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Programme	:	**B.Tech - CSE**	Semester	:	**Winter 18 - 19**
Course	:	**Database Management Systems (Embedded Lab)**	Code	:	**CSE2004**
Faculty	:	**Prof. R. Gayathri** **Prof. M. Premalatha**	Slot	:	**L3 + L4**

Ex. No. 2
07/01/18

SQL - Integrity Constraints

Create the following tables and apply constraints as follows
  1. Books Table:
      a. isbn – primary key
      b. title
      c. price
      d. qty – not null

```
SQL> create table books(isbn number(10),title char(15),price
number(4,2),qty number(3) not null, constraint pk_isbn primary
key(isbn));

Table created.

SQL> desc books
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
----------------

 ISBN                                      NOT NULL NUMBER(10)
 TITLE                                              CHAR(15)
 PRICE                                              NUMBER(4,2)
 QTY                                       NOT NULL NUMBER(3)
```

2. Authors Table:
   a. authorId – primary key
   b. email – unique

```
SQL> create table authors(authorId varchar(6), email
varchar(15), constraint pk_authorId primary key(authorId),
constraint myunique unique(email));

Table created.

SQL> desc authors
 Name                                      Null?    Type
 ---------------------------------------- -------- -----------
 ----------------

 AUTHORID                                 NOT NULL VARCHAR2(6)
 EMAIL
VARCHAR2(15)VARCHAR2(15)
```

3. Book_Authors:
   a. isbn – foreign key references books table
   b. authorId – foreign key references authors table

```
SQL> create table books_authors(authorId varchar(6) not
null,isbn number(10) not null, constraint fk_isbn foreign
key(isbn) references books,constraint fk_aId foreign
key(authorId) references authors);

Table created.

SQL> desc books_authors
 Name                                      Null?    Type
 ---------------------------------------- -------- -----------
 ----------------

 AUTHORID                                 NOT NULL VARCHAR2(6)
 ISBN                                     NOT NULL NUMBER(10)
```

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Write SQL Queries for the following:

Constraints:

      1. **Add unique constraint to title in books table**

```
SQL> alter table books add constraint myuniqueconstraint
unique(title);

Table altered.
```

      2. **Add not null constraint to price in books table**

```
SQL> alter table books modify price number(4,2) not null;

Table altered.

SQL> desc books
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------

 ISBN                                      NOT NULL NUMBER(10)
 TITLE                                              CHAR(15)
 PRICE                                     NOT NULL NUMBER(4,2)
 QTY                                       NOT NULL NUMBER(3)
```

      3. **Alter not null constraint in price attribute in books table and set the check constraint so that value is greater than 0.0**

```
SQL> alter table books modify price number null;

Table altered.

SQL> desc books
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 --------

 ISBN                                      NOT NULL NUMBER(10)
 TITLE                                              CHAR(15)
 PRICE                                              NUMBER
 QTY                                       NOT NULL NUMBER(3)

SQL> alter table books add check(price>0.00);

Table altered.
```

4. Drop not null constraint for qty in books table

```
SQL> alter table books modify qty number null;

Table altered.

SQL> desc books
 Name                                      Null?    Type
 ----------------------------------------- -------- -----------
 -

 ISBN                                      NOT NULL NUMBER(10)
 TITLE                                              CHAR(15)
 PRICE                                              NUMBER
 QTY                                                NUMBER
```

5. Set a default value of qty in books table as 0.

```
SQL> alter table books modify qty number(4) default 0;

Table altered.

SQL> desc books
 Name                                      Null?    Type
 ----------------------------------------- -------- -----------

 ISBN                                      NOT NULL NUMBER(10)
 TITLE                                              CHAR(15)
 PRICE                                              NUMBER
 QTY                                                NUMBER(4)
```

6. Drop unique constraint for email attribute in authors table.

```
SQL> alter table authors drop constraint myunique;

Table altered.
```

7. Drop any one foreign key constraint.

```
SQL> alter table books_authors drop constraint fk_isbn;

Table altered.
```

8. Drop a primary key [after referenced foreign key is dropped].

```
SQL> alter table books drop constraint pk_isbn;

Table altered.

SQL> desc books
 Name                                      Null?    Type
 ----------------------------------------- -------- -----------
 ----------------
 ISBN                                               NUMBER(10)
 TITLE                                              CHAR(15)
 PRICE                                              NUMBER
 QTY                                                NUMBER(4)
```

9. Add an attribute for authors table and set a constraint for it.

```
SQL> alter table authors add name char(10);

Table altered.

SQL> alter table authors add constraint Myunique unique(name);

Table altered.
```