База основных статистических данных

Семенов Влад
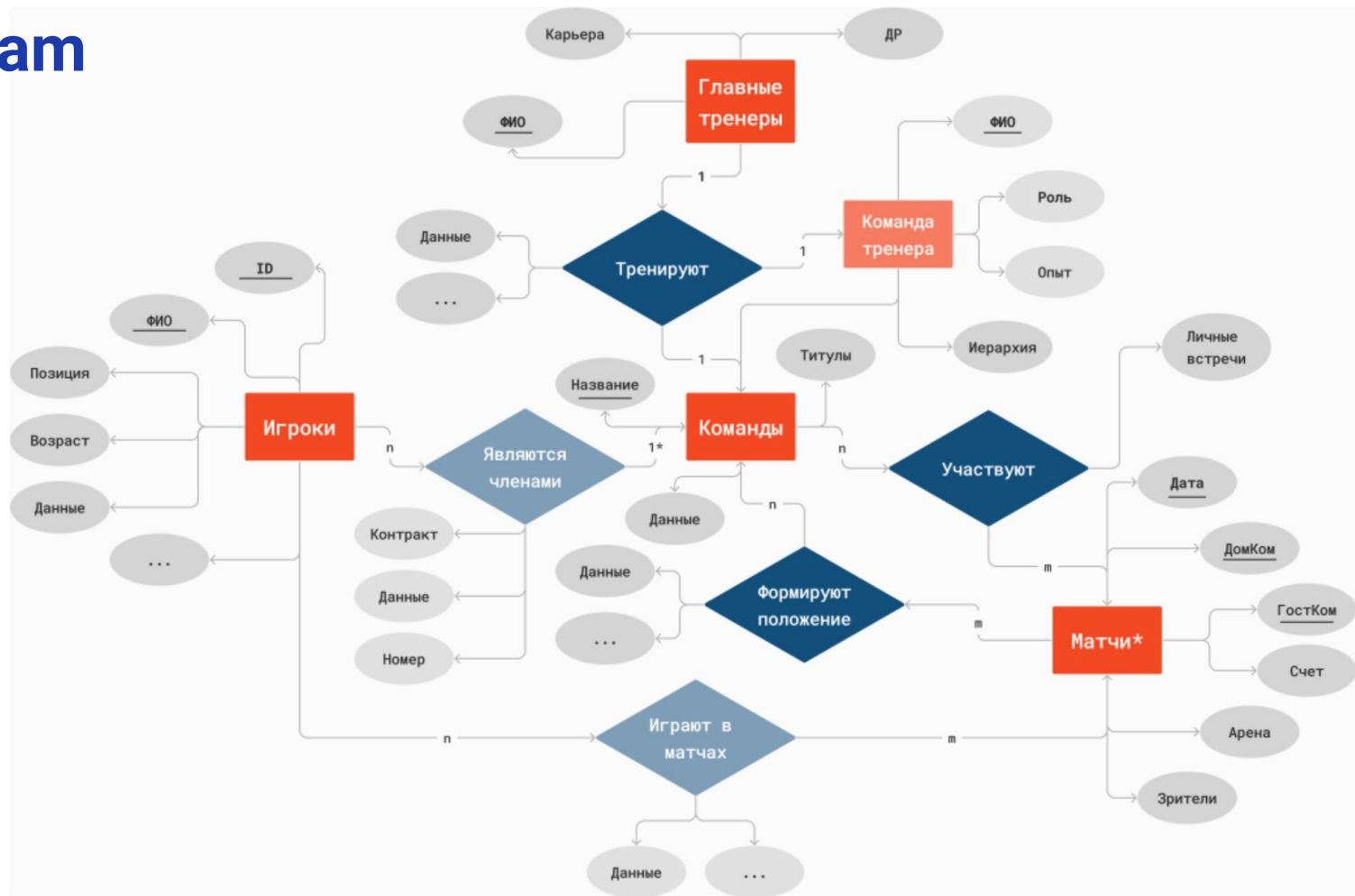
Почему реальные данные - потому что так интереснее

- Данные для проекта были собраны с сайта basketball-reference.com

- Предобработаны в Google Sheets

- Преобразованы в формат .csv

- Финальный импорт данных производились на sqliteonline.com.

