# 

**Name: ARBAZ AMEER KHAN**

**Roll-Number: 20F-0270**

**Section: 4C**

**Class:** **DATABASE LAB**

**FINAL PROJECT**

**Library Management System**

**Tools Used:**

* **Oracle 21c**
* **C# Windows Forms**
* **Lucid App**

A library management system is software that is designed to manage all the functions of a library. It helps librarian to maintain the database of new books and the books that are borrowed by members along with their due dates. This system completely automates all your library's activities.

I have created this program to automate most of the necessity things done in the library.

This program is created as part of my project for the database system’s lab. It includes all the know how’s of the database management. The server choice was oracle as it was made mandatory by the lab instructor, and language choice was C# the reason for choosing this specific language was its efficiency and they way windows forms are created with such automation.

I used a library called GunnaUI2 to add most of the frills in my project. I opted for the most minimalistic design for my project for that I purchased many things for it ranging from loading screen animations to icons used in this program.

To make my UI seamless I used the relationship called Mdi parent-child forms, the purpose of using this was to open forms within forms so that UI does not look disrupted. This did increase the work load as it was a difficult thing to be done but the end result it gave was very efficient.

Small kinck-knacks were kept in consideration such as when user enters the program he enters password and email, by doing so will show his name on the USER\_ADMIN\_PANEL.

I also added a very unique feature in this program that is the feedback system, which uses GMAIL’s API to record the feedback weather it is from user to administration or admin to the user and all of this will be sent/recorded via email

Using this API taught me a lot about the computer network as while implementing it my computer’s port was blocked.

Database used is ORACLE 21c, I opted for the most latest version of oracle which seemed risky at start of the project but turned out to be the best decision as there was ton of support regarding errors on internet, integration of the ORACLE SQL DEVELOPER from making a database to integrating it with C# very efficient.

**The EERD** I used for the project is:

![Diagram

Description automatically generated]()

**![Text

Description automatically generated]()![A screenshot of a video game

Description automatically generated with medium confidence]()![Chart, bar chart

Description automatically generated]()**