SIT772 Database and Information Retrieval

Assignment-1

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Ques1:

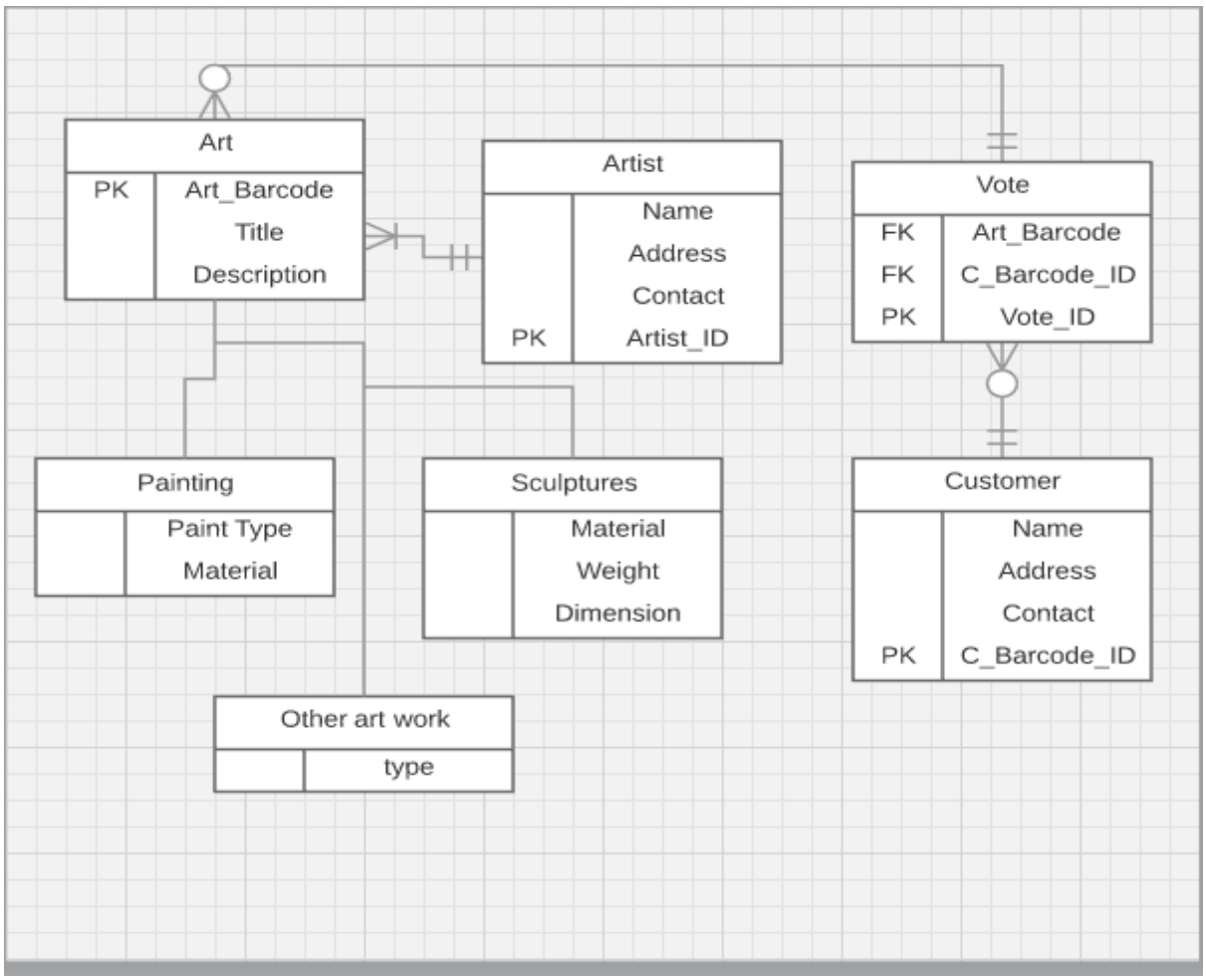
Exercise 1:

Entities:	**Attributes:**
Art	• Art_Barcode • Title • Description
Artist	• Name • Address • Phone Number • Artist_ID
Customer	• Name • Address • Phone Number • C_Barcode_ID
Paintings	• Paint type • Material
Sculptures	• Material • Weight • Dimension
Other artwork	• Type
Vote	• Art_Barcode • C_Barcode_ID • Vote_ID

Relationships:

1- Each Art work is created by single artist.
2- One artist may create more than one art.
3- People will be able to vote for more than one art work.

