1. Create the following tables with properly specifying Primary keys, Foreign keys and solve the following queries.

BRANCH (Branchid, Branchname, HOD)
STUDENT (USN, Name, Address, Branchid, sem)
BOOK (Bookid, Bookname, Authorid, Publisher, Branchid)
AUTHOR (Authorid, Authorname, Country, age)
BORROW (USN, Bookid, Borrowed_Date)

Execute the following Queries:
i.List the details of Students who are all studying in 2nd sem MCA.
ii.List the students who are not borrowed any books.
iii. Display the USN, Student name, Branch_name, Book_name, Author_name, Books_Borrowed_Date of 2nd sem MCA Students who borrowed books.
iv. Display the number of books written by each Author.
v.Display the student details who borrowed more than two books.vi.Display the student details who borrowed books of more than one Author.
vii.Display the Book names in descending order of their names.
viii.List the details of students who borrowed the books which are all published by the same publisher.

```
CREATE TABLE BRANCH(
   BRANCHID INT PRIMARY KEY,
   BRANCHNAME VARCHAR(30),
   HOD VARCHAR(30)
);
```

```
INSERT INTO BRANCH VALUES (1,'MCA','AMAR');
INSERT INTO BRANCH VALUES (2,'MBA','AKBAR');
INSERT INTO BRANCH VALUES (3,'MTECH','ANTONY');
```

```
CREATE TABLE STUDENT(
        USN VARCHAR(30) PRIMARY KEY,
        NAME VARCHAR(30),
        ADDRESS VARCHAR(30),
        BRANCHID INT REFERENCES BRANCH(BRANCHID),
        SEM INT
);
```

```
INSERT INTO STUDENT VALUES ('1001','LOKESH','BANGALORE',1,2);
INSERT INTO STUDENT VALUES ('1002','AKSHAY','BANGALORE',1,2);
INSERT INTO STUDENT VALUES ('1003','MANOJ','BANGALORE',2,1);
INSERT INTO STUDENT VALUES ('1004','AMITH','SHIMOGA',3,1);
INSERT INTO STUDENT VALUES ('1005','ABHI','BANGALORE',1,2);
```

```
CREATE TABLE AUTHOR(
        AUTHORID INT PRIMARY KEY,
        AUTHORNAME VARCHAR(30),
        COUNTRY VARCHAR(30),
        AGE INT
);
```

```
INSERT INTO AUTHOR VALUES (1,'DENNIS','US',56);
INSERT INTO AUTHOR VALUES (2,'RAMAKRISHNA','INDIA',56);
INSERT INTO AUTHOR VALUES (3,'JAMES','US',56);
INSERT INTO AUTHOR VALUES (4,'RITCHE','UK',56);



CREATE TABLE BOOK(
        BOOKID INT PRIMARY KEY,
        BOOKNAME VARCHAR(30),
        AUTHORID INT REFERENCES AUTHOR(AUTHORID),
        PUBLISHER VARCHAR(30),
        BRANCHID INT REFERENCES BRANCH(BRANCHID)
);

INSERT INTO BOOK VALUES(1,'JAVA',1,'PEARSON',1);
INSERT INTO BOOK VALUES(2,'C',1,'MC HILL',1);
INSERT INTO BOOK VALUES(3,'C++',2,'PEARSON',1);
INSERT INTO BOOK VALUES(4,'DBMS',3,'PEARSON',2);
INSERT INTO BOOK VALUES(5,'OS',4,'PEARSON',3);

CREATE TABLE BORROW(
        USN VARCHAR(20) REFERENCES STUDENT(USN),
        BOOKID INT REFERENCES BOOK(BOOKID),
        BORROW_DATE DATE
);

INSERT INTO BORROW VALUES ('1001',1,'12-JAN-2021');
INSERT INTO BORROW VALUES ('1001',2,'12-JAN-2021');
INSERT INTO BORROW VALUES ('1001',3,'12-JAN-2021');
INSERT INTO BORROW VALUES ('1002',1,'12-JAN-2021');
INSERT INTO BORROW VALUES ('1003',4,'12-JAN-2021');
INSERT INTO BORROW VALUES ('1003',5,'12-JAN-2021');
```

NOTE: IF ABOVE DATE FORMAT NOT WORKS TRY THIS ONE

```
INSERT INTO BORROW VALUES ('1003',5,'2021-01-12');
```

i. List the details of Students who are all studying in 2nd sem MCA

```
SELECT * FROM STUDENT
WHERE SEM = 2 AND BRANCHID IN (
        SELECT BRANCHID
        FROM BRANCH
        WHERE BRANCHNAME = 'MCA'
);
```

USN	NAME	ADDRESS	BRANCHID	SEM
1001	LOKESH	BANGALORE	1	2
1002	AKSHAY	BANGALORE	1	2
1005	ABHI	BANGALORE	1	2

ii. List the students who are not borrowed any books

```
SELECT * FROM STUDENT
WHERE USN NOT IN(
        SELECT USN
        FROM BORROW
);
```

```
USN        NAME       ADDRESS         BRANCHID   SEM
---------- ---------- --------------- ---------- ----
1004       AMITH      SHIMOGA         3          1
1005       ABHI       BANGALORE       1          2
```

