

CSC 143 Programming Project 1Bⁱ

Polymorphism

In this programming project, you will implement a hierarchy of classes as described and, utilizing *polymorphism*, objects of the classes are exercised in a client program.

Design a class hierarchy consisting of Publication, Book, Magazine, and KidsMagazine classes as described:

- A **Publication** has a publisher, number of pages, a price, and a title. The class should implement a *toString()* method that displays the all this information. This class should be *abstract*, as shown:

```
public abstract class Publication { ... }
```

- A **Book** is a kind of publication that has an author. **Book** should have a *toString()* method, which gives its class, along with all its information.
- A **Magazine** is a kind of publication that has a publication unit (monthly, weekly, bi-weekly). **Magazine** should have a *toString()* method displaying its type and information.
- A **KidsMagazine** is a type of magazine that also has a recommended age range. **KidsMagazine** should also have a *toString()* method.

Implement a client class that stores 8 different types of publications: magazine, book, or kid's magazine in an **Array of Publication**. Create eight instances of Publication and fill the array. Exploit *polymorphism* and print the information about each object stored in the array. Copy your console output into a Word document.

To submit this exercise, gather all *.java source-code files that have been created for the above classes (in Eclipse, you can find these files in src folder under the folder that has been created for this Java project), along with your Word copy of the console output, place all files into a folder named *YourLastNamePublication*, then zip/compress the folder and upload to the course Canvas page.

ⁱ Adopted from: <https://www.engage-csedu.org/find-resources/assignment-4> and <https://www.engage-csedu.org/>