SD CW THREE 2011-12

**Note**: To successfully develop this coursework you must be confident with the lab sheet exercises.

You should also read any required additional background material.   
The coursework requires constant and disciplined work on your part;

do not leave this work to the last minute as extensions are not possible with this assignment.

**Purpose of this assignment**

* To work through the complete program development process, from specification to working prototype.
* To demonstrate the appropriate use of the features of the Java programming language.
* To illustrate the correct use of documentation and comments.
* To re-inforce the notions of testing.

**Problem Description**

A CINEMA handles, at any time, 1 or more MOVIES showing and has an

MOVIE\_ARCHIVE of past shows

and a MOVIE\_SCHEDULE of future shows.

CUSTOMERS can:

* BookA Seat() for a FUTURE PERFORMANCE provided that there are CheckAvailableSeats()
* ViewPrevious Bookings()
* ViewMovieArchive()
* ViewMovieSchedule()
* MakeAdvancedBookings().
* ModifyCustomerAccountDetails()

+PayingPreference(),

+ address,

+password, etc.

CINEMA:

* holds, for each **MOVIE**, all its details such as
* +String director,
* +String actors,
* +String music,
* +String abstract (synopsis)
* +String movieURL
* getMovieClip() url short clips from the movies.
* has a SCREEN(S) 1 or more
* -screen number
* with different
* + capacities size
* + layouts.
* has a *MANAGER*  1
* addMovie(),
* deleteMovie(),
* modifyMovie()
* addBooking(),
* deleteBooking),
* modifyBooking()
* the data related to any movie, booking or screen at any time.

A BOOKING:

* can be CancelBooking() up to 24 hours before the showing of the film.
* if cancelled
* 78 hours before the show time then customers get a FULLREFUND();
* 48 hours 50%;
* 24 hours 25%.   
  Later cancellations are possible but no refund is given but the seat(s) become(s) available again.

**Requirements**

You are required to implement an application to handle all the above functionality. You are free to add functionality but not to delete functionality from the above requirements. Please note the following:

* The information must be stored using Java persistence
* The assignment must be implemented in Java
* If you "add" functionality please check with the lecturers first

The following login details must be provided for the evaluation of your code:

1. A manager account with user id = “manager” and password =”manager123”
2. A customer account with user id =”customer1” and password=”customer1”
3. A member account with user id =”customer2” and password=” customer2”
4. A member account with user id =”customer3” and password=” customer3”

These accounts will be used to test your system and if you fail to provide these ready created accounts we will not be able to test your system and you will get ZERO for your coursework.

**Background work**

Study and familiarized yourself with any cinema system (for example the multiplex cinemas of Odeon, Vue, or Cineworld) so as to get ideas of what needs to be done and how to expand on the above specification.

The above specification is intentionally imprecise and you will need to complete the specification of the system provided by thinking what the system you are building is meant to do, what functionalities and data is important to keep track-of, etc. Use your own intuition and judgement and discuss among your peers what should and what should not be included as part of the specification for this system. Write the complete specification into a (brief, one page) report, which will be part of your submission.

Based on your specification report, design the classes, entities and actors that you will need to achieve the required functionality. Implement in Java all the functionality of your system. Credit will be given to appropriate use of the features of the language.

Start by implementing the functionality as it pertains to the customers of the cinema (and the usual cinema functions).

This version of your program should be a fully functional booking system with a pre-loaded stock of bookings, movies, etc and customers, so all the functionality of the cinema can be used except that of the cinema manager.

Then implement the remaining functionality of the system. Focus on the completion of the manager’s functions and ensure that your movie booking system works in its entirety (because we will).

**Marking scheme**

~ 10%

Completion of exceptional requirements/specification

~ 70%

Delivering of requested functionality

~ 15%

Programming and implementation style (including comments and documentation)

~ 5%

Testing

**Discretionary marks**

If the minimum requirements are met and the student shows an above average performance and understanding on one or more of the specification, design, style, implementation and/or testing phases of the coursework discretionary marks could be awarded.

**Structure of the assignment submission:**

* Project name: Cinema
* Package name: cinema
* Class names and method signatures --- for you to determine

The above are basic requirements. You will have additional classes and methods.  
You are NOT required to use BlueJ for the assignment; you may use any IDE of your choice (or none at all) but you should follow the package details listed above.