iii. Display the USN, Student name, Branch_name, Book_name, Author_name, Books_Borrowed_Date of 2nd sem MCA Students who borrowed books

```
SELECT S.USN,S.NAME,BRANCHNAME,BOOKNAME,AUTHORNAME,BORROW_DATE
FROM STUDENT S,BOOK BK,BORROW BW,AUTHOR A,BRANCH B
WHERE S.USN = BW.USN AND S.BRANCHID = B.BRANCHID AND BK.AUTHORID = A.AUTHORID
AND BK.BOOKID = BR.BOOKID AND SEM = 2 AND BRANCH = 'MCA';
```

```
USN        NAME       BRANCHNAME   BOOKNAME     AUTHORNAME     BORROW_DATE
---------- ---------- ------------ ------------ -------------- -----------
1001       LOKESH     MCA          JAVA               DENNIS   12-JAN-21
1001       LOKESH     MCA          C                  DENNIS   12-JAN-21
1001       LOKESH     MCA          C++          RAMAKRISHNA    12-JAN-21
1002       AKSHAY     MCA          JAVA               DENNIS   12-JAN-21
```

iv. Display the number of books written by each Author.

```
SELECT AUTHORNAME,COUNT(*)
FROM BOOK B,AUTHOR A
WHERE B.AUTHORID = A.AUTHORID
GROUP BY AUTHORNAME;
```

```
AUTHORNAME      COUNT(*)
--------------- --------
DENNIS          2
RAMAKRISHNA     1
JAMES           1
RITCHE          1
```

v. Display the student details who borrowed more than two books.

```
SELECT *
FROM STUDENT
WHERE USN IN(SELECT USN FROM BORROW GROUP BY USN HAVING COUNT(USN) >2 );
```

```
USN         NAME       ADDRESS        BRANCHID       SEM
----------- ---------- -------------- -------------- ----
1001        LOKESH     BANGALORE      1              2
```

vi. Display the student details who borrowed books of more than one Author.

```
SELECT *
FROM STUDENT WHERE USN IN(
        SELECT USN
        FROM BORROW BW, BOOK B
        WHERE BW.BOOKID = B.BOOKID
        GROUP BY USN
        HAVING COUNT(DISTINCT AUTHORID) >1
);
```

```
USN     NAME     ADDRESS      BRANCHID   SEM
------- --------- ------------ ---------- -----
1001    LOKESH    BANGALORE    1        2
1003    MANOJ     BANGALORE    2        1
```

vii.Display the Book names in descending order of their names.

```
SELECT BOOKNAME
FROM BOOK
ORDER BY BOOKNAME DESC;
```

```
BOOKNAME
----------
OS
JAVA
DBMS
C++
C
```

viii. List the details of students who borrowed the books which are all published by the same publisher.

```
SELECT *
FROM STUDENT WHERE USN IN(
        SELECT USN  FROM BORROW B, BOOK BK
        WHERE B.BOOKID = BK.BOOKID
        GROUP BY USN
        HAVING COUNT(DISTINCT PUBLISHER) =1
);
```

```
USN         NAME       ADDRESS       BRANCHID   SEM
----------- ---------- ------------- ---------- -----
1002        AKSHAY     BANGALORE     1        2
1003        MANOJ      BANGALORE     2        1
```

2. Consider the following schema: STUDENT (USN, name, date_of_birth, branch, mark1, mark2, mark3, total,GPA) Execute the following queries:

i. Update the column total by adding the columns mark1, mark2, mark3.
ii. Find the GPA score of all the students.
iii. Find the students who born on a particular year of birth from the date_of_birth column.
iv. List the students who are studying in a particular branch of study.
v. Find the maximum GPA score of the student branch-wise.
vi. Find the students whose name starts with the alphabet "S".
vii. Find the students whose name ends with the alphabets "AR".
viii. Delete the student details whose USN is given as 1001

```
CREATE TABLE STUDENT(
   USN VARCHAR(30) PRIMARY KEY,
   NAME VARCHAR(30),
   DATE_OF_BIRTH DATE,
   BRANCH VARCHAR(30),
   MARKS1 INT,
   MARKS2 INT,
   MARKS3 INT,
   TOTAL INT,
   GPA FLOAT
);
```

```
INSERT INTO STUDENT VALUES('1001','AMAR','12-JUN-2001','MCA',89,82,92,0,0);
INSERT INTO STUDENT VALUES('1002','AKBAR','12-JUN-1999','MCA',70,65,91,0,0);
INSERT INTO STUDENT VALUES('1003','SANJAY','12-JUN-2001','MBA',69,90,90,0,0);
INSERT INTO STUDENT VALUES('1004','SAGAR','12-JUN-2000','MBA',78,80,91,0,0);
INSERT INTO STUDENT VALUES('1005','ADHI','12-JUN-1999','MBA',59,70,92,0,0);
INSERT INTO STUDENT VALUES('1007','LOKESH','12-JUN-01','MCA',52,52,93,0,0);
```

i. Update the column total by adding the columns mark1, mark2, mark3.

```
UPDATE STUDENT
SET TOTAL = MARKS1 + MARKS2 + MARKS3;
```

6 rows updated.

ii. Find the GPA score of all the students.

```
UPDATE STUDENT
SET GPA = (TOTAL / 30);
```

6 rows updated.

