Object-Oriented Programming (27 marks)

You are required to design a simple library management system using Object-Oriented Programming (OOP) principles. The system should be able to manage books and members. Each book has a title, author, and ISBN number. Each member has a name, membership ID, and a list of borrowed books.

Class Descriptions:

Book Class

Attribute/Method	Description
title	**str**: The title of the book
author	**str**: The author of the book
isbn	**str**: The ISBN number of the book
get_title()	Returns the title of the book
set_title(title)	Sets the title of the book
get_author()	Returns the author of the book
set_author(author)	Sets the author of the book
get_isbn()	Returns the ISBN number of the book
set_isbn(isbn)	Sets the ISBN number of the book

Member Class

Attribute/Method	Description
name	**str**: The name of the member
membership_id	**str**: The membership ID of the member
borrowed_books	**list**: A list of books borrowed by the member
get_name()	Returns the name of the member
set_name(name)	Sets the name of the member
get_membership_id()	Returns the membership ID of the member
set_membership_id(membership_id)	Sets the membership ID of the member
borrow_book(book)	Adds a book to the member's list of borrowed books
return_book(isbn)	Removes a book from the member's list of borrowed books using pop() method after linear search

Tasks:

1. **Declare the *Book* Class (5 marks)**

    - Write program code to declare the **Book** class, its attributes, and constructor.
    - Do not write program code for the get methods.
    - Use your programming language's appropriate constructor.
    - All attributes must be private. If you are writing in Python, include attribute declarations using comments.
    - Save your program code.

2. **Define Book Class Methods (6 marks)**

    - Write program code for the class methods **get_title()**, **set_title(title)**, **get_author()**, **set_author(author)**, **get_isbn()**, and **set_isbn(isbn)**.
    - Save your program code.

3. **Declare the Member Class (5 marks)**

    - Write program code to declare the **Member** class, its attributes, and constructor.
    - Do not write program code for the get methods.
    - Use your programming language's appropriate constructor.
    - All attributes must be private. If you are writing in Python, include attribute declarations using comments.
    - Save your program code.

4. **Define Member Class Methods (6 marks)**

    - Write program code for the class methods **get_name()**, **set_name(name)**, **get_membership_id()**, **set_membership_id(membership_id)**, **borrow_book(book)**, and **return_book(isbn)**.
    - Save your program code.

5. **Main Program (5 marks)**

    - Write a main program to demonstrate the use of these classes and methods.
    - The program should create instances of **Book** and **Member**, and demonstrate borrowing and returning books.
    - Save your program code.

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