BIRZEIT UNIVERSITY

COMP1331 – Advanced Programming

Assignment # 2

Objectives:

1. Create Classes and Objects.
2. Process Array of objects.

Specification

Submission: **Online through Ritaj**.

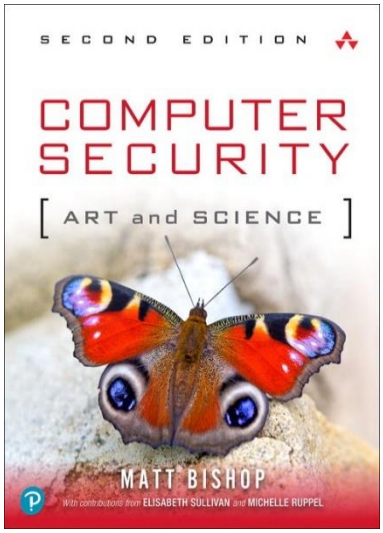
What to submit: Your **own** **well-structured** and **well-commented** JAVA files (**.java**) into a **studentId_sec#.rar** file, e.g. **122dddd_sec1.rar**).

Deadline: **07/06/2023** by midnight to a message called Assignment2_submission. (The online submission will be disabled after this time).

Tasks

Book class

A book has many attributes. Consider the following "Computer Security" book as an example:



Title	Computer security
Author	Matt Bishop
Edition	2
Publisher	Addison-Wesley Professional
Date	2019
language	English
pages	1136
ISBN-10	0201440997 I
ISBN-13	9780201440997

- Create a **Book** class using at least the following 5 attributes:
  - ***Title, Author, Edition, Publisher,*** and ***Language***.
- Create two constructors as follow:
  - No-argument constructor: that creates a book object using the default "Computer security" values.
  - A constructor with arguments using the basic **5** attributes that mentioned before.
- Create a public method called "***toString***" that returns a string contains the book object information.

Task 2: Library class

Create a **Library** class that contains an **array** of **Book**s (**with max 30 books**).

- The Library class has the following methods:
  - ***newBook*** : which adds a new book object to the Library's array.
  - ***borrowBook*** : search for a book in the Library's array using book's title (***or part of the title***) and if it's found and not borrowed mark it as borrowed else show a meaningful error message. Considering the following:
    - You can't borrow a book twice unless it has been returned.
    - If the book is not in the Library's array, it should indicate that the book is not available.
      - *Hint: consider a new Boolean attribute inside the book class to handle the borrow.*
  - ***returnBook*** : if a book was borrowed mark it to indicates that it has been returned.
  - ***printAvailableBooks*** : should print all the available(Not borrowed) books in the library.

Task 3: Driver class

Create a **Driver** class to test the **Library** and **Book** classes as follow:

- Add 10 different **Book** objects to the library.
- Borrow the 5^{th} and 6^{th} book from the library.
- Try to borrow the 5^{th} book again.
- Return the 6^{th} book to the library.
- Print the **available** (Not borrowed)books in the library.

Good Luck!