iii. Find the students who born on a particular year of birth from the date_of_birth column.

```
SELECT *
FROM STUDENT
WHERE DATE_OF_BIRTH LIKE '%99';
```

```
USN   NAME    DATE_OF_B BRANCH   MARKS1   MARKS2  MARKS3  TOTAL   GPA
------ -------- ------------------  ------- ------- ------- ------- ----------
1002  AKBAR   12-JUN-99 MCA     70     65     91     226    7.53333333
1005  ADHI    12-JUN-99 MBA     59     70     92     221    7.36666667
```

iv. List the students who are studying in a particular branch of study.

```
SELECT *
FROM STUDENT
WHERE BRANCH = 'MCA';
```

```
USN   NAME    DATE_OF_B BRANCH   MARKS1  MARKS2  MARKS3  TOTAL   GPA
----- ------- ------------------ ------- ------- ------- ------- ----------
1001  AMAR     12-JUN-01 MCA         89        82        92        263    8.76666667
1002  AKBAR    12-JUN-99 MCA         70        65        91        226    7.53333333
1007  LOKESH   12-JUN-01 MCA         52        52        93        197    6.56666667
```

v. Find the maximum GPA score of the student branch-wise.

```
SELECT BRANCH,MAX(GPA)
FROM STUDENT
GROUP BY BRANCH;
```

```
BRANCH        MAX(GPA)
---------------- ----------
MBA              8.3
MCA              8.76666667
```

vi. Find the students whose name starts with the alphabet “S”.

```
SELECT NAME
FROM STUDENT
WHERE NAME LIKE 'S%';
```

```
NAME
-----------
SANJAY
SAGAR
```

vii. Find the students whose name ends with the alphabets “AR”.

```
SELECT NAME
FROM STUDENT
WHERE NAME LIKE '%AR';
```

```
NAME
-----------
AMAR
AKBAR
SAGAR
```

viii. Delete the student details whose USN is given as 1001

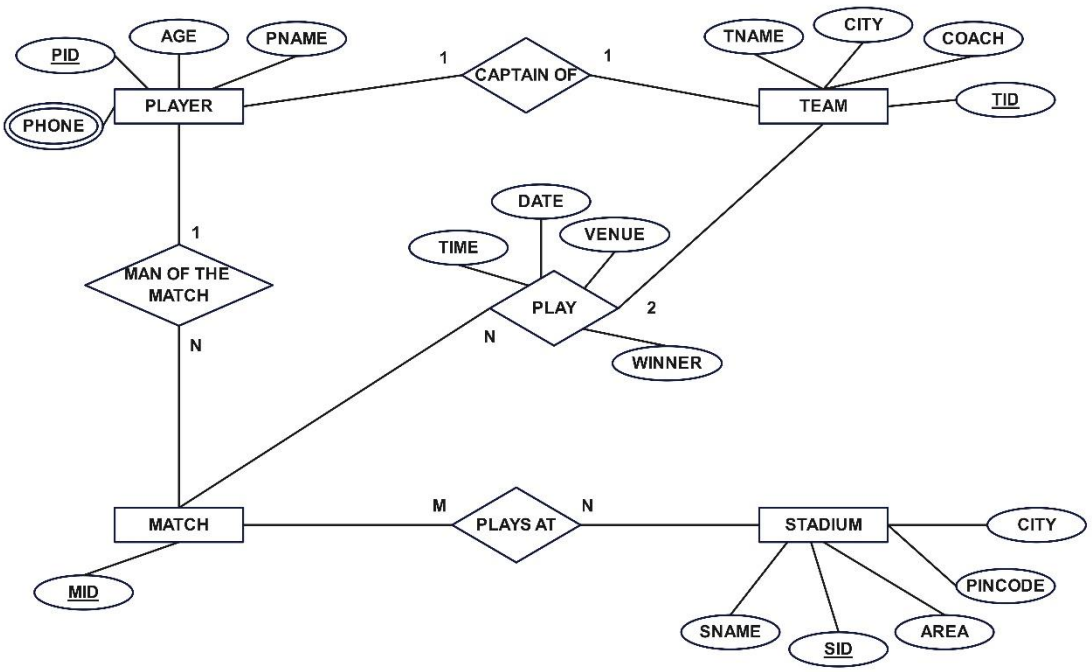
```
DELETE FROM STUDENT WHERE USN = '1001';
```

1 row deleted.

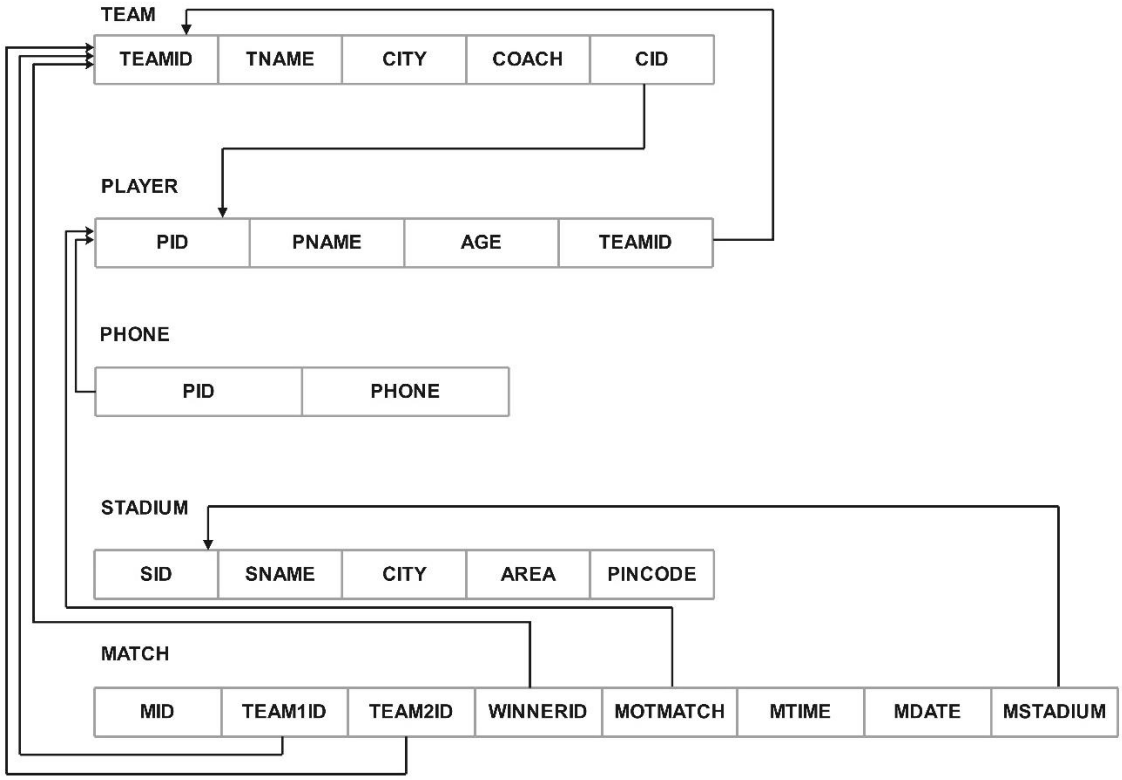
3. Design an ER-diagram for the following scenario, Convert the same into a relational model and then solve thefollowing queries. Consider a Cricket Tournament "ABC CUP" organized by an organization. In the tournamentthere are many teams are contesting each having a Teamid,Team_Name, City, a coach. Each team is uniquely identified by using Teamid. A team can have many Players and a captain. Each player is uniquely identified by Playerid, having a Name, and multiple phone numbers,age. A player represents only one team. There are many Stadiums to conduct matches. Each stadium is identified using Stadiumid, having a stadium_name,Address (involves city,area_name,pincode). A team can play many matches. Each match played between the two teams in the scheduled date and time in the predefined Stadium. Each match is identified uniquely by using Matchid. Each match won by any of the one team that also wants to record in the database. For each match man_of_the match award given to a player.

