



Java SE 8 Programming Language

Training Assignments

Document Code	25e-BM/HR/HDCV/FSOFT
Version	1.1
Effective Date	20/11/2012

Hanoi, 04/2019



CODE: JPL.L.A101
TYPE: LONG
LOC:
DURATION: 180 MINUTES

Objectives:

After finishing the following exercises, trainees will:

- Understand and practice with Classes, Object, Inheritance, Encapsulation, Abstraction and Polymorphism.
- Understand and practice with Control-of-flow statements.
- Understand and practice with method overloading, method overriding.
- Understand and practice with Java Collection, Streams and Filters.

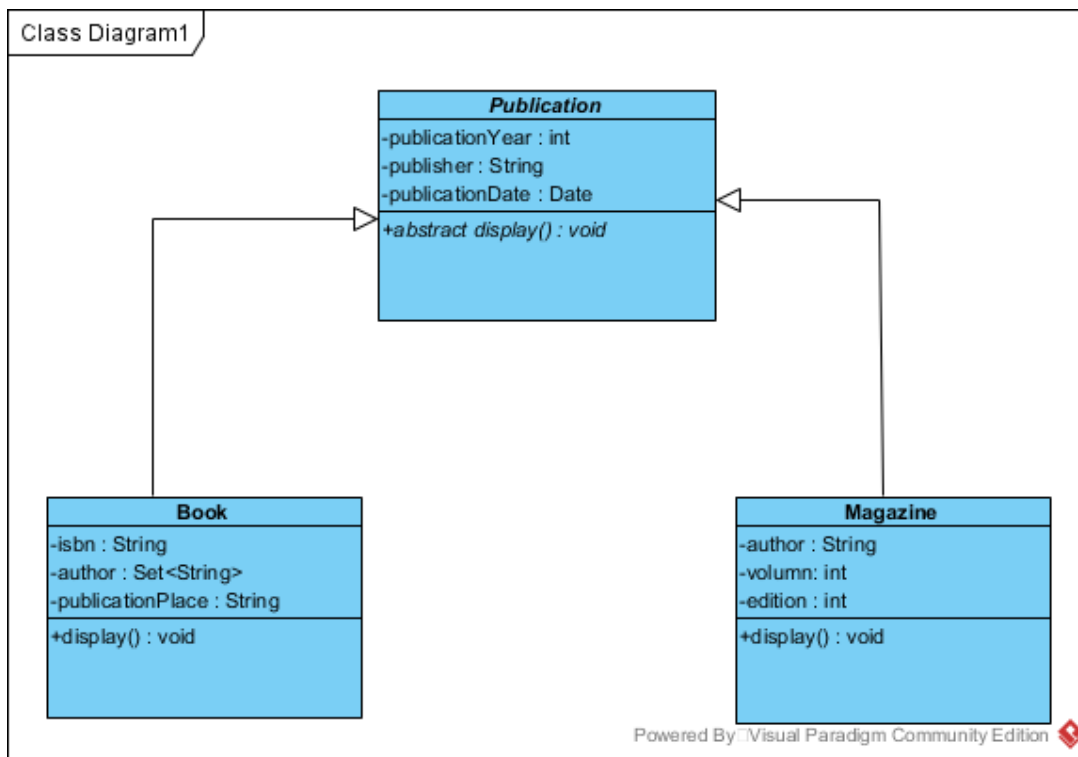
Working Environments

- JDK 1.8 above
- Eclipse, IntelliJ Idea, Netbean

Assignment Descriptions

Create a Java console based application to manage publications in a library. In the library, there are two kinds of publications: books and magazines.

Refer to the class hierarchy which is described below, trainees need to create Java classes in order to implement the entities and the relationship between them.



Publication is an abstract superclass that contains the general information of books and magazines which will be extended. It includes *publication year*, *publisher* and *publication date*.

Book inherits from Publication class and has more attributes: *ISBN* (international standard book number which only contain 10-17 digit and '-' quotes), *author* (a set of author name), *publication place*.

The magazine is similar to Book class. It inherits from Publication class and has more attributes: *author* (author name of magazine), *volume* and *edition*.

All of these classes must have a getter/setter and constructor if needed.

You must override **display()** method in Book/Magazine class to print all of the information related to Book/Magazine.

Functional Requirements

1. The program must have a function to add a new book but keep isbn is unique [bookService](#)
2. The program must have a function to add a new magazine but keep sorted by publication date
3. The program must have a function to display the list of all books and magazines that have the same input publication year and publisher.
4. The program must have a function to add an author to a specific book, if the author existed, the program should print a message "Author existed", otherwise print "Add [bookService](#) successfully".
5. The program must have a function to display the list of top 10 magazines which have the largest volume.
6. The program must have count all Publication by publication year [bookServie](#)
7. The program must provide functions to search flexibly match at least one criteria: [bookService](#)
 - by isbn
 - by author
 - by publisher

Search results should be sorted by publication date.

User Interface Requirements

Create a new class named **LibraryManagement** that contains a main() method to execute all above function like a menu.

Guidelines:

- Create a project named AccountName_**JPL.L.A101**, create package ***fa.training.entities*** that contain classes/interfaces: **Publication, Book, Magazine**.
- Create other package ***fa.training.services*** that contains classes to implement Functional Requirements.

Note, the functional requirements related to any entity, you have to create the service class corresponding to that entity. Ex: BookService, ...

- Create a package named ***fa.training.main*** contains **LibraryManagement** class.

--The end--