

CPSC 304 Project Cover Page

Milestone #: 4

Date: 11/30/2023

Group Number: 11

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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 the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

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

Project Description & What Was Completed

This project is about the management of a basketball league. The database stores information about sponsors, teams, revenue, contracts, and players. We have built a GUI that allows a user to interact with the database to obtain information about the league's teams, sponsors, and players as well modify information. For example, a user can insert a new player and update player contracts.




Changes

We didn't make any major changes to the overall schema, however we made some minor changes:



- Changed domain of Cap_Space in Team table to Integer instead of Char(20) as it's more representative of money
- Changed the Table Name Session to GameSession

Schema and Data






Sponsor(SID, Name, Slogan)

	 SID	 NAME	 SLOGAN
1	1	EcoFusion Solutions	Harmony in Every Innovation - Where Green Meets Ingenuity
2	2	Quantum Quench Beverages	Taste the Future, One Quantum Leap at a Time!
3	3	Galactic Gearworks	Universe's Finest Creations, Engineered for the Stars!
4	4	Eris	Just bang it!
5	5	InfiniTech Labs	Limitless Possibilities, Crafted in Every Code!




Division(Division_Name, Conference)

	 DIVISION_NAME	 CONFERENCE
1	Atlantic	Eastern
2	Central	Eastern
3	Pacific	Western
4	Southwest	Western
5	Southeast	Eastern

Team(Division_Name, Name, Cap_Space, Arena, Conference, City)

	 TNAME	 CAP_SPACE	 ARENA	 CITY	 DNAME
1	Raptors	136000000	ScotiaBank Arena	Toronto	Atlantic
2	Pacers	136123345	Gainbridge Fieldhouse	Indiana	Central
3	Thunder	123123123	Paycom Center	Oklahoma City	Southwest
4	Lakers	139242132	Crypto Arena	Los Angeles	Pacific
5	Clippers	139242134	Crypto Arena	Los Angeles	Pacific

League(Name, Revenue, Commissioner)

	 NAME	 REVENUE	 COMMISSIONER
1	NBA	1234000123	Adam Silver
2	WNBA	1234009	Cathy Engelbert
3	G-League	1234001	Shareef Abdur-Rahim
4	EuroLeague	223400	Dejan Bodiroga
5	CBA	9234000	Yao Ming

Location(Venue_Name, City)

	VENUE_NAME	CITY
1	Madison Square Garden	New York City
2	Crypto Arena	Los Angeles
3	ScotiaBank Arena	Toronto
4	Paycom Center	Oklahoma City
5	Gainbridge Fieldhouse	Indiana

GameSession(Venue, Date, City)

	VENUE	PLAYED_DATE
1	Crypto Arena	2019-11-03
2	Gainbridge Fieldhouse	2022-11-03
3	Madison Square Garden	2018-11-03
4	Paycom Center	2021-11-03
5	ScotiaBank Arena	2020-11-03

Season(Start_Date, LName, End_Date) Not Null: LName

	START_DATE	LNAME	END_DATE
1	2018-09-22	NBA	2019-06-22
2	2019-09-22	NBA	2020-06-22
3	2020-09-22	NBA	2021-06-22
4	2021-09-22	NBA	2022-06-22
5	2022-09-22	NBA	2023-06-22

Staff(StID, Name, Salary)

	STID	NAME	SALARY
1	1	Logan Martinez	350000
2	2	Grace Garcia	250000
3	3	Michael Johnson	120000
4	4	Emily Davis	48000
5	5	Christopher Lee	52000
6	6	Amanda Brown	60000
7	7	Daniel Wilson	80000
8	8	Olivia White	45000
9	9	Matthew Taylor	70000
10	10	Sophia Moore	30000
11	11	Ethan Anderson	90000
12	12	Isabella Garcia	55000
13	13	William Martinez	42000
14	14	Abigail Robinson	48000
15	15	James Hernandez	75000
16	16	Mia Smith	38000
17	17	Alexander Johnson	92000
18	18	Ava Davis	32000
19	19	Benjamin Brown	88000
20	20	Charlotte Wilson	42000

Coach (StID, number_of_rings)

	STID	NUMBER_OF_RINGS
1	6	3
2	7	5
3	8	2
4	9	4
5	10	6

Doctor(StID, Field)

	STID	FIELD
1	1	Cardiology
2	2	Pediatrics
3	3	Neurology
4	4	Orthopedics
5	5	Psychiatry

Trainer(StID, Specialty)

	STID	SPECIALTY
1	11	Strength and Conditioning
2	12	Sports Rehabilitation
3	13	Nutrition and Dietetics
4	14	Yoga and Flexibility
5	15	High-Intensity Interval Training

Manager(StID, Years_of_Experience)

	STID	YEARS_OF_EXPERIENCE
1	16	15
2	17	12
3	18	20
4	19	18
5	20	22

Signed_Contract(PID, CID, Signed_Date, Value, Length, Bonus)

	BONUS	PID	LENGTH	VALUE	SIGNED_DATE	CID
1	50000	2473875	5	80000000	2023-10-14	1
2	60000	1729634	4	100000000	2023-10-28	2
3	70000	1248756	5	54000000	2023-10-06	3
4	55000	1342351	2	85000000	2023-10-25	4
5	65000	1534897	3	150000000	2023-10-18	5
6	52000	1876543	4	140000000	2023-11-02	6
7	58000	1987654	3	40000000	2023-11-15	7
8	72000	1654321	5	32500000	2023-11-10	8
9	53000	1765432	1	40000000	2023-11-23	9
10	67000	1898765	5	56000000	2023-11-05	10
11	51000	2019876	3	72000000	2023-11-18	11
12	59000	1789098	4	31000000	2023-11-13	12
13	70000	1912345	5	25000000	2023-11-07	13
14	54000	1945678	2	88000000	2023-11-20	14
15	66000	2034567	1	92000000	2023-11-03	15

Player_Plays_for_Team(Debut_Year, Date_of_Birth, Height, Name, Jersey#, PID, TName, City)

	DEBUT_YEAR	DATE_OF_BIRTH	HEIGHT	NAME	JERSEY#	PID	TNAME	CITY
1	2018-06-21	1999-02-28	201	Luka Doncic	77	2473875	Raptors	Toronto
2	2015-06-25	1993-03-14	203	Stephen Curry	30	1729634	Pacers	Indiana
3	2014-06-26	1988-12-30	206	LeBron James	23	1248756	Lakers	Los Angeles
4	2013-06-27	1989-03-29	201	Anthony Davis	3	1342351	Lakers	Los Angeles
5	2016-06-23	1994-03-16	193	Giannis Antetokounmpo	34	1534897	Thunder	Oklahoma City
6	2019-06-20	1998-01-30	205	Zion Williamson	1	1876543	Raptors	Toronto
7	2017-06-22	1995-08-23	204	Devin Booker	1	1987654	Pacers	Indiana
8	2016-06-23	1994-08-07	207	Kawhi Leonard	2	1654321	Clippers	Los Angeles
9	2018-06-21	1999-06-29	202	Trae Young	11	1765432	Thunder	Oklahoma City
10	2015-06-25	1992-05-04	208	Karl-Anthony Towns	32	1898765	Lakers	Los Angeles
11	2017-06-22	1996-07-20	209	Jayson Tatum	0	2019876	Raptors	Toronto
12	2019-06-20	1998-03-05	210	Jamal Murray	27	1789098	Pacers	Indiana
13	2016-06-23	1994-07-03	211	Ben Simmons	25	1912345	Clippers	Los Angeles
14	2018-06-21	1997-02-17	212	Donovan Mitchell	45	1945678	Thunder	Oklahoma City
15	2014-06-26	1989-08-08	213	CJ McCollum	3	2034567	Lakers	Los Angeles
16	2022-03-04	1996-03-05	206	CPSC304 Dummy	30	1308797	Lakers	Los Angeles

