1. Create a schema for a library DB

**Solution :-**

set timing on;

drop table book cascade constraints;

drop table library\_branch cascade constraints;

drop table publisher cascade constraints;

drop table book\_authors cascade constraints;

drop table book\_copies cascade constraints;

drop table book\_lending cascade constraints;

drop view v\_books;

--range partition

show user

create table book (Book\_id char(15) primary key, Title char(15), Publisher\_Name char(20), Pub\_Year int)

partition by range(pub\_year)

(partition p1 values less than (2014) tablespace users,

partition p2 values less than (2016) tablespace sysaux,

partition p3 values less than (maxvalue) tablespace system);

desc dba\_tab\_partitions;

select table\_owner,table\_name,partition\_name from dba\_tab\_partitions

where table\_name='BOOK';

create table library\_branch(Branch\_id integer primary key , Branch\_Name char(20) , Address char(30));

create table publisher(Name char(20) primary key, Address char(30), Phone integer);

create table book\_authors(Author\_Name char(15),Book\_id char(15) primary key, foreign key (Book\_id)

references BOOK(Book\_id) on delete cascade);

create table book\_copies(No\_of\_Copies integer,Book\_id char(15),Branch\_id integer,foreign key

(Book\_id) references book(Book\_id) on delete cascade,

foreign key (Branch\_id) references library\_branch(Branch\_id) on delete cascade,primary key(book\_id,branch\_id));

create table book\_lending(Card\_No integer, Date\_Out date, Due\_Date date,Book\_id char(15),Branch\_id integer,

foreign key (Book\_id)

references book(Book\_id) on delete cascade,

foreign key (Branch\_id) references library\_branch(Branch\_id) on delete cascade,primary key(book\_id,branch\_id,card\_no));

insert into book(Book\_id,Title,Publisher\_Name,Pub\_Year) values('DBMS-1','DBMS','Pearson',2017);

insert into book(Book\_id,Title,Publisher\_Name,Pub\_Year) values('Oracle-1','Oracle','Wilson',2015);

insert into book(Book\_id,Title,Publisher\_Name,Pub\_Year) values('OOPS-1','OOPS','HP Publisher',2014);

insert into book(Book\_id,Title,Publisher\_Name,Pub\_Year) values('Network-1','Network','Neo Infotech',2013);

insert into book(Book\_id,Title,Publisher\_Name,Pub\_Year) values('MySql-1','MySql','MK Publisher',2012);

insert into book(Book\_id,Title,Publisher\_Name,Pub\_Year) values('DBMS-2','DBMS','Pearson',2011);

insert into library\_branch(Branch\_id,Branch\_Name,Address) values(1,'PearsonLibrary','USA');

insert into library\_branch(Branch\_id,Branch\_Name,Address) values(2,'OracleLibrary','UK');

insert into library\_branch(Branch\_id,Branch\_Name,Address) values(3,'OOPSLibrary','BYU');

insert into library\_branch(Branch\_id,Branch\_Name,Address) values(4,'NetworkLibrary','Canada');

insert into library\_branch(Branch\_id,Branch\_Name,Address) values(5,'MySqlLibrary','India');

insert into publisher(Name, Address, Phone) values('PearsonPublisher','USA',080124578);

insert into publisher(Name, Address, Phone) values('OraclePublisher','UK',6545456465);

insert into publisher(Name, Address, Phone) values('OOPSPublisher','BYU',454354354);

insert into publisher(Name, Address, Phone) values('NetworkPublisher','Canada',567657657);

insert into publisher(Name, Address, Phone) values('MySqlPublisher','India',1324454354);

insert into book\_authors(Author\_Name,Book\_id) values('Navathe','DBMS-1');

insert into book\_authors(Author\_Name,Book\_id) values('Raghu','Oracle-1');

insert into book\_authors(Author\_Name,Book\_id) values('Balu','OOPS-1');

insert into book\_authors(Author\_Name,Book\_id) values('Forouzan','Network-1');

insert into book\_authors(Author\_Name,Book\_id) values('Kanta','MySql-1');

insert into book\_authors(Author\_Name,Book\_id) values('Navathe','DBMS-2');

insert into book\_copies(No\_of\_Copies,Book\_id ,Branch\_id) values (5,'DBMS-1',1);

insert into book\_copies(No\_of\_Copies,Book\_id ,Branch\_id) values (8,'Oracle-1',2);

insert into book\_copies(No\_of\_Copies,Book\_id ,Branch\_id) values (15,'OOPS-1',3);

insert into book\_copies(No\_of\_Copies,Book\_id ,Branch\_id) values (3,'Network-1',4);

insert into book\_copies(No\_of\_Copies,Book\_id ,Branch\_id) values (12,'MySql-1',5);

insert into book\_copies(No\_of\_Copies,Book\_id ,Branch\_id) values (4,'DBMS-2',1);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (8454,'06-AUG-17','06-AUG-17','Oracle-1',2);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (43523,'12-MAR-17','06-AUG-17','OOPS-1',3);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (454,'16-APR-17','06-AUG-17','Network-1',4);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (12,'23-MAY-17','06-AUG-17','MySql-1',5);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (545,'01-JAN-17','06-jun-17','DBMS-1',1);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (545,'09-JUN-17','09-jun-17','DBMS-2',1);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (545,'23-MAY-17','14-jun-17','MySql-1',5);

insert into book\_lending(Card\_No, Date\_Out, Due\_Date,Book\_id,Branch\_id) values (545,'12-MAR-17','30-jun-17','OOPS-1',3);