Exercise 2:



Exercise 3:

```
SQL> create table Artist(
  2  name char(25) not null,
  3  address varchar(25) not null,
  4  contact int not null,
  5  artist_id int not null,
  6  primary key(artist_id));

Table created.

SQL> desc Artist;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 NAME                                      NOT NULL CHAR(25)
 ADDRESS                                   NOT NULL VARCHAR2(25)
 CONTACT                                   NOT NULL NUMBER(38)
 ARTIST_ID                                 NOT NULL NUMBER(38)
```

```
SQL> create table Art(
  2  art_barcode int not null,
  3  title varchar(25) not null,
  4  description varchar(25) not null,
  5  primary key(art_barcode));

Table created.

SQL> desc art;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 ART_BARCODE                               NOT NULL NUMBER(38)
 TITLE                                     NOT NULL VARCHAR2(25)
 DESCRIPTION                               NOT NULL VARCHAR2(25)
```

```
SQL> create table customer(
  2  name char not null,
  3  address varchar(25) not null,
  4  contact int not null,
  5  C_Barcode_ID int not null,
  6  primary key(C_Barcode_ID));

Table created.

SQL> desc customer;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 NAME                                      NOT NULL CHAR(1)
 ADDRESS                                   NOT NULL VARCHAR2(25)
 CONTACT                                   NOT NULL NUMBER(38)
 C_BARCODE_ID                              NOT NULL NUMBER(38)

SQL>
```

```
SQL> create table vote(
  2  art_barcode int not null,
  3  C_Barcode_ID int not null,
  4  Vote_ID int not null,
  5  primary key(Vote_ID),
  6  foreign key(art_barcode) references art(art_barcode),
  7  foreign key(C_Barcode_ID) references customer(c_Barcode_id));

Table created.

SQL> desc vote;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 ART_BARCODE                               NOT NULL NUMBER(38)
 C_BARCODE_ID                              NOT NULL NUMBER(38)
 VOTE_ID                                   NOT NULL NUMBER(38)
```

Ques2:

Exercise 1:

```
SQL> create table Student1
  2  (Student_ID int not null,
  3  Student_Fname char(25) not null,
  4  Student_Lname char(25) not null,
  5  primary key (Student_ID));

Table created.
```

```
SQL> desc Student1;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 STUDENT_ID                                NOT NULL NUMBER(38)
 STUDENT_FNAME                             NOT NULL CHAR(25)
 STUDENT_LNAME                             NOT NULL CHAR(25)
```

```
SQL> Select Student_ID,Student_Fname,Student_Lname from student1;

STUDENT_ID STUDENT_FN STUDENT_LN
---------- ---------- ----------
     10001 John       Smith
     10002 Dave       Franklin
     10003 Febby      Johns
     10004 Mary       Gibson
     10005 Glory      Anson
```

```
SQL> create table Student2(
  2  Student_ID int not null,
  3  Course_ID varchar(10) not null,
  4  Year_Joined int not null,
  5  foreign key(Student_ID) references Student1(Student_ID),
  6  foreign key(Course_ID) references Course(Course_ID));

Table created.

SQL> desc Student2;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 STUDENT_ID                                NOT NULL NUMBER(38)
 COURSE_ID                                 NOT NULL VARCHAR2(10)
 YEAR_JOINED                               NOT NULL NUMBER(38)
```

C:\Windows\system32\cmd.exe - sqlplus ;

```
SQL> insert into Student2 values(&Student_ID,'&Course_ID',&Year_Joined);
Enter value for student_id: 10001
Enter value for course_id: SIT772
Enter value for year_joined: 2016
old   1: insert into Student2 values(&Student_ID,'&Course_ID',&Year_Joined)
new   1: insert into Student2 values(10001,'SIT772',2016)

1 row created.

SQL> /
Enter value for student_id: 10002
Enter value for course_id: SIT774
Enter value for year_joined: 2015
old   1: insert into Student2 values(&Student_ID,'&Course_ID',&Year_Joined)
new   1: insert into Student2 values(10002,'SIT774',2015)

1 row created.

SQL> /
Enter value for student_id: 10003
Enter value for course_id: SIT775
Enter value for year_joined: 2017
old   1: insert into Student2 values(&Student_ID,'&Course_ID',&Year_Joined)
new   1: insert into Student2 values(10003,'SIT775',2017)

1 row created.

SQL> /
Enter value for student_id: 10004
Enter value for course_id: SIT712
Enter value for year_joined: 2016
old   1: insert into Student2 values(&Student_ID,'&Course_ID',&Year_Joined)
new   1: insert into Student2 values(10004,'SIT712',2016)

1 row created.

SQL> /
Enter value for student_id: 10005
Enter value for course_id: SIT772
Enter value for year_joined: 2017
old   1: insert into Student2 values(&Student_ID,'&Course_ID',&Year_Joined)
new   1: insert into Student2 values(10005,'SIT772',2017)

1 row created.

SQL> select Student_ID,Course_ID,Year_Joined from Student2;

STUDENT_ID COURSE_ID  YEAR_JOINED
---------- ---------- -----------
     10001 SIT772             2016
     10002 SIT774             2015
     10003 SIT775             2017
     10004 SIT712             2016
     10005 SIT772             2017
```

```
SQL> create table Course
  2  (Course_ID varchar(25) not null,
  3  Course char(25),
  4  Location char(25),
  5  primary key(Course_ID));

Table created.
```

```
SQL> desc course;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 COURSE_ID                                 NOT NULL VARCHAR2(10)
 COURSE                                    NOT NULL CHAR(25)
 LOCATION                                  NOT NULL CHAR(25)

SQL>
```

```
C:\Windows\system32\cmd.exe - sqlplus ;
Enter value for location: Geelong
old   1: insert into Course values('&Course_ID','&Course','&Location')
new   1: insert into Course values('SIT775','Software Development','Geelong')

1 row created.

SQL> /
Enter value for course_id: SIT712
Enter value for course: Project Management
Enter value for location: Burwood
old   1: insert into Course values('&Course_ID','&Course','&Location')
new   1: insert into Course values('SIT712','Project Management','Burwood')

1 row created.

SQL> Select Course_ID,Course,Location from Course;

COURSE_ID  COURSE                    LOCATION
---------- ------------------------- -------------------------
SIT772     Database                  Burwood
SIT774     IT Security               Burwood
SIT775     Software Development      Geelong
SIT712     Project Management        Burwood

SQL> create table Student2(
  2  Student_ID int not null,
  3  Course_ID varchar(10) not null,
  4  Year_Joined int not null,
  5  foreign key(Student_ID) refrences Student1(Student_ID),
  6  foreign key(Course_ID) refrences Course(Course_ID));
foreign key(Student_ID) refrences Student1(Student_ID),
                        *
ERROR at line 5:
ORA-00905: missing keyword
```