Sponsor_Sponsors_Team(Sponsored_Amount, SID, TName, City)
Works_For(StID, TName, City)

	SPONSORED_AMOUNT	SID	TNAME	CITY
1	100000	1	Raptors	Toronto
2	200000	2	Pacers	Indiana
3	220000	5	Clippers	Los Angeles
4	50000	1	Thunder	Oklahoma City
5	12000	2	Thunder	Oklahoma City
6	140000	3	Thunder	Oklahoma City
7	20000	4	Thunder	Oklahoma City
8	11000	5	Thunder	Oklahoma City
9	100000	1	Lakers	Los Angeles
10	200000	2	Lakers	Los Angeles
11	140000	3	Lakers	Los Angeles
12	370000	4	Lakers	Los Angeles
13	13000	5	Lakers	Los Angeles

Team_Plays_Team(HomeTeamName, HomeTeamCity, AwayTeamName, AwayTeamCity, Date, Venue)

	HOMETEAMNAME	HOMETEAMCITY	AWAYTEAMNAME	AWAYTEAMCITY	PLAYED_DATE	VENUE
1	Raptors	Toronto	Pacers	Indiana	2018-11-03	Madison Square Garden
2	Raptors	Toronto	Pacers	Indiana	2019-11-03	Crypto Arena
3	Raptors	Toronto	Pacers	Indiana	2020-11-03	ScotiaBank Arena
4	Raptors	Toronto	Pacers	Indiana	2021-11-03	Paycom Center
5	Thunder	Oklahoma City	Raptors	Toronto	2022-11-03	Gainbridge Fieldhouse

Game_Happens_In(Start_Date, LName, Venue, Play_Date)

	START_DATE	LNAME	VENUE	PLAYED_DATE
1	2018-09-22	NBA	Madison Square Garden	2018-11-03
2	2019-09-22	NBA	Crypto Arena	2019-11-03
3	2020-09-22	NBA	ScotiaBank Arena	2020-11-03
4	2021-09-22	NBA	Paycom Center	2021-11-03
5	2022-09-22	NBA	Gainbridge Fieldhouse	2022-11-03

Wins_Season(Start_Date, TName, City)

	START_DATE	LNAME	TNAME	CITY
1	2018-09-22	NBA	Raptors	Toronto
2	2019-09-22	NBA	Raptors	Toronto
3	2020-09-22	NBA	Raptors	Toronto
4	2021-09-22	NBA	Raptors	Toronto
5	2022-09-22	NBA	Raptors	Toronto

Works_For(StID, TName, City)

	STID	TNAME	CITY
1	1	Raptors	Toronto
2	2	Pacers	Indiana
3	3	Thunder	Oklahoma City
4	4	Lakers	Los Angeles
5	5	Clippers	Los Angeles
6	6	Raptors	Toronto
7	7	Pacers	Indiana
8	8	Thunder	Oklahoma City
9	9	Lakers	Los Angeles
10	10	Clippers	Los Angeles
11	11	Raptors	Toronto
12	12	Pacers	Indiana
13	13	Thunder	Oklahoma City
14	14	Lakers	Los Angeles
15	15	Clippers	Los Angeles
16	16	Raptors	Toronto
17	17	Pacers	Indiana
18	18	Thunder	Oklahoma City
19	19	Lakers	Los Angeles
20	20	Clippers	Los Angeles

Query Screenshots and References

Insert:

```
INSERT INTO Player_Plays_for_Team VALUES (?, ?, ?, ?, ?, ?, ?, ?)
```

Reference for code: Line 123 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Insert Before:

Back to the Menu

Debut Year	Date of Birth	Height	Name	Jersey#	PID	Team	City
2018-06...	1999-02...	201	Luka Doncic	77	2473875	Raptors	Toronto
2015-06...	1993-03...	203	Stephen C...	30	1729634	Pacers	Indiana
2014-06...	1988-12...	206	LeBron Ja...	23	1248756	Lakers	Los Angeles
2013-06...	1989-03...	201	Anthony D...	3	1342351	Lakers	Los Angeles
2016-06...	1994-03...	193	Giannis A...	34	1534897	Thunder	Oklahoma...
2019-06...	1998-01...	205	Zion Willia...	1	1876543	Raptors	Toronto
2017-06...	1995-08...	204	Devin Boo...	1	1987654	Pacers	Indiana
2016-06...	1994-08...	207	Kawhi Leo...	2	1654321	Clippers	Los Angeles
2018-06...	1999-06...	202	Trae Young	11	1765432	Thunder	Oklahoma...
2015-06...	1992-05...	208	Karl-Anth...	32	1898765	Lakers	Los Angeles
2017-06...	1996-07...	209	Jayson Ta...	0	2019876	Raptors	Toronto
2019-06...	1998-03...	210	Jamal Mur...	27	1789098	Pacers	Indiana
2016-06...	1994-07...	211	Ben Simm...	25	1912345	Clippers	Los Angeles
2018-06...	1997-02...	212	Donovan ...	45	1945678	Thunder	Oklahoma...
2014-06...	1989-08...	213	CJ McCollum	3	2034567	Lakers	Los Angeles

Year Signed (YYYY-MM-DD):

Date of Birth (YYYY-MM-DD):

Height (in cm):

Name:

Jersey Number:

Team Name:

City Name:

Insert Player

Type in valid values and hit the “Insert Player button”

Back to the Menu

Debut Year	Date of Birth	Height	Name	Jersey#	PID	Team	City
2018-06-...	1999-02-...	201	Luka Doncic	77	2473875	Raptors	Toronto
2015-06-...	1993-03-...	203	Stephen C...	30	1729634	Pacers	Indiana
2014-06-...	1988-12-...	206	LeBron Ja...	23	1248756	Lakers	Los Angeles
2013-06-...	1989-03-...	201	Anthony D...	3	1342351	Lakers	Los Angeles
2016-06-...	1994-03-...	193	Giannis An...	34	1534897	Thunder	Oklahoma...
2019-06-...	1998-01-...	205	Zion Willia...	1	1876543	Raptors	Toronto
2017-06-...	1995-08-...	204	Devin Boo...	1	1987654	Pacers	Indiana
2016-06-...	1994-08-...	207	Kawhi Leo...	2	1654321	Clippers	Los Angeles
2018-06-...	1999-06-...	202	Trae Young	11	1765432	Thunder	Oklahoma...
2015-06-...	1992-05-...	208	Karl-Anth...	32	1898765	Lakers	Los Angeles
2017-06-...	1996-07-...	209	Jayson Tat...	0	2019876	Raptors	Toronto
2019-06-...	1998-03-...	210	Jamal Mur...	27	1789098	Pacers	Indiana
2016-06-...	1994-07-...	211	Ben Simm...	25	1912345	Clippers	Los Angeles
2018-06-...	1997-02-...	212	Donovan ...	45	1945678	Thunder	Oklahoma...
2014-06-...	1989-08-...	213	CJ McCollum	3	2034567	Lakers	Los Angeles

