

SE 1108 PROGRAMMING AND PROBLEM SOLVING II

Lab Assignment 2

Media Library System

Create an interface called **Media**. This interface should have the following functions:

- `getPrice()`: Returns a double that represents the price of the media item.
- `display()`: Prints the information of the media item.
- `getCategory()`: Returns a String that indicates the category of the media.

Create an abstract class called **MediaItem**, which implements the **Media** interface. This class should have the following:

- `title (String)`
- `category (String)`
- `price (double)`
- constructor that takes all attributes

Create a class called **Book**, which is subclass of the **MediaItem** class. This class should include:

- `author (String)`
- Implement the necessary functions as per the interface.

Create a class called **Video**, which is subclass of the **MediaItem** class. This class should include:

- `director (String)`
- Implement the necessary functions as per the interface.

Create a class called **MediaLibrary**, which holds a list of **Media** objects. This class should have the following methods:

- `displayLibrary()`: Prints all media items in the list using a loop.
- `calculateTotalPrice()`: Calculates the total price of all media items in the list using a loop.
- `addMedia(Media media)`: Adds the media item passed in the parameter to the list.
- `findMediaByCategory(String category)`: Returns a list of all media items in a specific category.
- `removeMediaByCategory(String category)`: Removes all media items in a specific category.

In the main method, create two **Book** instances and two **Video** instances. Create an instance of **MediaLibrary**. Add all media instances to the **MediaLibrary**, then remove one category, and list items in a specific category. Use the `displayLibrary()` and `calculateTotalPrice()` methods to print out and calculate the contents of the library, and display the results of the find operation.