



**UNIVERSITY OF COLOMBO
DEPARTMENT OF ICT
FACULTY OF TECHNOLOGY
Year 2, Semester 1, 2021**

Database management Systems –II

Assignment – 3

A.M.S.D.Ananda – 2019T00430
Faculty of Technology
University of Colombo

Question 1

1. Map the following EER model into the relational model and answer the questions below.

Bank

<u>code</u>	name	description
-------------	------	-------------

Branch

<u>branch_no</u>	<u>code</u>	name	address
------------------	-------------	------	---------

Account

<u>account_no</u>	balance	branch_no	code	ty_code
-------------------	---------	-----------	------	---------

Account_type

<u>code</u>	name	description
-------------	------	-------------

Saving

<u>code</u>	interest_rate
-------------	---------------

Current

<u>code</u>	maxCheques
-------------	------------

Customer

<u>number</u>	name	nic	pin	address	phone
---------------	------	-----	-----	---------	-------

Account_customer

<u>account_no</u>	<u>number</u>
-------------------	---------------

Transaction

<u>tid</u>	amount	date_time	description	executed_by
------------	--------	-----------	-------------	-------------

Account_transaction

<u>account_no</u>	tid	type
-------------------	-----	------

1. How many relations did you get your relational schema after mapping?

10 relations

2. What is the primary key of the Branch relation?

branch_no + code

3. What mapping option did you use to map the entity 'Account_type' and its sub classes? Why did you select the option you selected?

Option 01.

There is a disjoint relationship between Account_type and its subclasses because account types do not overlap. Option 01 is suitable for total or partial generalization/specialization relationships as well as disjoint or overlap generalization/specialization relationships.

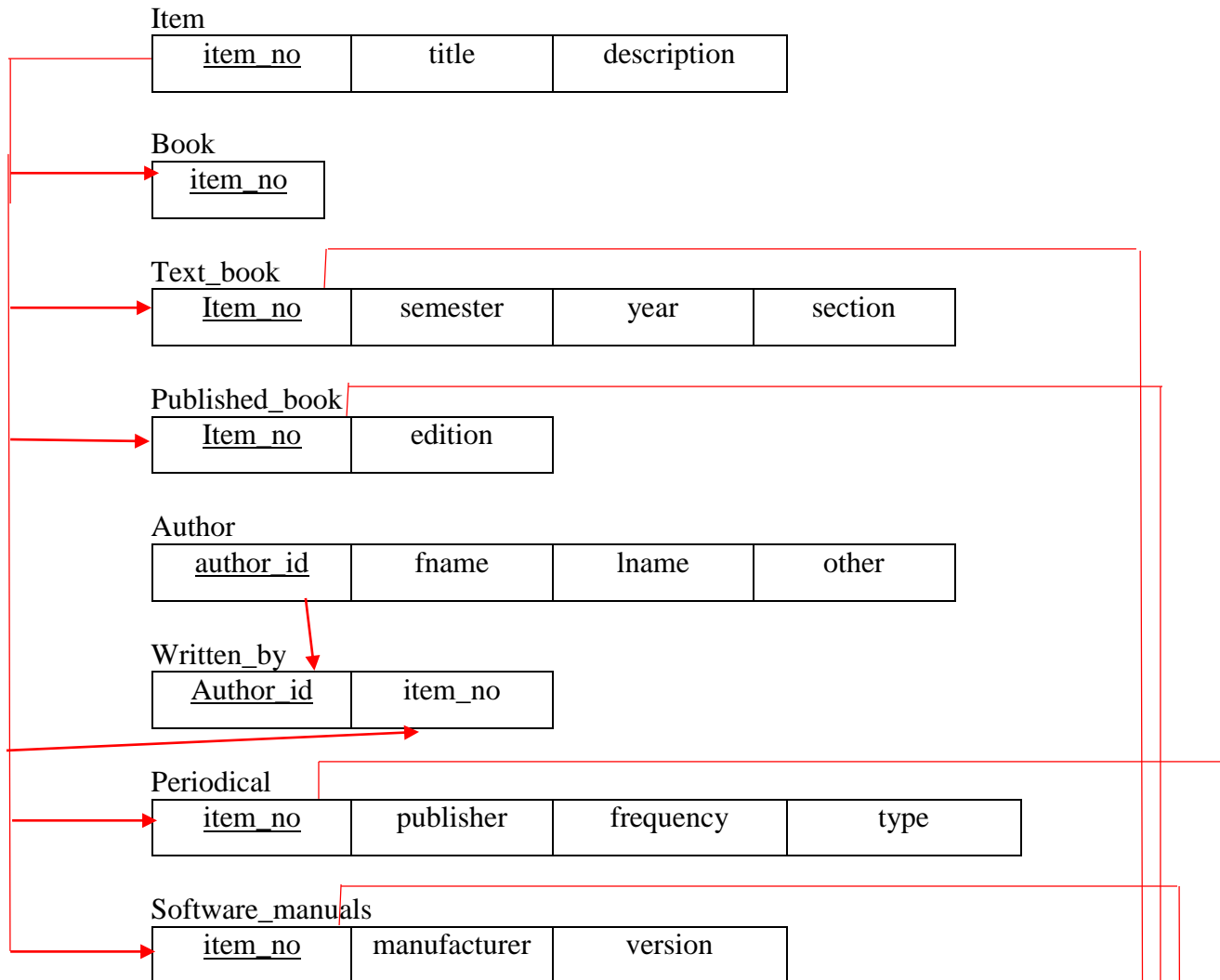
4. How many tables refer to the AccountNo attribute in Accounts table? What are the relations that refer to AccountNo as foreign keys ?