Execute the following Queries:
1 Display the youngest player (in terms of age) Name, Team name , age in which he belongs of the tournament.
2 List the details of the stadium where the maximum number of matches were played.
3 List the details of the player who is not a captain but got the man_of _match award at least in two matches.
4 Display the Team details who won the maximum matches.
5 Display the team name where all its won matches played in the same stadium.

ER DIGRAM



SCHEMA




```
CREATE TABLE TEAM(
   TEAMID INT PRIMARY KEY,
   TNAME VARCHAR(30),
   CITY VARCHAR(30),
   COACH VARCHAR(30),
   CID INT
);
```

```
INSERT INTO TEAM VALUES (1,'RCB','BANGALORE','RAHUL',1);
INSERT INTO TEAM VALUES (2,'CSK','CHENNAI','AKBAR',2);
INSERT INTO TEAM VALUES (3,'MI','MUMBAI','ANTONY',3);
INSERT INTO TEAM VALUES (4,'GT','GUJARAT','RAHUL DRAVID',4);
```

```
CREATE TABLE PLAYER(
   PID INT PRIMARY KEY,
   PNAME VARCHAR(30),
   AGE INT,
   TEAMID INT REFERENCES TEAM(TEAMID)
);
```

```
INSERT INTO PLAYER VALUES (1,'VIRAT',35,1);
```

```
INSERT INTO PLAYER VALUES (2,'DHONI',40,2);
INSERT INTO PLAYER VALUES (3,'ROHITH',39,3);
INSERT INTO PLAYER VALUES (4,'HARDIK',30,4);
INSERT INTO PLAYER VALUES (5,'K L RAHUL',32,1);
```

```
ALTER TABLE TEAM
ADD FOREIGN KEY (CID) REFERENCES PLAYER(PID);
```

```
CREATE TABLE PHONE(
   PID INT REFERENCES PLAYER(PID),
   PHONE VARCHAR(20)
);
```

```
INSERT INTO PHONE VALUES (1,'9999999999');
INSERT INTO PHONE VALUES (2,'9999999998');
INSERT INTO PHONE VALUES (3,'9999999997');
INSERT INTO PHONE VALUES (4,'9999999996');
INSERT INTO PHONE VALUES (5,'9999999995');
INSERT INTO PHONE VALUES (1,'9999999994');
```

```
CREATE TABLE STADIUM(
   SID INT PRIMARY KEY,
   SNAME VARCHAR(30),
   CITY VARCHAR(30),
   AREA VARCHAR(30),
   PINCODE INT
);
```

```
INSERT INTO STADIUM VALUES(1,'CHINNASWAMY','BANGALORE','MG ROAD','560092');
INSERT INTO STADIUM VALUES(2,'KANTEERAVA','DELHI','MAIN ROAD','560093');
INSERT INTO STADIUM VALUES(3,'MODI','GUJARAT','CITY','560094');
```

```
CREATE TABLE MATCH(
   MID INT PRIMARY KEY,
   TEAM1ID INT REFERENCES TEAM(TEAMID),
   TEAM2ID INT REFERENCES TEAM(TEAMID),
   WINNERID INT REFERENCES TEAM(TEAMID),
   MOTMATCH INT REFERENCES PLAYER(PID),
   MTIME VARCHAR(10),
   MDATE DATE,
   MSTADIUM INT REFERENCES STADIUM(SID)
);
```

```
INSERT INTO MATCH VALUES(1,1,2,1,1,'7PM','12-JAN-23',1);
INSERT INTO MATCH VALUES(2,1,3,1,1,'7PM','13-JAN-23',3);
INSERT INTO MATCH VALUES(3,1,4,1,5,'7PM','14-JAN-23',1);
INSERT INTO MATCH VALUES(4,4,2,2,2,'7PM','15-JAN-23',2);
INSERT INTO MATCH VALUES(5,1,2,1,5,'7PM','16-JAN-23',1);
```

