



Concordia University

COMP 353 - Database

Winter 2025

Warm-up Database Project

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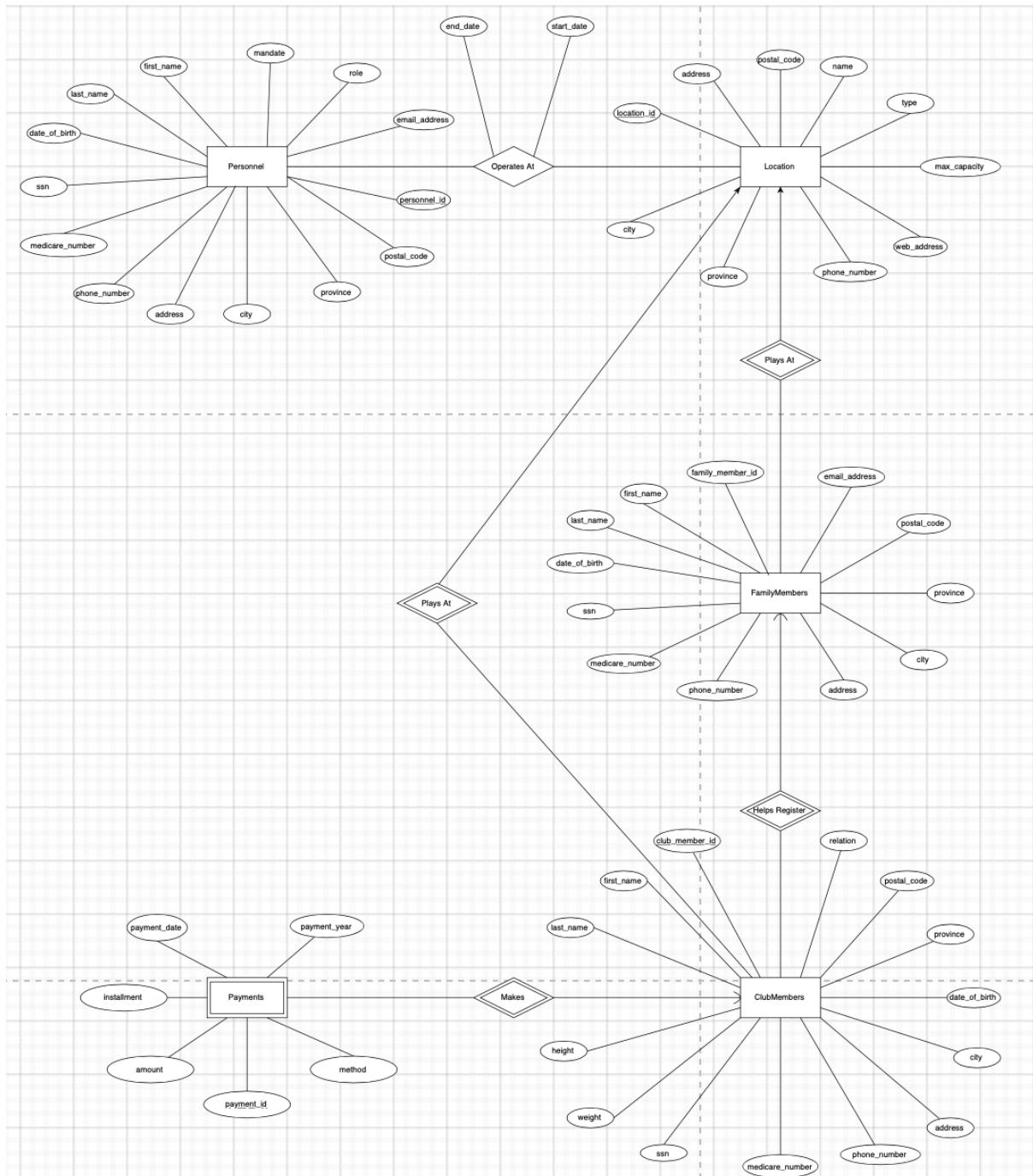
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E/R diagram



