

Introduction to Programming

Assignment weighting

This assignment is worth 70% of the overall mark for this module.

Learning Objectives

The following learning objectives are covered by this assignment

| | Learning outcome | Assessment criteria |
|---|---|--|
| 1 | have understood and learnt the programming language syntax and constructs | can create and/or recognise syntactically correct code for specified aspects of the programming language syntax and constructs |
| 2 | write simple code to demonstrate appropriate use of differing aspects of syntax | writes code for a precisely specified outcome |
| 3 | design and program a solution to a given problem | designs, implements and tests a program to solve a given problem |

When reading this assignment brief DON'T PANIC it has been written so that it provides a challenge for the strongest programming students but also enables other students to demonstrate they can create simple Java programs.

In this assignment you are going to create an application that can be used in a lending library.

Scenario

The Clap Hill Lending Library

The village of Clap Hill has had its own library for 25 years but it is now under threat of closure due to spending cuts. The only hope is to improve the library's efficiency and to do this they have asked you to create a computer program to keep track of its members and books.

Using your knowledge of object orientation you have identified a number of entities that need to be modelled by your software, they are:

Member

The library keeps basic information about each of its members e.g. first name, last name and phone number, also each member is given a unique membership number (this is a positive integer).

Book

The library gives each book a unique identity number (this is a positive integer) which is used to track loans. The library also records a book's author, title and whether it is fiction or non-fiction.

Loan

A loan is a member borrowing a particular book, so if a member comes into the library and borrows three books then this is considered to be three loans. The library records the membership ID number, the book ID number, the date loaned and the date due back (the loan period for all books is 3 weeks)

Library

This entity provides all the functionality required to maintain collections of members, books and loans. The expected functionality is shown on the next page.