# DB – Mid 1 – Fall 2020 – Solution

Q 1:

The only strong entity in the database is Artist, which has an artist_id attribute that uniquely identifies it. Each Album entity is uniquely identified by its album_id combined with the artist_id of the corresponding Artist entity. A Track entity is similarly uniquely identified by its track_id combined with the related album_id and artist_id attributes. The Played entity is uniquely identified by a combination of its played time, and the related track_id, album_id, and artist_id attributes.
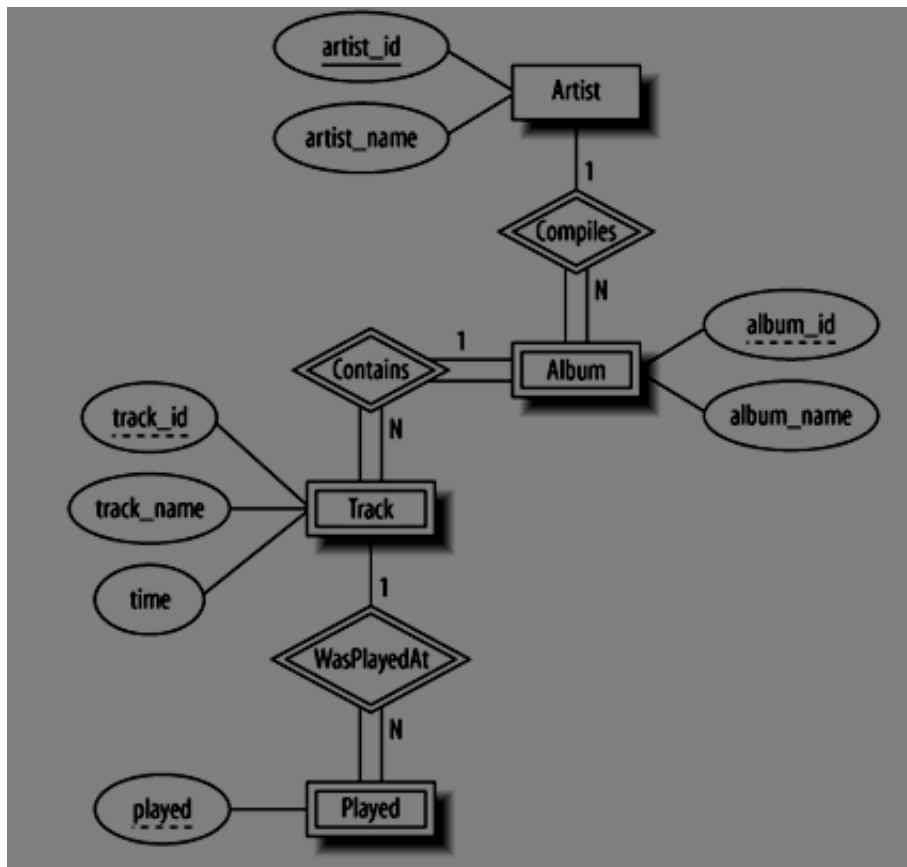
Q 2:

Part (a)

CREATE TABLE BUYER (

       BID VARCHAR2(4) ,

       Bname VARCHAR2(25) NOT NULL,

       Phone_numb VARCHAR2(12) NOT NULL UNIQUE ,

```
        Email VARCHAR2(40) NOT NULL UNIQUE,

        Agent_id VARCHAR2(4),

        Stars NUMBER(2) ,


        CONSTRAINT buyer_pk PRIMARY KEY ( BID ),

        CONSTRAINT FK_buyAgent FOREIGN KEY (Agent_id) REFERENCES Agent(AID),

        CONSTRAINT STARS_VALID CHECK(STARS BETWEEN 1 AND 5)
);
```

Part (b)

```
SELECT p.PID, p.asking_price, p.address, p.no_of_baths, p.no_of_beds,  p.sqft, a.aname, b.bname

FROM property p, Agent a, buyer b, Sold_property  sp

WHERE p.PID = sp.PID

AND b.BID = sp.BID

AND b.AID=a.AID

AND b.stars=5
```

Part (c)

```
SELECT sp1.selling_price, b.bname FROM sold_property sp1, Buyer b

WHERE N-1= (select count (distinct sp2.selling_price) FROM sold_property sp2

                WHERE sp2.selling_price>sp1.selling_price)

AND sp1.BID=b.BID
```

Part (d)

```
SELECT p.PID , p.address, p.asking_price, sp.selling_price FROM property p, sold_property sp

WHERE p.PID=sp.PID

AND p.asking_price> sp.selling_price
```

Part (e)

```
SELECT DISTINCT p.address, p.asking_price, FROM property p

WHERE p.no_of_beds >= 3

AND p.no_of_baths >=2

AND NOT EXISTS (
```

Part (f)

SELECT p.postal_code, avg(p.selling_price) as AVG_PRICE

FROM property p, sold_property sp

WHERE p.PID = sp.PID

Group by p.postal_code

Having Count(p.PID) >= 5

Q. 3:

The database and DBMS software together makes a **database system**.

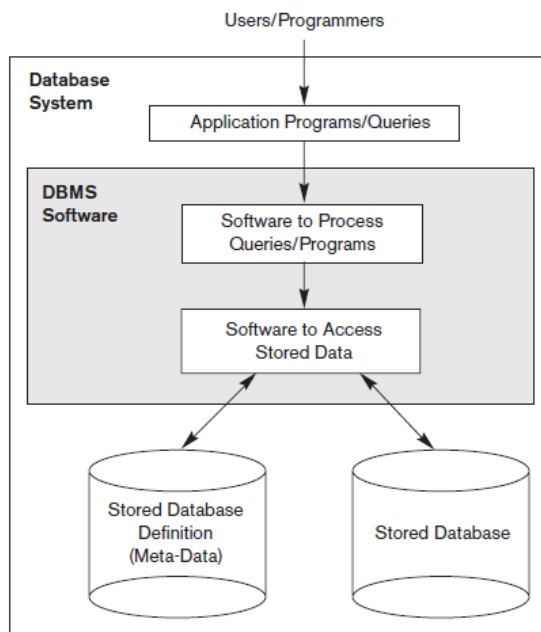Figure 1.1
A simplified database
system environment.

When not to use DBMS:
  i.   High initial investment in hardware, software, and training
  ii.   The generality that a DBMS provides for defining and processing data
  iii. Overhead for providing security, concurrency control, recovery, and integrity
        functions

Q 4:

  1. **Key constraint violation: 1126 already exist in key column**

2. Referential entegrity constraint violation: two tuple exist in committee member table for id 3
3. Domain constraint violation: 1129 does not exist in committee member as an id