E/R diagram Conversion into at least five relations

Personnel(personnel_id, ssn, first_name, last_name, date_of_birth, medicare_number, phone_number, address, city, province, postal_code, email, role, mandate)

Locations(location_id, name, type, address, city, province, postal_code, phone_number, web_address, max_capacity)

ClubMembers(club_member_id, first_name, last_name, height, weight, ssn, medicare_number, phone_number, address, city, date_of_birth, province, postal_code, relation, family_member_id(Foreign), location_id(Foreign))

FamilyMembers(family_member_id, first_name, last_name, date_of_birth, ssn, medicare_number, phone_number, address, city, province, postal_code, email, location_id(Foreign))

Payments(payment_id, payment_date, amount, method, installment_number, payment_year, club_member_id(Foreign))

OperatesAt(operates_at_id, start_date, end_date, personnel_id(Foreign), location_id(Foreign))

DDL

SQL statements formulated and used to create the database :

```
-- Create Locations Table
CREATE TABLE Locations (
    location_id INT AUTO_INCREMENT PRIMARY KEY,
    type ENUM('Head', 'Branch') NOT NULL,
    name VARCHAR(100),
    address VARCHAR(100),
    city VARCHAR(100),
    province VARCHAR(100),
    postal_code CHAR(7),
    phone_number CHAR(10),
    web_address VARCHAR(100),
    max_capacity INT
);
```

```
✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0645 seconds)

CREATE TABLE Locations ( location_id INT AUTO_INCREMENT PRIMARY KEY, type ENUM('Head', 'Branch') NOT NULL, name VARCHAR(100), address VARCHAR(100), city VARCHAR(100), province VARCHAR(100), postal_code CHAR(7), phone_number CHAR(10), web_address VARCHAR(100), max_capacity INT );
```

```
-- Create Personnel Table
CREATE TABLE Personnel (
    personnel_id INT AUTO_INCREMENT PRIMARY KEY,
    first_name VARCHAR(50),
    last_name VARCHAR(50),
    date_of_birth DATE,
    ssn CHAR(9) UNIQUE NOT NULL,
    medicare_number VARCHAR(15) UNIQUE NOT NULL,
    phone_number CHAR(10),
    address VARCHAR(100),
    city VARCHAR(100),
    province VARCHAR(100),
    postal_code CHAR(6),
    email VARCHAR(100),
    role ENUM(
        'General Manager', 'Deputy Manager', 'Treasurer', 'Secretary', -- roles for head location only
        'Administrator', 'Captain', 'Coach', 'Assistant Coach', 'Other' -- general roles
    ),
    mandate ENUM('Volunteer', 'Salaried')
);
```

```
✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0556 seconds)

CREATE TABLE Personnel ( personnel_id INT AUTO_INCREMENT PRIMARY KEY, first_name VARCHAR(50), last_name VARCHAR(50), date_of_birth DATE, ssn CHAR(9) UNIQUE NOT NULL, medicare_number VARCHAR(15) UNIQUE NOT NULL, phone_number CHAR(10), address VARCHAR(100), city VARCHAR(100), province VARCHAR(100), postal_code CHAR(6), email VARCHAR(100), role ENUM('General Manager', 'Deputy Manager', 'Treasurer', 'Secretary', -- roles for head location only 'Administrator', 'Captain', 'Coach', 'Assistant Coach', 'Other' -- general roles ), mandate ENUM('Volunteer', 'Salaried') );
```

```
-- Create OperatesAt Table (To Track Work History)
CREATE TABLE OperatesAt (
    operates_at_id INT AUTO_INCREMENT PRIMARY KEY,
    personnel_id INT,
    location_id INT,
    start_date DATE NOT NULL,
    end_date DATE DEFAULT NULL, -- NULL means currently active
    FOREIGN KEY (personnel_id) REFERENCES Personnel(personnel_id),
    FOREIGN KEY (location_id) REFERENCES Locations(location_id)
);
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0683 seconds.)