Year Signed (YYYY-MM-DD):

2022-03-04

Date of Birth (YYYY-MM-DD):

1996-03-05

Height (in cm):

206

Name:

CPSC304 Dummy

Jersey Number:

30

Team Name:

Lakers

City Name:

Los Angeles

Insert Player

After Insert Player button has been clicked and insert is successful:

Back to the Menu

Debut Year	Date of Birth	Height	Name	Jersey#	PID	Team	City
2018-06-...	1999-02-...	201	Luka Doncic	77	2473875	Raptors	Toronto
2015-06-...	1993-03-...	203	Stephen C...	30	1729634	Pacers	Indiana
2014-06-...	1988-12-...	206	LeBron Ja...	23	1248756	Lakers	Los Angeles
2013-06-...	1989-03-...	201	Anthony D...	3	1342351	Lakers	Los Angeles
2016-06-...	1994-03-...	193	Giannis An...	34	1534897	Thunder	Oklahoma...
2019-06-...	1998-01-...	205	Zion Willia...	1	1876543	Raptors	Toronto
2017-06-...	1995-08-...	204	Devin Boo...	1	1987654	Pacers	Indiana
2016-06-...	1994-08-...	207	Kawhi Leo...	2	1654321	Clippers	Los Angeles
2018-06-...	1999-06-...	202	Trae Young	11	1765432	Thunder	Oklahoma...
2015-06-...	1992-05-...	208	Karl-Anth...	32	1898765	Lakers	Los Angeles
2017-06-...	1996-07-...	209	Jayson Tat...	0	2019876	Raptors	Toronto
2019-06-...	1998-03-...	210	Jamal Mur...	27	1789098	Pacers	Indiana
2016-06-...	1994-07-...	211	Ben Simm...	25	1912345	Clippers	Los Angeles
2018-06-...	1997-02-...	212	Donovan ...	45	1945678	Thunder	Oklahoma...
2014-06-...	1989-08-...	213	CJ McCollum	3	2034567	Lakers	Los Angeles

Year Signed (YYYY-MM-DD):

2022-03-04

Date of Birth (YYYY-MM-DD):

1996-03-05

Height (in cm):

206

Name:

CPSC304 Dummy

Jersey Number:

30

Team Name:


Lakers

City Name:

Los Angeles

Insert Player

Message

 Player inserted.

OK

After successful insert (Notice the new player CPSC 304 has been added)

[Back to the Menu](#)

Debut Year	Date of Birth	Height	Name	Jersey#	PID	Team	City
2018-06-...	1999-02-...	201	Luka Doncic	77	2473875	Raptors	Toronto
2015-06-...	1993-03-...	203	Stephen C...	30	1729634	Pacers	Indiana
2014-06-...	1988-12-...	206	LeBron Ja...	23	1248756	Lakers	Los Angeles
2013-06-...	1989-03-...	201	Anthony D...	3	1342351	Lakers	Los Angeles
2016-06-...	1994-03-...	193	Giannis An...	34	1534897	Thunder	Oklahoma...
2019-06-...	1998-01-...	205	Zion Willia...	1	1876543	Raptors	Toronto
2017-06-...	1995-08-...	204	Devin Boo...	1	1987654	Pacers	Indiana
2016-06-...	1994-08-...	207	Kawhi Leo...	2	1654321	Clippers	Los Angeles
2018-06-...	1999-06-...	202	Trae Young	11	1765432	Thunder	Oklahoma...
2015-06-...	1992-05-...	208	Karl-Anth...	32	1898765	Lakers	Los Angeles
2017-06-...	1996-07-...	209	Jayson Tat...	0	2019876	Raptors	Toronto
2019-06-...	1998-03-...	210	Jamal Mur...	27	1789098	Pacers	Indiana
2016-06-...	1994-07-...	211	Ben Simm...	25	1912345	Clippers	Los Angeles
2018-06-...	1997-02-...	212	Donovan ...	45	1945678	Thunder	Oklahoma...
2014-06-...	1989-08-...	213	CJ McCollum	3	2034567	Lakers	Los Angeles
2022-03-...	1996-03-...	206	CPSC304 ...	30	1308797	Lakers	Los Angeles

Year Signed (YYYY-MM-DD):

2022-03-04

Date of Birth (YYYY-MM-DD):

1996-03-05

Height (in cm):

206

Name:

CPSC304 Dummy

Jersey Number:

30

Team Name:

Lakers

City Name:

Los Angeles

Insert Player

Delete:

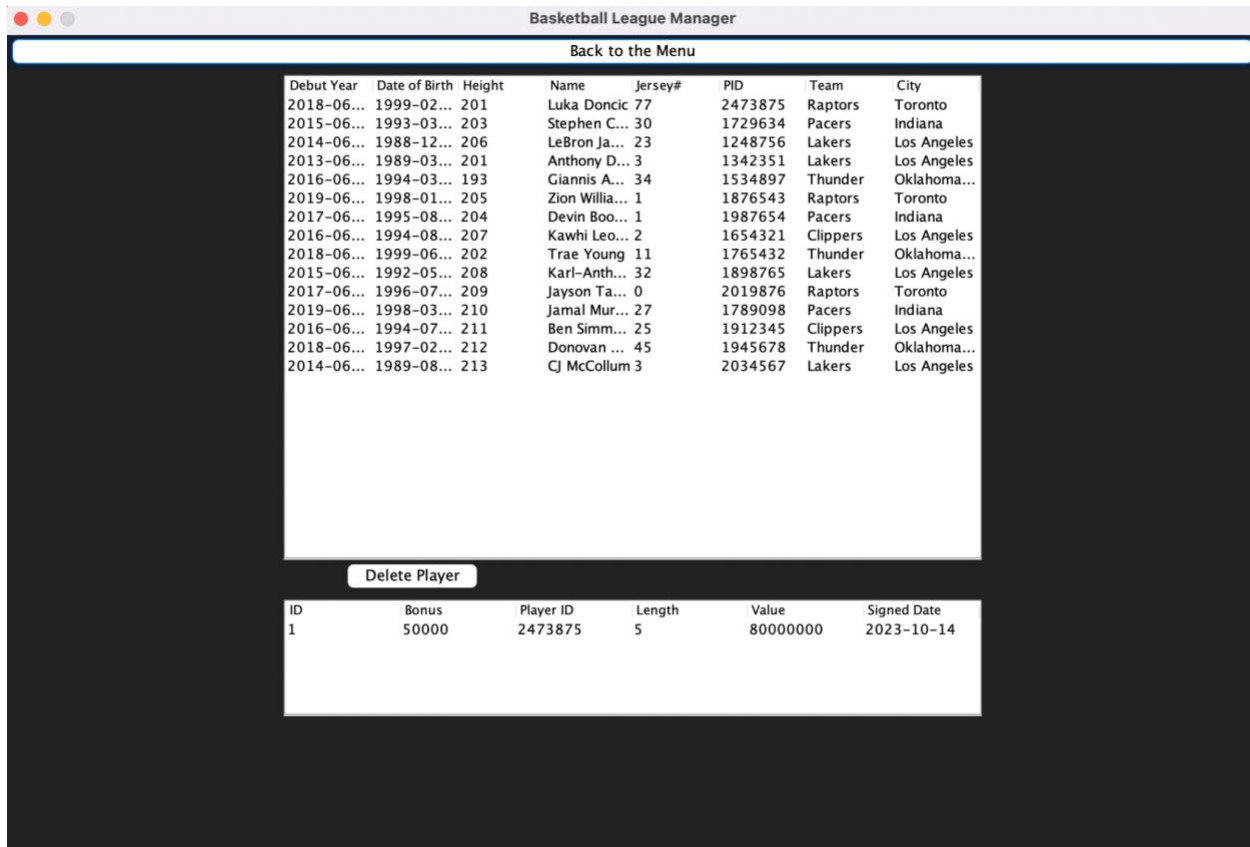
```
DELETE FROM Player_Plays_for_Team WHERE PID
```

```
DELETE FROM Signed_Contract WHERE PID = ?
```

Reference for code: Lines 167-168 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Players_plays_for_team Table and Signed_contract table:



Debut Year	Date of Birth	Height	Name	Jersey#	PID	Team	City
2018-06...	1999-02...	201	Luka Doncic	77	2473875	Raptors	Toronto
2015-06...	1993-03...	203	Stephen C...	30	1729634	Pacers	Indiana
2014-06...	1988-12...	206	LeBron Ja...	23	1248756	Lakers	Los Angeles
2013-06...	1989-03...	201	Anthony D...	3	1342351	Lakers	Los Angeles
2016-06...	1994-03...	193	Giannis A...	34	1534897	Thunder	Oklahoma...
2019-06...	1998-01...	205	Zion Willia...	1	1876543	Raptors	Toronto
2017-06...	1995-08...	204	Devin Boo...	1	1987654	Pacers	Indiana
2016-06...	1994-08...	207	Kawhi Leo...	2	1654321	Clippers	Los Angeles
2018-06...	1999-06...	202	Trae Young	11	1765432	Thunder	Oklahoma...
2015-06...	1992-05...	208	Karl-Anth...	32	1898765	Lakers	Los Angeles
2017-06...	1996-07...	209	Jayson Ta...	0	2019876	Raptors	Toronto
2019-06...	1998-03...	210	Jamal Mur...	27	1789098	Pacers	Indiana
2016-06...	1994-07...	211	Ben Simm...	25	1912345	Clippers	Los Angeles
2018-06...	1997-02...	212	Donovan ...	45	1945678	Thunder	Oklahoma...
2014-06...	1989-08...	213	CJ McCollum	3	2034567	Lakers	Los Angeles


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Delete Player

ID	Bonus	Player ID	Length	Value	Signed Date
1	50000	2473875	5	80000000	2023-10-14

Click a player (row) and it will display their contract. Pressing “Delete Player” will prompt confirmation:

Debut Year	Date of Birth	Height	Name	Jersey#	PID	Team	City
2018-06...	1999-02...	201	Luka Doncic	77	2473875	Raptors	Toronto
2015-06...	1993-03...	203	Stephen C...	30	1729634	Pacers	Indiana
2014-06...	1988-12...	206	LeBron Ja...	23	1248756	Lakers	Los Angeles
2013-06...	1989-03...	201	Anthony D...	3	1342351	Lakers	Los Angeles
2016-06...	1994-03...	193	Giannis A...	34	1534897	Thunder	Oklahoma...
2019-06...	1998-01...	205	Zion Willia...	1	1876543	Raptors	Toronto
2017-06...	1995-08...	204	Devin Boo...	1	1987654	Pacers	Indiana
2016-06...	1994-08...	207	Kawhi Leo...	2	1654321	Clippers	Los Angeles
2018-06...	1999-06...	202	Trae Young	11	1765432	Thunder	Oklahoma...
2015-06...	1992-05...	208	Karl-Anth...	32	1898765	Lakers	Los Angeles
2017-06...	1996-07...	209	Jayson Ta...	0	2019876	Raptors	Toronto
2019-06...	1998-03...	210	Jamal Mur...	27	1789098	Pacers	Indiana
2016-06...	1994-07...	211	Ben Simm...	25	1912345	Clippers	Los Angeles
2018-06...	1997-02...	212	Donovan ...	45	1945678	Thunder	Oklahoma...
2014-06...	19						Los Angeles



Are you sure you want to delete this player?

No

Yes

Delete Player

ID	Bonus	Player ID	Length	Value	Signed Date
1	50000	2473875	5	80000000	2023-10-14

The Player_plays_for_team table gets refreshed:

Debut Year	Date of Birth	Height	Name	Jersey#	PID	Team	City
2015-06...	1993-03...	203	Stephen C...	30	1729634	Pacers	Indiana
2014-06...	1988-12...	206	LeBron Ja...	23	1248756	Lakers	Los Angeles
2013-06...	1989-03...	201	Anthony D...	3	1342351	Lakers	Los Angeles
2016-06...	1994-03...	193	Giannis A...	34	1534897	Thunder	Oklahoma...
2019-06...	1998-01...	205	Zion Willia...	1	1876543	Raptors	Toronto
2017-06...	1995-08...	204	Devin Boo...	1	1987654	Pacers	Indiana
2016-06...	1994-08...	207	Kawhi Leo...	2	1654321	Clippers	Los Angeles
2018-06...	1999-06...	202	Trae Young	11	1765432	Thunder	Oklahoma...
2015-06...	1992-05...	208	Karl-Anth...	32	1898765	Lakers	Los Angeles
2017-06...	1996-07...	209	Jayson Ta...	0	2019876	Raptors	Toronto
2019-06...	1998-03...	210	Jamal Mur...	27	1789098	Pacers	Indiana
2016-06...	1994-07...	211	Ben Simm...	25	1912345	Clippers	Los Angeles
2018-06...	1997-02...	212	Donovan ...	45	1945678	Thunder	Oklahoma...
2014-06...	1989-08...	213	CJ McCollum	3	2034567	Lakers	Los Angeles

Delete Player

ID	Bonus	Player ID	Length	Value	Signed Date
1	50000	2473875	5	80000000	2023-10-14

