

CSE255 Midterm Examination Handout

Consider the BBALL relational schema, with assumptions, below for tracking UConn's basketball program and statistics over the years, that will be used for certain problems on the midterm examination.

PLAYER(PLName, PFName, StartYear, NumYears, UniformNumber);
COACH(CLName, CFName, StartYear, EndYear);
TEAM (TeamID, Year, Squad);
ROSTERS(TeamID, PLName, CLName);
RSRECORD(TeamID, Wins, Losses);
PORECORD(TeamID, Wins, Losses);
STATISTICS(PLName, TeamID, PPG, RPG, APG);
TITLES(TeamID, TitleType);

Assumptions for the schema are as follows:

- Last names of coaches and players are unique.
- The Year, StartYear, and EndYear attributes have values such as, 1968, 1971, 1994, 1999, 2001, etc. In the TEAM table, a year such as 1997 means the season that finishes in 1997 but started in November 1996. In all other tables, it represents when they started in the program, e.g., Tony Robertson, a senior, started in 1999. EndYear is null for active coaches.
- NumYears represents the number of complete years a player is in the program, e.g., Tony Robertson would have NumYears = 3 since he hasn't completed his fourth year.
- STATISTICS contains values for each player ONLY after the season is complete, e.g., Tony Robertson will have just three tuples in STATISTICS.
- ROSTERS is a ternary relationship among PLAYER, COACH, TEAM.
- There is one COACH per year, i.e., coaches are not fired during the season.
- RSRECORD is for the regular season record; PORECORD is for the playoffs.
- PPG, RPG, and APG are Points, Rebounds, and Assists Per Game, respectively.
- The attribute Squad has the values Mens and Womens, and the attribute TitleType has the values BigEastRS, BigEastCC, NCAA, NIT.

Player/Coach Tables: These track information on the players and coaches for the basketball teams (Mens/Womens). Since the names of the coaches/players are unique, it is not possible to have the case where a former player is now a coach.

Team Table: This tracks information on each team, namely, the ID of the team, its year, and squad (Mens or Womens).

Rosters Table: This tracks information on each roster by TeamID, tracking the players and coach for each team.

RSRecord/PSRecord: These tables contain parallel information for a team's regular season and post season win/loss records. Note that if a team does not play in the post season, there would be no entry in the PORECORD table.

Statistics Table: This tracks statistics for each player, namely, PPG, RPG, and APG on a team basis.

Titles Table: This tracks the titles that a team has – since a team can have multiple titles, the primary key is both the attributes (TeamID and TitleType).

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In order to cater to the remote control-wielding, retro, couch-potato US society, the relational schema below represents the various information that can be tracked on actors, directors, TV shows, and movies. The relational schema is given below:

Person (LName, FName, NumYears, State, PersonID);
TVShows (ShowName, StartYear, NumSeasons, ShowID, NumEmmy);
Episodes (ShowID, EpisodeID, EName, EDescr);
Movies (MovieName, Year, Cost, Gross, ShowID, NumOscar);
Roles (RLName, RFName, ShowID, RoleID, RoleType);
TVRoles (PersonID, RoleID, ShowID, EpisodeID, EmmyFlag);
MovieRoles (PersonID, RoleID, ShowID, OscarFlag);
TVDirectors (PersonID, ShowID, EpisodeID, EmmyFlag);
MovieDirectors (PersonID, ShowID, OscarFlag);

Person Table: A person can be a Director or an Actor. LName, FName combinations are always unique (screen actors guild requires unique names), and this unique combination is assigned a unique PersonID (not part of the key of Person, but always with a unique value). NumYears is the number of years that the person has been involved in the entertainment field. State is the state in which they primarily reside.

TVShows Table: ShowName in combination with StartYear forms the key. ShowName is not unique. For example, there have been two Wheel of Fortunes, one in the early days (1950s/1960s) and the current version. NumSeasons represents the number of years the show was on. ShowID is a unique ID (not part of the key) that identifies each show. ShowID is unique across all Shows and Movies. There is also a NumEmmy for each Show that indicates how many Emmy Awards the show won for all of its years.