```
CREATE TABLE OperatesAt ( operates_at_id INT AUTO_INCREMENT PRIMARY KEY, personnel_id INT, location_id INT, start_date DATE NOT NULL, end_date DATE DEFAULT NULL, -- NULL means currently active FOREIGN KEY (personnel_id) REFERENCES Personnel(personnel_id), REFERENCES Personnel(personnel_id), FOREIGN KEY (location_id) REFERENCES Locations(location_id) );
```

```
-- Create FamilyMembers Table
CREATE TABLE FamilyMembers (
    family_member_id INT AUTO_INCREMENT PRIMARY KEY,
    first_name VARCHAR(50),
    last_name VARCHAR(50),
    date_of_birth DATE,
    ssn CHAR(9) UNIQUE NOT NULL,
    medicare_number VARCHAR(15) UNIQUE NOT NULL,
    phone_number CHAR(10),
    address VARCHAR(100),
    city VARCHAR(100),
    province VARCHAR(100),
    postal_code CHAR(6),
    email VARCHAR(100),
    location_id INT,
    FOREIGN KEY (location_id) REFERENCES Locations(location_id)
);
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0651 seconds.)
CREATE TABLE FamilyMembers (family_member_id INT AUTO_INCREMENT PRIMARY KEY, first_name VARCHAR(50), last_name VARCHAR(50), date_of_birth DATE, ssn CHAR(9) UNIQUE NOT NULL, medicare_number VARCHAR(15) UNIQUE NOT NULL, phone_number CHAR(10), address VARCHAR(100), city VARCHAR(100), province VARCHAR(100), postal_code CHAR(6), email VARCHAR(100), location_id INT, FOREIGN KEY (location_id) REFERENCES Locations(location_id));

```
-- Create ClubMembers Table
CREATE TABLE ClubMembers (
    club_member_id INT AUTO_INCREMENT PRIMARY KEY,
    first_name VARCHAR(50),
    last_name VARCHAR(50),
    date_of_birth DATE,
    height INT,
    weight INT,
    ssn CHAR(9) UNIQUE NOT NULL,
    medicare_number VARCHAR(15) UNIQUE NOT NULL,
    phone_number CHAR(10),
    address VARCHAR(100),
    city VARCHAR(100),
    province VARCHAR(100),
    postal_code CHAR(6),
    family_member_id INT,
    location_id INT,
    FOREIGN KEY (family_member_id) REFERENCES FamilyMembers(family_member_id),
    FOREIGN KEY (location_id) REFERENCES Locations(location_id),
    relation ENUM('Father', 'Mother', 'Grandfather', 'Grandmother', 'Tutor', 'Partner', 'Friend', 'Brother', 'Sister', 'Other')
);
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0917 seconds.)
CREATE TABLE ClubMembers (club_member_id INT AUTO_INCREMENT PRIMARY KEY, first_name VARCHAR(50), last_name VARCHAR(50), date_of_birth DATE, height INT, weight INT, ssn CHAR(9) UNIQUE NOT NULL, medicare_number VARCHAR(15) UNIQUE NOT NULL, phone_number CHAR(10), address VARCHAR(100), city VARCHAR(100), province VARCHAR(100), postal_code CHAR(6), family_member_id INT, location_id INT, FOREIGN KEY (family_member_id) REFERENCES FamilyMembers(family_member_id), FOREIGN KEY (location_id) REFERENCES Locations(location_id), relation ENUM('Father', 'Mother', 'Grandfather', 'Grandmother', 'Tutor', 'Partner', 'Friend', 'Brother', 'Sister', 'Other'));

