Project 2: Proposal

Team Number 4
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Problem statement

To make a database management system for sports statistics for the game of Cricket. This system will allow users to view the individual statistics of players, match details, stats of teams and other stats such as leader-boards and records. Administrator of the system can manage the data within the system, and perform functions such as addition, update, and deletion of data.

Mini-world Description

The mini-world for this system consists of various Cricket playing teams, players and other people who are involved in the game (such as match officials, team support staff, etc.). Other entities are Matches that will be played by teams and their players, and venues that will host different matches between teams.

Actors

1. Players
2. Teams
3. Venue
4. Match
5. Officials
6. Team Support

Scenarios

For all scenarios, the following is fixed:

A match is being played between two teams, Team1 and Team2. Each team consists of a squad of 15 players for each match. Of these 15 players, there are 11 active players, the remaining 4 are for substitution.

The match is hosted in Stadium1 (Venue), home ground for Team1. Stadium1 is located in City1 and has a capacity of X.

While batting, no more than 11 players can bat. Neither team can lose more than 10 wickets while batting. For the fielding team, no more than 11 players can be on the field at any time. One of these 11 players is a bowler, 1 is a wicket keeper, remaining are fielders. There are 2 umpires on the field, and one umpire is Third Umpire who is off-field and uses different technologies to assist the two umpires give correct decisions. Commentators are in the commentary stand.

Scenario 1:
Team1 bats first, scores R runs in O1 overs at a loss of Wkt1 wickets. Team2 scores (R+1) runs in O2 overs at a loss of Wkt2 wickets. Result: Team2 wins by W wickets.

Scenario 2:
Team1 bats first, scores R1 runs in O1 overs at a loss of Wkt1 wickets. Team2 scores R2 runs (R1 > R2) in O2 overs at the loss of Wkt2 wickets. Result: Team1 wins by (R1 – R2) runs.

Scenario 3:
Team1 bats first, scores R runs in O1 overs at a loss of Wkt1 wickets. Team2 also scores R runs in O2 overs at a loss of Wkt2 wickets. Result: Match drawn.

Scenario 4:
Rain interrupts match. Result: Match abandoned due to rain.

Functionalities and operations of actors:

1. **Player:**
   - Batsman – a) Scores runs (by hitting a boundary (4 or 6 runs) and/or by running between the wickets).
     b) Gets out (bowled, caught, stumped, runout).
   - Bowler – a) Bowls multiple overs (6 valid balls each).
     b) Takes wickets of batsmen.
   - Fielder – a) Restricts the batsmen from taking runs.
     b) Takes wickets of batsmen by catching or running them out.
   - Substitutes - Take place of tired or injured players during fielding .

2. **Team:**
   Play matches against other teams. Win/loose a match.

3. **Match:**
   Played between two teams. Hosted at a venue.

4. **Venue:**
   Host matches between two teams at a time.

5. **Officials:**
   Umpires: Give decisions about wickets and runs
   Commentators: Provide live analysis of ongoing matches

6. **Team support:**
   Sponsors - provide funding for team
   Coach - Coaching and guiding team players
   Team manager - Manage team, players, equipment and match schedules
   Team selectors - Select team squad and the playing 11, appoint captain and vice-captain