Episodes Table: For each TV Show, the Episodes for its entire run (all years in sequential order) are tracked; thus ShowID, EpisodeID combination uniquely identifies each Episode. In addition, each Episode has a name (EName which may not be unique) and a description (EDescr).

Movies Table: MovieName in combination with Year forms the key. MovieName is not unique, since there are many remakes of movies. Cost represents how much the movie cost, Gross represents the amount of money the movie grossed. There is also a NumOscar for each movie that indicates how many Oscars the movie won in total (all categories). ShowID is the common unique identifier between Shows and Movies.

Roles Table: Roles are tracked by Show (Movie or TV). RLName, RFName, ShowName combinations are always unique, since the same role (as identified by name) may be on more than one show. This combination is assigned a unique RoleID. RoleID is not part of the key of Roles, but it always has a unique value. RoleTypes have values of Star, Co-Star, and Guest-Star.

TVRoles and MovieRoles Tables: Actors are identified by the roles that they play in a given show. The combination of PersonID, RoleID, ShowID is needed as a key to identify movie roles, with an EpisodeID added to identify TV roles. There are boolean flags that indicate whether the actor won an Emmy or Oscar for their TV or Movie role in a given year. Different actors can play the same role in different years (and on different episodes).

TVDirector and MovieDirectors Tables: Directors are identified by the movies and TV shows that they direct in a given year. There are boolean flags that indicate whether the director won an Emmy or Oscar for their TV show or movie in a given year. For TVDirectors, we track the Episode that is being directed. For MovieDirectors, there is a tracking of the individual episodes that are directed.

Values:

PersonID (P1, P2, P3, ...); RoleID (R1, R2, R3, ...); ShowID(S1, S2, S3, ...); EpisodeID (E1, E2, E3, ...); DirID (are PersonIDs); NumYears, NumSeasons, NumOscars, NumEmmy: Integer; StartYear and Year (19XX or 20XX - where XX is the year); EmmyFlag, OscarFlag: Boolean; Cost, Gross: Large Integer; RoleType: (Star, Co-Star, Guest-Star); LName, FName, ShowName, MovieName, RLName, RFName, EName, EDescr: String;

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In order to demonstrate the content of these tables, consider below various tuples of the tables:

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Person ( Lname, FName NumYears State PersonID );
    Eastwood Clint 40 CA P1
    Ball Lucy 50 CA P2
    Martin Steve 30 CA P3
    Howard Ron 35 CA P4

TVShows (ShowName, StartYear, NumSeasons ShowID NumEmmy);
    I Love Lucy 1951 12 S1 10
    Happy Days 1982 10 S2 8
    Andy Griff. 1958 8 S3 12

Episodes ( ShowID, EpisodeID, EName, EDescr);
    S1 E156 Making Wine . . .
    S1 E199 Candy Making . . .
    S3 E1 Opie Lies . . .
    S2 E111 Richie Marries . . .

Movies ( MovieName, Year, Cost, Gross, ShowID, NumOscar);
    Enforcer 1982 20M 50M S47 0
    The Jerk 1986 25M 62M S22 0

Roles ( RLName, RName, ShowID, RoleID, RoleType);
    Taylor Opie S3 R1 Co-Star
    Taylor Andy S3 R2 Star
    Ricardo Lucy S1 R3 Star
    Callahan Harry S47 R4 Star
    Cunningham Richie S2 R5 Star

TVRoles ( PersonID, RoleID, ShowID, EpisodeID, EmmyFlag);
    P2 R3 S1 E156 True
    P4 R1 S1 E1 False
    P4 R5 S3 E111 False

MovieRoles (PersonID, RoleID, ShowID, OscarFlag);
    P1 R4 S47 False
    P3 R11 S22 False

TVDirectors (PersonID, ShowID, EpisodeID, EmmyFlag);
    P75 S3 E12 False
    P75 S3 E14 False
    P14 S1 E112 True

MovieDirectors (PersonID, ShowID, OscarFlag);
    P1 S47 False
    P24 S22 True
  
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