

CSE1ISX – Information Systems

Assessment 2: System design

Objectives:

- ✦ Use a generalised model of an information system (IS) to analyse, identify and effectively describe the components of a simple real-life information system
- ✦ Use established fact-finding techniques to elicit IS requirements for a simple business scenario
- ✦ Use Context and Level 0 Data Flow Diagrams and a System Dictionary to adequately describe the requirements for a simple IS
- ✦ Use Entity-Relationship Modelling to develop and describe a simple relational database design
- ✦ Design and construct a simple IS using a prototyping tool
- ✦ Critique the design of the user interface of a simple IS

This is an INDIVIDUAL assignment. Students are not permitted to work in a group when writing this assignment.

Copying, Plagiarism:

This is an individual assignment. Students are not permitted to work in a group when writing this assignment. Plagiarism is the submission of another person's work in a manner that gives the impression that the work is their own. La Trobe University treats plagiarism seriously. When detected, penalties are strictly imposed.

Further information can be found on

<http://www.latrobe.edu.au/students/academicintegrity/explanation/plagiarism>

Submission Guidelines:

- ✦ Your assignment submission should be typed, not written/drawn by hand.
- ✦ Submit the electronic copy of your assignment through the subject LMS.
- ✦ Submission after the deadline will incur a penalty of 5% of the points available per day capped at 5 days. No assignment will be accepted after 5 days late. If you have encountered difficulties that lead to late submission or no submission, you should apply for special consideration.

Scenario – Hill Book-store

Note: The project scenario from Assessment 1 is continued below.

Hill Book-store plans to rent books in different genres such as romance, comedy, drama, action, horror, kids and family etc. The company intends to keep track of the book stock by assigning each book a number that will uniquely identify it. Apart from this, the book title, genre, file size, year of release, synopsis, length, and the rental price of the book are also expected to be recorded in the new system.

The customers that expect to rent books from Hill Book-store, are first required to register themselves with the store to become members. They can do this easily by providing their personal details such as their first name, last name, email address, telephone number, address and date of birth. They are also required to pick a username and a password for login purposes. The username is required to be an email address. The password is required to consist of eight characters that include an upper-case letter and numbers.

The customers are required to provide their credit card details to complete the registration process. To do this, the customers need to provide the card type, card number, cvv, name on card and the card expiry date. Once these details are verified by the system, the registration process will be complete, and the new member will be given a membership ID, which is a unique number that identifies each member.

Once the customers become members, they can log in to the system using their username and password. Once the members log in to the system they can browse the system for books.

When a member looks up a book they would like to rent, they can simply click on the rent button. This will allow the members to download the book to their local device. Before the download starts, the system will request the member to confirm the action and provide permission to charge them the cost of the rental. Once the members confirm this, the system charges them on the provided credit card details.

Members can rent up to ten (10) books at a given time. The system is required to record the date rented and expiry date of the book rented. The rental period is for 30 days from the date the book is rented. Once the rental period expires, the book link on the members device will expire. For each book rented, an invoice is sent to the member by email.

John wishes to generate a report from the system each month for his monthly meetings with the staff. This report is to include a summary of rentals processed by Hill Book-store during that month.

PART A - Context and Data Flow Diagrams

Your tasks

Task 1

A *system requirement* is a characteristic or feature that must be included in an information system to satisfy business requirements and be acceptable to users.

Outline all system requirements of the Hill Book-store system.

Task 2

Create a *context diagram* based on the requirements you have identified above in *Task 1*. It is recommended that you create the diagram using Microsoft Visio.

Task 3

Create a Level 0 *Data Flow Diagram* (DFD) based on the context diagram you created in *Task 2*. It is recommended that you create the diagram using Microsoft Visio.

Task 4

Create a decision table that describes the book rental process. Include all conditions that must be met before a book can be rented by a Hill Book-store member.

PART B - System Prototype

Your tasks

Task 1

Create an Entity Relationship diagram for the Hill Book-store system. Use Microsoft Visio to create the diagram.

Task 2

Create data dictionary element entries for the username and the password. Use the Data dictionary template given below to complete your answer.

Data dictionary template

Element description	
Data element name	
Alias	
Type	
Length	
Default value	
Acceptable values	
Description and comments	

When you have completed the report, submit the assessment via the **Assessment Upload** link on the LMS system. You should submit the following:

- ✦ Submit your report in a single Word document called **xxx_cse1isx_assessment2.docx** (where xxx is your student number). Any Visio or Access files should be submitted separately as a referenced appendix.

Assessment Marking Criteria

Part A (Task 1)

	Points
Requirements for the new system has been provided	10
TOTAL	10

Part A (Task 2)

	Points
Context Diagram with clear relationship of system components has been provided.	10
Demonstrate effective use of elements of DFD symbol set.	2
TOTAL	12

Part A (Task 3)

	Points
Level 0 Diagram with clear relationship of system components has been provided.	12
Demonstrate effective use of elements of DFD symbol set.	2
TOTAL	14

Part A (Task 4)

	Points
Correct conditions in decision table	5
Correct outcomes in decision table	5
Correct combination in decision table	4
TOTAL	14

Part B (Task 1)

	Points
Entity Relationship Diagram with clear relationship of system components has been provided	25
Demonstrate effective use of elements of ER symbol set	5
TOTAL	30

Part B (Task 2)

	Points
Correct entries for all sections of the password data element	10
Correct entries for all sections of the username data element	10
TOTAL	20



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