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, LIBRARY\_BRANCH L

WHERE B.BOOK\_ID=A.BOOK\_ID

AND B.BOOK\_ID=C.BOOK\_ID

AND L.BRANCH\_ID=C.BRANCH\_ID;

SELECT card\_no

FROM BOOK\_LENDING

WHERE Due\_Date BETWEEN '01-JAN-2017' AND '01-jul-2017'

GROUP BY card\_no

HAVING COUNT (\*)>3;

CREATE VIEW V\_BOOKS AS

SELECT B.BOOK\_ID, B.TITLE,b.publisher\_name,b.pub\_year, C.NO\_OF\_COPIES

FROM BOOK B, BOOK\_COPIES C, LIBRARY\_BRANCH L

WHERE B.BOOK\_ID=C.BOOK\_ID

AND C.BRANCH\_ID=L.BRANCH\_ID;

select \* from V\_BOOKS;

select \* from book;

select \* from library\_branch;

select \* from publisher;

select \* from book\_authors;

select \* from book\_copies;

select \* from book\_lending;

DELETE FROM BOOK

WHERE BOOK\_ID='Oracle-1';

select \* from book;

select \* from book\_authors;

select \* from book\_copies;

select \* from book\_lending;

select constraint\_name, constraint\_type from user\_constraints

where table\_name='BOOK';

alter table book drop partition p2;

set timing off;

Outputs:-

desc dba\_tab\_partitions;

Name Null? Type

----------------------------------------- -------- ----------------------------

TABLE\_OWNER VARCHAR2(128)

TABLE\_NAME VARCHAR2(128)

COMPOSITE VARCHAR2(3)

PARTITION\_NAME VARCHAR2(128)

SUBPARTITION\_COUNT NUMBER

HIGH\_VALUE LONG

HIGH\_VALUE\_LENGTH NUMBER

PARTITION\_POSITION NUMBER

TABLESPACE\_NAME VARCHAR2(30)

PCT\_FREE NUMBER

PCT\_USED NUMBER

INI\_TRANS NUMBER

MAX\_TRANS NUMBER

INITIAL\_EXTENT NUMBER

NEXT\_EXTENT NUMBER

MIN\_EXTENT NUMBER

MAX\_EXTENT NUMBER

MAX\_SIZE NUMBER

PCT\_INCREASE NUMBER

FREELISTS NUMBER

FREELIST\_GROUPS NUMBER

LOGGING VARCHAR2(7)

COMPRESSION VARCHAR2(8)

COMPRESS\_FOR VARCHAR2(30)

NUM\_ROWS NUMBER

BLOCKS NUMBER

EMPTY\_BLOCKS NUMBER

AVG\_SPACE NUMBER

CHAIN\_CNT NUMBER

AVG\_ROW\_LEN NUMBER

SAMPLE\_SIZE NUMBER

LAST\_ANALYZED DATE

BUFFER\_POOL VARCHAR2(7)

FLASH\_CACHE VARCHAR2(7)

CELL\_FLASH\_CACHE VARCHAR2(7)

GLOBAL\_STATS VARCHAR2(3)

USER\_STATS VARCHAR2(3)

IS\_NESTED VARCHAR2(3)

PARENT\_TABLE\_PARTITION VARCHAR2(128)

INTERVAL VARCHAR2(3)

SEGMENT\_CREATED VARCHAR2(4)

INDEXING VARCHAR2(4)

READ\_ONLY VARCHAR2(4)

INMEMORY VARCHAR2(8)

INMEMORY\_PRIORITY VARCHAR2(8)

INMEMORY\_DISTRIBUTE VARCHAR2(15)

INMEMORY\_COMPRESSION VARCHAR2(17)

INMEMORY\_DUPLICATE VARCHAR2(13)

CELLMEMORY VARCHAR2(24)

INMEMORY\_SERVICE VARCHAR2(12)

INMEMORY\_SERVICE\_NAME VARCHAR2(1000)

TABLE\_OWNER

--------------------------------------------------------------------------------

TABLE\_NAME

--------------------------------------------------------------------------------

PARTITION\_NAME

--------------------------------------------------------------------------------

SYSTEM

BOOK

P1

SYSTEM

BOOK

P2

TABLE\_OWNER

--------------------------------------------------------------------------------

TABLE\_NAME

--------------------------------------------------------------------------------

PARTITION\_NAME

--------------------------------------------------------------------------------

SYSTEM

BOOK

P3

BOOK\_ID TITLE PUBLISHER\_NAME PUB\_YEAR

--------------- --------------- -------------------- ----------

Network-1 Network Neo Infotech 2013

MySql-1 MySql MK Publisher 2012

DBMS-2 DBMS Pearson 2011

Oracle-1 Oracle Wilson 2015

OOPS-1 OOPS HP Publisher 2014

DBMS-1 DBMS Pearson 2017

6 rows selected.