Exercise 2:

```
SQL> select a.Student_ID,Student_FName,Student_Lname
  2  from student1 a
  3  inner join Student2 b on a.Student_ID=b.Student_ID
  4  where Year_Joined>='2016';

STUDENT_ID STUDENT_FN STUDENT_LN
---------- ---------- ----------
     10001 John       Smith
     10003 Febby      Johns
     10004 Mary       Gibson
     10005 Glory      Anson
```

Exercise 3:

```
SQL> select* from student1 where
  2  Student_FName like '%a%'
  3  or
  4  Student_Lname like '%a%';

STUDENT_ID STUDENT_FN STUDENT_LN
---------- ---------- ----------
     10002 Dave       Franklin
     10004 Mary       Gibson
```

Exercise 4:

```
SQL> select a.Student_ID,Student_FName,Student_Lname
  2  from Student1 a
  3  inner join Student2 b on a.student_id=b.student_id
  4  inner join Course c on b.course_id=c.course_id
  5  where location='Burwood';

STUDENT_ID STUDENT_FN STUDENT_LN
---------- ---------- ----------
     10001 John       Smith
     10002 Dave       Franklin
     10004 Mary       Gibson
     10005 Glory      Anson
```

Exercise 5:

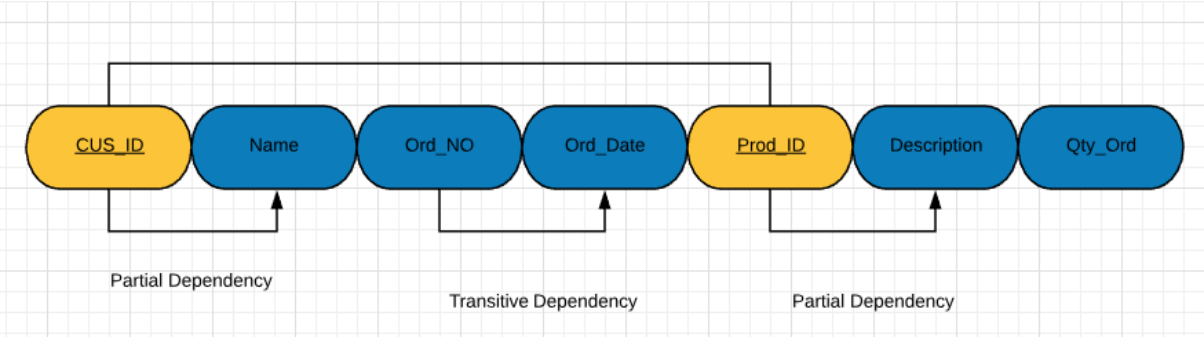
```
SQL> Select a.student_id,Student_FName,Student_Lname
  2  from student1 a
  3  inner join student2 b on a.student_id=b.student_id
  4  inner join course c on b.course_id=c.course_id
  5  where course='Database'
  6  or
  7  location='Geelong';

STUDENT_ID STUDENT_FN STUDENT_LN
---------- ---------- ----------
     10001 John       Smith
     10003 Febby      Johns
     10005 Glory      Anson

SQL>
```

Ques3:

Exercise 1:



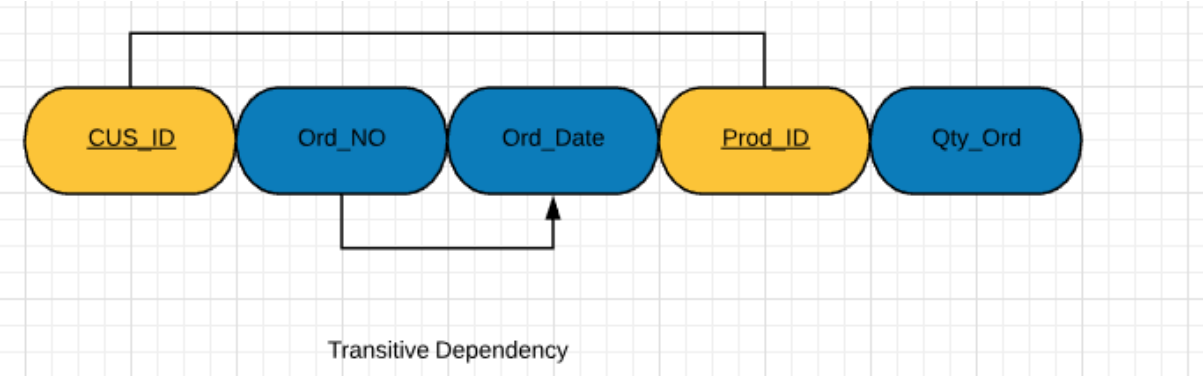
CUS_ID	Name	Ord_NO	Ord_Date	Prod_ID	Description	Qty_Ord
C001	Gold	81	15-Apr	P005	Chisel	6
C001	Gold	81	15-Apr	P004	Plane	14
C075	Red	99	16-Apr	P015	Saw	3
C009	Blue	56	16-Apr	P033	Punch	24
C009	Blue	56	16-Apr	P004	Plane	9
C001	Gold	88	17-Apr	P015	Saw	10

Table Name: Sales

Composite Key: CUS_ID, Prod_ID (Marked in Green)

Relational Schema: (**CUS_ID,** Name, Ord_NO, Ord_Date, **Prod_ID,** Description, Qty_Ord)

Exercise 2:

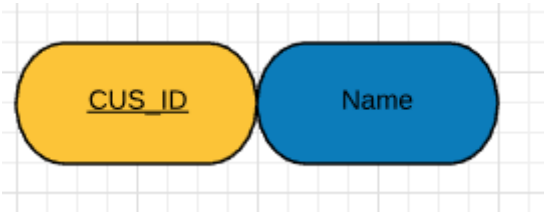


CUS_ID	Ord_NO	Ord_Date	Prod_ID	Qty_Ord
C001	81	15-Apr	P004	14
C001	81	15-Apr	P005	6
C001	88	17-Apr	P015	10
C009	56	16-Apr	P004	9
C009	56	16-Apr	P033	24
C075	99	16-Apr	P015	3

Table Name: Sales

Composite Key: CUS_ID, Prod_ID (Marked in Green)

Relational Schema: (**CUS_ID,** Ord_NO, Ord_Date, **Prod_ID,** Qty_Ord)

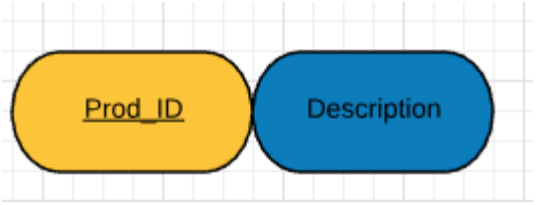


CUS_ID	Name
C001	Gold
C009	Blue
C075	Red

Table Name: Customer

Primary Key: CUS_ID (Marked in Green)

Relational Schema: (**CUS_ID,** Name)



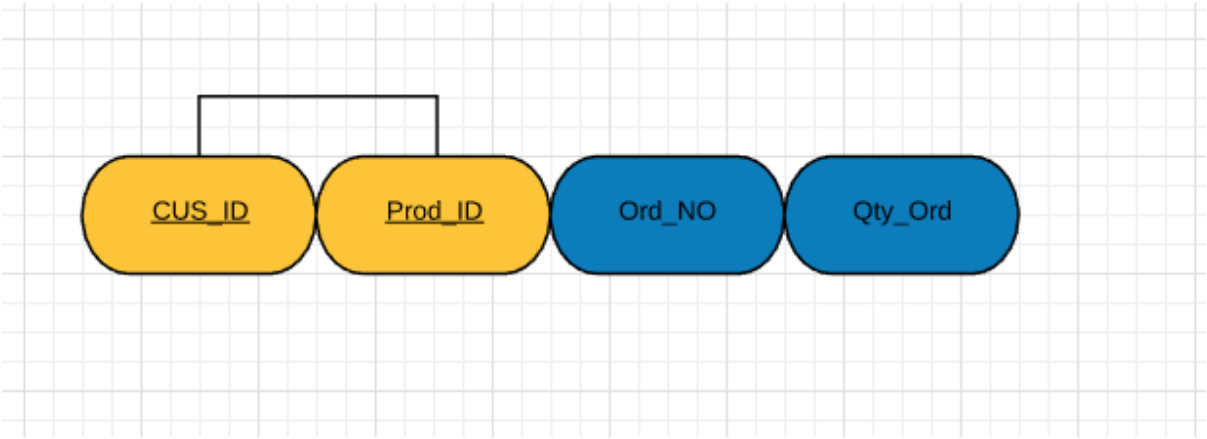
Prod_ID	Description
P004	Plane
P005	Chisel
P015	Saw
P033	Punch

Table Name: Product

Primary Key: Prod_ID (Marked in Green)

Relational Schema: (**Prod_ID,** Description)

Exercise 3:



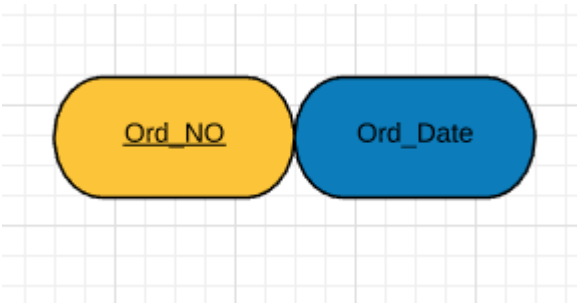
CUS_ID	Prod_ID	Ord_NO	Qty_Ord
C001	P004	81	14
C001	P005	81	6
C001	P015	88	10
C009	P004	56	9
C009	P033	56	24
C075	P015	99	3

Table Name: Sales

Composite Key: CUS_ID, Prod_ID (Marked in Green)

Foreign Key: Ord_NO

Relational Schema: (**CUS_ID, PROD_ID,** ORD_NO, Qty_Ord)

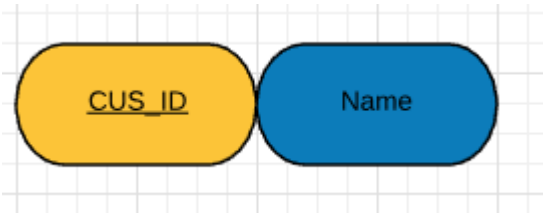


Ord_NO	Ord_Date
56	16-Apr
81	15-Apr
88	17-Apr
99	16-Apr

Table Name: Order

Primary Key: Ord_NO (Marked in Green)

Relational Schema: (**Ord_NO,** Ord_date)

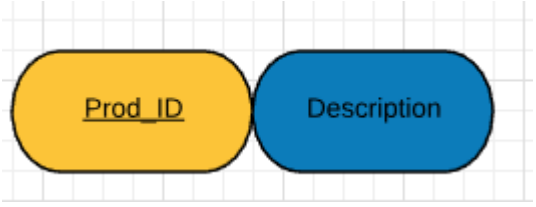


CUS_ID	Name
C001	Gold
C009	Blue
C075	Red

Table Name: Customer

Primary Key: CUS_ID (Marked in Green)

Relational Schema: (**CUS_ID,** Name)



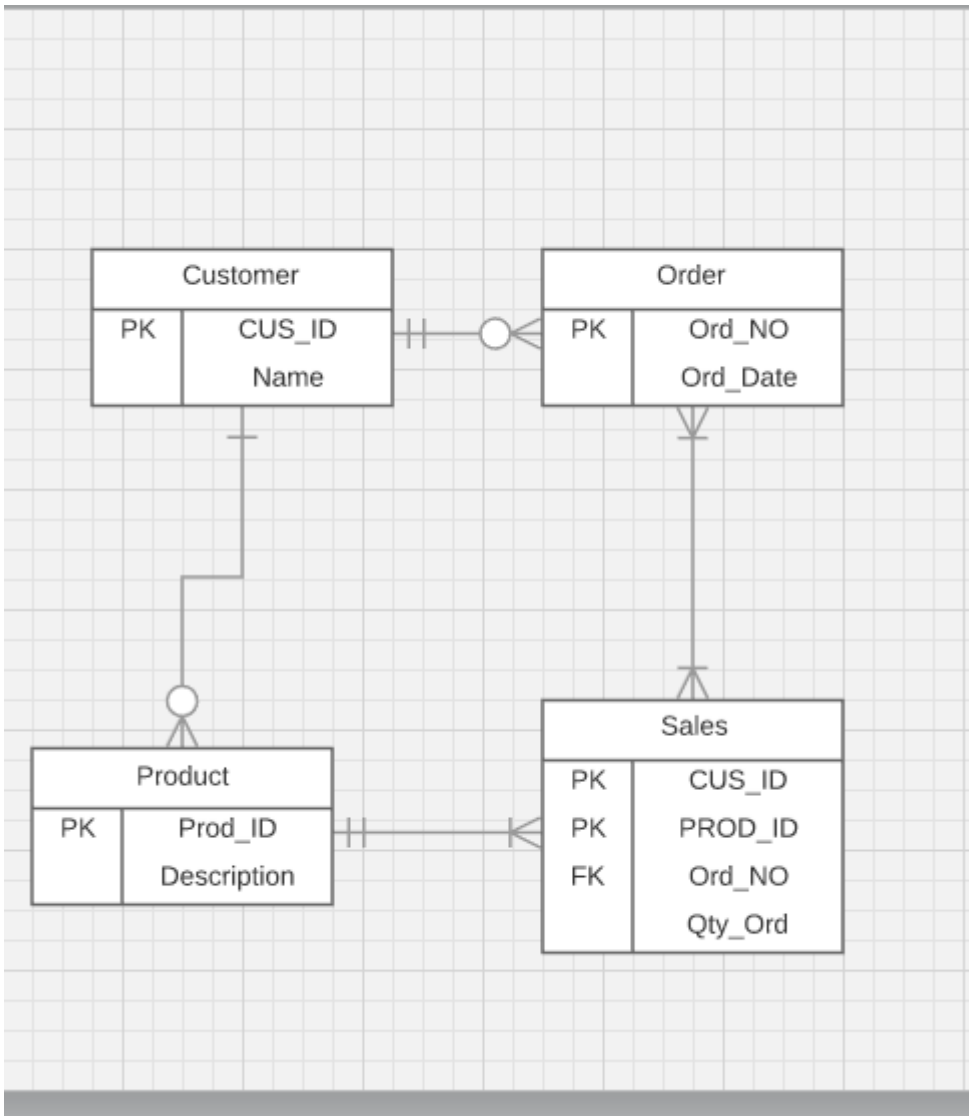
Prod_ID	Description
P004	Plane
P005	Chisel
P015	Saw
P033	Punch

