Part 1: Conceptual Database Design and Discussion

In the ER Design part, some constraints could not be captured. These constraints are:

1. Two different matches cannot happen at the same time and place.
2. Contract finish date of the *"directs"* relation between *"Coach"* entity and "Team" entity must be a later date than the same relation's contract start date. This constraint can be enforced in the second part which is using CREATE TABLE command in MySQL.
3. In reality, a team can agree with a coach for a while and after that, the team can agree with another coach (when the previous coach's contract expires). But in the ER Design, this cannot be shown. Each team has a single and unique coach. If the teams were allowed to have more than one coach or a single coach were allowed to coach different teams, we could not impose a mechanism to prevent overlapping contracts, and this would result in a violation of the principle stating that each team is directed by a unique coach between contract start and contract end date.
4. The *"plays"* relation between aggregation of "*plays_team*" relation between *"Player"* entity and "*Team*" entity does not disallow a player to be in two matches that happen at the same time and day. It does not prevent the possibility of the players having time conflict between their matches.
5. The *"plays"* relation between aggregation of "*plays_team*" relation between *"Player"* entity and "*Team*" entity allows players from different teams to play in the same match but this must not happen.
6. The *"plays"* relation between aggregation of "*plays_team*" relation between *"Player"* entity and "*Team*" entity does not check if a player can be at the given position (denoted using *"position_ID"* attribute of *"plays"* relation) at a match. The position ID list of the player must include *"position_ID"* attribute of *"plays"* relation.
7. Juries cannot change their ratings, but we are not able to show this.