NOTE: IF ABOVE DATE FORMAT NOT WORKS TRY THIS ONE
INSERT INTO MATCH VALUES(5,1,2,1,5,'7PM','2023-01-16',1);

1 Display the youngest player (in terms of age) Name, Team name , age in which he belongs of the tournament.

```
SELECT PNAME, TNAME, AGE
FROM PLAYER P, TEAM T
WHERE P.TEAMID = T.TEAMID AND AGE = (SELECT MIN(AGE) FROM PLAYER);
```

```
PNAME      TNAME      AGE
---------- ---------- -----
HARDIK     GT         30
```

2 List the details of the stadium where the maximum number of matches were played.

```
SELECT *
FROM STADIUM
WHERE SID IN (
  SELECT MSTADIUM
  FROM MATCH
  GROUP BY MSTADIUM
  HAVING COUNT(MSTADIUM) = (
    SELECT MAX(COUNTS) FROM (
        SELECT COUNT(*) COUNTS
        FROM MATCH
        GROUP BY MSTADIUM) COUNTER
    )
);
```

```
SID SNAME           CITY            AREA       PINCODE
--- --------------- --------------- ---------- ----------
  1 CHINNASWAMY     BANGALORE       MG ROAD    560092
```

3 List the details of the player who is not a captain but got the man_of _match award at least in two matches.

```
SELECT *
FROM PLAYER
WHERE PID IN (
  SELECT MOTMATCH
  FROM MATCH
  GROUP BY MOTMATCH
  HAVING COUNT(MOTMATCH)>=2
) AND PID NOT IN (SELECT CID FROM TEAM);
```

```
PID PNAME                      AGE    TEAMID
--- ------------------------------ ---------- ----------
 5    K L RAHUL                    32        1
```

4 Display the Team details who won the maximum matches.

```
SELECT *
FROM TEAM
WHERE TEAMID IN (
  SELECT WINNERID
  FROM MATCH
  GROUP BY WINNERID
  HAVING COUNT(WINNERID) = (
    SELECT MAX(COUNTS) FROM(
        SELECT COUNT(*) COUNTS
        FROM MATCH
        GROUP BY WINNERID) COUNTER
  )
);
```

```
  TEAMID  TNAME       CITY               COACH     CID
---------- -------------- ----------------- ---------- ----
  1           RCB        BANGALORE       RAHUL     1
```

5 Display the team name where all its won matches played in the same stadium.

```
SELECT TNAME
FROM TEAM, MATCH
WHERE TEAMID = WINNERID
GROUP BY TNAME
HAVING COUNT(DISTINCT MSTADIUM) = 1;
```

```
TNAME
-------
CSK
```

4. A country wants to conduct an election for the parliament. A country having many constituencies. Each constituency is identified uniquely by Constituency_id, having the Name, belongs to a state,Number_of_voters. A constituency can have many voters. Each voter is uniquely identified by using Voter_id, having the Name, age, address (involves Houseno,city,state,pincode). Each voter belongs to only one constituency. There are many candidates contesting in the election. Each candidates are uniquely identified by using candidate_id, having Name, phone_no, age, state. A candidate belongs to only one party.Thereare many parties. Each party is uniquely identified by using Party_id, having Party_Name,Party_symbol. A candidate can contest from many constituencies under a same party. A party can have many candidates contesting from different constituencies. No constituency having the candidates from the same party. A constituency can have many contesting candidates belongs to different parties. Each voter votes only one candidate of his/her constituencty.

Queries:

i. List the details of the candidates who are contesting from more than one constituencies which are belongs to different states.

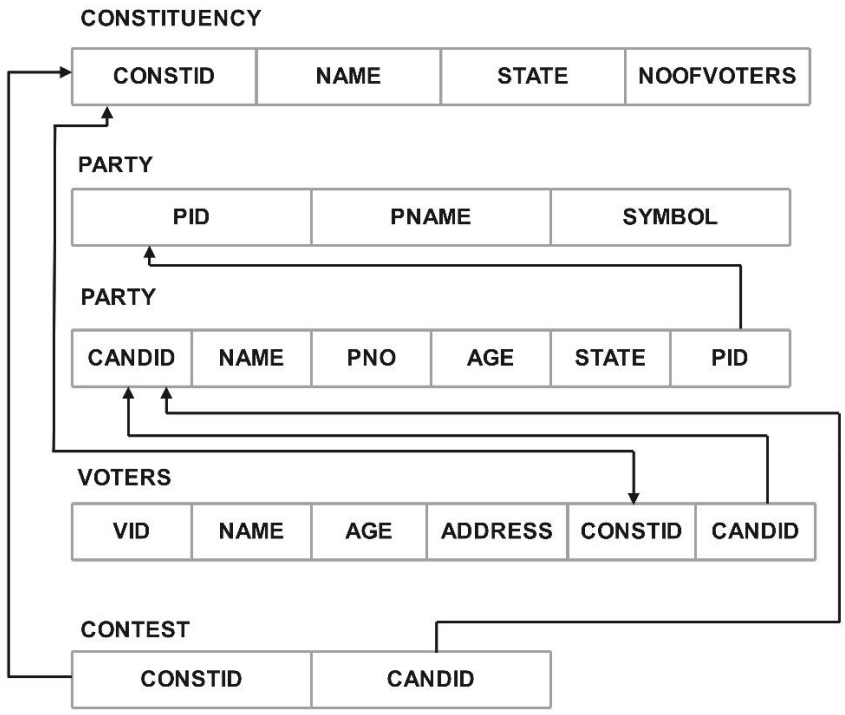
ii. Display the state name having maximum number of constituencies.

iii. Create a stored procedure to insert the tuple into the voter table by checking the voter age. If voter‟s age
is at least 18 years old, then insert the tuple into the voter else display the “Not an eligible voter msg”.

iv. Create a stored procedure to display the number_of_voters in the specified constituency. Where the constituency name is passed as an argument to the stored procedure.

v. Create a TRIGGER to UPDATE the count of “ Number_of_voters” of the respective constituency in “CONSTITUENCY”table , AFTER inserting a tuple into the “VOTERS”table.