```
-- Create Payments Table
CREATE TABLE Payments (
    payment_id INT AUTO_INCREMENT PRIMARY KEY,
    club_member_id INT,
    payment_date DATE,
    amount DECIMAL(10, 2),
    payment_year INT,
    installment_number TINYINT CHECK (installment_number BETWEEN 1 AND 4),
    method ENUM('Cash', 'Debit Card', 'Credit Card'),
    FOREIGN KEY (club_member_id) REFERENCES ClubMembers(club_member_id)
);
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0537 seconds.)
CREATE TABLE Payments (payment_id INT AUTO_INCREMENT PRIMARY KEY, club_member_id INT, payment_date DATE, amount DECIMAL(10, 2), payment_year INT, installment_number TINYINT CHECK (installment_number BETWEEN 1 AND 4), method ENUM('Cash', 'Debit Card', 'Credit Card'), FOREIGN KEY (club_member_id) REFERENCES ClubMembers(club_member_id));

DML

SQL statements to populate tables (required transactions)

```
-- Populate Locations Table (11 locations)
INSERT INTO Locations (type, name, address, city, province, postal_code, phone_number, web_address, max_capacity)
VALUES
('Head', 'Montreal Main', '123 Main Street', 'Montreal', 'QC', 'H1A1A1', '5141234567', 'www.montrealmain.com', 500),
('Branch', 'Laval Branch', '456 Laval Street', 'Laval', 'QC', 'H7A1B2', '4501234567', 'www.lavalbranch.com', 200),
('Branch', 'Dorval Branch', '789 Dorval Avenue', 'Dorval', 'QC', 'H9P3H6', '5147894561', 'www.dorvalbranch.com', 150),
('Branch', 'Longueuil Branch', '321 Longueuil Blvd', 'Longueuil', 'QC', 'J4V2H1', '4509876543', 'www.longueuilbranch.com', 300),
('Branch', 'Quebec City Branch', '987 Rue Saint-Jean', 'Quebec City', 'QC', 'G1R1S8', '4181237890', 'www.quebeccitybranch.com', 250),
('Branch', 'Sherbrooke Branch', '654 King Street', 'Sherbrooke', 'QC', 'J1H1R5', '8194567890', 'www.sherbrookebranch.com', 180),
('Branch', 'Trois-Rivières Branch', '852 Mauricie Road', 'Trois-Rivières', 'QC', 'G9A2B3', '8196543210', 'www.troisrivieresbranch.com', 220),
('Branch', 'Gatineau Branch', '741 Hull Street', 'Gatineau', 'QC', 'J8X3Y2', '8197891234', 'www.gatineaubranch.com', 270),
('Branch', 'Brossard Branch', '159 Brossard Blvd', 'Brossard', 'QC', 'J4W2G6', '4503219876', 'www.brossardbranch.com', 300),
('Branch', 'Drummondville Branch', '357 Centre-Ville Avenue', 'Drummondville', 'QC', 'J2B5R9', '8198765432', 'www.drummondvillebranch.com', 160),
('Branch', 'Chicoutimi Branch', '963 Saguenay Street', 'Chicoutimi', 'QC', 'G7H3A4', '4185678901', 'www.chicoutimibranch.com', 200);
```

