

## ONT412 Assignment

Due Date 24<sup>th</sup> October **before 23:55**

Since you have learned the various design patterns for this assignment you are tasked with developing an Online Library System that manages collection of books. The system should allow users to browse the book catalogue, borrow books, and track the borrowing status of each book.

In this library system, some books are classified as premium and can only be borrowed by premium members. You need to implement a solution that.

**Controls Access:** Ensure that non-premium users are restricted from borrowing premium books, while premium users can borrow any book.

Each book in the library can be in one of several states: Available, Borrowed, or Reserved. You will need to implement functionality that dynamically manages the state of a book based on user actions.

To allow users to browse the book catalogue, you need to provide a way to iterate through the collection of books efficiently.

You are required to submit a .pdf document explaining where each pattern fits in this scenario, then draw a consolidated class diagram which includes all the patterns and write the code for the functionality required for the system.

Your code snippets from your different projects should be copied and pasted in your .pdf document and submitted. *Only .pdf document will be accepted as submission for the assignment.*

**You are required to work in groups of no more than 5 students.**

**Students who miss the deadline will lose 20% per day late from the submission date**