

j#

```
1 CREATE TABLE Course (  
2   CourseID INT,  
3   CourseName VARCHAR(100),  
4   CourseAddress VARCHAR(100),  
5   CourseSuburb VARCHAR(40),  
6   CoursePhone VARCHAR(10),  
7   PRIMARY KEY (CourseID)  
8 );  
9  
10 CREATE TABLE Hole (  
11   CourseID INT,  
12   HoleNumber INT,  
13   Distance DECIMAL(5, 1),  
14   Par INT,  
15   PRIMARY KEY (CourseID, HoleNumber),  
16   FOREIGN KEY (CourseID) REFERENCES Course (CourseID)  
17 );  
18  
19 CREATE TABLE Tournament (  
20   TournamentID INT,  
21   TournamentName VARCHAR(100),  
22   CourseID INT,  
23   StartDate DATE,  
24   EndDate DATE,  
25   AgeLimit INT,  
26   PRIMARY KEY (TournamentID),  
27   FOREIGN KEY (CourseID) REFERENCES Course (CourseID)  
28 );
```

```
1 SELECT Player.PlayerID, AVG(PlayerCompetes.TotalScore), MIN(  
2   PlayerCompetes.Rank)  
3 FROM Player NATURAL JOIN PlayerCompetes  
4 GROUP BY Player.PlayerID;
```

Assume PlayerID is a candidate key PlayerID -> PlayerName, PlayerShirtSize, TeamName, Team mascots, Team Home Ground, Home Ground Location

Violations of 1NF: Team mascots has multi-valued attributes TeamMascot(TeamName PFK, Mascot PK)  
Player(PlayerName, PlayerShirtSize, TeamName, Team Home Ground, Home Ground Location)

Violations of 2NF: in addition to 1NF violations, no partial dependencies  
Violations of 3NF: transitive dependencies TeamName -> team home ground TeamHomeGround -> Home Ground Location  
Player(PlayerName PK, PlayerShirtSize, TeamName FK) Team(TeamName PK, Team Home Ground FK)  
TeamMascot(TeamName PFK, Mascot PK) Location(Home Ground PK, Home Ground Location)

```
1 CREATE TABLE B (  
2   bid INT NOT NULL,  
3   PRIMARY KEY (bid)
```

```

4 );
5
6 CREATE TABLE C (
7     cid INT NOT NULL,
8     PRIMARY KEY (cid)
9 );
10
11 CREATE TABLE A (
12     aid INT NOT NULL,
13     bid INT NOT NULL,
14     cid INT NOT NULL,
15     PRIMARY KEY (aid),
16     FOREIGN KEY (bid) REFERENCES B (bid),
17     FOREIGN KEY (cid) REFERENCES C (cid)
18 );

```

```

1 # Assuming that 'Public Transport' is one of the options for transport
  means. I can't
2 # see anything that specifies possible values
3 SELECT COUNT(DISTINCT PreferredTransportation.PID)
4 FROM PreferredTransportation NATURAL JOIN TransportMeans
5 WHERE TransportMeans.TName = 'Public Transport';

```

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```

1 SELECT TransportMeans.Name, COUNT(Person.PID)
2 FROM Person NATURAL JOIN PreferredTransportation NATURAL JOIN
   TransportMeans
3 WHERE PreferredTransportation.CRID IN (SELECT CRID
4                                       FROM CensusRecord
5                                       WHERE CYear = 2016)
6 GROUP BY TransportMeans.TID
7 ORDER BY COUNT(Person.PID) DESC;

```

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```

1 # num people travelling from brunswick
2 # num people travelling to suburb other than Epping and Port Melbourne
3 SELECT COUNT(DISTINCT FrequentTrip.PID)
4 FROM FrequentTrip INNER JOIN Suburb AS FromSuburb ON FrequentTrip.from
   = Suburb.SID
5     INNER JOIN Suburb AS ToSuburb ON FrequentTrip.to = Suburb.SID
6     INNER JOIN CensusRecord ON FrequentTrip.CRID = CensusRecord.CYear
7 WHERE FromSuburb.SName = 'Brunswick' AND ToSuburb.Name NOT IN ('Epping'
   , 'Port Melbourne') AND CensusRecord.CYear = 2016

```

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```

1 SELECT
2 FROM CensusRecord NATURAL JOIN Residency NATURAL JOIN Suburb
3 WHERE Residency.PID IN (SELECT COUNT(DISTINCT PreferredTransportation.

```

```
PID)  
4 FROM PreferredTransportation NATURAL JOIN TransportMeans  
5 WHERE TransportMeans.TName = 'Public Transport';
```