



De La Salle University- Manila
Gokongwei College of Engineering



LBYCPA1
Programming Logic and Design Laboratory

Project Proposal

IMPL

Renzo Lance Villaluz
Vladimir Noel P. Ramos

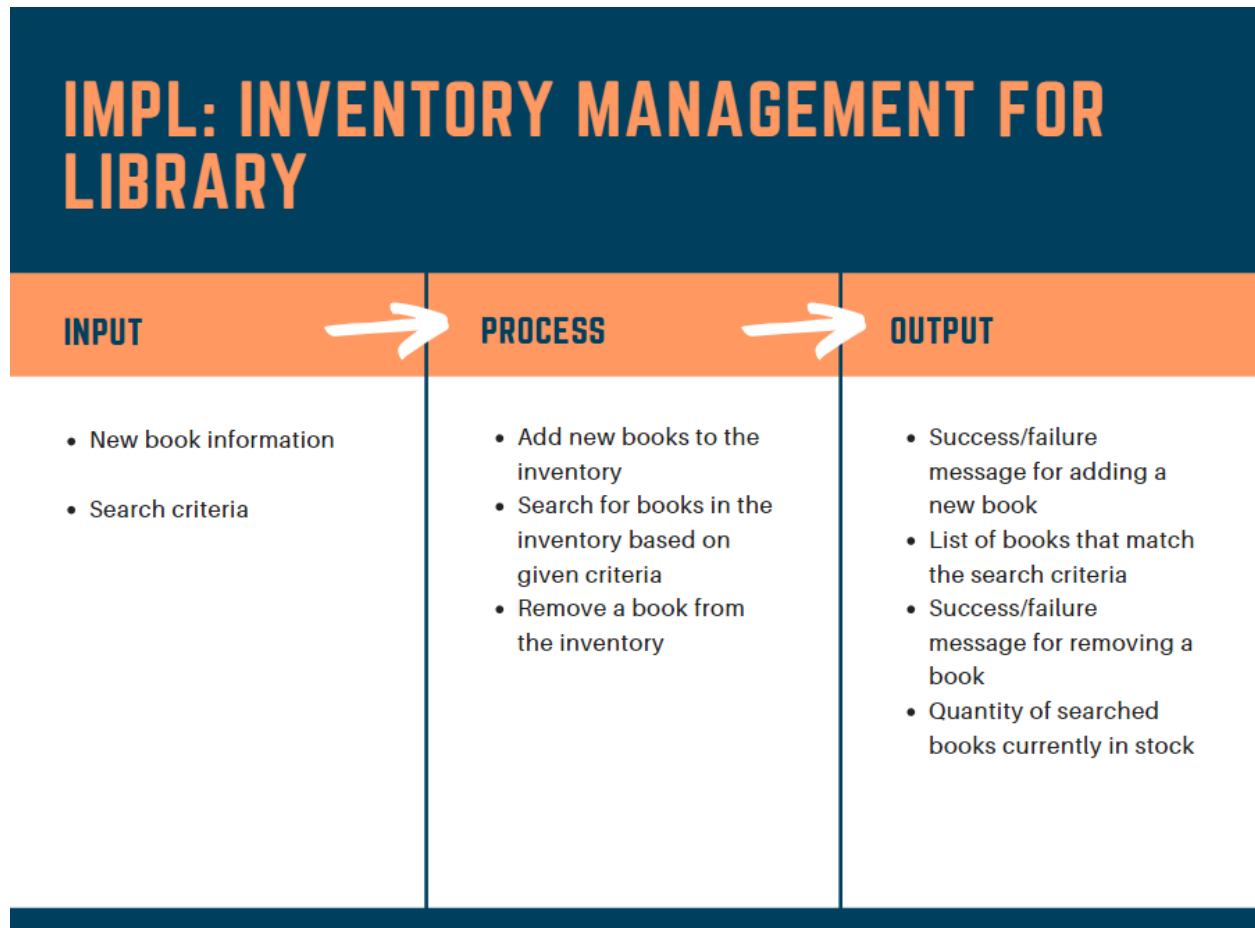
Project Description

The goal of the project is to create a Python program that gives librarians the resources they need to effectively manage their book inventory, including the ability to add, search for, and remove books. The application will also show the library's current book stock availability. This program aims to lessen librarians' burden and boost the effectiveness of book inventory management.

The technical goal of this project is to develop a user-friendly interface with functionalities to add, search, and remove books from the library while accurately managing the books there. JupyterLab, an open-source web-based interactive development environment (IDE) that offers a versatile and potent platform for data science projects, would be used to construct the program.

IPO

IPO model:



Explanation:

The data or information that the program needs to obtain from the user or system are included in the IPO's Input component. This would contain details about new books. Also, the program

should be able to take a book for inventory removal, and the user should be able to enter search parameters based on what task the user intends to do.

