



**SAPIENZA**  
UNIVERSITÀ DI ROMA

**SQL - SQL EVALUATION AND OPTIMIZATION**

# **DATA MANAGEMENT FOR DATA SCIENCE - 2019/2020**

# DATA BASE - BASKETBALL.MEN

➤ **DESCRIPTION:** Database that represent data of the world of basketball in USA. Data are updated up to 2011.

➤ **LINK :** <https://relational.fit.cvut.cz/dataset/BasketballMen>

➤ **DBMS: MySql**

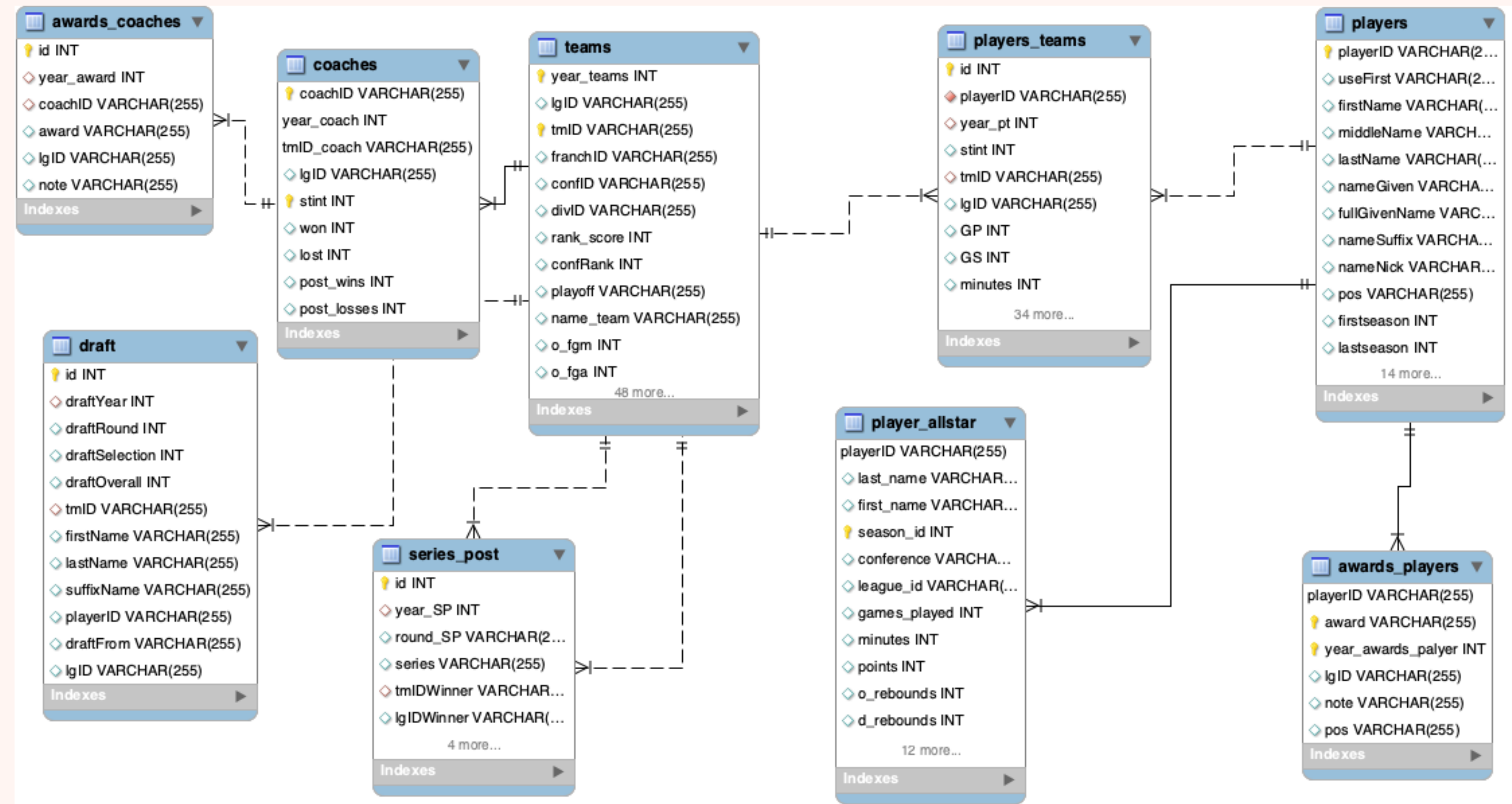
➤ **9 Tables**

➤ **43.787. Rows**

➤ **195 Columns**

➤ **10 Queries**

➤ **4 Optimized queries**



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# SQL QUERIES

- **1** - HighSchool name and count of players gives by each highSchool
  - **2** - Name, lastname, id and total points scored by the best 10 players (who scored most)
  - **3** - Firstname, lastName, height, weight, birthcountry of players born not in USA that played ONLY in 1 team in career(in the USA leagues). **(optimized)**
  - **4** - Top 10 players who scored the most but never played in all star match
  - **5** - Michael Jordan's team mates. **(optimized)**
  - **6** - the player who won the most awards for each category of available awards, in case of draw between players, select the younger one.
  - **7** - for each year we found the ranking of coaches from the one with the best Win/rate to the worst with at least more than 10 games. We want to know if the best coaches have also won an award for the same year and only for NBA league .
  - **8** - Top player for different ranking (games played, minutes played, best scorer, best assistman, best carcher, best stealer, best blocker, best free throws, best sniper from 2, best sniper from 3) **((optimized)**
  - **9** - top 10 players that won more MVP awards. For every player we show numebr of total MVP awards taht he won. We show also with which team he won them and number of MVP for every team.
  - **10** - top 50 players with higher average point/minutes rate that have won at least 1MVP or have been inserted in All NBA Fistr Team of the year. For every player we show points/minutes rate, number of MVP won, how many times every players has been inserted in 'All NBA - First Team of the year" and number of times that every player has played in allstart games. **(optimized)**
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# SQL EVALUATION AND OPTIMIZATION

N° query	State	Time	State 2	Time 2	State 3	Time 3
3	Initial query with pk and fk	2,5 sec	rewriting the SQL query	0,790 sec	adding indices to one or more tables	0,740 sec
5	Without pk and fk - without integrity constraints	0,550 sec	adding integrity constraints to one or more tables	0,0095	rewriting the SQL query	0,0070
8	Without pk and fk - without integrity constraints	0,750 sec	adding integrity constraints to one or more tables	0,540 sec	rewriting the SQL query	0,220. Sec
9	Without pk and fk - without integrity constraints	0,940 sec	adding integrity constraints to one or more tables	0,330 sec	rewriting the SQL query	0,095 sec