ER-diagram

Детали

```sql
1  DROP TABLE IF EXISTS teamsbase;
2
3  CREATE TABLE teamsbase (
4      Franchise VARCHAR(100) PRIMARY KEY,
5      Years INTEGER CHECK (Years > 0),
6      WinLoseRate REAL CHECK (WinLoseRate >= 0.0 AND WinLoseRate <= 1.0),
7      Champ INTEGER CHECK (Champ >= 0),
8      TeamCode VARCHAR(5)
9  );
10
11 INSERT INTO teamsbase (Franchise, Years, WinLoseRate, Champ, TeamCode) VALUES
12 ('Atlanta Hawks', 75, 0.493, 1, 'ATL'),
13 ('Boston Celtics', 78, 0.594, 17, 'BOS'),
14 ('Brooklyn Nets', 57, 0.440, 2, 'BRK'),
15 ('Charlotte Hornets', 34, 0.433, 0, 'CHO'),
16 ('Chicago Bulls', 58, 0.509, 6, 'CHI'),
17 ('Cleveland Cavaliers', 54, 0.467, 1, 'CLE'),
18 ('Dallas Mavericks', 44, 0.507, 1, 'DAL'),
19 ('Denver Nuggets', 57, 0.513, 1, 'DEN'),
20 ('Detroit Pistons', 76, 0.471, 3, 'DET'),
21 ('Golden State Warriors', 78, 0.486, 7, 'GSW'),
22 ('Houston Rockets', 57, 0.514, 2, 'HOU'),
23 ('Indiana Pacers', 57, 0.511, 3, 'IND'),
24 ('Los Angeles Clippers', 54, 0.423, 0, 'LAC'),
25 ('Los Angeles Lakers', 76, 0.591, 17, 'LAL'),
26 ('Memphis Grizzlies', 29, 0.432, 0, 'MEM'),
27 ('Miami Heat', 36, 0.527, 3, 'MIA'),
28 ('Milwaukee Bucks', 56, 0.528, 2, 'MIL'),
29 ('Minnesota Timberwolves', 35, 0.411, 0, 'MIN'),
30 ('New Orleans Pelicans', 22, 0.470, 0, 'NOP'),
31 ('New York Knicks', 78, 0.487, 2, 'NYK'),
32 ('Oklahoma City Thunder', 57, 0.536, 1, 'OKC'),
33 ('Orlando Magic', 35, 0.469, 0, 'ORL'),
34 ('Philadelphia 76ers', 75, 0.522, 3, 'PHI'),
35 ('Phoenix Suns', 56, 0.537, 0, 'PHO'),
36 ('Portland Trail Blazers', 54, 0.525, 1, 'POR'),
37 ('Sacramento Kings', 76, 0.458, 1, 'SAC'),
```

Создание таблиц

```sql
CREATE TABLE coach (
    Coach VARCHAR(50) NOT NULL REFERENCES coachall(coach),
    Team VARCHAR(5) NOT NULL REFERENCES teambase(teamcode),
    SeasonsWithFranchise INTEGER CHECK (SeasonsWithFranchise >= 0),
    SeasonsOverall INTEGER CHECK (SeasonsOverall >= 0),
    GamesCurRegul INTEGER CHECK (GamesCurRegul >= 0),
    WinCurRegul INTEGER CHECK (WinCurRegul >= 0 AND WinCurRegul <= GamesCurRegul),
    LoseCurRegul INTEGER CHECK (LoseCurRegul >= 0 AND LoseCurRegul <= GamesCurRegul),
    GamesCareerRegul INTEGER CHECK (GamesCareerRegul >= 0),
    WinCareerRegul INTEGER CHECK (WinCareerRegul >= 0 AND WinCareerRegul <= GamesCareerRegul),
    LoseCareerRegul INTEGER CHECK (LoseCareerRegul >= 0 AND LoseCareerRegul <= GamesCareerRegul),
    WinRateCareerRegul REAL CHECK (WinRateCareerRegul >= 0.0 AND WinRateCareerRegul <= 1.0),
    PRIMARY KEY (Coach, Team)
);
```

Мноооого данных

```sql
23  INSERT INTO players (Rank, Player, Pos, Age, Team, Games, MinutesPlayed, EfficientFieldGoalsRate, FreeThrowsRate, Reboun
24  ('1','Buddy Hield','SF-SG','31','TOT','84','25.7','.565','.881','3.2','2.8','0.8','0.5','1.2','2.0','12.1'),
25  ('2','Nickeil Alexander-Walker','SG','25','MIN','82','23.4','.560','.800','2.0','2.5','0.8','0.5','0.9','1.7','8.0'),
26  ('3','Harrison Barnes','PF','31','SAC','82','29.0','.576','.801','3.0','1.2','0.7','0.1','0.7','1.2','12.2'),
27  ('4','Christian Braun','SG','22','DEN','82','20.2','.525','.694','3.7','1.6','0.5','0.4','0.7','1.7','7.3'),
28  ('5','Mikal Bridges','SF','27','BRK','82','34.8','.521','.814','4.5','3.6','1.0','0.4','2.0','1.4','19.6'),
29  ('6','Jalen Green','SG','21','HOU','82','31.7','.498','.804','5.2','3.5','0.8','0.3','2.3','1.4','19.6'),
30  ('7','Chet Holmgren','C','21','OKC','82','29.4','.598','.793','7.9','2.4','0.6','2.3','1.6','2.4','16.5'),
31  ('8','Reggie Jackson','PG','33','DEN','82','22.2','.499','.806','1.9','3.8','0.5','0.2','1.3','1.8','10.2'),
32  ('9','Georges Niang','PF','30','CLE','82','22.3','.567','.850','3.4','1.2','0.4','0.2','0.9','2.3','9.4'),
33  ('10','Bobby Portis','PF','28','MIL','82','24.5','.562','.790','7.4','1.3','0.8','0.4','1.1','2.3','13.8'),
34  ('11','Payton Pritchard','PG','26','BOS','82','22.3','.583','.821','3.2','3.4','0.5','0.1','0.7','1.3','9.6'),
35  ('12','Austin Reaves','SG','25','LAL','82','32.1','.568','.853','4.3','5.5','0.8','0.3','2.1','1.9','15.9'),
36  ('13','Paul Reed','C','24','PHI','82','19.4','.561','.718','6.0','1.3','0.8','1.0','0.8','2.4','7.3'),
37  ('14','Domantas Sabonis','C','27','SAC','82','35.7','.609','.704','13.7','8.2','0.9','0.6','3.3','3.0','19.4'),
38  ('15','Obi Toppin','PF','25','IND','82','21.1','.661','.770','3.9','1.6','0.6','0.5','0.8','1.7','10.3'),
39  ('16','Jonas Valančiūnas','C','31','NOP','82','23.5','.585','.785','8.8','2.1','0.4','0.8','1.4','2.7','12.2'),
40  ('17','Cason Wallace','SG','20','OKC','82','20.6','.602','.784','2.3','1.5','0.9','0.5','0.5','1.6','6.8'),
```

```
1  SELECT Home, Visitor, Arena, MAX(Attendance) AS MaxAttendance
2  FROM matches
3  GROUP BY Home, Visitor
4  ORDER BY MaxAttendance DESC
5  LIMIT 10;
```

