

# ICS 321 Database Systems (242)

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## PROJECT PHASE 2 Soccer@KFUPM DDL

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### Points to Note:

1. This solution may be used as a reference or full use in your implementation. If your schema covers all the requirements and supports your SQL queries better, you can use your schema in implementation.
2. Refer to the attached schema description/dictionary to understand the attributes and relations. Also add more data through insert statements to fully illustrate the PHASE 1 & 2 requirements.
3. This schema is designed with attributes (example kfupm\_id) using simple data types to ensure focus on implementation.
4. You may use db-fiddle to test the entire script of SQL statements below (with any version of MySQL, PostgreSQL or SQLite provided by <https://www.db-fiddle.com/>).
5. If you are using this schema, you may add/modify/remove the relations to address redundancies, repetitions, mapping or semantic errors etc., that you may come across.

```
CREATE TABLE TOURNAMENT (  
    tr_id numeric NOT NULL,  
    tr_name character varying(40) NOT NULL,  
    start_date date NOT NULL,  
    end_date date NOT NULL,  
    PRIMARY KEY (tr_id) );  
INSERT INTO TOURNAMENT VALUES (1, 'Faculty Tournament', '2023-03-10', '2023-03-25');  
INSERT INTO TOURNAMENT VALUES (2, 'Open Tournament', '2023-03-15', '2023-03-30');  
INSERT INTO TOURNAMENT VALUES (3, 'Student Tournament', '2022-12-10', '2022-12-02');  
INSERT INTO TOURNAMENT VALUES (4, 'Staff Tournament', '2023-02-15', '2023-02-25');  
INSERT INTO TOURNAMENT VALUES (5, 'Annual Tournament', '2023-01-01', '2023-01-15');
```

```
CREATE TABLE VENUE (  
    venue_id numeric NOT NULL,  
    venue_name character varying(30) NOT NULL,  
    venue_status character(1) NOT NULL,  
    venue_capacity numeric NOT NULL,  
    PRIMARY KEY (venue_id) );  
INSERT INTO VENUE VALUES (11, 'Main Stadium', 'Y', 20000);  
INSERT INTO VENUE VALUES (22, 'Indoor Stadium', 'Y', 1000);  
INSERT INTO VENUE VALUES (33, 'Jabal Field', 'N', 500);  
INSERT INTO VENUE VALUES (44, 'Student Field', 'Y', 2000);
```

```
CREATE TABLE TEAM (  
    team_id numeric NOT NULL,  
    team_name character varying(30) NOT NULL,  
    PRIMARY KEY (team_id));  
INSERT INTO TEAM VALUES (1214,'CCM');  
INSERT INTO TEAM VALUES (1215,'KBS');  
INSERT INTO TEAM VALUES (1216,'CEP');  
INSERT INTO TEAM VALUES (1217,'CPG');  
INSERT INTO TEAM VALUES (1218,'CCM');  
INSERT INTO TEAM VALUES (1219,'CDB');  
INSERT INTO TEAM VALUES (1220,'CGS');
```

```

CREATE TABLE TOURNAMENT_TEAM (
    team_id numeric NOT NULL,
    tr_id numeric NOT NULL,
    team_group character(1) NOT NULL,
    match_played numeric NOT NULL,
    won numeric NOT NULL,
    draw numeric NOT NULL,
    lost numeric NOT NULL,
    goal_for numeric NOT NULL,
    goal_against numeric NOT NULL,
