

SQL Assignment 1

Course: INFO151 Database

Purpose: This assignment assesses students' understanding of the basic commands and functions of SQL for single relation query and multi-relation query.

Contribution: This assignment submission is worth 10 marks out of your overall course mark.

Due Date: Due by noon on 22nd September (Week 9). Model answers will be available at noon on 27th September.

Academic Integrity: Throughout the university, common punishment for academic dishonesty can range from failing the assignment to failing the course up to being suspended or even expelled from the university. Don't take a chance. The consequences for plagiarism are serious.

Submission: See "INFO151 Assignment Submission Instructions.docx" on BlackBoard.

Instruction:

1. Download LibraryDB from Blackboard. The LibraryDB contains details of the items in the library and details of the readers. The database also keeps tracks of items coming in and going out of the library. The database schema for LibraryDB is as follows:

Item	(<u>ItemID</u> : Integer (Auto Increment), Title: Text, MediaID: Integer, Author: Text, PubYear: Integer, Description: Text, ReplacementCost: Real, LostFee: Real)
InventoryItem	(<u>InventoryItemID</u> : Integer (Auto Increment), ItemID: Integer, Status: Text, Condition: Text)
Media	(<u>MediaID</u> : Integer (Auto Increment), MediaCode: Text, MediaDescription: Text, LoanPeriod: Integer, RenewalsAllowed: Integer, OverdueFee: Real)
Customer	(<u>CustomerID</u> : Integer (Auto Increment), LastName: Text, FirstName: Text, Address: Text, Suburb: Text, City: Text, PostalCode: Integer, Email: Text, PhoneNumber: Text)
Loan	(<u>LoanID</u> : Integer (Auto Increment), CustomerID: Integer, InventoryItemID: Integer, CheckedOut: DateTime, DueDate: DateTime, CheckedIn: DateTime, Renewals: Integer, OverdueFee: Real)

Where **Item** contains details of items that are available in your library and ItemID is the primary key. The ReplacementCost attribute specifies the actual cost to purchase a single copy of the item. The LostFee attribute is what the

customer is charged when an item that they have checked out is lost or damaged beyond repair. The fee that the library charges the borrower is the ReplacementCost plus a flat re-stocking fee (\$10). Each item has at least one copy of that item (inventory). MediaID is a foreign key identifying the format of an item.

InventoryItem contains details of the individual copies of items in your library, including Status (value includes Available, CheckedOut, OnHold, Damaged, and Lost) and Condition (value includes Good, Fair, Poor). InventoryItemID is the primary key. ItemID is a foreign key identifying details of items.

