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LIBRARY DATABASE

Schema for library Database

BOOK (Book_id , title, publisher_ name, Pub_Year)

BOOK_AUTHORS (BOOK_id , Author_Name)

PUBLISHER (Name, Address, Phone)

BOOK_ COPIES (BOOK_id , Programme_id , No. of_ copies)

BOOK_ LENDING (Book_id, programme_id, card_No, Date_out , Due_Date)

LIBRARY_PROGRAMME (programme_id , programme_name , Address)

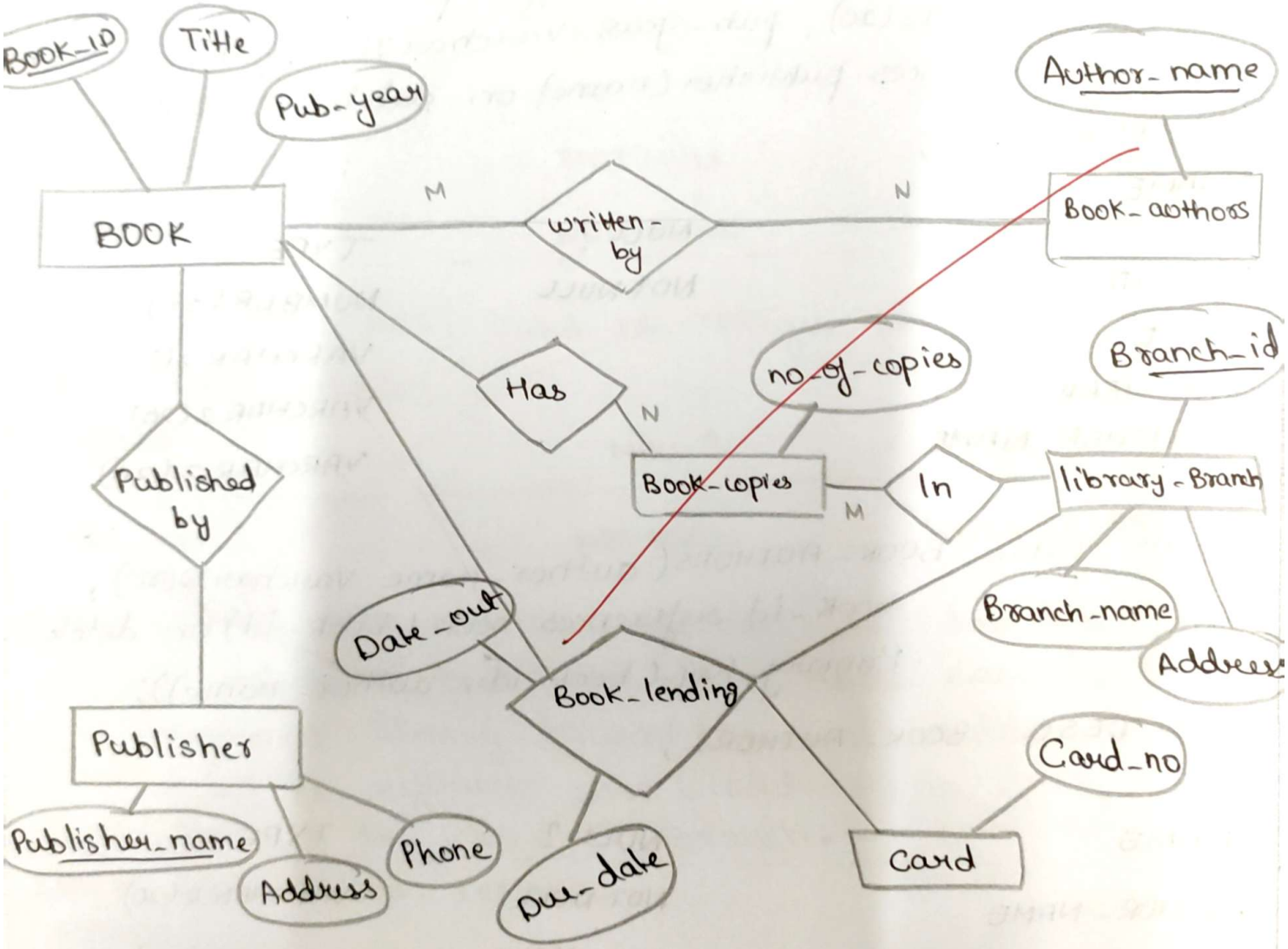

Table creation

Create table Publisher(name Varchar2(20) primary Key, Phone integer, address Varchar 2(20));

SQL> DESC Publisher;

NAME	NULL?	TYPE
NAME	NOT NULL	VARCHAR2(20)
PHONE		NUMBER (38)
ADDRESS		Varchar 2(20)

Create table book(book_id integer primary key, title Varchar2(20), pub-year Varchar2(20), publisher_name references publisher(name) on delete cascade);