    goal_diff numeric NOT NULL,
    points numeric NOT NULL,
    group_position numeric NOT NULL,
    PRIMARY KEY (team_id, tr_id),
    FOREIGN KEY (tr_id) REFERENCES TOURNAMENT (tr_id),
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id));
INSERT INTO TOURNAMENT_TEAM VALUES (1214,1,'A',3,0,3,0,4,4,0,3,1);
INSERT INTO TOURNAMENT_TEAM VALUES (1215,1,'B',3,1,1,1,3,4,-1,4,2);
INSERT INTO TOURNAMENT_TEAM VALUES (1216,2,'C',3,1,1,1,0,0,0,4,2);
INSERT INTO TOURNAMENT_TEAM VALUES (1217,2,'A',3,1,1,1,1,4,-3,4,1);
INSERT INTO TOURNAMENT_TEAM VALUES (1218,3,'A',3,1,1,1,2,4,-2,4,3);
INSERT INTO TOURNAMENT_TEAM VALUES (1219,3,'B',3,1,1,1,4,2,2,4,1);
INSERT INTO TOURNAMENT_TEAM VALUES (1220,3,'C',3,1,1,1,1,2,-1,4,2);
INSERT INTO TOURNAMENT_TEAM VALUES (1214,3,'C',3,1,1,1,1,2,-1,4,2);

```

```

CREATE TABLE PERSON (
    kfupm_id numeric NOT NULL,
    name character varying(40) NOT NULL,
    date_of_birth date,
    PRIMARY KEY (kfupm_id));
INSERT INTO PERSON VALUES (1001, 'Ahmed', '1999-03-10');
INSERT INTO PERSON VALUES (1003, 'Saeed', '2005-03-10');
INSERT INTO PERSON VALUES (1005, 'Majid', '1996-03-10');
INSERT INTO PERSON VALUES (1007, 'Ahmed', '2001-03-10');
INSERT INTO PERSON VALUES (1009, 'Fahd', '2008-03-10');
INSERT INTO PERSON VALUES (1011, 'Mohammed', '1998-03-10');
INSERT INTO PERSON VALUES (1013, 'Raed', '1999-07-10');
INSERT INTO PERSON VALUES (1015, 'Mousa', '2009-03-10');
INSERT INTO PERSON VALUES (1017, 'Ali', '2009-03-10');
INSERT INTO PERSON VALUES (1019, 'Yasir', '2007-03-10');
INSERT INTO PERSON VALUES (1021, 'Ashraf', '2010-03-10');
INSERT INTO PERSON VALUES (1023, 'Hassan', '2004-03-10');
INSERT INTO PERSON VALUES (1025, 'Abdullah', '2003-03-10');
INSERT INTO PERSON VALUES (1027, 'Bassam', '2005-03-10');
INSERT INTO PERSON VALUES (1029, 'Ashraf', '2004-03-10');
INSERT INTO PERSON VALUES (9001, 'Carlos', '2004-03-10');
INSERT INTO PERSON VALUES (9003, 'Farhan', '2004-03-10');
INSERT INTO PERSON VALUES (9002, 'Jameel', '2004-03-10');
INSERT INTO PERSON VALUES (7001, 'Hassan', '2004-03-10');
INSERT INTO PERSON VALUES (7002, 'Robert', '2004-03-10');
INSERT INTO PERSON VALUES (7003, 'Fayez', '2004-03-10');
INSERT INTO PERSON VALUES (7004, 'Mark', '2004-03-10');
INSERT INTO PERSON VALUES (7005, 'Ahmad', '2004-03-10');
INSERT INTO PERSON VALUES (7006, 'Faisal', '2004-03-10');

```

```
INSERT INTO PERSON VALUES (7007,'Noman', '2004-03-10');
INSERT INTO PERSON VALUES (3001,'Ahmed', '2004-03-10');
INSERT INTO PERSON VALUES (3003,'Saied', '2004-03-10');
INSERT INTO PERSON VALUES (3002,'Fadhel', '2004-03-10');
INSERT INTO PERSON VALUES (3004,'Morad', '2004-03-10');
INSERT INTO PERSON VALUES (3005,'Farid', '2004-03-10');
```

```
CREATE TABLE PLAYING_POSITION (
    position_id character(2) NOT NULL,
    position_desc character varying(15) NOT NULL,
    PRIMARY KEY (position_id) );
INSERT INTO PLAYING_POSITION VALUES ('GK', 'Goalkeepers');