✓ 11 rows inserted.
Inserted row id: 11 (Query took 0.0158 seconds.)

```
INSERT INTO Locations (type, name, address, city, province, postal_code, phone_number, web_address, max_capacity) VALUES ('Head', 'Montreal Main', '123 Main Street', 'Montreal', 'QC', 'H1A1A1', '5141234567', 'www.montrealmain.com', 500), ('Branch', 'Laval Branch', '456 Laval Street', 'Laval', 'QC', 'H7A1B2', '4501234567', 'www.lavalbranch.com', 200), ('Branch', 'Dorval Branch', '789 Dorval Avenue', 'Dorval', 'QC', 'H9P3H6', '5147894561', 'www.dorvalbranch.com', 150), ('Branch', 'Longueuil Branch', '321 Longueuil Blvd', 'Longueuil', 'QC', 'J4V2H1', '4509876543', 'www.longueuilbranch.com', 300), ('Branch', 'Quebec City Branch', '987 Rue Saint-Jean', 'Quebec City', 'QC', 'G1R1S8', '4181237890', 'www.quebeccitybranch.com', 250), ('Branch', 'Sherbrooke Branch', '654 King Street', 'Sherbrooke', 'QC', 'J1H1R5', '8194567890', 'www.sherbrookebranch.com', 180), ('Branch', 'Trois-Rivières Branch', '852 Mauricie Road', 'Trois-Rivières', 'QC', 'G9A2B3', '8196543210', 'www.troisrivieresbranch.com', 220), ('Branch', 'Gatineau Branch', '741 Hull Street', 'Gatineau', 'QC', 'J8X3Y2', '8197891234', 'www.gatineaubranch.com', 270), ('Branch', 'Brossard Branch', '159 Brossard Blvd', 'Brossard', 'QC', 'J4W2G6', '4503219876', 'www.brossardbranch.com', 300), ('Branch', 'Drummondville Branch', '357 Centre-Ville Avenue', 'Drummondville', 'QC', 'J2B5R9', '8198765432', 'www.drummondvillebranch.com', 160), ('Branch', 'Chicoutimi Branch', '963 Saguenay Street', 'Chicoutimi', 'QC', 'G7H3A4', '4185678901', 'www.chicoutimibranch.com', 200);
```

```
-- Populate Personnel Table (12 personnel) Olivia Davis and Henry Johnson also being family members
INSERT INTO Personnel (first_name, last_name, date_of_birth, ssn, medicare_number, phone_number, address, city, province, postal_code, email, role, mandate)
VALUES
('John', 'Doe', '1980-06-15', '123450789', 'MED123456789', '5141112222', '123 Maple Street', 'Montreal', 'QC', 'H1A1B1', 'johndoe@email.com', 'General Manager', 'Salaried'),
('Jane', 'Smith', '1985-04-28', '223344555', 'MED223344555', '5143334444', '456 Oak Street', 'Laval', 'QC', 'H7A1C2', 'janesmith@email.com', 'Coach', 'Volunteer'),
('Robert', 'Johnson', '1990-02-10', '334455668', 'MED334465668', '5145556666', '789 Cedar Avenue', 'Dorval', 'QC', 'H9S2X3', 'robertjohnson@email.com', 'Administrator', 'Salaried'),
('Alice', 'Brown', '1995-11-05', '445566770', 'MED445566770', '5147778888', '321 Birch Street', 'Montreal', 'QC', 'H1C2B3', 'alicebrown@email.com', 'Deputy Manager', 'Volunteer'),
('Emily', 'Davis', '1983-07-19', '556677881', 'MED556677881', '5148889999', '321 Spruce Avenue', 'Longueuil', 'QC', 'J4V1W2', 'emilydavis@email.com', 'Coach', 'Salaried'),
('Michael', 'Clark', '1975-03-22', '667788992', 'MED667788992', '5142223333', '789 Birch Street', 'Laval', 'QC', 'H7A2D3', 'michaelclark@email.com', 'Assistant Coach', 'Volunteer'),
('Olivia', 'Martinez', '1987-10-05', '778899051', 'MED778899051', '5146543210', '555 Willow Lane', 'Dorval', 'QC', 'H9H3L2', 'oliviarmartinez@email.com', 'Coach', 'Salaried'),
('Daniel', 'Evans', '1982-12-18', '889900112', 'MED889900112', '5144445555', '234 Elm Street', 'Montreal', 'QC', 'H1A2D4', 'danielevans@email.com', 'Other', 'Salaried'),
('Mia', 'Roberts', '1991-08-29', '990011223', 'MED990011223', '5147776666', '678 Poplar Drive', 'Longueuil', 'QC', 'J4V2Y1', 'miaroberts@email.com', 'Administrator', 'Volunteer'),
('James', 'Wilson', '1986-04-15', '112233485', 'MED112233485', '5148887777', '432 Birchwood Ave', 'Laval', 'QC', 'H7B3K5', 'jameswilson@email.com', 'Other', 'Salaried'),
('Henry', 'Johnson', '1978-08-22', '123456787', 'MED123456787', '5145554444', '987 Cedar Ave', 'Montreal', 'QC', 'H3G1P4', 'henryjohnson@email.com', 'Other', 'Salaried'),
('Olivia', 'Davis', '1980-07-15', '223344556', 'MED223344556', '5146667777', '654 Birch St', 'Laval', 'QC', 'H7G1J3', 'oliviadavis@email.com', 'Other', 'Salaried'),
('Chris', 'Bing', '1985-12-12', '926153786', 'MED926153786', '5142154414', '523 Hazel St', 'Montreal', 'QC', 'H3G1Z7', 'icecreamwastaken@email.com', 'Treasurer', 'Salaried'),
('Bully', 'Maguire', '1962-04-25', '993366445', 'MED993366445', '5142263527', '865 Juniper Drive', 'Montreal', 'QC', 'H3G1P1', 'spooderman@email.com', 'Secretary', 'Salaried');
```