Update:

```
UPDATE signed_contract SET bonus = ?, length = ? WHERE cid = ?
```

Reference: Line 354 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Update Before:

Back to the Menu					
ID	Bonus	Player ID	Length	Value	Signed Date
1	50000	2473875	5	80000000	2023-10-14
2	60000	1729634	4	100000000	2023-10-28
3	70000	1248756	5	54000000	2023-10-06
4	55000	1342351	2	85000000	2023-10-25
5	65000	1534897	3	150000000	2023-10-18
6	52000	1876543	4	140000000	2023-11-02
7	58000	1987654	3	40000000	2023-11-15
8	72000	1654321	5	32500000	2023-11-10
9	53000	1765432	1	40000000	2023-11-23
10	67000	1898765	5	56000000	2023-11-05
11	51000	2019876	3	72000000	2023-11-18
12	59000	1789098	4	31000000	2023-11-13
13	70000	1912345	5	25000000	2023-11-07
14	54000	1945678	2	88000000	2023-11-20
15	66000	2034567	1	92000000	2023-11-03

Update Contract

Update when a contract is selected:

Back to the Menu

ID	Bonus	Player ID	Length	Value	Signed Date
1	50000	2473875	5	80000000	2023-10-14
2	60000	1729634	4	100000000	2023-10-28
3	70000	1248756	5	54000000	2023-10-06
4	55000	1342351	2	85000000	2023-10-25
5	65000	1534897	3	150000000	2023-10-18
6	52000	1876543	4	140000000	2023-11-02
7	58000	1987654	3	40000000	2023-11-15
8	72000	1654321	5	32500000	2023-11-10
9	53000	1765432	1	40000000	2023-11-23
10	67000	1898765	5	56000000	2023-11-05
11	51000	2019876	3	72000000	2023-11-18
12	59000	1789098	4	31000000	2023-11-13
13	70000	1912345	5	25000000	2023-11-07
14	54000	1945678	2	88000000	2023-11-20
15	66000	2034567	1	92000000	2023-11-03

Contract length Bonus

550000

Update Contract

Input new contract length and bonus value then Hit update Contract button:

Back to the Menu

ID	Bonus	Player ID	Length	Value	Signed Date
1	50000	2473875	5	80000000	2023-10-14
2	60000	1729634	4	100000000	2023-10-28
3	70000	1248756	5	54000000	2023-10-06
4	55000	1342351	2	85000000	2023-10-25
5	65000	1534897	3	150000000	2023-10-18
6	52000	1876543	4	140000000	2023-11-02
7	58000	1987654	3	40000000	2023-11-15
8	72000	1654321	5	32500000	2023-11-10
9	53000	1765432	1	40000000	2023-11-23
10	67000	1898765	5	56000000	2023-11-05
11	51000	2019876	3	72000000	2023-11-18
12	59000	1789098	4	31000000	2023-11-13
13	70000	1912345	5	25000000	2023-11-07
14	54000	1945678	2	88000000	2023-11-20
15	66000	2034567	1	92000000	2023-11-03

Contract length Bonus

170000

Update Contract

消息
Contract 1 updated.
确定

After the operation, note the contract 1 now display the new contract length and bonus:

[Back to the Menu](#)

ID	Bonus	Player ID	Length	Value	Signed Date
1	70000	2473875	1	80000000	2023-10-14
2	60000	1729634	4	100000000	2023-10-28
3	70000	1248756	5	54000000	2023-10-06
4	55000	1342351	2	85000000	2023-10-25
5	65000	1534897	3	150000000	2023-10-18
6	52000	1876543	4	140000000	2023-11-02
7	58000	1987654	3	400000000	2023-11-15
8	72000	1654321	5	32500000	2023-11-10
9	53000	1765432	1	400000000	2023-11-23
10	67000	1898765	5	56000000	2023-11-05
11	51000	2019876	3	72000000	2023-11-18
12	59000	1789098	4	31000000	2023-11-13
13	70000	1912345	5	25000000	2023-11-07
14	54000	1945678	2	88000000	2023-11-20
15	66000	2034567	1	92000000	2023-11-03

[Update Contract](#)

Select:

```
SELECT * FROM Team WHERE UPPER(?) = UPPER(?);
```

if the user selects Cap_Space as an attribute, the query is instead:

```
SELECT * FROM Team WHERE ? = ?
```

Reference for code: Line 379-386 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Select before:

Back to the Menu

Team Name

contains

Select Teams

City	Name	Arena	Division	Cap Space
Toronto	Raptors	ScotiaBank Arena	Atlantic	136000000
Indiana	Pacers	Gainbridge Fieldh...	Central	136123345
Oklahoma City	Thunder	Paycom Center	Southwest	123123123
Los Angeles	Lakers	Crypto Arena	Pacific	139242132
Los Angeles	Clippers	Crypto Arena	Pacific	139242134

Back to the Menu

Team Name

Cap Space

Arena

City Name

Division Name

contains

Select Teams

City	Name	Arena	Division	Cap Space
Toronto	Raptors	ScotiaBank Arena	Atlantic	136000000
Indiana	Pacers	Gainbridge Fieldh...	Central	136123345
Oklahoma City	Thunder	Paycom Center	Southwest	123123123
Los Angeles	Lakers	Crypto Arena	Pacific	139242132
Los Angeles	Clippers	Crypto Arena	Pacific	139242134

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Team Name

contains

starts with

equals

ends with

Select Teams

City	Name	Arena	Division	Cap Space
Toronto	Raptors	ScotiaBank Arena	Atlantic	136000000
Indiana	Pacers	Gainbridge Fieldh...	Central	136123345
Oklahoma City	Thunder	Paycom Center	Southwest	123123123
Los Angeles	Lakers	Crypto Arena	Pacific	139242132
Los Angeles	Clippers	Crypto Arena	Pacific	139242134

Type in valid value and select attribute and comparator in drop down:

Back to the Menu

Arena

starts with

Cr

Select Teams

City	Name	Arena	Division	Cap Space
Toronto	Raptors	ScotiaBank Arena	Atlantic	136000000
Indiana	Pacers	Gainbridge Fieldh...	Central	136123345
Oklahoma City	Thunder	Paycom Center	Southwest	123123123
Los Angeles	Lakers	Crypto Arena	Pacific	139242132
Los Angeles	Clippers	Crypto Arena	Pacific	139242134

After clicking Select Teams:

Back to the Menu

Arena

starts with

Cr

Select Teams

Team Name	City	Arena	Division	Cap Space
Lakers	Los Angeles	Crypto Arena	Pacific	139242132
Clippers	Los Angeles	Crypto Arena	Pacific	139242134