SQL> DESC BOOK;

NAME	NULL?	TYPE
BOOK_ID	NOT NULL	NUMBER(38)
TITLE		VARCHAR 2(20)
PUB_YEAR		VARCHAR 2(20)
PUBLISHER_NAME		VARCHAR 2(20)

Create table BOOK_AUTHORS(author_name Varchar 2(20), book_id references book (book-id) on delek Cascad primary Key (book-id, author- name));

SQL> DESC BOOK_AUTHORS;

NAME	NULL?	TYPE
AUTHOR_NAME	NOT NULL	VARCHAR 2(20)
BOOK_ID	NOT NULL	NUMBER (38)

Create table LIBRARY_BRANCH(branch_id integer primary key branch_name Varchar 2(50), address Varchar 2(50));

SQL> DESC LIBRARY_BRANCH;

NAME	NULL?	TYPE
BRANCH_ID	NOT NULL	NUMBER (38)
BRANCH_NAME		VARCHAR 2(50)
ADDRESS		VARCHAR2(50)

Create table BOOK_COPIES(no_of_copies integer, book_id references book(book_id) on delete cascade, branch_id references library_branch (branch_id) on delete cascade, primary key (book_id, branch_id));

SQL> DESC BOOK_COPIES;

NAME	NULL?	TYPE
NO_OF_COPIES		NUMBER(38)
BOOK_ID	NOT NULL	NUMBER(38)
BRANCH_ID	NOT NULL	NMBER(38)

create table CARD(card_no integer primary key);

SQL> DESC CARD;

NAME	NULL?	TYPE
CARD_NO	NOT NULL	NUMBER(38)

create table BOOK_LENDING(date_out, due_date date, book_id references book (book_id) on delete cascade, branch_id references library_branch(branch_id) on delete cascade, card_no references card (card_no) on delete cascade, Primary key (book_id, branch_id, card_no));

SQL> DESC BOOK_LENDING;

NAME
DATE_OUT
DUE_DATE
BOOK_ID
BRANCH_ID
CARD_NO

* INSERTION OF VALUES INTO TABLES

- Insertion of Values into publisher table

```
Insert into publisher Values('mcgraw-hill', 9989076587,
                                'bangalore');
Insert into publisher Values('pearson', 9889076565, 'new delhi');
Insert into publisher Values('random hous', 7455607890', 'hyderabad');
Insert into publishes Values('hachette livre', 8970862340, 'chennai');
Insert into publisher Values('grupo planeta', 7756120238, 'bangalore');
```

```
SQL> SELECT * FROM PUBLISHER;
```

NAME	PHONE	ADDRESS
MCGRAW-HILL	9989076587	BANGALORE
PEARSON	9889076565	NEWDELHI
RANDOM HOUS	74556 79345	HYDERABAD
HACHETTE LIVRE	8970862340	CHENNAI
GRUPO PLANETA	7756120238	BANGALORE

- Insertion of Values into BOOK Table

```
Insert into BOOK Values(1, 'dbms', 'jan-2017', 'mcgraw-hill');
Insert into BOOK Values(2, 'adbms', 'jun-2016', 'mcgraw-hill');
Insert into BOOK Values(3, 'cn', 'sep-2016', 'pearson');
Insert into BOOK Values(4, 'cg', 'Sep-2015', 'grupo planeta');
Insert into BOOK Values(5, 'os', 'may-2016', 'pearson');
```

```
SQL> SELECT * FROM BOOK;
```

BOOK-ID	TITLE	PUB_YEAR	PUBLISHER_NAME
1	DBMS	JAN-2017	MCGRAW-HILL
2	ADBMS	JUN-2016	MCGRAW-HILL
3	CN	SEP-2016	PEARSON
4	CG	SEP-2015	GROPO PLANETA
5	OS	MAY-2016	PEARSON

- Insertion of Values into BOOK-authors Table

```
Insert into book-authors Value('navathe',1);
Insert into book-authors Value ('Navathe',2);
Insert into book-authors Value('tanenbaum',3);
Insert into book-authors Values('edward angel',4);
Insert into book-authors Values('galvin',5);
SQL> SELECT * FROM BOOK-AUTHORS;
```

AUTHOR_NAME	BOOK-ID
NAVATHE	1
NAVATHE	2
TANENBAUM	3
EDWARD ANGEL	4
GALVIN	5

- Insertion of Values into LIBRARY-BRANCH

```
Insert into library-branch Values(10,'rr nagar','bangalore');
Insert into library-branch Values(11,'rnsit','bangalore');
Insert into library-branch Values(12,'rajaji'nagar,'bangalor');
Insert into library-branch Values(13,'hitte','mangalore');
Insert into library-branch Values(14,'manipal','udupi');
```

SQL > SELECT * FROM LIBRARY_BRANCH;

