Soft 7004 – OOP2 - Labs

## LAB 5: Completion Date: 04th December 2015

## On completion please zip up your files including any documents used for drawing the class diagram. Upload to BlackBoard.

**Q1**

### Part a) You have already completed the ObjectList, the Lecturer and the Book classes from the class diagram below. You should have a dummy copy of the BookList class. From the diagram below complete this BookList class.

ObjectList

oList: Object[ ]

total: int

ObjectList(int)

add(Object): boolean

remove(int): boolean

isFull(): boolean

isEmpty(): boolean

getObject(int) : Object

getTotal(): int

# Lecturer

name: String

ID: int

books: BookList

MAXNOOFBOOKS: int 15

Lecturer : (String , int)

getName () : String

getID () : int

addBook *(Book)*

getBookList () : BookList

……………

toString(): String

print()

BookList

BookList(int)

getBook(int) : Book

search(int): Book //ISBN

removeBook(int): boolean //ISBN

calculateYearlyBookPayment(): double

Book

title: String

ISBN: int

author: String

price: double

Book(String, int, String, double)

…………

getPrice(): double

…………

**What follows is a description of the rules applied to this situation.**

Part b) A lecturer can purchase 15 books in a given year. At the end of the year he must calculate the price of the books purchased for the accounts department. A lecturer knows about his booklist and his books.

Using a Lecturer ArrayList, write a menu driven program/application to do the following:-

* Add a lecturer to the Arraylist.
* Find a lecturer using his/her ID
* Add a book to the lecturers BookList
* Remove a book from the lecturers BookList
* Search for a book using the ISBN number
* Calculate the yearly book payment.
* Output all of the book details in the system to a file

Exception handling should be used to deal with all error conditions or unexpected events.