Projection:

```
SELECT table_name FROM user_tables
```

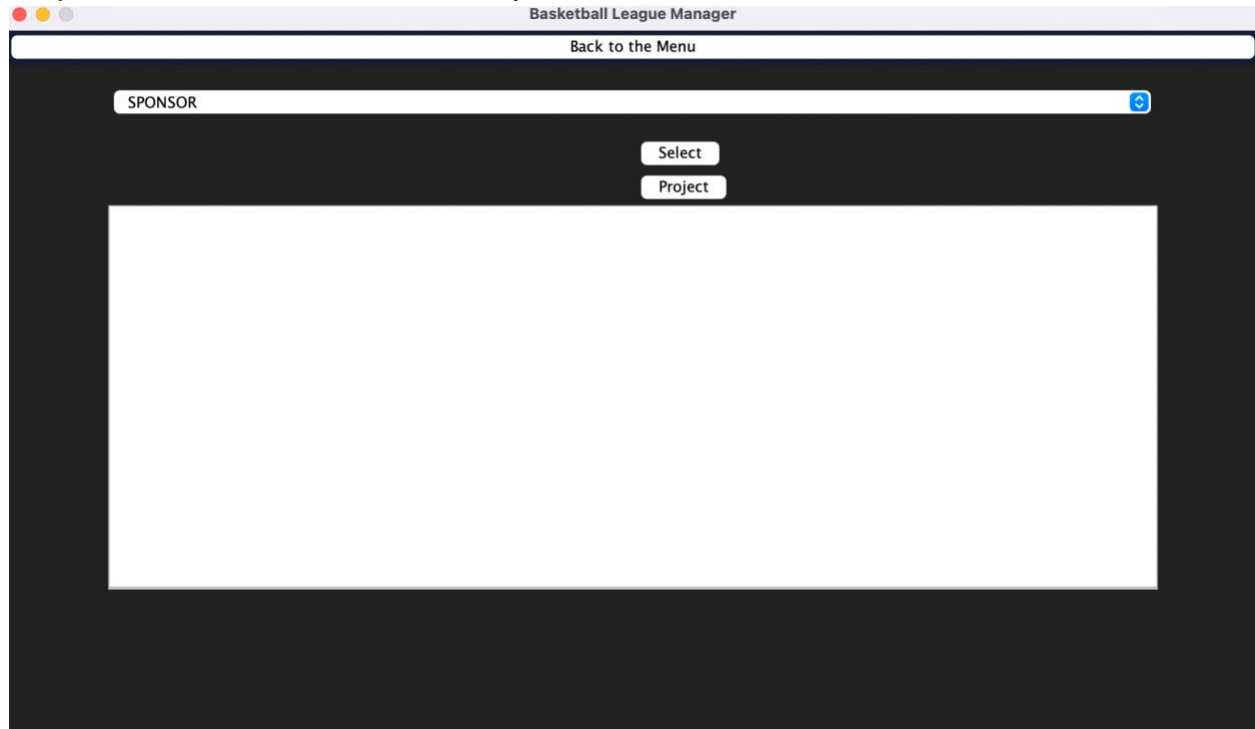
```
SELECT DISTINCT column_name FROM all_tab_columns WHERE table_name = ?
```

```
SELECT ? FROM ?
```

Reference for code: Lines 596/623/653 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

ProjectionPanel when loaded initially:



Select Sponsor:

Basketball League Manager

Back to the Menu

Project

- ☐ SID
- ☐ NAME
- ☐ SLOGAN
- ☐ INDUSTRY
- ☐ COMPANYNAME

List of attributes related to the table sponsor. I choose to select SID, NAME and SLOGAN:

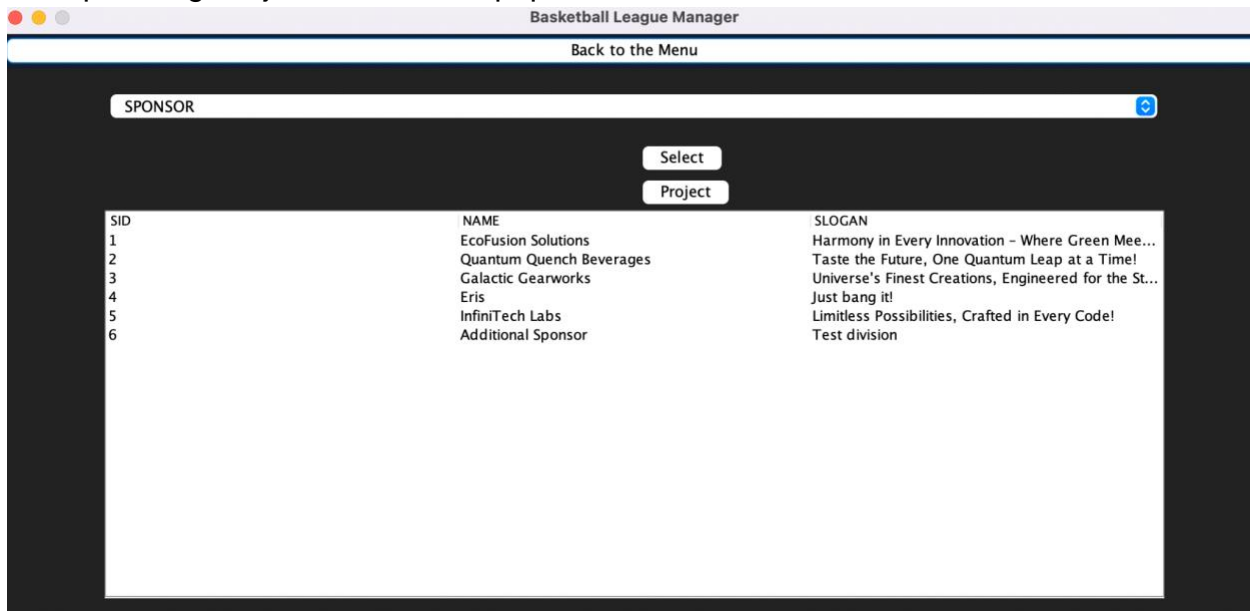
Basketball League Manager

Back to the Menu

Project

- ☒ SID
- ☒ NAME
- ☒ SLOGAN
- ☐ INDUSTRY
- ☐ COMPANYNAME

After pressing Project, the table is populated with the relevant attributes and its data:



SID	NAME	SLOGAN
1	EcoFusion Solutions	Harmony in Every Innovation - Where Green Mee...
2	Quantum Quench Beverages	Taste the Future, One Quantum Leap at a Time!
3	Galactic Gearworks	Universe's Finest Creations, Engineered for the St...
4	Eris	Just bang it!
5	InfiniTech Labs	Limitless Possibilities, Crafted in Every Code!
6	Additional Sponsor	Test division

Another example with even more attributes. The table being: Player_Plays_For_Team:



NAME	PID	TNAME	CITY	HEIGHT	JERSEY#	DEBUT_YEAR	DATE_OF_BIRTH
Luka Doncic	2473875	Raptors	Toronto	201	77	2018-06-21 0...	1999-02-28 0...
Stephen Curry	1729634	Pacers	Indiana	203	30	2015-06-25 0...	1993-03-14 0...
LeBron James	1248756	Lakers	Los Angeles	206	23	2014-06-26 0...	1988-12-30 0...
Anthony Davis	1342351	Lakers	Los Angeles	201	3	2013-06-27 0...	1989-03-29 0...
Giannis Antetoko...	1534897	Thunder	Oklahoma City	193	34	2016-06-23 0...	1994-03-16 0...
Zion Williamson	1876543	Raptors	Toronto	205	1	2019-06-20 0...	1998-01-30 0...
Devin Booker	1987654	Pacers	Indiana	204	1	2017-06-22 0...	1995-08-23 0...
Kawhi Leonard	1654321	Clippers	Los Angeles	207	2	2016-06-23 0...	1994-08-07 0...
Trae Young	1765432	Thunder	Oklahoma City	202	11	2018-06-21 0...	1999-06-29 0...
Karl-Anthony To...	1898765	Lakers	Los Angeles	208	32	2015-06-25 0...	1992-05-04 0...
Jayson Tatum	2019876	Raptors	Toronto	209	0	2017-06-22 0...	1996-07-20 0...
Jamal Murray	1789098	Pacers	Indiana	210	27	2019-06-20 0...	1998-03-05 0...
Ben Simmons	1912345	Clippers	Los Angeles	211	25	2016-06-23 0...	1994-07-03 0...
Donovan Mitchell	1945678	Thunder	Oklahoma City	212	45	2018-06-21 0...	1997-02-17 0...
CJ McCollum	2034567	Lakers	Los Angeles	213	3	2014-06-26 0...	1989-08-08 0...

Join:

```
SELECT t.tname, t.city, s.name, s.salary
FROM team t, staff s, works_for w
WHERE s.salary >= ? AND s.stid = w.stid AND w.tname = t.tname
AND w.city = t.city
```

Reference: Lines 419-421 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Join before, joining team and staff. Display all salary since the lower end is 0:

[Back to the Menu](#)

Enter the lower end salary: [Filter](#)

Home City	Team Name	Staff Name	Salary
Toronto	Raptors	Logan Martinez	350000
Indiana	Pacers	Grace Garcia	250000
Oklahoma City	Thunder	Michael Johnson	120000
Los Angeles	Lakers	Emily Davis	48000
Los Angeles	Clippers	Christopher Lee	52000
Toronto	Raptors	Amanda Brown	60000
Indiana	Pacers	Daniel Wilson	80000
Oklahoma City	Thunder	Olivia White	45000
Los Angeles	Lakers	Matthew Taylor	70000
Los Angeles	Clippers	Sophia Moore	30000
Toronto	Raptors	Ethan Anderson	90000
Indiana	Pacers	Isabella Garcia	55000
Oklahoma City	Thunder	William Martinez	42000
Los Angeles	Lakers	Abigail Robinson	48000
Los Angeles	Clippers	James Hernandez	75000
Toronto	Raptors	Mia Smith	38000
Indiana	Pacers	Alexander Johnson	92000
Oklahoma City	Thunder	Ava Davis	32000
Los Angeles	Lakers	Benjamin Brown	88000
Los Angeles	Clippers	Charlotte Wilson	42000

Join after specify a new lower end salary and click filter:

Back to the Menu

Enter the lower end salary:

Home City	Team Name	Staff Name	Salary
Toronto	Raptors	Logan Martinez	350000
Indiana	Pacers	Grace Garcia	250000
Oklahoma City	Thunder	Michael Johnson	120000

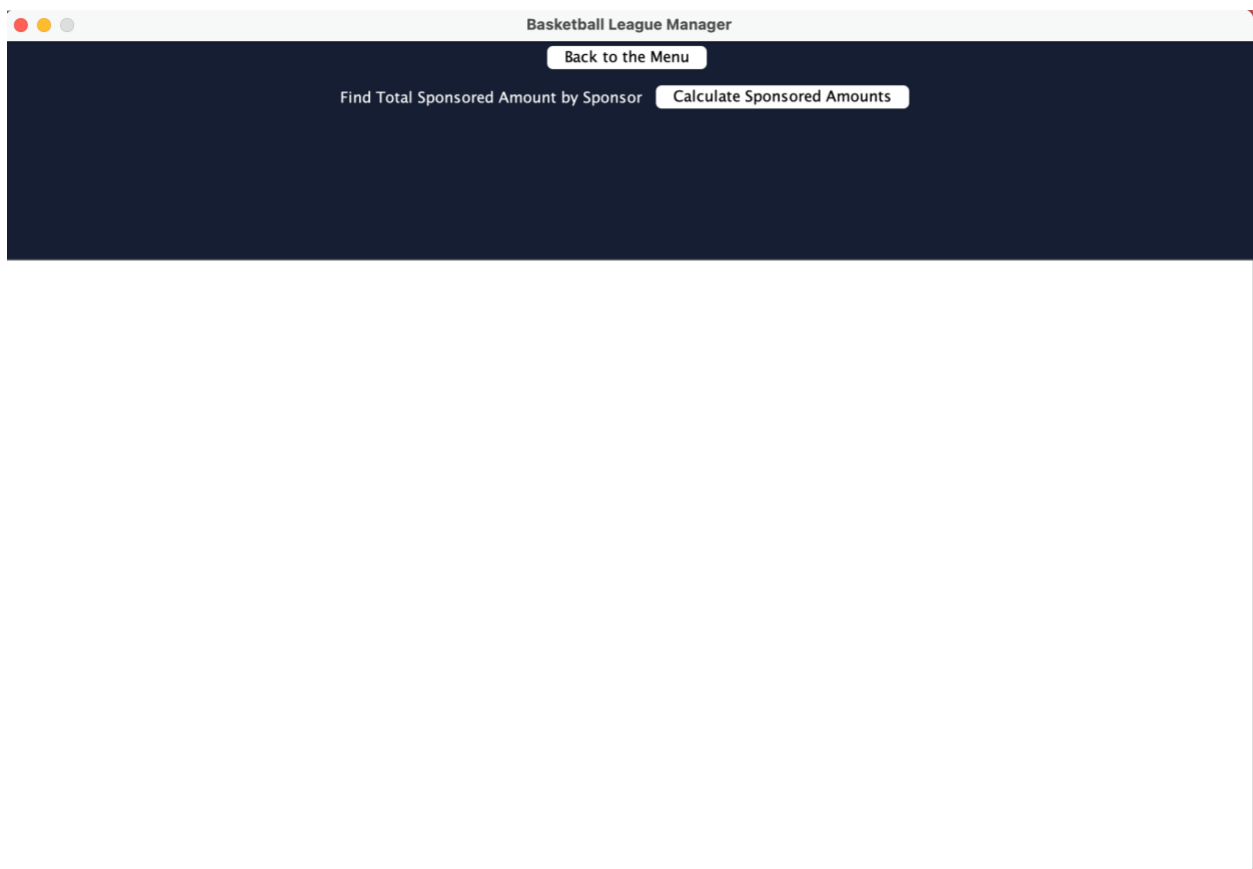
Aggregation with Group By:

```
Select S.Name, SUM(T.Sponsored_Amount) AS TOTALSPONSOREDAMT
FROM Sponsor S, Sponsor_Sponsors_Team T
WHERE S.SID = T.SID
GROUP BY S.Name
ORDER BY TOTALSPONSOREDAMT DESC
```

