

Deliverables

1. Description of project:

VolleyVision Pro is a comprehensive database solution crafted exclusively for volleyball coaches. This platform is designed to seamlessly manage team-related data, offering coaches a secure login and user-friendly interface to efficiently organize and monitor various aspects of their team's performance. Empowering coaches with essential features, VolleyVision Pro enables streamlined management, including updating player stats, handling team rosters, and accessing comprehensive player profiles. The system also provides valuable insights into upcoming tournaments and sponsorship agreements, facilitating strategic planning and commitment fulfillment. With its intuitive design, VolleyVision Pro ensures coaches stay organized, make informed decisions, and elevate team performance—a must-have tool for modern volleyball team management.

2. How our final schema differs:

Our final schema includes information that translates relationship sets to tables (i.e. Manages, Participate, etc). This was missing in our Milestone 2, where we only included entity sets. There were some changes with the Members, Coaches, and Players as well to properly represent the ISA relationship and primary keys within each table.

Members ID now should generate by default “`ID INTEGER GENERATED BY DEFAULT ON NULL AS IDENTITY`” and PlayerID should be UNIQUE.

We added DROP statements to properly run the SQL file and reflect all updates in our tables.

NOTES:

- Added relationship tables such as Sponsors, HostedAt, Participate, Get, and Teaches
- Added that MemberID thing

3. Schema - (Primary key = underlined, Foreign key = **bolded**, Candidate key = *italic*)

Organization (OrganizationID: Integer, Name: varchar [50], AmountSponsored: Integer)
(AmountSponsored cannot be negative)

Sponsors (**OrganizationID**: Integer, **TournamentID**: Integer, AmountSponsored: Integer)

Tournament (TournamentID: Integer

, **SponsorID**: Integer <- (FK referencing Organization table (**OrganizationID**)

, Name: varchar [50]

, **StartDate**: Date

, **EndDate**: Date

, **FacilityID**(FK referencing Facility table): Integer) (FacilityName cannot be null, EndDate must be > StartDate)

University of British Columbia, Vancouver

Department of Computer Science

Facility (FacilityID: Integer, FacilityName: Varchar[50], Address: varchar [50], Capacity: Integer)

HostedAt (TournamentID: Integer <- (FK referencing Organization (OrganizationID))
, FacilityID: Integer (FK referencing Facility (FacilityID)))

Club (ClubID: Integer, Name: varchar [50], Location: varchar[50]) (ClubID cannot be null)

Team (TeamID: Integer, **ClubID(FK referencing Club)**: varchar [50], **CoachID(FK referencing Coaches)**: Integer, NumPlayers: Integer) (Club cannot be null)

Participate (TeamID: Integer <- (FK referencing Team (TeamID))
, TournamentID: integer <- (FK referencing TournamentID (TournamentID))
)

Players (ID: Integer, S/N: integer, **TeamID(FK referencing Team)**: Integer, JerseyNum: Integer, Position: Varchar[50]) (TeamID cannot be null, SIN must be unique)

PlayerStats (**StatID(FK referencing Players)**: Integer, MatchesPlayed: Integer, GamesWon: Integer, NumofPoints: Integer) (StatID must be unique)

Certification (CertificationID: Integer, CertificateName: varchar [50], ExpirationDate: Date)





Gets (GetID: Integer
, **MemberID**: Integer <- (FK referencing Members (MemberID))
, CertificateName: VARCHAR(50)
, DateCertified: DATE
)




Coaches (**CertificateID(FK referencing Certification)**: Integer, YearStarted: Integer, YearsCoached: Integer) (YearsCoached cannot be negative)





Teaches (TeachID: Integer
, **TeamID**: integer <- (FK referencing Team (TeamID))
, **ID**: Integer <- (FK referencing Members (MemberID))
)







Member (ID: Integer, Name: varchar[50], PhoneNum: Integer, Address: varchar [50], City: varchar[50], Birthday: Date) (Name cannot be null)




Screenshots of data present in relations:








	 GETID ↕	 MEMBERID ↕	 CERTIFICATENAME ↕	 DATECERTIFIED ↕
1	1	6	Safe Sport	2012-03-10
2	2	7	Safe Sport	2014-05-11
3	3	8	Safe Sport	2016-07-23
4	4	9	Safe Sport	2017-01-20
5	5	10	Safe Sport	2011-09-02




	 ORGANIZATIONID ↕	 NAME ↕	 AMOUNTSPONSORED ↕
1	1	OrganizationOne	10000
2	2	OrganizationTwo	10000
3	3	OrganizationThree	20000
4	4	OrganizationFour	3000
5	5	OrganizationFive	5000




	 FACILITYID ↕	 FACILITYNAME ↕	 ADDRESS ↕	 CAPACITY ↕
1	1	FacilityOne	123 Abc St	500
2	2	FacilityTwo	19030 74 Ave	400
3	3	FacilityThree	3012 Glen Dr	500
4	4	FacilityFour	222 Smith Ave	1000
5	5	FacilityFive	123 Van St	700



	 TOURNAMENTID ↕	 NAME ↕	 FACILITYNAME ↕	 SPONSORID ↕	 STARTDATE ↕	 ENDDATE ↕
1	1	TOne	FacilityOne	1	2023-06-28	2023-06-30
2	2	TTwo	FacilityTwo	2	2024-03-28	2023-03-30
3	3	TThree	FacilityThree	3	2023-01-18	2023-01-19
4	4	TFour	FacilityFour	4	2023-07-28	2023-07-30
5	5	TFive	FacilityFive	5	2024-06-25	2024-06-29
6	6	Provincials Championship	FacilityFive	5	2024-06-25	2024-06-29



	 CLUBID ↕	 NAME ↕	 LOCATION ↕
1	1	ClubOne	333 Sunny Ave
2	2	ClubTwo	5034 Lock Ave
3	3	ClubThree	4102 Ocean Dr
4	4	ClubFour	3032 Bob Ave
5	5	ClubFive	553 Smith St





	 ID ↕	 NAME ↕	 PHONENUM ↕	 ADDRESS ↕	 CITY ↕	 BIRTHDATE ↕	 AGE ↕
1	1	Bob Smith	6045555555	123 Sunny Ave	Vancouver	1996-01-01	20
2	2	Joe David	6045557777	333 Flemings Ave	Vancouver	1991-02-01	19
3	3	Billy Smith	6045555566	555 Water Ave	Burnaby	2000-11-10	19
4	4	Sue Anderson	6045555353	6063 Blue Street	Richmond	1996-01-01	22
5	5	Michael Scott	6045555151	2323 80 Ave	Surrey	1996-01-01	24
6	6	Eric Wong	7785555555	123 Sunny Ave	Vancouver	1996-01-01	20
7	7	Joe Anthony	7785557777	333 Flemings Ave	Vancouver	1991-02-01	19
8	8	Billy While	7785555566	555 Water Ave	Burnaby	2000-11-10	19
9	9	Odin Anderson	6047775353	6063 Blue Street	Richmond	1996-01-01	22
10	10	Michael Hilario	6045559898	2323 80 Ave	Surrey	1996-01-01	24

	 CERTIFICATIONID ↕	 CERTIFICATENAME ↕	 EXPIRATIONDATE ↕
1	55551	CertOne	2023-06-12
2	55552	CertTwo	2023-02-11
3	55553	CertThree	2024-01-01
4	55554	CertFour	2023-10-10
5	55555	CertFive	2023-06-13

	 ORGANIZATIONID ▾	 TOURNAMENTID ▾	 AMOUNTSPONSORED ▾
1	1	1	100000
2	2	2	200000
3	3	3	300000
4	4	4	400000
5	5	5	500000






	 TOURNAMENTID ▾	 FACILITYID ▾
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5