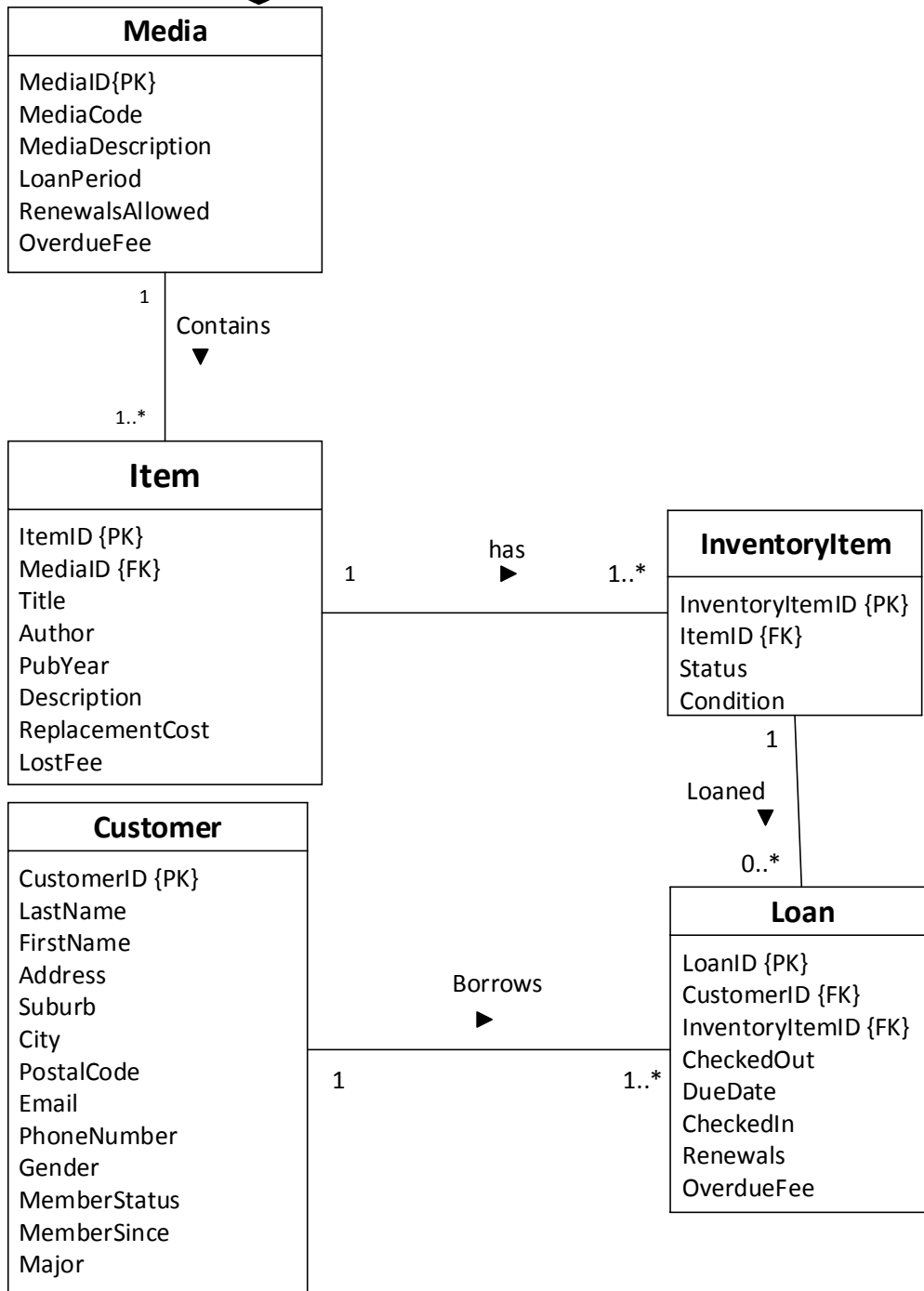
Media contains types of item, including DVD video, CD audio, Hardback book, Paperback book, and Periodical. The OverdueFee attribute specifies the daily overdue fee. The LoanPeriod attribute specifies the number of days an item may be checked out to one patron. The RenewalsAllowed attribute specifies the number of renewals allowed for each type of media.

Customer contains details of library members who can borrow item and the CustomerID is the primary key.

Loan contains details of the individual copies that are borrowed by library members and LoanID is the primary key. CustomerID is a foreign key identifying the borrower. InventoryItemID is a foreign key identifying a specific copy of the item that is loaned. Renewals records the number of renewals occurred for the loan item. OverdueFee records the overdue fee accumulated on the loan item.

Note:

- (1) I did not provide text description for each attribute because most of attributes are self-explanatory. If you have difficulty in understanding the database schema and attribute names, post your questions to the discussion board of BlackBoard.
- (2) An ER model to represent the data used by the library is shown below.



Questions:

1. List titles of items published in the year 2015. Include Title and PubYear in your query results. (1 mark)
2. List all copies of the item with titles containing “iPhone” that are available for borrowing. Include InventoryItemID and Title in your query results. (1 mark)
3. Library manager would like to know all copies of items that are lost. Sort the results in ascending order by Title. Include InventoryItemID, Title, and Status in your query results. (2 marks)
4. A librarian inadvertently entered values for ReplacementCost and LostFee in the wrong currency (US dollar) for items published between 2000 and 2002. Produce a report showing ReplacementCost and LostFee in the correct currency (NZ dollar). The format of your report should be the same as the format of the table below. Use the latest exchange rate by checking <http://www.xe.com> (2 marks)

Title of Item	Year of Publication	ReplacementCost(NZD)	LostFee(NZD)

5. Find library members whose first name starts with the same letter as yours and has at least the same number of characters as your first name. For instance, my name is ‘Yi-Te’, which contains 5 characters. The format of your report should be the same as the table below. (2 marks)

Full Name	Gender	MemberStatus	Member Since	Major
<i>{The format of full name should be Last Name, First Name. For instance, Chiu, Yi-Te}</i>				

6. Produce a report showing books that **have been borrowed** by “Yi-Te Chiu”. Include Title in your query results. (2 marks).