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|  | **ISCG7425 – Enterprise Java Programming**  **Assignment 1: Video Rental System**  *Individual assessment*  *Total marks: 100*  *Course Weighting: 20%* |

*Due Date: 23:55, Sunday, 11 May 2014*

**Assignment Brief:**

Develop a multi-tier Video Rental System using a MVC design pattern and Java, Struts and Hibernate. The system will allow users to create, read, update and delete both customer and video records using a simple web based user interfance. The system should also allow a user to loan videos to customers using a separate loans interface.

**Part A – Database Design 20%:**

1. Develop an appropriate database structure to allow the video rental system to store and retrieve information on videos owned by shop, customers of the shop, and videos that have been loaned to customers.

[20 marks]

**Part B – Model Objects 20%:**

1. Develop Hibernate Model Objects to map the database tables and relationships defiend above into Java classes.

[20 marks]

**Part C – User Interface 20%:**

1. Develop an appropriate user interface using Struts 2, HTML and JavaScript. The user interface will allow a user to enter create, read, update and delete information related to both customers and books.

[5 marks]

1. Users will be able to search for both books and videos using a variety of keys. For example, a user will be able to locate a customer based on the customer’s name and data of birth.

[5 marks]

1. Develop a struts action and appropriate user interface to allow a user to loan a video to a customer for a given period of time (standard loan period).

[10 marks]

The user interface should allow a user to:

**Video Records:**

* Add new video record
* Modify existing video record
* Delete existing video record
* Find a video record: by title, by year, by genre

**Customer Records:**

* Add new customer record
* Modify existing customer record
* Delete existing customer record
* Find a customer record: by name, by address, by identification number

**Part D – Controller 20%:**

1. Develop a controller system modelled on MVC design paraidgm to allow the system to mediate between the presentation layer and the database layers independently.

[20 marks]

**Part E – Challenge Questions 20%:**

Note: select questions from the following list which add up to 20 marks.

1. Validation: make sure the system does not accept rubbish data

[5 marks]

1. Implement application level optimistic locking

[10 marks]

1. Develop reports to show customers that have overdue items.

[5 marks]

1. Implement historical records using Envers Entity Versioning

[5 marks]

1. Develop a login system and attach to a user’s session object to keep track of a user and the user’s role in the system.

[10 marks]

1. Re-develop the entire system from scratch using a different technology stack or a different design pattern. For example, use Grails to re-implement the system or use another web technology such as Seam, or Java Server Faces.

[20 marks]

1. Allow the user to upload video and customer data using XML files.

[5 marks]

**Submission Details and Marking Criteria:**

This is an individual assignment. You must work on the individual tasks by yourself and all work you submit must be your work and your work only. Your final submission should contain the following:

* A zip file which contains program source code, and a small text file (.txt) with a list explaining what challenge questions you have completed
* Include a list of references in this document if you have used any print or electronic resources
* Do NOT embed your program code in a Microsoft Word document

Grades will be awarded for each section of the assignment successfully completed:

**Marking Schedule**

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| Sections | Marks |
| Part A – Database Design | 20% |
| Part B – Model Objects | 20% |
| Part C – User Interface | 20% |
| Part D – Controller | 80% |
| Part E – Challenge Questions | 20% |
| Total | 100% |

**Assignment hand-in**

Assignments submitted after the due date and time without having received an extension through Special Assessment Circumstances (SAC) will be penalised according to the following scheme:

* 10% of marks deducted if submitted within 24hrs of the deadline
* 20% of marks deducted if submitted after 24hrs and up to 48hrs of the deadline
* 30% of marks deducted if submitted after 48hrs and up to 72hrs of the deadline
* No grade will be awarded for an assignment that is submitted later than 72hrs after the deadline.

Students submitting assignments after the due date and time will be ineligible to resubmit a failed assignment.

**Special Assessment Circumstances**

A student, who due to circumstances beyond his or her control, misses a test, final examination or an assignment deadline or considers his or her performance in a test, final examination or an assignment to have been adversely affected, should complete the Special Assessment Circumstances (SAC) form available from Student Central.

Within any semester, a student may have only one SAC per course.

When requesting an SAC for an assignment, the SAC form must be submitted (along with work completed to date) within the time frame of the extension requested; i.e. if the Doctor’s certificate is for one (1) day, then the SAC form and work completed must be submitted within one (1) day.

**Unacceptable Assistance**

* Working together on one copy of the assessment and submitting it as own work.
* Giving another student your work.
* Copying someone else’s work. This includes work done by someone not on the course.
* Copying from books, Internet etc. and submitting it as own work. Anything taken directly from another source must be acknowledged correctly: show the source alongside the quotation.
* Changing or correcting another student’s work.

**Have a query? Want to improve your work?**

You could:

* Talk it over with your lecturer or programme leader.
* Visit Te Puno Ako or Maia for learning advice and support.
* Visit the Centre for Pacific Development and Support.
* Contact your Ed Collective Advocate for independent advice.
* For contact details and more information, go to <http://www.edcollective.org.nz/>

This is an individual assignment. You must work on the individual tasks by yourself and all work on these tasks must be your own.

Please sign the statement below to declare that this assignment submission is your own work and hand in the signed statement with your assignment. Failure to sign and include this statement may mean your assignment is not marked.

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| **ISCG7425 – Enterprise Java Programming**  Assignment 1  I declare that the individual part of this assignment submission is my own work. Where I have incorporated work by other people, I have correctly acknowledged the source in my assignment.  Student Name …………………………………….. Student ID …………………..… Date: ……….….……. |