BRANCH_ID	BRANCH_NAME	ADDRESS
10	rr nagar	Bangalore
11	rnsit	Bangalore
12	rajaji nagar	Bangalore
13	nitte	mangalore
14	manipal	udipi

- Insertion of Values in BOOK_COPIES Table

```
Insert into book_copies Values (10, 1, 10);
Insert into book_copies Values (5, 1, 11);
Insert into book_copies Values (2, 2, 12);
Insert into book_copies Values (5, 2, 13);
Insert into book_copies Values (7, 3, 14);
Insert into book_copies Values (1, 5, 10);
Insert into book_copies Values (3, 4, 11);
```

SQL > SELECT * FROM BOOK_COPIES;

NO_OF_COPIES	BOOK_ID	BRANCH_ID
10	1	10
5	1	11
2	2	12
5	2	13
7	3	14
1	5	10
3	4	11

Insertion of Values in card table

```
Insert into card Values (100);
Insert into card Values (101);
Insert into card Values (102);
Insert into card Values (103);
Insert into card Values (104);
```

```
SQL> SELECT * FROM CARDS;

   CARD_NO
----------
       100
       101
       102
       103
       104
```

- Insertion of Values in book_lending table

```
Insert into book_lending Values('1-jan-17','1-jun-17',1,10,101)
Insert into book_lending Values('11-jan-17','11-mar-17',3,14,101);
Insert into book_lending Values('21-feb-17','21-apr-17',2,13,101)
Insert into book_lending Values('15-mar-17','15-jul-17',4,11,101);
Insert into book_lending Values('12-apr-17','12-may-17',1,11,104);
SQL> SELECT * FROM BOOK_LENDING;
```

DATE_OUT	DUE_DATE	BOOK_ID	BRANCH_ID	CARD_NO
01-JAN-17	01-JUN-17	1	10	101
11-JAN-17	11-MAR-17	3	14	101
21-FEB-17	21-APR-17	2	13	101
15-MAR-17	15-JUL-17	4	11	101
12-APR-17	12-MAY-17	1	11	104

* QUERIES

1) Retrive details of all books in library - id, title, name of publisher, author, no-of-copies in each branch.

```
SQL> Select b.book_id, b.title, b.publisher_name,
     a.author_name, c.no_of_copies, l.branch.id
     from book b, book_authors a, book_copies c,
     where b.book_id = a.book_id                    library_branch 1
     and b.book_id = c.book_id
     and l.branch_id = c.branch_id;
```

output

BOOK_ID	TITLE	PUBLISHER_NAME	AUTHOR_NAME	No. of copies
1	DBMS	MCGRAW-HILL	NAVATHE	10
1	DBMS	MCGRAW-HILL	NAVATHE	5
2	ADBMS	MCGRAW-HILL	NAVATHE	2
2	ADBMS	MCGRAW-HILL	NAVATHE	5
3	CN	PEARSON	TANENBAUM	3
5	OS	PEARSON	GALVIN	1
4	CG	GRUPO PLANETA	EDWARD ANGEL	2

2) Get the particulars of borrowers who have bowrowed more than 3 books but from Jan 2017 to jun 2017

```
SQL> Select card_no
     from book_lending
     where date_out between '01-Jan-2017' and '01-jul-2017'
     group by card_no
     having count(*) > 3;
```

output

CARD_NO
101

Delete a book in BOOK table. update the contents of other tables reflect data manoplation operation.

```
SQL>  DELETE FROM BOOK
      WHERE BOOK-ID = 3;

   1 row deleted

SQL>  Select * from BOOK;
```

BOOK-ID	TITLE	PUB-YEAR	PUBLISHER-NAME
1	DBMS	JAN-2017	MCGRAW-HILL
2	ADBMS	JUN-2016	MCGRAW-HILL
4	CG	SEP-2015	GRUPO PLANETA
5	OS	MAY-2016	PEARSON

4) Partition the BOOK table based on year of publication.

```
SQL>  CREATE VIEW V-publication
      AS SELECT pub-year
      FROM BOOK;
```

output

```
View created.

SQL> SELECT * FROM V-publication
```

PUB-YEAR
JAN-2017
JUN-2016
SEP-2016
SEP-2015
MAY-2016

5 rows selected.

5) Create View of all books and its number of copies that are currently available in the library.

```
SQL>    CREATE VIEW V_BOOK AS
        Select b.book_id, b.title, c.no-of-copies
        FROM
        bookb, book_copies c, library_branch l
        WHERE b.book_id = c.book:id
        AND c.branch_id = l.branch_id;
```

output

View Created

```
SQL> SELECT * FROM V_BOOK;
```

BOOK_ID	TITLE	NO_OF_COPIES
1	DBMS	10
1	DBMS	5
2	ADBMS	2
2	ADBMS	5
3	CN	4
5	OS	1
4	CG	3

7 rows selected.

22/9/23

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