**Library management system**

**Project Description:** This project is a compact Library Management System, tracking book details (ID, name, price), differentiating between Premium and Basic types. It also manages employee data, including personal and work details. The system ensures security with straightforward login, authorization, and reporting features. Testing and documentation guarantee reliability, with future scalability in mind.

The Premium books cannot be rented but come with a discount percentage, while Basic books can be rented but do not have any associated discount percentage.

**Project modules and feature:**

**1. User Authentication**

1. Login
2. Register
3. Exit

**2. Modules**

* Librarian account (Manage book information)
* Manager account (Manage librarian information)

**3. Project Features**

* Librarian account: Manage book information (Include premium and basic book)
  + Add new book
  + Update book
    - * Update by ID
      * Update by name
  + Delete book
    - Delete by ID
    - Delete by name
  + Search book
    - Search by ID
    - Search by name
  + Sort book
    - Sort by ID
      * Ascending
      * Descending
    - Sort by name
      * Ascending
      * Descending
  + Display all book detail
    - Premium book
      * ID
      * Name
      * Price
      * Discount percentage
    - Basic book
      * ID
      * Name
      * Price
      * Fee
  + Save: Save data in the memory
* Manager account: Manage librarian information
  + Add new librarian information
  + Update librarian information
    - Update by ID
    - Update by name
  + Delete librarian information
    - Delete by ID
    - Delete by name
  + Search librarian information
    - Search by ID
    - Search by name
  + Sort librarian information
    - Sort by ID
      * Ascending
      * Descending
    - Sort by name
      * Ascending
      * Descending
  + Calculate librarian wage
    - Calculate by ID
    - Calculate by name
  + Display librarian information
    - ID
    - Name
    - Wage
  + Save: Save data in the memory

**Book Information Validation:**

ID: Integer, 3 digits (1-999)

Name: String, maximum 30 characters

Price: Double, maximum $10,000

**Librarian Information Validation:**

ID: Integer, 3 digits (1-999)

Name: String, maximum 30 characters

Wage ($/day): Double, maximum $10,000

**Security Validation:**

Username: String, no spaces, maximum 30 characters

Password: String, no spaces, maximum 30 characters

**Premium Book Account:**

Books cannot be rented but have a discount percentage.

Fields: ID, Name, Price, Discount Percentage: double, max $10,000

**Basic Book Account:**

Books can be rented but do not have a discount percentage.

Fields: ID, Name, Price, Fee: double, max $10,000

**Logical design**

A diagram of a company

Description automatically generated

**Physical design**

“” mean a message to the user

\*\* mean displaying information

A screenshot of a computer screen

Description automatically generatedA screenshot of a computer screen

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a chat

Description automatically generated A screenshot of a computer screen

Description automatically generated