✓ 14 rows inserted
Inserted row id: 14 (Query took 0.0164 seconds.)

```
INSERT INTO Personnel (first_name, last_name, date_of_birth, ssn, medicare_number, phone_number, address, city, province, postal_code, email, role, mandate) VALUES ('John', 'Doe', '1980-06-15', '123450789', 'MED123456789', '5141112222', '123 Maple Street', 'Montreal', 'QC', 'H1A1B1', 'johndoe@email.com', 'General Manager', 'Salaried'), ('Jane', 'Smith', '1985-04-28', '223344555', 'MED223344555', '5143334444', '456 Oak Street', 'Laval', 'QC', 'H7A1C2', 'janesmith@email.com', 'Coach', 'Volunteer'), ('Robert', 'Johnson', '1990-02-10', '334455668', 'MED334465668', '5145556666', '789 Cedar Avenue', 'Dorval', 'QC', 'H9S2X3', 'robertjohnson@email.com', 'Administrator', 'Salaried'), ('Alice', 'Brown', '1995-11-05', '445566770', 'MED445566770', '5147778888', '321 Birch Street', 'Montreal', 'QC', 'H1C2B3', 'alicebrown@email.com', 'Deputy Manager', 'Volunteer'), ('Emily', 'Davis', '1983-07-19', '556677881', 'MED556677881', '5148889999', '321 Spruce Avenue', 'Longueuil', 'QC', 'J4V1W2', [...]
```

```

INSERT INTO ClubMembers ([first_name, last_name, date_of_birth, height, weight, ssn, medicare_number, phone_number, address, city, province, postal_code, family_member_id, location_id, relation])
VALUES
    -- Sophia Williams (2 children)
    -- Emma Williams is an overager, won't be active
    ('Emma', 'Williams', '2000-11-15', 165, 55, '889900776', 'MED889900776', '5149998888', '123 Main Road', 'Montreal', 'QC', 'H1A2B3', 1, 1, 'Mother'),
    ('Noah', 'Williams', '2010-06-21', 158, 50, '990011112', 'MED990011112', '5149874563', '123 Main Road', 'Montreal', 'QC', 'H1A2B3', 1, 1, 'Father'),
    -- James Brown (3 children)
    ('Liam', 'Brown', '2010-03-22', 160, 52, '776655443', 'MED776655443', '4506667777', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 2, 2, 'Brother'),
    ('Ava', 'Brown', '2007-12-05', 170, 60, '112299338', 'MED112299338', '5143211234', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 2, 2, 'Sister'),
    ('Ethan', 'Brown', '2011-08-17', 154, 48, '334455668', 'MED334455668', '5146541237', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 2, 2, 'Mother'),
    -- Laura White (1 child)
    ('Sophia', 'Miller', '2009-06-30', 170, 60, '112299337', 'MED112299337', '5148889999', '789 Elm St', 'Dorval', 'QC', 'H9K3L1', 3, 3, 'Brother'),
    -- Henry Johnson (2 children)
    ('Lucas', 'Johnson', '2008-04-12', 168, 62, '556677112', 'MED556677112', '5147779999', '987 Cedar Ave', 'Montreal', 'QC', 'H3G1P4', 4, 1, 'Mother'),
    ('Mia', 'Johnson', '2010-10-10', 162, 58, '667788113', 'MED667788113', '5142224445', '987 Cedar Ave', 'Montreal', 'QC', 'H3G1P4', 4, 1, 'Father'),
    -- Olivia Davis (2 children)
    ('Daniel', 'Davis', '2009-02-18', 165, 54, '778899115', 'MED778899115', '5143456789', '654 Birch St', 'Laval', 'QC', 'H7G1J3', 5, 2, 'Brother'),
    ('Charlotte', 'Davis', '2011-06-08', 152, 49, '889900117', 'MED889900117', '5146547890', '654 Birch St', 'Laval', 'QC', 'H7G1J3', 5, 2, 'Sister'),
    -- Random single members
    ('Elijah', 'Wilson', '2007-03-12', 175, 66, '990011123', 'MED990011123', '5147654321', '444 Cedar Blvd', 'Dorval', 'QC', 'H9G2T3', 6, 3, 'Brother'),
    ('Harper', 'Harris', '2009-12-01', 162, 55, '112233335', 'MED112233335', '5142468101', '555 Spruce Ln', 'Longueuil', 'QC', 'J4N3K1', 7, 4, 'Sister');