SQL

Home	Visitor	Arena	MaxAttendance
Chicago Bulls	Indiana Pacers	United Center	22.018
Chicago Bulls	Washington Wizards	United Center	21.726
Chicago Bulls	Cleveland Cavaliers	United Center	21.7
Chicago Bulls	New York Knicks	United Center	21.648
Chicago Bulls	Philadelphia 76ers	United Center	21.648
Chicago Bulls	Sacramento Kings	United Center	21.579
Chicago Bulls	Memphis Grizzlies	United Center	21.441
Chicago Bulls	Atlanta Hawks	United Center	21.42
Chicago Bulls	Oklahoma City Thunder	United Center	21.369
Chicago Bulls	Dallas Mavericks	United Center	21.363

эффективные игроки

```sql
21 SELECT Player, EfficientFieldGoalsRate, points
22 FROM players
23 WHERE points>10
24 ORDER BY EfficientFieldGoalsRate DESC
25 LIMIT 10;
```

Player	EfficientFieldGoalsRate	Points
Daniel Gafford	0.725	11
Obi Toppin	0.661	10.3
Rudy Gobert	0.661	14
Jakob Poeltl	0.656	11.1
Grayson Allen	0.649	13.5
Ivica Zubac	0.649	11.7
Mark Williams	0.649	12.7
Onyeka Okongwu	0.642	10.2
Moritz Wagner	0.636	10.9
Jarrett Allen	0.634	16.5

лучшие из тренеров и Стив Керр

```sql
79  SELECT Coach, WinCurRegul, GamesCurRegul, (WinCurRegul * 1.0 / GamesCurRegul) AS CurrentWinRate
80  FROM coach
81  WHERE (WinCurRegul * 1.0 / GamesCurRegul) > (
82      SELECT AVG(WinCurRegul * 1.0 / GamesCurRegul)
83      FROM coach
84      WHERE GamesCurRegul > 0)
85  ORDER BY CurrentWinRate DESC;
86
87
88
```

Coach	WinCurRegul	GamesCurRegul	CurrentWinRate
Jason Kidd	50	82	0.6097560975609756
Tom Thibodeau	50	82	0.6097560975609756
Willie Green	49	82	0.5975609756097561
Frank Vogel	49	82	0.5975609756097561
J.B. Bickerstaff	48	82	0.5853658536585366
Rick Carlisle	47	82	0.573170731707317
Darvin Ham	47	82	0.573170731707317
Jamahl Mosley	47	82	0.573170731707317
Nick Nurse	47	82	0.573170731707317
Erik Spoelstra	46	82	0.5609756097560976
Mike Brown	46	82	0.5609756097560976
Steve Kerr	46	83	0.5542168674698795
Ime Udoka	41	82	0.5

Сверяем данные

```sql
46  WITH HomeWins AS (
47      SELECT Home AS Team, COUNT(*) AS Wins
48      FROM matches
49      WHERE PointsHome > PointsVisitor
50      GROUP BY Home
51  )
52
53  SELECT hw.Team, hw.Wins AS HomeWins, s.Home AS RecordedHome
54  FROM HomeWins hw
55  JOIN standing s ON hw.Team = s.Team;
```

Team	HomeWins	RecordedHome
Boston Celtics	37	37-4
Denver Nuggets	33	33-8
Oklahoma City Thunder	33	33-8
Minnesota Timberwolves	30	30-11
Los Angeles Clippers	25	25-16
Dallas Mavericks	25	25-16
New York Knicks	27	27-14