2 tables (Account_transaction, Account_customer)

Question 2

Map the EER model in the next page which is drawn for a library system into the relational model. Underline the primary keys. Clearly show the foreign keys.

Answer the following questions with relevance to the schema you have written.



Copy_of_item

<u>access_no</u>	status
------------------	--------

C_Text

<u>access_no</u>	item_no
------------------	---------

C_published_book_type

<u>access_no</u>	item_no	ISBN
------------------	---------	------

C_software_manual

<u>access_no</u>	item_no
------------------	---------

C_periodical_type

<u>access_no</u>	item_no	date
------------------	---------	------

Periodical_type

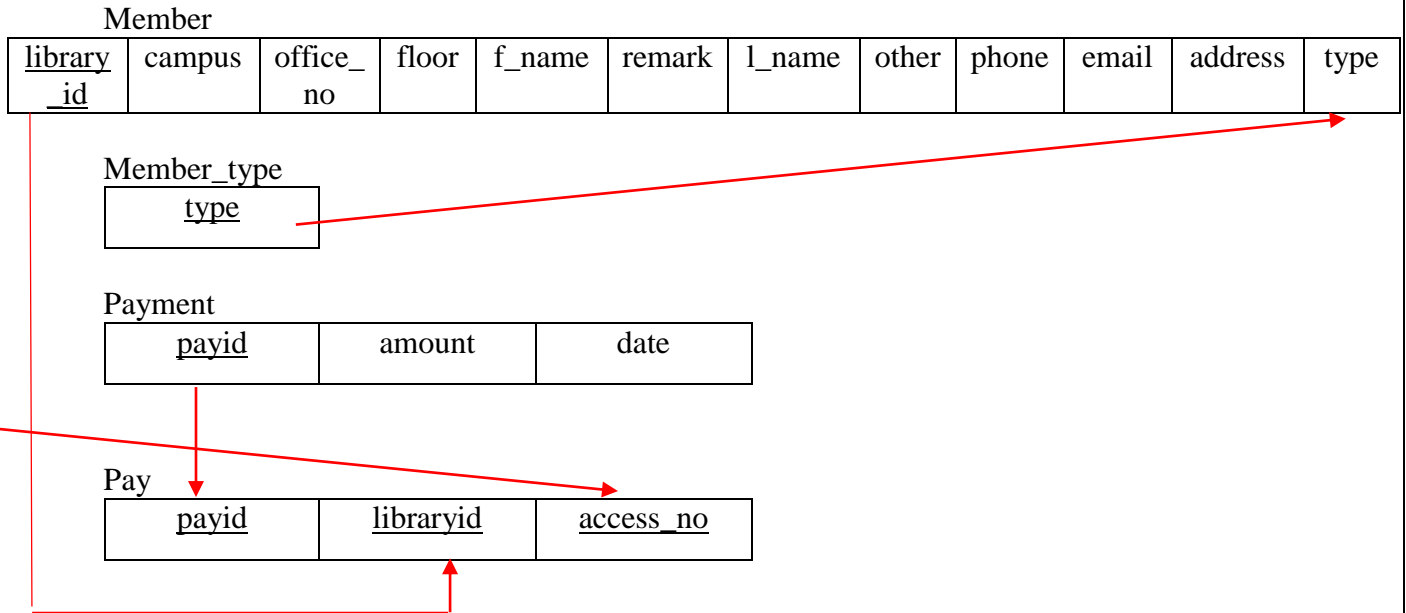
<u>date</u>	<u>item_no</u>
-------------	----------------

Published_book_type

<u>ISBN</u>	cover	yearpublished	publisher
-------------	-------	---------------	-----------

Loan

<u>library_id</u>	<u>access_no</u>	finepaid	datereturned	duedate	daterime_borrowed
-------------------	------------------	----------	--------------	---------	-------------------



1. **What mapping option did you use to map the entity 'Item' and its sub classes? Why did you select the option you selected**

Option 01.

Option 01 is suitable for total or partial generalization/specialization relationships as well as disjoint or overlap generalization/specialization relationships.

2. **What mapping option did you use to map the entity 'Books' and its sub classes? Why did you select the option you selected**

Option 02

Because that option subclass can cover superclass.

3. **What mapping option did you use to map the entity 'Periodicals' and its sub classes? Why did you select the option you selected**

Option 03

Assumption: a newspaper cannot be a magazine. So the relationship between Periodicals and its subclasses has disjoint relationship.

4. **What is the primary key of 'PeriodicalType' table?**

item_no + Date

5. **What are the foreign keys for the 'Published Book Type'?**

item_no

- 6. What mapping option did you use to map the entity 'Copy of Items' and its sub classes? Why did you select the option you selected?**

Option 01.

Option 01 is suitable for total or partial generalization/specialization relationships as well as disjoint or overlap generalization/specialization relationships.

- 7. What are the any foreign keys for the 'C-Periodical Type'?**

item_no + date

- 8. What are the attributes of the 'Pay' table?**

payid, libraryid, access_no