	 ID ↕	 YEARSCOACHED ↕
1	6	2
2	7	3
3	8	5
4	9	7
5	10	10
6	11	4

	 TEAMID ↕	 CLUBID ↕	 COACHID ↕	 NUMPLAYERS ↕
1	1	1	6	12
2	2	2	7	14
3	3	3	8	12
4	4	4	9	12
5	5	5	10	14

	 CLUBID ↕	 TEAMID ↕
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5

	 TEAMID ▾	 TOURNAMENTID ▾
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	1	6
7	2	6
8	3	6
9	4	6
10	5	6

	 ID ▾	 JERSEYNUM ▾	 POSITION ▾	 TEAMID ▾	 SIN ▾
1	2	10	Middle	1	556633
2	3	16	Setter	3	663321
3	4	9	Power	5	332244
4	5	6	Libero	5	562525

	STATID	PLAYERID	MATCHESPLAYED	GAMESWON	NUMOFFPOINTS
1	2	2	25	10	900
2	3	3	10	2	2000
3	4	4	7	2	2000
4	5	5	5	10	2000

	TEACHID	TEAMID	ID
1	1	1	6
2	2	2	7
3	3	3	8
4	4	4	9
5	5	5	10

4. **SQL Queries**

All SQL queries can be found in our **volleyball.php** file.

Query	Where it can be found:
Insert	Line 745/796
Update	Line 669/673
Delete	Line 707
Division	Line 834
Selection	Line 581
Aggregation with Group By	Line 610
Aggregation with Having	Line 635
Join	Line 430
Projection	Line 510
Nested Aggregation with Group By	Line 467

5. GUI

INSERT query

MEMBERS table before:

	ID	NAME	PHONENUM	ADDRESS	CITY	BIRTHDATE	AGE
1	1	Bob Smith	6045555555	123 Sunny Ave	Vancouver	1996-01-01	20
2	2	Joe David	6045557777	333 Flemings Ave	Vancouver	1991-02-01	19
3	3	Billy Smith	6045555566	555 Water Ave	Burnaby	2000-11-10	19
4	4	Sue Anderson	6045555353	6063 Blue Street	Richmond	1996-01-01	22
5	5	Michael Scott	6045555151	2323 80 Ave	Surrey	1996-01-01	24
6	6	Eric Wong	7785555555	123 Sunny Ave	Vancouver	1996-01-01	20
7	7	Joe Anthony	7785557777	333 Flemings Ave	Vancouver	1991-02-01	19
8	8	Billy While	7785555566	555 Water Ave	Burnaby	2000-11-10	19
9	9	Odin Anderson	6047775353	6063 Blue Street	Richmond	1996-01-01	22
10	10	Michael Hilario	6045559898	2323 80 Ave	Surrey	1996-01-01	24
11	11	Conor Bedard	6049891234	989 Chicago St	Vancouver	1996-09-09	37

Interface:

Please register as a member below!

Name:

Phone Number:

Address:

City:

Birthday (yyyy-mm-dd):

Age:

Register

Interface response:

You have registered successfully! Your Member ID is: 21

MEMBERS table after:

	ID	NAME	PHONENUM	ADDRESS	CITY	BIRTHDATE	AGE
1	1	Bob Smith	6045555555	123 Sunny Ave	Vancouver	1996-01-01	20
2	2	Joe David	6045557777	333 Flemings Ave	Vancouver	1991-02-01	19
3	3	Billy Smith	6045555566	555 Water Ave	Burnaby	2000-11-10	19
4	4	Sue Anderson	6045555353	6063 Blue Street	Richmond	1996-01-01	22
5	5	Michael Scott	6045555151	2323 80 Ave	Surrey	1996-01-01	24
6	6	Eric Wong	7785555555	123 Sunny Ave	Vancouver	1996-01-01	20
7	7	Joe Anthony	7785557777	333 Flemings Ave	Vancouver	1991-02-01	19
8	8	Billy While	7785555566	555 Water Ave	Burnaby	2000-11-10	19
9	9	Odin Anderson	6047775353	6063 Blue Street	Richmond	1996-01-01	22
10	10	Michael Hilario	6045559898	2323 80 Ave	Surrey	1996-01-01	24
11	11	Conor Bedard	6049891234	989 Chicago St	Vancouver	1996-09-09	37
	21	Quinn Hughes	77812340987	1234 Canucks Ave	Vancouver	1986-04-09	37