SCHEMA



```
CREATE TABLE CONSTITUENCY(
   CONSTID INT PRIMARY KEY,
   NAME VARCHAR(30),
   STATE VARCHAR(30),
   NOOFVOTERS INT
);
```

```
INSERT INTO CONSTITUENCY VALUES(1,'BANGALORE','KARNATAKA',2);
INSERT INTO CONSTITUENCY VALUES(2,'SHIMOGA','KARNATAKA',2);
INSERT INTO CONSTITUENCY VALUES(3,'HYDARABAD','TELANGANA',3);
```

```
CREATE TABLE PARTY(
   PID INT PRIMARY KEY,
   PNAME VARCHAR(30),
   SYMBOL VARCHAR(30)
);
```

```
INSERT INTO PARTY VALUES(1,'CONGRESS','PALM');
INSERT INTO PARTY VALUES(2,'BJP','LOTUS');
```

```
CREATE TABLE CANDIDATE(
   CANDID INT PRIMARY KEY,
   NAME VARCHAR(30),
   PNO VARCHAR(30),
   AGE INT,
   STATE VARCHAR(30),
   PID INT REFERENCES PARTY(PID)
);
```

```
INSERT INTO CANDIDATE VALUES(1,'AMAR','8660639260',35,'KARNATAKA',1);
INSERT INTO CANDIDATE VALUES(2,'ANTONY','8660639262',37,'TELANGANA',2);
```

```
CREATE TABLE VOTERS(
   VID INT,
   NAME VARCHAR(30),
   AGE VARCHAR(30),
   ADDRESS VARCHAR(150),
   CONSTID INT REFERENCES CONSTITUENCY(CONSTID),
   CANDID INT REFERENCES CANDIDATE(CANDID)
);
```

```
INSERT INTO VOTERS VALUES(1,'ABHI',20,'1 BALKI BIDAR KARNATAKA 577001',1,1);
INSERT INTO VOTERS VALUES(2,'ARIF',20,'1 BHADRAVATHI BHADRAVATHI KARNATAKA
577201',2,2);
INSERT INTO VOTERS VALUES(3,'MANOJ',18,'1 ANAVERI SHIMOGA KARNATAKA 577243',1,2);
```

```
CREATE TABLE CONTEST(
   CONSTID INT REFERENCES CONSTITUENCY(CONSTID),
   CANDID INT REFERENCES CANDIDATE(CANDID)
);
```

```
INSERT INTO CONTEST VALUES(1,1);
INSERT INTO CONTEST VALUES(2,2);
INSERT INTO CONTEST VALUES(3,1);
```

i. List the details of the candidates who are contesting from more than one constituencies which are belongs to different states.

```
SELECT *
FROM CANDIDATE
WHERE CANDID IN (
   SELECT CANDID
   FROM CONTEST CT, CONSTITUENCY CS
   WHERE CT.CONSTID = CS.CONSTID
   GROUP BY CANDID
   HAVING COUNT(DISTINCT(STATE))>1
);
```

```
 CANDID  NAME     PNO              AGE      STATE
---------- --------- --------------- ---- ----------
     1        AMAR     8660639260     35  KARNATAKA
```

ii. Display the state name having maximum number of constituencies.

```
SELECT STATE FROM CONSTITUENCY
GROUP BY STATE
HAVING COUNT(STATE) = (
   SELECT MAX(COUNTS) FROM (
                     SELECT COUNT(*) COUNTS
                     FROM CONSTITUENCY
                     GROUP BY STATE) COUNTER
);
```

```
STATE
----------
KARNATAKA
```

iii. Create a stored procedure to insert the tuple into the voter table by checking the voter age. If voter's age is at least 18 years old, then insert the tuple into the voter else display the "Not an eligible voter msg".

FOR ORACLE

```
CREATE OR REPLACE PROCEDURE CHECKAGE(ID IN NUMBER,AGE IN NUMBER)
AS
BEGIN
  IF AGE>=18 THEN
    INSERT INTO VOTERS(VID,AGE)VALUES(ID,AGE);
  ELSE
    DBMS_OUTPUT.PUT_LINE('NOT AN ELIGIBLE VOTER');
  END IF;
END;
```

Procedure created.
SQL> **SET SERVEROUTPUT ON**;
SQL> **EXEC CHECKAGE(4,17);**
NOT AN ELIGIBLE VOTER
PL/SQL procedure successfully completed.
SQL> **EXEC CHECKAGE(3,22);**
PL/SQL procedure successfully completed.

FOR MYSQL

```
DELIMITER //

CREATE PROCEDURE CHECKAGE(IN ID INT, IN AGE INT)
BEGIN
 IF AGE >= 18 THEN
  INSERT INTO VOTERS (VID, AGE) VALUES (ID, AGE);
 ELSE
  SELECT 'NOT AN ELIGIBLE VOTER' AS Message;
 END IF;
END//

DELIMITER ;
```

CALL CHECKAGE(5,12)

Message

NOT AN ELIGIBLE VOTER

iv. Create a stored procedure to display the number_of_voters in the specified constituency.

