will be stored.**

**Python IDLE:**

**Python IDLE must be installed in computer. It will be used for executing python scripts.**

**mysql.connector:**

**It will connect python IDLE with MySQL server. To install it open cmd and write ‘pip installmysql.connector’.**

**Hardware Requirements:**

**Computer must be of 500 gb hard-disk, Intel i5 processor and 8gb ram (minimum) or**

**AMD RYZEN 5 - 8 GB RAM SDD Capacity 512GB**

**Conclusion**

**In conclusion, the Library Management System (LMS) developed using Python and MySQL provides an efficient and user-friendly solution for managing library operations. By automating key tasks such as adding, updating, issuing, and returning books, the system significantly reduces the manual workload of librarians, allowing them to focus on more critical aspects of library management. The integration of a MySQL database ensures reliable data storage and easy access to information regarding book inventory and borrowing activities.**

**This project not only enhances the operational efficiency of libraries but also improves the experience of library users, enabling them to easily check the availability of books and manage their borrowing activities. The use of widely available technologies like Python and MySQL makes this system cost-effective and accessible for libraries of various sizes.**

**Overall, the Library Management System stands as a valuable tool that contributes to the effective organization and utilization of library resources, fostering a more conducive environment for learning and knowledge acquisition. Future enhancements could include features such as online access for users, advanced search functionalities, and integration with digital resources, further expanding the capabilities of the Library Management System.**

**References**

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* **Date, C. J. (2004). *An Introduction to Database Systems*.**
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[**https://www.python.org/**](https://www.python.org/)

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