Table Name: Product

Primary Key: Prod_ID (Marked in Green)

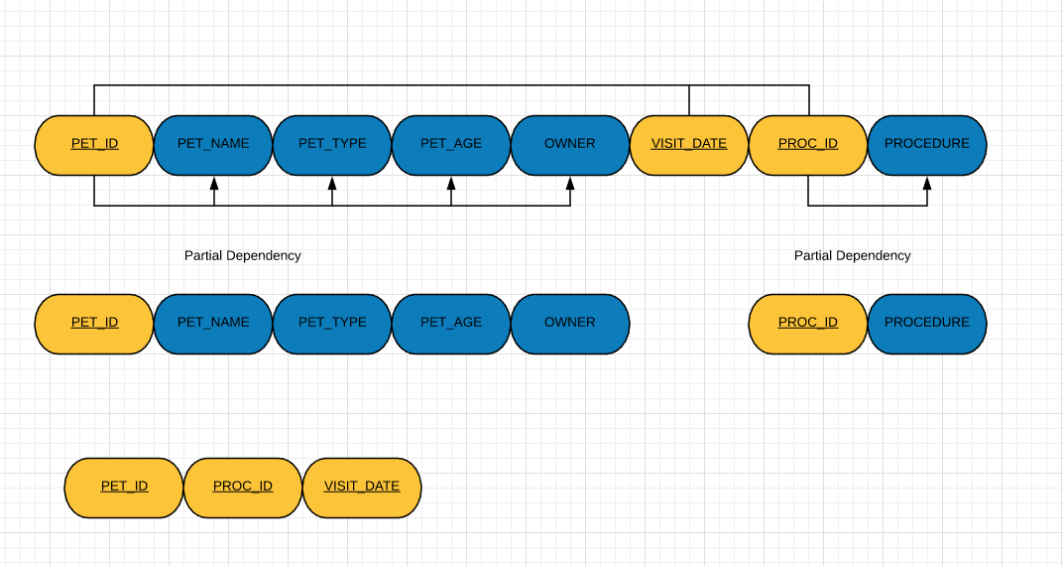
Relational Schema: (**Prod_ID,** Description)

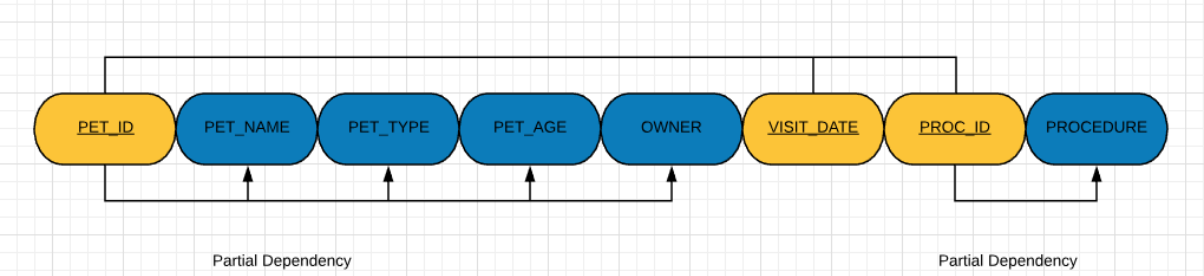
Exercise 4:



Ques4:

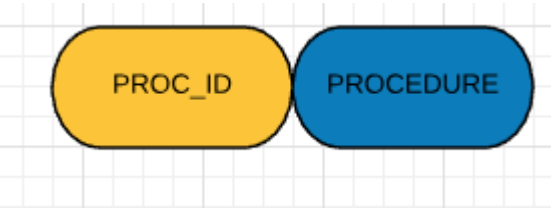
Exercise 1:





PET_ID	PET_NAME	PET_TYPE	PET_AGE	OWNER	VISIT_DATE	PROC_ID	PROCEDURE
246	ROVER	DOG	12	SAM COOK	JAN 13/2002	1	RABIES VACCINATION
					MAR 27/2002	10	EXAMINE and TREAT WOUND
					APR 02/2002	5	HEART WORM TEST
298	SPOT	DOG	2	TERRY KIM	JAN 21/2002	8	TETANUS VACCINATION
					MAR 10/2002	5	HEART WORM TEST
341	MORRIS	CAT	4	SAM COOK	JAN 23/2001	1	RABIES VACCINATION
					JAN 13/2002	1	RABIES VACCINATION
519	TWEEDY	BIRD	2	TERRY KIM	APR 30/2002	20	ANNUAL CHECKUP
					APR 30/2002	12	EYE WASH

Composite Key :(PET_ID, PROC_ID, VISIT_DATE)