Reference for code: Lines 304-308 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Aggregation with Group By before query is run, Sponsor and Sponsor_Sponsors_Team tables:



	SPONSORED_AMOUNT	SID	TNAME	CITY
1	100000	1	Raptors	Toronto
2	200000	2	Pacers	Indiana
3	220000	5	Clippers	Los Angeles
4	50000	1	Thunder	Oklahoma City
5	12000	2	Thunder	Oklahoma City
6	140000	3	Thunder	Oklahoma City
7	20000	4	Thunder	Oklahoma City
8	11000	5	Thunder	Oklahoma City
9	100000	1	Lakers	Los Angeles
10	200000	2	Lakers	Los Angeles
11	140000	3	Lakers	Los Angeles
12	370000	4	Lakers	Los Angeles
13	13000	5	Lakers	Los Angeles

	SID	NAME	SLOGAN
1	1	EcoFusion Solutions	Harmony in Every Innovation - Where Green Meets Ingenuity
2	2	Quantum Quench Beverages	Taste the Future, One Quantum Leap at a Time!
3	3	Galactic Gearworks	Universe's Finest Creations, Engineered for the Stars!
4	4	Eris	Just bang it!
5	5	InfiniTech Labs	Limitless Possibilities, Crafted in Every Code!
6	6	Additional Sponsor	Test division

After user clicks “Calculate Sponsored Amounts”

Basketball League Manager

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Find Total Sponsored Amount by Sponsor

Calculate Sponsored Amounts

Sponsor

Quantum Quench Beverages

Eris

Galactic Gearworks

EcoFusion Solutions

InfiniTech Labs

Sponsor Total

412000

390000

280000

250000

244000

Aggregation with Having:

```
SELECT AVG(Height) AS AvgHeight FROM Player_Plays_For_Team WHERE TName = ?
```

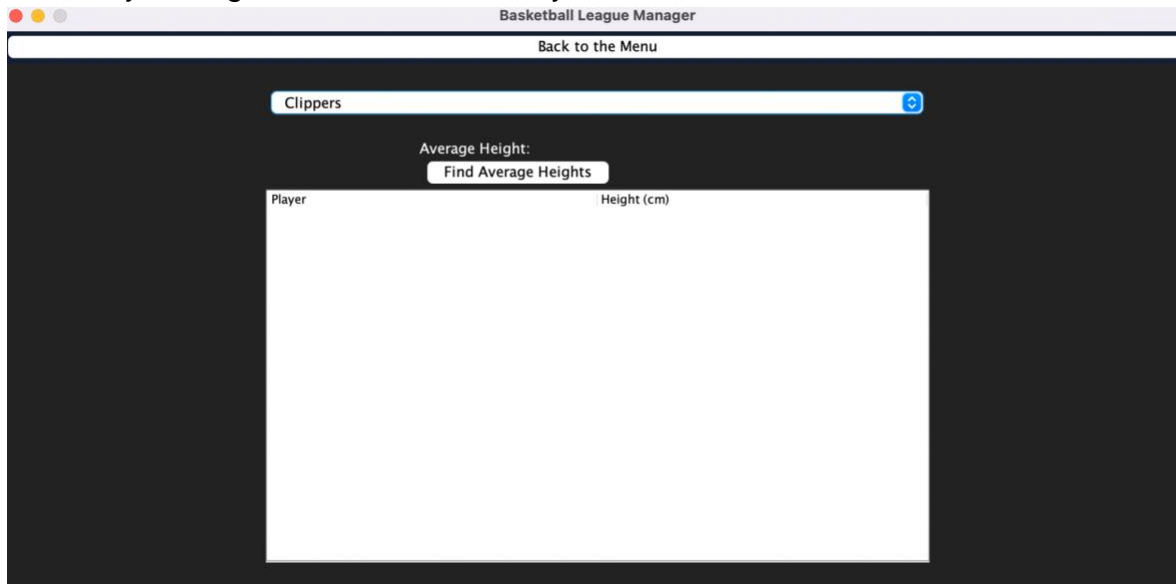
```
SELECT AVG(Height) AS AvgHeight FROM Player_Plays_For_Team WHERE TName = ?
```

```
SELECT * FROM Player_Plays_For_Team WHERE Tname = ? AND Height > (SELECT AVG(Height) FROM Player_Plays_For_Team WHERE TName = ?)
```

Reference for code: Lines 498/524-526 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Find Player Heights Panel when initially loaded:



Players with heights above a certain average height on a specific team will be displayed in the table:

Basketball League Manager

Back to the Menu

Clippers

Average Height: 209.00 cm

Find Average Heights

Player	Height (cm)
Ben Simmons	211

Nested Aggregation with Group By:

```
SELECT AVG(c1.value) as avg_value
FROM signed_contract c1
WHERE c1.value > (Select AVG(c2.value)
                  From signed_contract c2)
GROUP BY c1.length
HAVING c1.length = ?
```

Reference: Lines 333-338 in

project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Nested Aggregation with Group By, user can choose the group using the drop down menu:

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Display the average contract value of players with higher-than-average contract and with

1

▼

year(s) remain on their contract

1

2

3

4

5

\$86000000

Division:

```
SELECT t.tname, t.city, t.arena, t.dname, t.cap_space
FROM team t
WHERE NOT EXISTS ( SELECT s.sid
                    FROM sponsor s
                    MINUS
                    SELECT sst.sid
                    FROM sponsor_sponsors_team sst
                    WHERE t.tname = sst.tname AND t.city =
sst.city)
```

Reference: Lines 445-452 in
project_e8l4b_s3v1s_u6i1i/src/main/database/DatabaseConnectionHandler.java

Division showing all teams that are sponsored by all sponsors in the system;

Back to the Menu

Sponsor ID	Sponsor Name	Company Slogan
1	EcoFusion Solutions	Harmony in Every Innovat...
2	Quantum Quench Bevera...	Taste the Future, One Qu...
3	Galactic Gearworks	Universe's Finest Creatio...
4	Eris	Just bang it!
5	InfiniTech Labs	Limitless Possibilities, C...

***** All sponsors in the system *****

vvvvv All teams that are sponsored by all the sponsors vvvvv

Home City	Team Name	Arena	Division	Cap Space
Oklahoma City	Thunder	Paycom Center	Southwest	123123123
Los Angeles	Lakers	Crypto Arena	Pacific	139242132

Insert a new sponsor that sponsors no one for testing, it correctly display no team:

Back to the Menu

Sponsor ID	Sponsor Name	Company Slogan
1	EcoFusion Solutions	Harmony in Every Innovat...
2	Quantum Quench Bevera...	Taste the Future, One Qu...
3	Galactic Gearworks	Universe's Finest Creatio...
4	Eris	Just bang it!
5	InfiniTech Labs	Limitless Possibilities, C...
6	Additional Sponsor	Test division

***** All sponsors in the system *****

vvvvv All teams that are sponsored by all the sponsors vvvvv

Home City	Team Name	Arena	Division	Cap Space