* **Deniz Bilge Akkoç 2020400135**
* **Gülşen sabak 2020400072**
* **manager(username: string, password: string)**

U -> UP

Since all fields are dependent on username field, and it is the primary key of the relation, it is in BCNF form.

* **user (username: string, password: string, name: string, surname: string)**

U -> UPNS

Since all fields are dependent on username field, and it is the primary key of the relation, it is in BCNF form.

* **coach (username: string, nationality: string, password: string)**

U -> UMP

Since all fields are dependent on username field, and it is the primary key of the relation, it is in BCNF form.

* **jury (username: string, nationality: string, password: string)**

U -> UMP

Since all fields are dependent on username field, and it is the primary key of the relation, it is in BCNF form.

* **player (username: string, team\_list: string, position\_list: string, height: integer, weight: integer, date\_of\_birth: string, password: string)**

U -> UTYHWDP

Since all fields are dependent on username field, and it is the primary key of the relation, it is in BCNF form.

* **position (position\_ID: integer, position\_name: string)**

K -> KL

Since all fields are dependent on position\_ID field, and it is the primary key of the relation, it is in BCNF form.

* **team (team\_ID: integer, team\_name: string, coach\_username: string, contract\_start: string, contract\_finish: string)**

Z -> ZVOEI

Since all fields are dependent on team\_ID field, and it is the primary key of the relation, it is in BCNF form.

* **tv\_channel (channel\_ID: integer, channel\_name: string)**

A -> AB

Since all fields are dependent on team\_ID field, and it is the primary key of the relation, it is in BCNF form.

* **stadium (stadium\_ID: integer, stadium\_name: string, stadium\_country: string)**

J -> JXC

Since all fields are dependent on stadium\_ID field, and it is the primary key of the relation, it is in BCNF form.

* **match\_session (session\_ID: integer, team\_id: integer, stadium\_ID: integer, assigned\_jury\_username: string, played\_player\_username\_list: string, date: string, time\_slot: integer, rating: string)**

G -> GRJĞQÜFÇ

Since all fields are dependent on session\_ID field, and it is the primary key of the relation, it is in BCNF form.

* **rate (username: string, session\_ID: integer)**

UG -> UG

Since username field and session\_ID field are the primary key of the relation, it is in BCNF form.

* **being\_in\_an\_aggreement (username: string, team\_ID: integer)**

UZ -> UZ

Since username field and team\_ID field are the primary key of the relation, it is in BCNF form.

* **has\_aggreement (team\_ID: integer, channel\_ID: integer)**

ZA -> ZA

Since team\_ID field and channel\_ID field are the primary key of the relation, it is in BCNF form.

* **register (username: string, team\_ID: integer)**

UZ -> UZ

Since username field and team\_ID field are the primary key of the relation, it is in BCNF form.

* **at\_where (session\_ID: integer, stadium\_ID: integer)**

GJ -> GJ

Since session\_ID field and stadium\_ID field are the primary key of the relation, it is in BCNF form.

* **play\_in (username: string, position\_ID: integer)**

UK -> UK

Since username field and position\_ID field are the primary key of the relation, it is in BCNF form.

* **t\_matchs (session\_ID: integer, team\_ID: integer)**

G -> GZ

Since all fields are dependent on session\_ID field, and it is the primary key of the relation, it is in BCNF form.

* **played\_in\_m (session\_ID: integer, username: string, position\_ID: integer)**

G -> GUK

Since all fields are dependent on session\_ID field, and it is the primary key of the relation, it is in BCNF form.

**TRIGGERS**

There can’t be added any match session that has conflict with other match sessions. We have controlled this restriction via using trigger. In that trigger we are checking whether there is any conflict on date, time\_slot and stadium\_ID.

DELIMITER //

CREATE TRIGGER person\_bi BEFORE INSERT ON match\_session

FOR EACH ROW

BEGIN

IF EXISTS (

SELECT 1

FROM match\_session

WHERE dateOf = NEW.dateOf

AND time\_slot = NEW.time\_slot

AND stadium\_ID = NEW.stadium\_ID

) THEN

SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT = 'Cannot insert due to data conflict.';

END IF;

END //

DELIMITER ;

Jury can’t update the match session that he/she has rated before. We have controlled this restricton via using trigger. If there is any no unrated match session, then it raises message as 'You have already rated.’

DELIMITER //

CREATE TRIGGER israted BEFORE UPDATE ON match\_session

IF (NEW.rating IS NOT NULL) THEN

SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT = 'You have already rated.';

END IF;

DELIMITER ;

\* We have added UNIQUE(team\_ID) to hass\_aggrement table Since each team is in an aggrement with only 1 channel. But each channel doesnt have to be in an aggrement with only 1 team.

\* We have added UNIQUE(session\_ID, username) to played\_in\_m table, since each player have to be in 1 position in a match. In that way, match and user cannot repeat together.

\* We have added UNIQUE(channel\_name) to tv\_channel table, since each channel\_id should be matched with unique channel\_name. We don’t want to have repeated channel\_name.

\* We have controlled the restriction: “each player has to be in at least one team” with the help of PRIMARY KEY (username, team\_ID). In that way, the team\_ID cannot be NULL, since it is in primary key.

\* We have controlled the restriction: “each player has to be in at least one position” with the help of PRIMARY KEY (position\_ID, username). In that way, the position\_ID cannot be NULL, since it is in primary key.

\* We have added UNIQUE(stadium\_name) to stadium table so that there exist unique name for each stadium\_ID.

\* Since we have kept the squad info inside match\_session, when we delete match session the squad info also deleted

\* Since we have kept the necessary stadium infos in tables via using stadium\_ID, when stadium name changed all relations that contains it is changing (since not directly connected with stadium\_name. Relations are directly connected with stadium\_ID)

\* We have controlled that constraint “the rating of the newly added match sessions should be lefty blank or null” via using UI. Directly we didnt put the input block to enter rating. In that way, we assign all ratings NULL at initial.

\* We have added the rateable sessions under the page. Jury has to select one of these ones. This is our constraint. We have these kind of constraints. We will mention them in the demo session.

\* played\_player\_username\_list corresponds the played\_player\_username

UPDATED ER DIAGRAM

