FINAL PROJECT HANDBOOK

PROGRAMMING ADV TOPICS IN PROGRAMMING

Survival Guide For DJJJ

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Course: PROG 2200 – Adv Topics In Programming

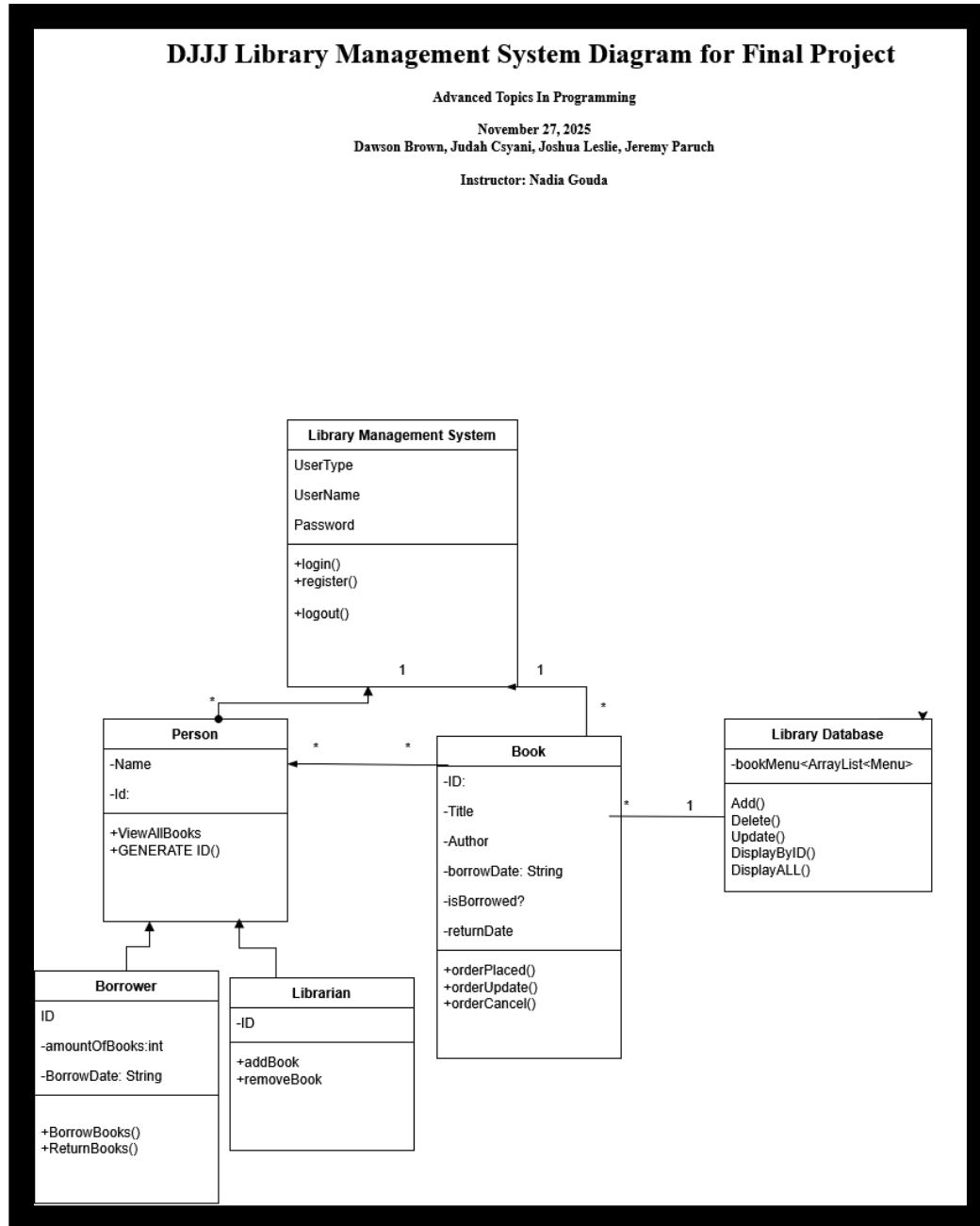**Instructor:** Nadia Gouda

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Project Idea Selection

We are doing a Library Borrowing Tracking System.

This idea was amongst us based past familiarity and comfortability with implementing the

logic behind a system with this amount of sophistication,

OOP Planning Structure

Hierarchy diagram

DJJJ Library Management System Diagram for Final Project

Advanced Topics In Programming

November 27, 2025
Dawson Brown, Judah Csyani, Joshua Leslie, Jeremy Paruch

Instructor: Nadia Gouda

Library Management System

UserType

UserName

Password

+login()
+register()

+logout()

1   1

*   *

Person

-Name

-Id:

+ViewAllBooks
+GENERATE ID()

*   *

Book

-ID:

-Title

-Author

-borrowDate: String

-isBorrowed?

-returnDate

+orderPlaced()
+orderUpdate()
+orderCancel()

*   1

Library Database

-bookMenu<ArrayList<Menu>

Add()
Delete()
Update()
DisplayByID()
DisplayALL()

Borrower

ID

-amountOfBooks:int

-BorrowDate: String

+BorrowBooks()
+ReturnBooks()

Librarian

-ID

+addBook
+removeBook

One Page Explanation

Main Purpose

The main purpose of the Library Management System is to demonstrate our knowledge and understanding of the advanced topics in OOP ,The library management system is an exemplary project. As it's primary function is to organize, track and remind librarians and borrowers of what books are currently available and unavailable.

Target users

The target users are everyone that is registered into the library management system. This involves librarians and "borrowers", in this context are individuals who are successful applicants and are allowed to borrow as many books as they wish from the library. Librarians are individuals who posses the administrative rights to add, remove and update books as they deem necessary for their role.

Major Components

The major components to this project are the following:

"Library DB"," Login System", "Menu for Viewing Books", "Status of Books", and lastly "Overdue Books".

Expected features

We are implementing the following features for this project:

"Current borrowed books", "All available books",

How logic and events will work

This is an example of how we are thinking the logic will work for this project:

If book is available { show as available}

Else { book is not available}

If person tries to borrow {protect with user login}.

We are very confident that this logic is sound and from a high level perspective understandable in regard to what is being communicated effectively for how this system will function.

The Group Policy (Ethos)

Commitment to Participation

We will make an effort to contribute equally to our projects by attending meetings and fulfilling our responsibilities in tasks.

Respect and Communication

We aim to promote open and respectful communication so that every team member feels comfortable sharing their ideas, concerns, and feedback.

Accountability

Each of us is accountable for completing our assigned tasks in a timely manner. If an unexpected situation arises, it's essential to inform the team early and collaborate on finding a solution.

Quality

Our goal is to deliver high-quality work instead of hurrying, as rushing could lead to errors.

Support

We will actively support each other by sharing our knowledge and offering help when someone is facing difficulties.

The Group Policy Continued (Ethos)

Conflict Resolution

In the event of disagreements, team members should tackle conflicts with a focus on solutions and aim for a compromise; if this fails, faculty intervention may be necessary.

Transparency

We will keep each other informed and updated on our progress regarding the projects.

Work-Life Balance

We will strive to avoid overworking ourselves and acknowledge the significance of taking breaks.

Decision-Making Process

We will conduct group votes before making decisions. The majority will decide; in the case of a tie, the designated tiebreaker will make the final decision on the course of action.

Who is taking care of what?

Dawson

Backend Developer

Jeremy

Testing and Documentation

Josh

UI or integration specialist

Judah

Backend Developer

- This project is a an overall contributive effort of all members involved. **All members assist in other roles as needed, there is to be expected crossover as required.**