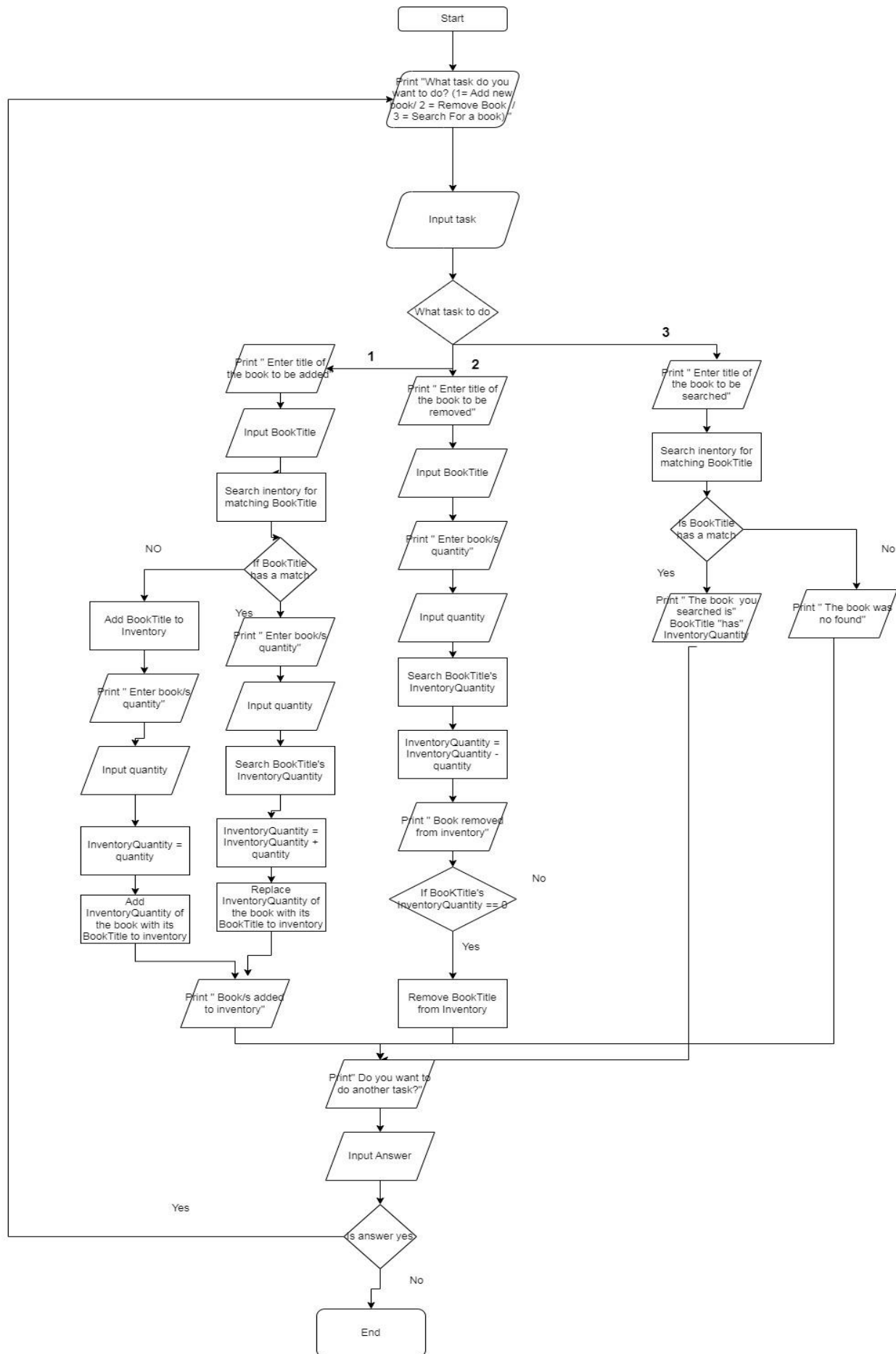
The program will utilize to process the input data and create the desired output referred to as the process component of the IPO. The process component involves adding new books to the inventory by creating a new record in the book database, searching for books in the inventory based on the given search criteria and displaying the search results, removing a book from the inventory.

The results that the program will generate after processing the input are represented by the output component of the IPO. A list of books that meet the criteria, the quantity of the searched book/s that are currently in the inventory, and success/failure signals for adding a new book to the inventory or removing a book from the inventory would all be included in the program's output section.

Methodology

To begin a project, it's important to first thoroughly analyze the problem that needs to be solved. Once the problem has been clearly defined, the next step is to create an algorithm, pseudocode, and a flowchart to guide the construction of the code. This will help to ensure that the code is well-organized and efficient.

Lastly, the code can then be written after the algorithm, pseudocode, and flowchart have been created. Throughout the coding process, it's critical to refer back to the earlier steps to make sure the code is being written in line with the plan. Once the code has been written, it is essential to polish it and look for any potential problems or errors. This could entail evaluating the code and making any adjustments required to increase functionality.



. Include a description of Python concepts that will be used to develop the project.

1. Classes
 - The program uses two classes: book and inventory. Book represents a single book with its attributes such as the title and quantity, while inventory represents a collection of books with methods to manipulate the collection.
2. Methods
 - Functions that are defined within a class and operate on its objects. The inventory class has methods to add, remove, search, and display books in the inventory.
3. Control Flow
 - The program uses control flow statements such as elif, else, and if to control the program's logic based on the user's input.
4. Loops
 - The program uses a while loop to allow the user to perform multiple actions on the inventory until they choose to exit the program.
5. Input & Output
 - The program uses the input function to take user input and the print function to display output to the user.
6. List Comprehension
 - The program uses list comprehension to search for matching books based on the user's search term.

Schedule of Activities

Creating Problem for the Project	Ramos	March 2, 2023
Project Proposal	Ramos and Villaluz	March 16, 2023
IPO	Villaluz	March 16, 2023
Flowchart	Ramos	March 16, 2023
Algorithm	Ramos	March 16, 2023
Pseudocode	Villaluz	March 16, 2023
Coding	Ramos and Villaluz	March 30, 2023
Debugging and Polishing of code	Ramos and Villaluz	March 31, 2023
Final Project	Ramos and Villaluz	April 1, 2023

References

Jupyterlab, Draw.io