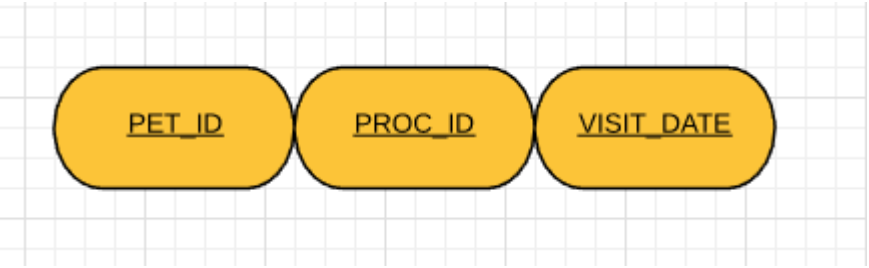


PROC_ID	PROCEDURE
1	RABIES VACCINATION
5	HEART WORM TEST
8	TETANUS VACCINATION
10	EXAMINE and TREAT WOUND
12	EYE WASH
20	ANNUAL CHECKUP

Table Name: Procedure

Primary Key: PROC_ID (Marked in Green)

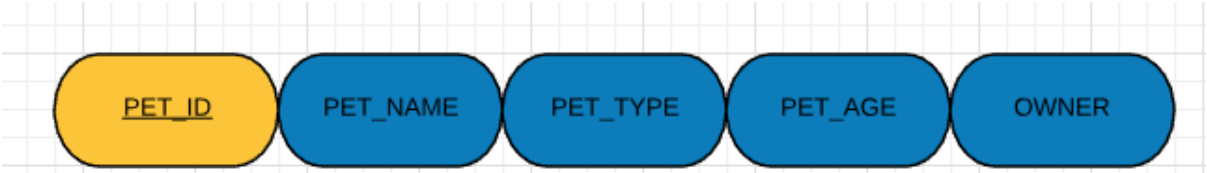
Relational Schema: (**PROC_ID,** Procedure)



PET_ID	PROC_ID	VISIT_DATE
246	1	JAN 13/2002
246	10	MAR 27/2002
246	5	APR 02/2002
298	8	JAN 21/2002
298	5	MAR 10/2002
341	1	JAN 23/2001
341	1	JAN 13/2002
519	12	APR 30/2002
519	20	APR 30/2002

Table Name: Pet_Visit_Proc_Record

Composite Key: (Pet_ID, Proc_ID, Visit_Date) (Marked in Green)



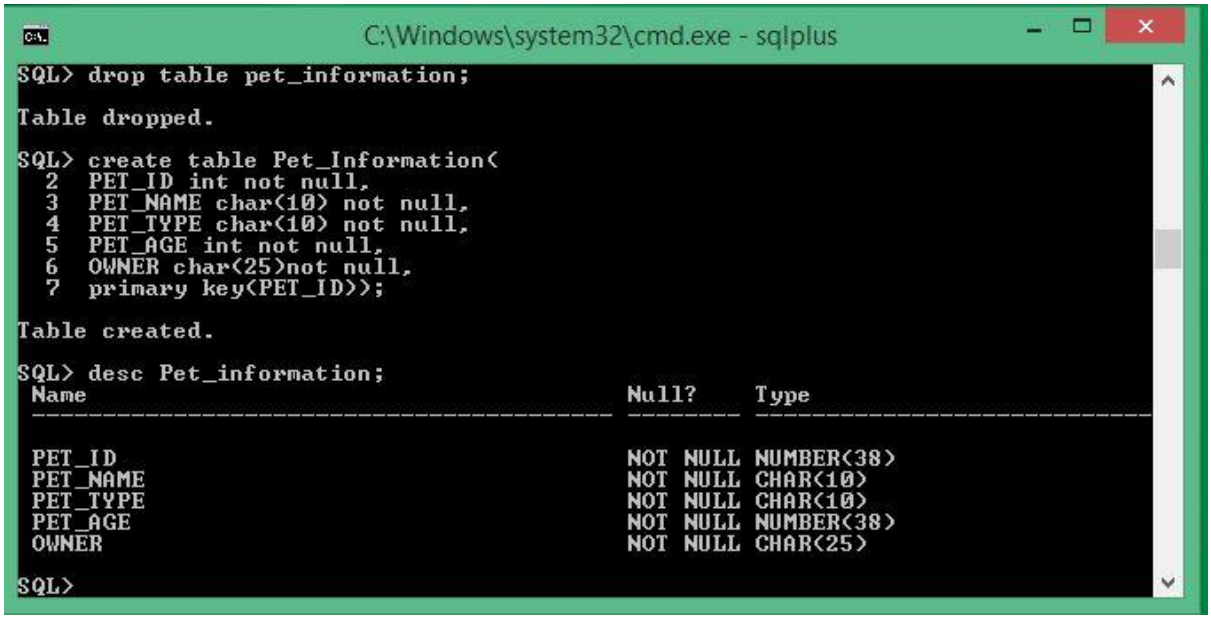
PET_ID	PET_NAME	PET_TYPE	PET_AGE	OWNER
246	ROVER	DOG	12	SAM COOK
298	SPOT	DOG	2	TERRY KIM
341	MORRIS	CAT	4	SAM COOK
519	TWEEDY	BIRD	2	TERRY KIM