UPDATE query

PLAYERS table before:

	ID	JERSEYNUM	POSITION	TEAMID	SIN
1	1	0	Outside	1	111111
2	2	10	Middle	1	556633
3	3	16	Setter	3	663321
4	4	9	Power	5	332244
5	5	6	Libero	5	562525

PLAYERSTATS table before:

	STATID	PLAYERID	MATCHESPLAYED	GAMESWON	NUMOFPOINTS
1	1	1	5	2	2000
2	2	2	25	10	900
3	3	3	10	2	2000
4	4	4	7	2	2000
5	5	5	5	2	2000

Interface before:

Update Player Stats

What do you want to update?: SIN

Player ID: 1

New Value: 222222

Update

OR

Update Player Stats

What do you want to update?: Games Won

Player ID: 5

New Value: 10

Update

Interface After:

Update Player Stats

What do you want to update?: SIN

Player ID:

New Value:

Update

Stats has been updated successfully!

OR

New Value:

Update

Stats has been updated successfully!

PLAYERS table after:

	ID	JERSEYNUM	POSITION	TEAMID	SIN
1	1	0	Outside	1	222222
2	2	10	Middle	1	556633
3	3	16	Setter	3	663321
4	4	9	Power	5	332244
5	5	6	Libero	5	562525

PLAYERSTATS table after:

	STATID	PLAYERID	MATCHESPLAYED	GAMESWON	NUMOFPOINTS
1	1	1	5	2	2000
2	2	2	25	10	900
3	3	3	10	2	2000
4	4	4	7	2	2000
5	5	5	5	10	2000

DELETE query

PLAYERS table before:

	ID	JERSEYNUM	POSITION	TEAMID	SIN
1	1	0	Outside	1	222222
2	2	10	Middle	1	556633
3	3	16	Setter	3	663321
4	4	9	Power	5	332244
5	5	6	Libero	5	562525

Interface before:

Remove a player on your team here!

Your Team ID:

Player ID:

Remove

Interface after:

Remove a player on y

Your Team ID:

Player ID:

Remove

Player deleted successfully!

PLAYERS table after:

4 rows									
	ID	JERSEYNUM	POSITION	TEAMID	SIN				
1	2	10	Middle	1	556633				
2	3	16	Setter	3	663321				
3	4	9	Power	5	332244				
4	5	6	Libero	5	562525				

DELETE ON CASCADE situation:

PLAYERSTATS table before deletion on PLAYER:

	STATID	PLAYERID	MATCHESPLAYED	GAMESWON	NUMOFPOINTS
1	1	1	5	2	2000
2	2	2	25	10	900
3	3	3	10	2	2000
4	4	4	7	2	2000
5	5	5	5	10	2000

PLAYERSTATS table after deletion on PLAYER:

K < 4 rows > > ↺ ⌚ ■ + - ↶ ↷ ⬆ Tx: Manual ✓ ↺ DDL ⚙					
	STATID	PLAYERID	MATCHESPLAYED	GAMESWON	NUMOFPOINTS
1	2	2	25	10	900
2	3	3	10	2	2000
3	4	4	7	2	2000
4	5	5	5	10	2000

DIVISION query

```
$query = "SELECT T1.Name AS TournamentName
FROM Tournament T1
WHERE NOT EXISTS (
    SELECT C.ClubID
    FROM Club C
    WHERE NOT EXISTS (
        SELECT P.TeamID
        FROM Participate P
        WHERE P.TournamentID = T1.TournamentID
        AND P.TeamID = C.ClubID
    )
);"
```

Interface before:

[Click to check which tournament every club participates](#)

Submit

Interface after:

[Click to check which tournament every club participates](#)

Submit

Tournament Name
Provincials Championship

SELECTION query

```
SELECT Name, BirthDate
FROM Members
WHERE City = 'Vancouver';
```

	NAME	BIRTHDATE
1	Bob Smith	1996-01-01
2	Joe David	1991-02-01
3	Eric Wong	1996-01-01
4	Joe Anthony	1991-02-01

Interface before:

Member DoB

DoB for members residing in

Submit

Interface after:

Member DoB

DoB for members residing in

Submit

Retrieved data from SELECTION query:

Name	BirthDate
Joe David	01-FEB-91
Eric Wong	01-JAN-96
Joe Anthony	01-FEB-91

AGGREGATION WITH GROUP BY query

```
SELECT TeamID, COUNT(*) AS NumPlayers
FROM Players
GROUP BY TeamID;
```

	TEAMID	NUMPLAYERS
1	1	3
2	2	1
3	5	2
4	4	3
5	3	1

Interface before:

Team Size

Submit

Interface after:

Team Size

Submit

Retrieved data from AGGREGATION (GB) query:

TeamID	NumPlayers
1	3
2	1
5	2
4	3
3	1

AGGREGATION WITH HAVING query

```
SELECT o.OrganizationID, o.Name, AVG(s.AmountSponsored) AS AverageSponsorship
FROM Organization o
JOIN Sponsors s ON o.OrganizationID = s.OrganizationID
GROUP BY o.OrganizationID, o.Name
HAVING AVG(s.AmountSponsored) > 200000;
```

	ORGANIZATIONID	NAME	AVERAGESPONSORSHIP
1	5	OrganizationFive	500000
2	3	OrganizationThree	300000
3	4	OrganizationFour	400000

Interface before:

Our Valued Sponsors

List of organizations with an average sponsorship amount of \$200K+ for tournaments

Submit

Interface after:

Our Valued Sponsors

List of organizations with an average sponsorship amount of \$200K+ for tournaments

Submit

Retrieved data from AGGREGATION (H) query:

OrganizationID	Name	AverageSponsorship
5	OrganizationFive	500000
3	OrganizationThree	300000
4	OrganizationFour	400000

JOIN query

```
$sql = "SELECT P.ID, P.SIN, P.JerseyNum, P.Position, P.TeamID, PS.StatID, PS.MatchesPlayed, PS.GamesWon, PS.NumofPoints
      FROM Players P, PlayerStats PS
      WHERE P.ID = PS.PlayerID
      AND P.ID = ' " . $_GET['playerID'] . "'";
```

Interface before:

Checkout some player stats!

Player ID:

Check

Interface after:

Checkout some player stats!

Player ID:

Check

Retrieved data from the join query:

ID	SIN	JerseyNum	Position	TeamID	StatID	MatchesPlayed	GamesWon	NumofPoints
2	556633	10	Middle	1	2	25	10	900

PROJECTION query

```
$sqlTemplate = "SELECT column_name FROM USER_TAB_COLUMNS WHERE table_name = '$tableName';"
```

Interface before:

Search Here!

Select a table: Attributes to search for (comma separated):

Search

Interface after:

Search Here!

Select a table: Attributes to search for (comma separated):

Search

Search results from PLAYERS with Selected Columns:

JERSEYNUM	TEAMID
0	1
10	1
16	3
9	5
6	5
10	1
10	2
11	4
11	4
1	4

NESTED AGGREGATION WITH GROUP BY query

```
$sql = "SELECT TeamID, COUNT(*) AS NumPlayers
      FROM Players
      GROUP BY TeamID";
```

Interface before:

Tournament Showcase: Average Sponsorship Insights

Submit

Interface after:

Tournament Showcase: Average Sponsorship Insights

Submit

Tournaments & Average Sponsorships:

Tournament	Average Sponsorship Amount Received
TOne	\$10000
TTwo	\$10000
TThree	\$20000
TFour	\$3000
TFive	\$5000