BRANCH\_ID BRANCH\_NAME ADDRESS

---------- -------------------- ------------------------------

1 PearsonLibrary USA

2 OracleLibrary UK

3 OOPSLibrary BYU

4 NetworkLibrary Canada

5 MySqlLibrary India

NAME ADDRESS PHONE

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PearsonPublisher USA 80124578

OraclePublisher UK 6545456465

OOPSPublisher BYU 454354354

NetworkPublisher Canada 567657657

MySqlPublisher India 1324454354

AUTHOR\_NAME BOOK\_ID

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Navathe DBMS-1

Raghu Oracle-1

Balu OOPS-1

Forouzan Network-1

Kanta MySql-1

Navathe DBMS-2

6 rows selected.

NO\_OF\_COPIES BOOK\_ID BRANCH\_ID

------------ --------------- ----------

5 DBMS-1 1

8 Oracle-1 2

15 OOPS-1 3

3 Network-1 4

12 MySql-1 5

4 DBMS-2 1

6 rows selected.

CARD\_NO DATE\_OUT DUE\_DATE BOOK\_ID BRANCH\_ID

---------- --------- --------- --------------- ----------

8454 06-AUG-17 06-AUG-17 Oracle-1 2

43523 12-MAR-17 06-AUG-17 OOPS-1 3

454 16-APR-17 06-AUG-17 Network-1 4

12 23-MAY-17 06-AUG-17 MySql-1 5

545 01-JAN-17 06-JUN-17 DBMS-1 1

545 09-JUN-17 09-JUN-17 DBMS-2 1

545 23-MAY-17 14-JUN-17 MySql-1 5

545 12-MAR-17 30-JUN-17 OOPS-1 3

8 rows selected.

**Output :-**

**1)**

BOOK\_ID TITLE PUBLISHER\_NAME AUTHOR\_NAME

--------------- --------------- -------------------- ---------------

NO\_OF\_COPIES BRANCH\_ID

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DBMS-1 DBMS Pearson Navathe

5 1

Oracle-1 Oracle Wilson Raghu

8 2

OOPS-1 OOPS HP Publisher Balu

15 3

BOOK\_ID TITLE PUBLISHER\_NAME AUTHOR\_NAME

--------------- --------------- -------------------- ---------------

NO\_OF\_COPIES BRANCH\_ID

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Network-1 Network Neo Infotech Forouzan

3 4

MySql-1 MySql MK Publisher Kanta

12 5

DBMS-2 DBMS Pearson Navathe

4 1

6 rows selected.

**2)**

CARD\_NO

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545

**5)**

BOOK\_ID TITLE PUBLISHER\_NAME PUB\_YEAR NO\_OF\_COPIES

--------------- --------------- -------------------- ---------- ------------

DBMS-1 DBMS Pearson 2017 5

Oracle-1 Oracle Wilson 2015 8

OOPS-1 OOPS HP Publisher 2014 15

Network-1 Network Neo Infotech 2013 3

MySql-1 MySql MK Publisher 2012 12

DBMS-2 DBMS Pearson 2011 4

6 rows selected.

SQL> select \* from book;

BOOK\_ID TITLE PUBLISHER\_NAME PUB\_YEAR

--------------- --------------- -------------------- ----------

Network-1 Network Neo Infotech 2013

MySql-1 MySql MK Publisher 2012

DBMS-2 DBMS Pearson 2011

OOPS-1 OOPS HP Publisher 2014

DBMS-1 DBMS Pearson 2017

Elapsed: 00:00:00.00

SQL>

SQL> select \* from book\_authors;

AUTHOR\_NAME BOOK\_ID

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Navathe DBMS-1

Balu OOPS-1

Forouzan Network-1

Kanta MySql-1

Navathe DBMS-2

Elapsed: 00:00:00.00

SQL>

SQL> select \* from book\_copies;

NO\_OF\_COPIES BOOK\_ID BRANCH\_ID

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5 DBMS-1 1

15 OOPS-1 3

3 Network-1 4

12 MySql-1 5

4 DBMS-2 1

Elapsed: 00:00:00.00

SQL>

SQL> select \* from book\_lending;

CARD\_NO DATE\_OUT DUE\_DATE BOOK\_ID BRANCH\_ID

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43523 12-MAR-17 06-AUG-17 OOPS-1 3

454 16-APR-17 06-AUG-17 Network-1 4

12 23-MAY-17 06-AUG-17 MySql-1 5

545 01-JAN-17 06-JUN-17 DBMS-1 1

545 09-JUN-17 09-JUN-17 DBMS-2 1

545 23-MAY-17 14-JUN-17 MySql-1 5

545 12-MAR-17 30-JUN-17 OOPS-1 3

7 rows selected.

CONSTRAINT\_NAME

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SYS\_C008966

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