INSERT INTO PLAYING_POSITION VALUES ('DF', 'Defenders');
INSERT INTO PLAYING_POSITION VALUES ('MF', 'Midfielders');
INSERT INTO PLAYING_POSITION VALUES ('FD', 'Forwards');
```

```
CREATE TABLE PLAYER (
    player_id numeric NOT NULL,
    jersey_no numeric NOT NULL,
    position_to_play character(2) NOT NULL,
    PRIMARY KEY (player_id),
    FOREIGN KEY (player_id) REFERENCES PERSON (kfupm_id),
    FOREIGN KEY (position_to_play) REFERENCES PLAYING_POSITION (position_id));
INSERT INTO PLAYER VALUES (1001,1, 'GK');
INSERT INTO PLAYER VALUES (1003,2, 'DF');
INSERT INTO PLAYER VALUES (1005,3, 'DF');
INSERT INTO PLAYER VALUES (1007,4, 'MF');
INSERT INTO PLAYER VALUES (1009,5, 'FD');
INSERT INTO PLAYER VALUES (1011,6, 'FD');
```

```
CREATE TABLE TEAM_PLAYER (
    player_id numeric NOT NULL,
    team_id numeric NOT NULL,
    tr_id numeric NOT NULL,
    PRIMARY KEY (player_id, team_id, tr_id),
    FOREIGN KEY (player_id) REFERENCES PLAYER (player_id),
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),
    FOREIGN KEY (tr_id) REFERENCES TOURNAMENT (tr_id));
INSERT INTO TEAM_PLAYER VALUES (1001,1214,1);
INSERT INTO TEAM_PLAYER VALUES (1003,1216,2);
INSERT INTO TEAM_PLAYER VALUES (1001,1215,2);
INSERT INTO TEAM_PLAYER VALUES (1003,1216,1);
INSERT INTO TEAM_PLAYER VALUES (1005,1216,1);
INSERT INTO TEAM_PLAYER VALUES (1005,1218,2);
INSERT INTO TEAM_PLAYER VALUES (1007,1217,1);
INSERT INTO TEAM_PLAYER VALUES (1009,1218,1);
INSERT INTO TEAM_PLAYER VALUES (1011,1219,3);
```

```
CREATE TABLE SUPPORT (
    support_type character(2) NOT NULL,
    support_desc character varying(15) NOT NULL,
    PRIMARY KEY (support_type));
INSERT INTO SUPPORT VALUES ('RF', 'REFEREE');
INSERT INTO SUPPORT VALUES ('AR', 'ASST REFEREE');
```

```
INSERT INTO SUPPORT VALUES ('CH', 'COACH');
INSERT INTO SUPPORT VALUES ('AC', 'ASST COACH');
```

```
CREATE TABLE TEAM_SUPPORT (
    support_id numeric NOT NULL,
    team_id numeric NOT NULL,
    tr_id numeric NOT NULL,
    support_type character(2) NOT NULL,
    PRIMARY KEY (support_id, team_id, tr_id),
    FOREIGN KEY (support_id) REFERENCES PERSON (kfupm_id),
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),
    FOREIGN KEY (tr_id) REFERENCES TOURNAMENT (tr_id),
    FOREIGN KEY (support_type) REFERENCES SUPPORT (support_type));
INSERT INTO TEAM_SUPPORT VALUES (9001,1214,1,'CH');
INSERT INTO TEAM_SUPPORT VALUES (9002,1216,1,'CH');
INSERT INTO TEAM_SUPPORT VALUES (7001,1214,1,'AC');
INSERT INTO TEAM_SUPPORT VALUES (7002,1216,1,'AC');
```

```
CREATE TABLE MATCH_PLAYED (
    match_no numeric NOT NULL,
    play_stage character(1) NOT NULL,
    play_date date NOT NULL,
    team_id1 numeric NOT NULL,
    team_id2 numeric NOT NULL,
    results character(5) NOT NULL,
    decided_by character(1) NOT NULL,
    goal_score character(5) NOT NULL,
    venue_id numeric NOT NULL,
    audience numeric NOT NULL,
