CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

1. The people who have written and sung a particular song and whose name begin with ‘D’
2. The titles of the CDs that contain songs of which the year of recording is not known
3. The tracks on the CDs with the serial number 78574. Provide these in numerical order, indicating the performers for the track having a singer
4. The exclusive composer and singers. That is, composer who have never recorded a song and singers who have never written a song
5. The singer on the CD that contains the largest number of songs
6. The CDs on which all the songs are by a single singer and on which at least three recording are from years preceding the release year of the CD
7. The singers who have never recorded a song as solist
8. The singer who have never made a CD in which appears as the only singer
9. The singer who have always recorded songs as solist

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

1. The people who have written and sung a particular song and whose name begin with ‘D’

```
SELECT SingerName
FROM (Singer INNER JOIN Recording ON Singer.PerformanceCode=Recording.Performance)
        INNER JOIN  Composer ON Recording.SongTitle=Composer.SongTitle
WHERE SingerName=CompName and SingerName LIKE 'd%';
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

2. The titles of the CDs that contain songs of which the year of recording is not known

```
SELECT Title
FROM (CD INNER JOIN Track ON CD.CDNumber=Track.CDNumber) INNER JOIN Recording
    ON Track.PerformanceCode=Recording.Performance
WHERE Recording.Year Is Null;
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

3. The tracks on the CDs with the serial number 78574. Provide these in numerical order, indicating the performers for the track having a singer

```
SELECT TrackNo, SingerName
FROM Track LEFT JOIN Singer ON Track.PerformanceCode=Singer.PerformanceCode
WHERE CDNumber=78574
ORDER BY TrackNo;
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

4. The exclusive composer and singers. That is, composer who have never recorded a song and singers who have never written a song

```
SELECT CompName
FROM Composer
WHERE CompName NOT IN
    (SELECT CompName
     FROM (Composer INNER JOIN Recording on Composer.SongTitle=Recording.SongTitle)
    INNER JOIN Singer on Recording.Performance=Singer.PerformanceCode
     WHERE CompName=SingerName)
 UNION
SELECT SingerName
FROM Singer
WHERE SingerName NOT IN
     (SELECT SingerName
      FROM (Singer inner join Recording on
    Singer.PerformanceCode=Recording.Performance) INNER JOIN Composer on
    Recording.songTitle=Composer.SongTitle
      WHERE CompName=SingerName);
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

5. The singer on the CD that contains the largest number of songs

```
SELECT SingerName
FROM (SELECT Singer.SingerName, Count(*) AS num
     FROM Singer INNER JOIN Track ON Singer.PerformanceCode =
    Track.PerformanceCode
     GROUP BY Singer.SingerName)
WHERE num=(SELECT max(N) from (SELECT Count(*) AS N
           FROM Singer INNER JOIN Track ON Singer.PerformanceCode
    Track.PerformanceCode
           GROUP BY Singer.SingerName));
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

6. The CDs on which all the songs are by a single singer and on which at least three recording are from years preceding the release year of the CD

```
SELECT CDNumber
FROM CD
WHERE CDNumber NOT IN
        (Select CDNumber
          from (Track inner join Singer as S1 on Track.PerformanceCode=S1.PerformanceCode)
        inner join singer as S2 on Track.PerformanceCode=S2.PerformanceCode
          where S1.SingerName<>S2.SingerName)
 and CDNumber  IN
        (Select CDNumber
        From Track inner join Recording on Track.PerformanceCode=Recording.Performance
        where Recording.Year<CD.Year
        group by CDNumber
        Having count(*) >=3);
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

7. The singers who have never recorded a song as solist

```
SELECT S1.SingerName
FROM (Singer AS S1 INNER JOIN Recording ON
        Recording.Performance=S1.PerformanceCode) INNER JOIN Singer AS S2 ON
        Recording.Performance=S2.PerformanceCode
GROUP BY Performance, S1.SingerName
HAVING count(*)>1;
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

8. The singer who have never made a CD in which appears as the only singer

```
SELECT SingerName
FROM Singer
WHERE SingerName NOT IN
 (Select SingerName
  from Track inner join Singer on Track.PerformanceCode=Singer.PerformanceCode
  where CDNumber NOT IN
       (Select CDNumber
        From (Track inner join Singer as S1 on Track.PerformanceCode=S1.PerformanceCode)
        inner join Singer as S2 on Track.PerformanceCode=S2.PerformanceCode
       where S1.SingerName<>S2.SingerName));
```

CD(CDNumber,Title,Year,Price)
Track(CDNumber,PerformanceCode,trackNo)
Recording(Performance,SongTitle,Year)
Composer(CompName,songTitle)
Singer(SingerName,PerformanceCode)

9. The singer who have always recorded songs as solist

```
SELECT SingerName
FROM Singer
WHERE SingerName NOT IN
       (Select S1.SingerName
        from (Singer as S1 inner join Recording on
       Recording.Performance=S1.PerformanceCode) inner join Singer as S2 on
       Recording.Performance=S2.PerformanceCode
        where S1.SingerName<>S2.SingerName);
```