

University of British Columbia
Department of Computer Science

CPSC 304 2020

Summer Term1

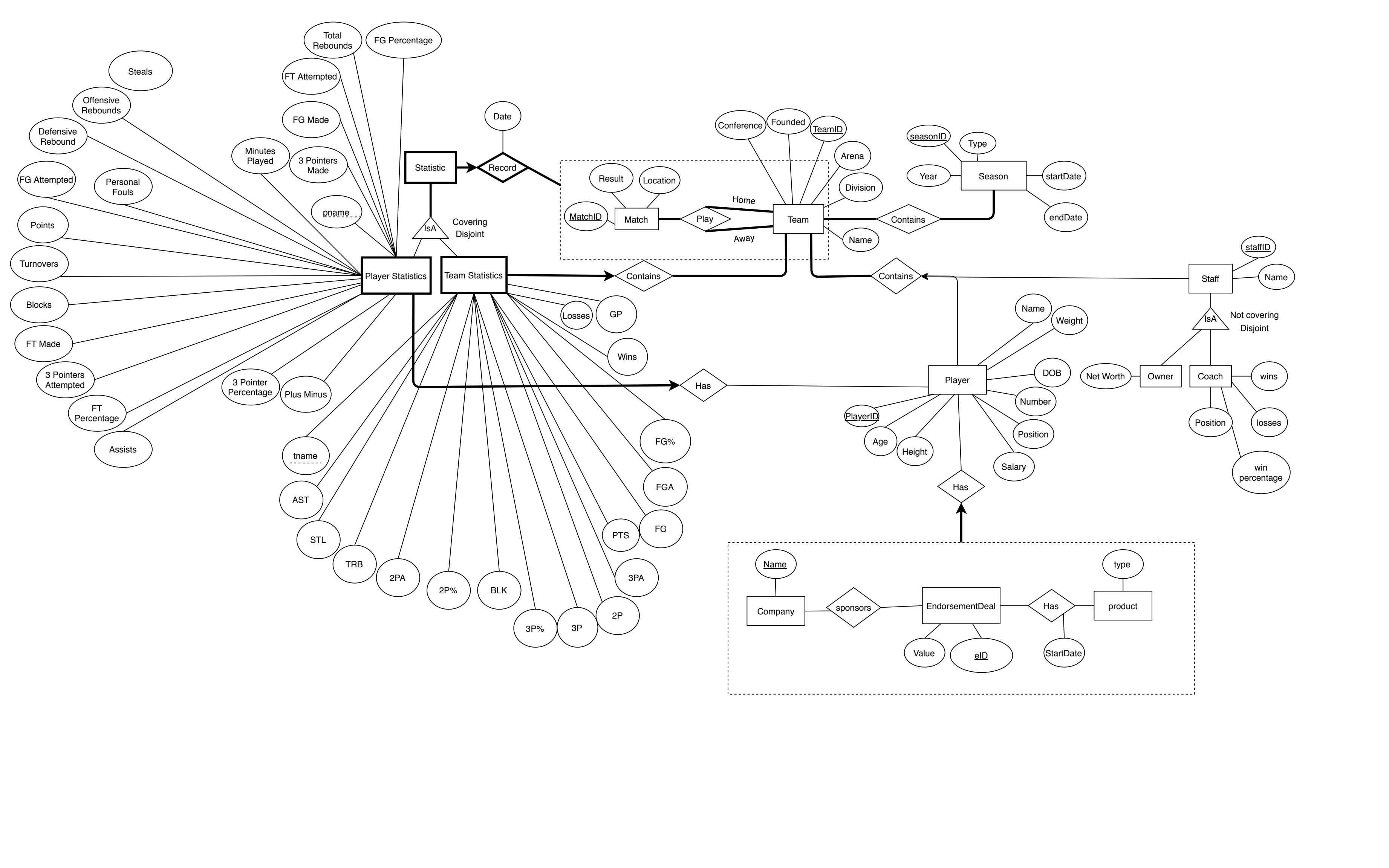
Group Project - Implementation of a Relational Database

Project Title:	NBA Database
Project Milestone:	Milestone 2 (ERD, Schema, Normalization)

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above.

