Jacob Ochs : jochs@westmont.edu

Dr. Wayne Iba

CS-125 : Database Design

February 27, 2018

<p align="center">Project 2 Deliverable</p>

   My database model is that of an sport architecture for Ultimate Frisbee. This will be my fourth year on Westmont's club ultimate team, and thus I have a good working knowledge of the sport and it's overall structure, hence my personal motivation. With this database, the user will be able to query personal statistics on any player, on any team, on any league, in order to broadly inform a coach or scout of the best ways to utilize his personnel. My approach has a drawback in that the user will not be able to see inter-game statistics on individual players, to facilitate more informed head-to-head matchups with his opponent. However, my approach will suffice to show a broader scope of the analytics behind an arbitrary ultimate frisbee league, as well as comparisons between players and teams between leagues.

Relations and Functional Dependencies:

  Player (<u>PName</u>, Age, Gender, Position, JerseyNum, Hometown)

    FD: PName → Age Gender Position JerseyNum Hometown

  Stats (Scores, Assists, Catches, Completions, Turnovers, Blocks, Points_Played,

    Unforced_Errors). No FD.

  Team (<u>TName, League</u>, City, Record)

    FD: TName League → City Record

  League (<u>LName</u>, Division, Gender)

    FD: LName → Division Gender

  Coach (<u>CName</u>, Phone)

    FD: Cname → Phone

  Game (<u>Location, StartTime</u>, Description, Score)

    FD: Location StartTime → Description Score

Relations from Entity Relationships:

  PlaysFor (PName, TName, League)

  Records (PName, Scores, Assists, Catches, Completions, Turnovers, Blocks, PointsPlayed,

    UnforcedErrors)

  Participates (PName, Location, StartTime)

CompetesIn (TName, League, Location, StartTime

Organizes (TName, League, LName)

Trains (Cname, TName, League)

Increments (Location, StartTime, Scores, Assists, Catches, Completions, Turnovers, Blocks,
      PointsPlayed, UnforcedErrors)

All FD's are in BCNF because for each FD, the left side contains a superkey.

Entity-Relationship Diagram

Player (attributes): PName (key), Age, Gender, Position, JerseyNum, Hometown

League (attributes): LName (key), Division, Gender

Team (attributes): TName (key), City, League (key), Record

Coach (attributes): CName (key), Phone

Stats (attributes): Scores, Assists, Catches, Completions, Turnovers, Blocks, PointsPlayed, UnforcedErrors

Game (attributes): Location (key), StartTime (key), Description, FinalScore

Relationships:
- Player — PlaysFor → Team
- Player — Records → Stats
- Player — Participates → Game
- Stats — Increments → Game
- Team — CompetesIn → Game (Home / Away)
- Team — Organizes → League
- Coach — Trains → Team