Table Name: Pet_Information

Primary Key: Pet_ID (Marked in Green)

Relational Schema: (**Pet_ID,** Pet_Name, Pet_Type, Pet_Age, Owner)

Exercise 2:



```
SQL> insert into Pet_information values(&PET_ID,'&PET_NAME','&PET_TYPE','&PET_AG
E','&OWNER');
Enter value for pet_id: 246
Enter value for pet_name: ROVER
Enter value for pet_type: DOG
Enter value for pet_age: 12
Enter value for owner: SAM COOK
old   1: insert into Pet_information values(&PET_ID,'&PET_NAME','&PET_TYPE','&PE
T_AGE','&OWNER')
new   1: insert into Pet_information values(246,'ROVER','DOG','12','SAM COOK')

1 row created.

SQL> /
Enter value for pet_id: 298
Enter value for pet_name: SPOT
Enter value for pet_type: DOG
Enter value for pet_age: 2
Enter value for owner: TERRY KIM
old   1: insert into Pet_information values(&PET_ID,'&PET_NAME','&PET_TYPE','&PE
T_AGE','&OWNER')
new   1: insert into Pet_information values(298,'SPOT','DOG','2','TERRY KIM')

1 row created.

SQL> /
Enter value for pet_id: 341
Enter value for pet_name: MORRIS
Enter value for pet_type: CAT
Enter value for pet_age: 4
Enter value for owner: SAM COOK
old   1: insert into Pet_information values(&PET_ID,'&PET_NAME','&PET_TYPE','&PE
T_AGE','&OWNER')
new   1: insert into Pet_information values(341,'MORRIS','CAT','4','SAM COOK')

1 row created.

SQL> /
Enter value for pet_id: 519
Enter value for pet_name: TWEEDY
Enter value for pet_type: BIRD
Enter value for pet_age: 2
Enter value for owner: TERRY KIM
old   1: insert into Pet_information values(&PET_ID,'&PET_NAME','&PET_TYPE','&PE
T_AGE','&OWNER')
new   1: insert into Pet_information values(519,'TWEEDY','BIRD','2','TERRY KIM')

1 row created.

SQL>
```

```
QL> SELECT PET_ID,PET_NAME,PET_TYPE,PET_AGE,OWNER FROM PET_INFORMATION;

    PET_ID PET_NAME   PET_TYPE      PET_AGE OWNER
---------- ---------- ---------- ---------- --------------------
       246 ROVER      DOG                12 SAM COOK
       298 SPOT       DOG                 2 TERRY KIM
       341 MORRIS     CAT                 4 SAM COOK
       519 TWEEDY     BIRD                2 TERRY KIM
```

```
       519 TWEEDY     BIRD                2 TERRY KIM

SQL> create table Procedure_Information(
  2  PROC_ID int not null,
  3  PROCEDURE char(20) not null,
  4  primary key(Proc_ID));

Table created.

SQL> desc procedure_information;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 PROC_ID                                   NOT NULL NUMBER(38)
 PROCEDURE                                 NOT NULL CHAR(20)
```

```
SQL> insert into Procedure_Information values(&PROC_ID,'&Procedure');
Enter value for proc_id: 1
Enter value for procedure: RABIES VACCINATION
old   1: insert into Procedure_Information values(&PROC_ID,'&Procedure')
new   1: insert into Procedure_Information values(1,'RABIES VACCINATION')

1 row created.

SQL> /
Enter value for proc_id: 5
Enter value for procedure: HEART WORM TEST
old   1: insert into Procedure_Information values(&PROC_ID,'&Procedure')
new   1: insert into Procedure_Information values(5,'HEART WORM TEST')

1 row created.

SQL> /
Enter value for proc_id: 8
Enter value for procedure: TETANUS VACCINATION
old   1: insert into Procedure_Information values(&PROC_ID,'&Procedure')
new   1: insert into Procedure_Information values(8,'TETANUS VACCINATION')

1 row created.
```

```
SQL> select PROC_ID,PROCEDURE FROM PROCEDURE_INFORMATION;

   PROC_ID PROCEDURE
---------- --------------------
         1 RABIES VACCINATION
         5 HEART WORM TEST
         8 TETANUS VACCINATION
```

```
SQL> create table Pet_Visit_Proc_Record(
  2  PET_ID int not null,
  3  PROC_ID int not null,
  4  VISIT_DATE date not null,
  5  primary key(PET_ID,PROC_ID,VISIT_DATE));

Table created.

SQL> DESC PET_VISIT_PROC_RECORD;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------

 PET_ID                                    NOT NULL NUMBER(38)
 PROC_ID                                   NOT NULL NUMBER(38)
 VISIT_DATE                                NOT NULL DATE
```

References:

1- Michael Green (2017), *Entity Relationship Diagram for Art Museum [closed],* Available at: https://dba.stackexchange.com/questions/171909/entity-relationship-diagram-for-art-museum (Accessed 30 April 2018)

2-Future Learn Limited (2018), *SIT772-Database and Information Retreival*, Available at: https://www.futurelearn.com/your-programs/database-and-information-retrieval/4(Accessed 30 April 2018)