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia



Schema:

Season(seasonID: CHAR[], year: INTEGER , type: CHAR[] , startDate: Date, endDate: Date)

Match(matchID:CHAR[] , result: CHAR[] , location: CHAR[])

Team(teamID:CHAR[] , **year**: INTEGER , name: CHAR[] , division: CHAR[] , arena: CHAR[] , conference : CHAR[] , founded: Date)

Play(**home_teamID**: CHAR[] , **away_teamID**: CHAR[] , **matchID**: CHAR[])

Player Statistic (**home_teamID**: CHAR[] , **away_teamID**: CHAR[] , **matchID**: CHAR[] , pname: CHAR[] , **playerID**: CHAR[] , date : Date , FT attempted: INTEGER , FG made: INTEGER , 3P made: INTEGER , total rebounds: INTEGER , FG percentage: INTEGER , FT percentage: INTEGER , steals: INTEGER , minutes played: INTEGER , offensive rebounds: INTEGER , defensive rebounds: INTEGER , FG attempted: INTEGER, points: INTEGER , plus minus: INTEGER , personal fouls: INTEGER , FT made: INTEGER , 3P percentage: INTEGER , turnovers: INTEGER , blocks: INTEGER , assists: INTEGER , 3P attempted: INTEGER)

Team Statistic (**home_teamID**: CHAR[] , **away_teamID**: CHAR[] , **matchID**: CHAR[] , tname: CHAR[] , **teamID**: CHAR[] , date : Date , FT attempted: INTEGER , FG made: INTEGER , 3P made: INTEGER , total rebounds: INTEGER , FG percentage: INTEGER , FT percentage: INTEGER , steals: INTEGER , minutes played: INTEGER , offensive rebounds: INTEGER , defensive rebounds: INTEGER , FG attempted: INTEGER, points: INTEGER , plus minus: INTEGER , personal fouls: INTEGER , FT made: INTEGER , 3P percentage: INTEGER , turnovers: INTEGER , blocks: INTEGER , assists: INTEGER , 3P attempted: INTEGER)

Player(playerID: CHAR[] , **teamID**: CHAR[] , name : CHAR[] , age: INTEGER , height: REAL , position: CHAR[] , number : INTEGER , DOB: Date , weight: REAL , name: CHAR[])

Staff(staffID: CHAR[] , name: CHAR[])

Owner(staffID: CHAR[] , net worth : INTEGER)

Coach(staffID: CHAR[] , wins: INTEGER, losses: INTEGER, Winning percentage : REAL , position : CHAR[])

Endorsement Deal(eID: CHAR[] , value: INTEGER)

Company(name: CHAR[])

Product(type: CHAR[])

MILESTONE 2 Requirements:

Entities (at least 7 sets - excluding weak and ISAs) + Primary Keys

1. Season - seasonID (Year would have duplicates given playoffs)
2. Match - matchID
3. Team - teamID
4. Staff - staffID
 - a. ISA relationship:
 - i. Coach
 - ii. Owner
5. Player - playerID
 - a. PreviousTeam
 - i. Weak entity
6. Statistic(weak entities)
 - a. ISA relationship
 - i. Player statistics
 - ii. Team statistics
7. Endorsement Deal (aggregation)
 - a. Company
 - b. Product

Weak entity (at least one):

1. Player statistics (playerID, matchID)
2. Team statistics (teamID, matchID)
3. Previous Team (playerID, TeamID, endDate)

ISA relationship(s):

1. Coach
 - a. Head
 - b. Assistant
2. Statistic(s)
 - a. Player
 - b. Team

Relationships - 7 different (identify constraints - cardinality, participation(total or partial), etc)

1. Season contains Teams
 - a. M:M
 - b. Participation: Total - team must be connected to a season & season must have team(s)
2. Team plays a Match

- a. M:M
 - b. Participation: Total - team must play a match & matches must have teams
- 3. Statistics are recorded from a single Match & a match has many statistics
 - a. M: 1
 - b. Participation: Total - Statistic must come from a match and a Match will have statistics
- 4. Staff is employed by Team
 - a. M:M (within a season, many staff can be employed by many teams)
- 5. Team contains Player
 - a. 1:M (A player can only play for one team at a time)
 - b. Participation: Total - players must belong to a team and teams must have players.
- 6. Player has (aggregation of: Company sponsors EndorsementDeal and EndorsementDeal has Product)
 - a. 1:M (A particular endorsement deal pertains to one player, but many players can have an endorsement deal)
 - b. Participation: Partial - Not all players have an endorsement deal, but all endorsement deals must involve one player.
- 7. Player has Player Statistics
 - a. 1:M (There are multiple player statistics entries for one specific player, and entries are added when games are played)
 - b. Participation: Total - Players who play in the league have statistics, and player statistic entries must pertain to a specific player.