Where the constituency name is passed as an argument to the stored procedure.

FOR ORACLE

```
CREATE OR REPLACE PROCEDURE COUNTVOTERS(CNAME IN VARCHAR)
AS
        CNT INTEGER;
BEGIN
        SELECT NOOFVOTERS INTO CNT
  FROM CONSTITUENCY
  WHERE NAME = CNAME;
        DBMS_OUTPUT.PUT_LINE ( 'TOTAL VOTERS ARE: ' || CNT);
END;
/
```

Procedure created.

SQL> **EXEC COUNTVOTERS('SHIMOGA'**);

TOTAL VOTERS ARE: 2

PL/SQL procedure successfully completed.

FOR MYSQL

```
DELIMITER //

CREATE PROCEDURE COUNTVOTERS(IN CNAME VARCHAR(255))
BEGIN
  DECLARE CNT INT;

  SELECT NOOFVOTERS INTO CNT
  FROM CONSTITUENCY
  WHERE NAME = CNAME;

  IF CNT IS NOT NULL THEN
    SELECT CONCAT('TOTAL VOTERS ARE: ', CNT) AS Message;
  END IF;
END//
```

```
CALL COUNTVOTERS('SHIMOGA');
Message
--------------------------
TOTAL VOTERS ARE: 2
```

v. Create a TRIGGER to UPDATE the count of "Number_of_voters" of the respective constituency in "CONSTITUENCY" table , AFTER inserting a tuple into the "VOTERS" table.

FOR ORACLE

```
CREATE OR REPLACE TRIGGER UPDATECOUNT
AFTER INSERT ON VOTERS
FOR EACH ROW
BEGIN
UPDATE CONSTITUENCY
SET NOOFVOTERS = NOOFVOTERS + 1
WHERE CONSTID=:NEW.CONSTID;
END;
/
```

Trigger created.

FOR MYSQL

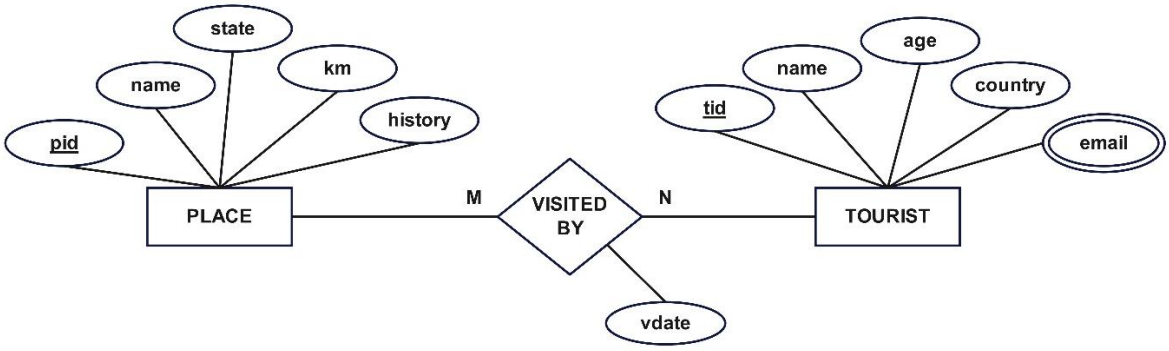
```
FOR MYSQL
DELIMITER //

CREATE TRIGGER UPDATECOUNT AFTER INSERT ON VOTERS
FOR EACH ROW
BEGIN
  UPDATE CONSTITUENCY
  SET NOOFVOTERS = NOOFVOTERS + 1
  WHERE CONSTID = NEW.CONSTID;
END//

DELIMITER ;
```

INSERT INTO VOTERS VALUES(10,'AKSHAY',22,'1 BALKI BIDAR KARNATAKA 577002',1,1);

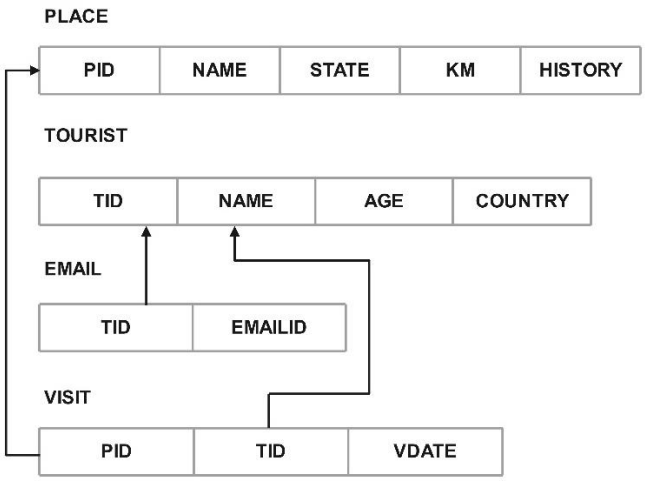
5. Design an ER-diagram for the following scenario, Convert the same into a relational model, normalize Relations into a suitable Normal form and then solve the following queries. A country can have many Tourist places . Each Tourist place is identified by using tourist_place_id, having a name, belongs to a state, Number of kilometers away from the capital city of that state,history. There are many Tourists visits tourist places every year. Each tourist is identified uniquely by using Tourist_id, having a Name, age, Country and multiple emailids. A tourist visits many Tourist places, it is also required to record the visted_date in the database. A tourist can visit a Tourist place many times at different dates. A Tourist place can be visited by many tourists either in the same date or at different dates.

Queries:
i. List the state name which is having maximum number of tourist places.
ii. List details of Tourist place where maximum number of tourists visited.
iii. List the details of tourists visited all tourist places of the state "KARNATAKA".
iv. Display the details of the tourists visited at least one tourist place of the state, but visited all states tourist places.
v. Display the details of the tourist place visited by the tourists of all country.