    player_of_match numeric NOT NULL,
    stop1_sec numeric NOT NULL,
    stop2_sec numeric NOT NULL,
    PRIMARY KEY (match_no),
    FOREIGN KEY (team_id1) REFERENCES TEAM (team_id),
    FOREIGN KEY (team_id2) REFERENCES TEAM (team_id),
    FOREIGN KEY (venue_id) REFERENCES VENUE (venue_id),
    FOREIGN KEY (player_of_match) REFERENCES PLAYER (player_id));
INSERT INTO MATCH_PLAYED VALUES (1, 'G', '2020-03-11', 1214, 1215, 'WIN', 'N', '2-1',11,5113,1007,131,242);
INSERT INTO MATCH_PLAYED VALUES (2, 'G', '2020-03-11', 1215,1216,'DRAW', 'N', '1-1',22,510,1009,111,272);
INSERT INTO MATCH_PLAYED VALUES (3, 'F', '2020-03-12', 1214, 1215,'LOSS', 'N', '1-3',33,2510,1003,111,172);
INSERT INTO MATCH_PLAYED VALUES (4, 'G', '2020-03-13', 1214, 1215,'WIN', 'N', '5-1',11,1510,1011,111,372);
```

```
CREATE TABLE match_details (
    match_no numeric NOT NULL,
    team_id numeric NOT NULL,
    win_lose character(1) NOT NULL,
    decided_by character(1) NOT NULL,
    goal_score numeric NOT NULL,
    penalty_score numeric,
    player_gk numeric NOT NULL,
    PRIMARY KEY (match_no, team_id),
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),
    FOREIGN KEY (player_gk) REFERENCES PLAYER (player_id),
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no));
```

```
INSERT INTO match_details VALUES (1, 1214, 'W', 'N', 1, 0,1001);
INSERT INTO match_details VALUES (2, 1215, 'W', 'N', 2, 0,1003);
INSERT INTO match_details VALUES (2, 1217, 'L', 'N', 2, 0,1003);
INSERT INTO match_details VALUES (1, 1216, 'L', 'N', 1, 0,1001);
INSERT INTO match_details VALUES (3, 1215, 'W', 'N', 2, 0,1003);
INSERT INTO match_details VALUES (3, 1214, 'W', 'N', 2, 0,1005);
```

```
CREATE TABLE MATCH_SUPPORT (
    match_no numeric NOT NULL,
    support_id numeric NOT NULL,
    support_type character(2) NOT NULL,
    PRIMARY KEY (match_no, support_id),
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no),
    FOREIGN KEY (support_id) REFERENCES PERSON (kfupm_id));
INSERT INTO MATCH_SUPPORT VALUES (1,3002,'RF');
INSERT INTO MATCH_SUPPORT VALUES (1,3003,'AR');
INSERT INTO MATCH_SUPPORT VALUES (2,3001,'RF');
INSERT INTO MATCH_SUPPORT VALUES (2,3003,'AR');
```

```
CREATE TABLE GOAL_DETAILS (
    goal_id numeric NOT NULL,
    match_no numeric NOT NULL,
    player_id numeric NOT NULL,
    team_id numeric NOT NULL,
    goal_time numeric NOT NULL,
    goal_type character(1) NOT NULL,
    play_stage character(1) NOT NULL,
    goal_schedule character(2) NOT NULL,
    goal_half numeric,
    PRIMARY KEY (goal_id),
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),
    FOREIGN KEY (player_id) REFERENCES PLAYER (player_id),
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no));
```

```
INSERT INTO GOAL_DETAILS VALUES (1, 1, 1003, 1214, 72, 'N', 'G', 'NT',2);
INSERT INTO GOAL_DETAILS VALUES (2, 1, 1005, 1214, 82, 'N', 'G', 'NT',2);
INSERT INTO GOAL_DETAILS VALUES (3, 1, 1003, 1214, 77, 'N', 'G', 'NT',2);
