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Course Title : Programming Fundamental

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Report Name : Library Management System

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**PROJECT REPORT**

[ Library Management System ]

**INTODUCTION**

This Library Management System is a C++ program that helps manage books efficiently. It allows user to:

1. Browse categories and subcategories of books.

2. Issue book for 2 days with a fixed charge.

3. Calculate late fine if books are returned after 2 days.

4. Prevent multiple issuances before returning a book.

This program ensures an organized book management experience using C++ programming concepts.

**FEATURES AND FUNCTIONALITIES**

Categories & Subcategories

The system allows users to select a category and then choose a subcategory to view available books.

**Category**: Urdu literature

English literature

**Subcategories**:

1. Urdu Poetry

2. Urdu Novels

**Books in Urdu Poetry:**

"Diwan-e-Ghalib" by Mirza Ghalib

"Kulliyat-e-Iqbal" by Allama Iqbal

"Shah Jo Risalo" by Shah Abdul Latif Bhittai

**Books in Urdu Novels:**

"Umrao Jaan Ada" by Mirza Hadi Ruswa

"Mirat-ul-Uroos" by Deputy Nazir Ahmed

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**Book Issuing System**

Users can issue a book for 2 days with a fixed fee of $10 per book.

The system records the issue date for tracking returns.

**Late Fine System**

If a book is returned after 2 days, the system calculates the fine automatically.

Late Fine: $5 per extra day.

**Return & Multiple Issuing Prevention**

A book must be returned first before it can be issued again.

The system ensures a book is not issued twice until it is returned.

**User-Friendly Menu System**

Users can:

1. Browse categories and books

2. Issue a book

3. Return a book

4. Exit the system

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**TECHNOLOGIES USED**

This project is built using C++ and implements:

Structures & Vectors to manage books and categories

Functions for book display, issuing, and returning

Time Handling (ctime) to track issue and return dates

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**SAMPLE OUTPUT**

Issuing a Book:

Welcome to the Library Management System

1. Browse Categories

2. Exit

Choose an option: 1

Categories:

1. Urdu Literature

Choose a category: 1

Subcategories:

1. Urdu Poetry

2. Urdu Novels

Choose a subcategory: 1

1. View Books

2. Issue a Book

3. Return a Book

Choose an option: 2

Enter the number of the book to issue: 1

Book 'Diwan-e-Ghalib' issued successfully!

Charge: $10

Return within 2 days to avoid fines.

Returning a Book (Late by 2 Days):

Enter the number of the book to return: 1

Book returned late by 2 days. Fine: $10

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**CONCLUSION**

This Library Management System provides a complete book issuing and return management solution using C++. The program ensures proper book organization, late fine calculations, and secure book issuance.

**\*\*\*\*\*\*\***BEST OF LUCK**\*\*\*\*\*\*\***