ER DIAGRAM



SCHEMA



```
CREATE TABLE TOURIST (
   TID INT PRIMARY KEY,
   NAME VARCHAR(30),
   AGE INT,
   COUNTRY VARCHAR(30)
);
```

```
INSERT INTO TOURIST VALUES (1,'AMAR',21,'INDIA');
INSERT INTO TOURIST VALUES (2,'AKBAR',22,'INDIA');
INSERT INTO TOURIST VALUES (3,'ANTONY',20,'UK');
INSERT INTO TOURIST VALUES (4,'RAM',25,'US');
```

```
CREATE TABLE EMAIL(
   TOURISTID INT REFERENCES TOURIST(TID),
   EMAIL VARCHAR(50)
);
```

```
INSERT INTO EMAIL VALUES(1,'AMAR@GMAIL.COM');
INSERT INTO EMAIL VALUES(1,'AMAR.P@GMAIL.COM');
INSERT INTO EMAIL VALUES(2,'AKBARAMAR@GMAIL.COM');
INSERT INTO EMAIL VALUES(3,'ANTONY@GMAIL.COM');
INSERT INTO EMAIL VALUES(4,'RAM@GMAIL.COM');
```

```
CREATE TABLE PLACE(
   PID INT PRIMARY KEY,
   NAME VARCHAR(50),
   STATE VARCHAR(50),
   KM INT,
   HISTORY VARCHAR(200)
);
```

```
INSERT INTO PLACE VALUES(1,'JOG FALSE','KARNATAKA',400,'WATER FALSE');
INSERT INTO PLACE VALUES(2,'MYSORE','KARNATAKA',150,'PALACE');
INSERT INTO PLACE VALUES(3,'TAJMAHAL','DELHI',100,'BURIAL');
INSERT INTO PLACE VALUES(4,'TIRUPATHI','AP',50,'TEMPLE');
```

```
CREATE TABLE VISIT(
   TID INT REFERENCES TOURIST(TID),
   PID INT REFERENCES PLACE(PID),
   VISITDATE DATE
);
```

```
INSERT INTO VISIT VALUES(1,1,'12-JAN-2022');
INSERT INTO VISIT VALUES(2,1,'12-JAN-2022');
INSERT INTO VISIT VALUES(3,1,'12-JAN-2022');
```

```
INSERT INTO VISIT VALUES(4,1,'12-JAN-2022');
INSERT INTO VISIT VALUES(2,2,'12-JAN-2022');
INSERT INTO VISIT VALUES(2,3,'12-JAN-2022');
INSERT INTO VISIT VALUES(2,4,'12-JAN-2022');
```

NOTE: IF ABOVE DATE FORMAT NOT WORKS TRY THIS ONE
INSERT INTO VISIT VALUES(2,4,'2022-01-12');

i. List the state name which is having maximum number of tourist places.

```
SELECT STATE
FROM PLACE
GROUP BY STATE
HAVING COUNT(*) = (
  SELECT MAX(COUNTS) FROM(
    SELECT COUNT(*) COUNTS
    FROM PLACE
    GROUP BY STATE) COUNTER
);
```

```
STATE
----------
KARNATAKA
```

ii. List details of Tourist place where maximum number of tourists visited.

```
SELECT *
FROM PLACE
WHERE PID IN (
  SELECT PID
  FROM VISIT
  GROUP BY PID
  HAVING COUNT(*)= (
    SELECT MAX(COUNTS) FROM (
    SELECT COUNT(*) COUNTS
    FROM VISIT
    GROUP BY PID) COUNTER
  )
);
```

```
PID   NAME          STATE         KM     HISTORY
------ --------------- --------------- ------- -------------
1     JOG FALSE     KARNATAKA     400    WATER FALSE
```

iii. List the details of tourists visited all tourist places of the state "KARNATAKA".

```
SELECT T.NAME, AGE, COUNTRY
FROM VISIT V, PLACE P, TOURIST T
WHERE V.PID = P.PID AND V.TID = T.TID AND STATE = 'KARNATAKA'
GROUP BY T.NAME, AGE, COUNTRY
HAVING COUNT(DISTINCT V.PID) = (
  SELECT COUNT(*)
  FROM PLACE
  WHERE STATE = 'KARNATAKA'
);
```

```
NAME      AGE    COUNTRY
---------- -------- ----------
AKBAR     22     INDIA
```

iv. Display the details of the tourists visited at least one tourist place of the state, but visited all states touristplaces.

```
SELECT T.NAME, AGE, COUNTRY
FROM VISIT V, PLACE P, TOURIST T
WHERE V.PID = P.PID AND V.TID = T.TID
GROUP BY T.NAME, AGE, COUNTRY
HAVING COUNT(DISTINCT STATE) = (
  SELECT COUNT(DISTINCT STATE)
  FROM PLACE
);
```

```
NAME      AGE    COUNTRY
----------------------------
AKBAR     22     INDIA
```

v. Display the details of the tourist place visited by the tourists of all country

```
SELECT P.NAME, KM, HISTORY
FROM VISIT V, PLACE P, TOURIST T
WHERE V.PID = P.PID AND V.TID = T.TID
GROUP BY P.NAME, KM, HISTORY
HAVING COUNT(DISTINCT COUNTRY) = (
  SELECT COUNT(DISTINCT COUNTRY)
  FROM TOURIST
);
```

```
NAME       KM   HISTORY
------------ ----- ------------
JOG FALSE    400  WATER FALSE
```