INSERT INTO GOAL_DETAILS VALUES (4, 1, 1005, 1214, 92, 'N', 'G', 'NT',1);
```

```
CREATE TABLE PENALTY_SHOOTOUT (
    kick_id numeric NOT NULL,
    match_no numeric NOT NULL,
    team_id numeric NOT NULL,
    player_id numeric NOT NULL,
    score_goal character(1) NOT NULL,
    kick_no numeric NOT NULL,
    PRIMARY KEY (kick_id),
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),
    FOREIGN KEY (player_id) REFERENCES PLAYER (player_id),
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no));
```

```
INSERT INTO PENALTY_SHOOTOUT VALUES (1, 1, 1215, 1003, 'N', 1);
INSERT INTO PENALTY_SHOOTOUT VALUES (2, 2, 1217, 1007, 'Y', 2);
```

```
CREATE TABLE PLAYER_BOOKED (  
    match_no numeric NOT NULL,  
    team_id numeric NOT NULL,  
    player_id numeric NOT NULL,  
    booking_time numeric NOT NULL,  
    sent_off character(1),  
    play_schedule character(2) NOT NULL,  
    play_half numeric NOT NULL,  
    PRIMARY KEY (match_no, team_id, player_id),  
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),  
    FOREIGN KEY (player_id) REFERENCES PLAYER (player_id),  
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no));
```

```
INSERT INTO PLAYER_BOOKED VALUES (1, 1215, 1003, 36, 'N','NT', 1);  
INSERT INTO PLAYER_BOOKED VALUES (1, 1217, 1005, 76, 'Y','NT', 2);
```

```
CREATE TABLE PLAYER_IN_OUT (  
    match_no numeric NOT NULL,  
    team_id numeric NOT NULL,  
    player_id numeric NOT NULL,  
    in_out character(1) NOT NULL,  
    time_in_out numeric NOT NULL,  
    play_schedule character(2) NOT NULL,  
    play_half numeric NOT NULL,  
    PRIMARY KEY (match_no, team_id),  
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),  
    FOREIGN KEY (player_id) REFERENCES PLAYER (player_id),  
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no));
```

```
INSERT INTO PLAYER_IN_OUT VALUES (1, 1214, 1003, 'I',73,'NT', 2);  
INSERT INTO PLAYER_IN_OUT VALUES (2, 1215, 1007, 'O',33,'NT', 1);
```

```
CREATE TABLE MATCH_CAPTAIN (  
    match_no numeric NOT NULL,  
    team_id numeric NOT NULL,  
    player_captain numeric NOT NULL,  
    PRIMARY KEY (match_no, team_id),  
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),  
    FOREIGN KEY (player_captain) REFERENCES PLAYER (player_id),  
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no));  
INSERT INTO MATCH_CAPTAIN VALUES (1, 1214, 1005);  
INSERT INTO MATCH_CAPTAIN VALUES (2, 1215, 1003);
```

```
CREATE TABLE PENALTY_GK (  
    match_no numeric NOT NULL,  
    team_id numeric NOT NULL,  
    player_gk numeric NOT NULL,  
    PRIMARY KEY (match_no, team_id),  
    FOREIGN KEY (team_id) REFERENCES TEAM (team_id),  
    FOREIGN KEY (player_gk) REFERENCES PLAYER (player_id),  
    FOREIGN KEY (match_no) REFERENCES MATCH_PLAYED (match_no));  
INSERT INTO PENALTY_GK VALUES (1, 1214, 1003);  
INSERT INTO PENALTY_GK VALUES (1, 1215, 1007);
```