```

✓ 12 rows inserted.
Inserted row id: 12 (Query took 0.0130 seconds)

```

INSERT INTO ClubMembers ([first_name, last_name, date_of_birth, height, weight, ssn, medicare_number, phone_number, address, city, province, postal_code, family_member_id, location_id, relation) VALUES
    -- Sophia Williams (2 children)
    -- Emma Williams is an overager, won't be active
    ('Emma', 'Williams', '2000-11-15', 165, 55, '889900776', 'MED889900776', '5149998888', '123 Main Road', 'Montreal', 'QC', 'H1A2B3', 1, 1, 'Mother'),
    ('Noah', 'Williams', '2010-06-21', 158, 50, '990011112', 'MED990011112', '5149874563', '123 Main Road', 'Montreal', 'QC', 'H1A2B3', 1, 1, 'Father'),
    -- James Brown (3 children)
    ('Liam', 'Brown', '2010-03-22', 160, 52, '776655443', 'MED776655443', '4506667777', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 2, 2, 'Brother'),
    ('Ava', 'Brown', '2007-12-05', 170, 60, '112299338', 'MED112299338', '5143211234', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 2, 2, 'Sister'),
    ('Ethan', 'Brown', '2011-08-17', 154, 48, '334455668', 'MED334455668', '5146541237', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 2, 2, 'Mother'),
    -- Laura White (1 child)
    ('Sophia', 'Miller', '2009-06-30', 170, 60, '112299337', 'MED112299337', '5148889999', '789 Elm St', 'Dorval', 'QC', 'H9K3L1', 3, 3, 'Brother'),
    -- Henry Johnson (2 children)
    ('Lucas', 'Johnson', '2008-04-12', 168, 62, '556677112', 'MED556677112', '5147779999', '987 Cedar Ave', 'Montreal', 'QC', 'H3G1P4', 4, 1, 'Mother'),
    ('Mia', 'Johnson', '2010-10-10', 162, 58, '667788113', 'MED667788113', '5142224445', '987 Cedar Ave', 'Montreal', 'QC', 'H3G1P4', 4, 1, 'Father'),
    -- Olivia Davis (2 children)
    ('Daniel', 'Davis', '2009-02-18', 165, 54, '778899115', 'MED778899115', '5143456789', '654 Birch St', 'Laval', 'QC', 'H7G1J3', 5, 2, 'Brother'),
    ('Charlotte', 'Davis', '2011-06-08', 152, 49, '889900117', 'MED889900117', '5146547890', '654 Birch St', 'Laval', 'QC', 'H7G1J3', 5, 2, 'Sister'),
    -- Random single members
    ('Elijah', 'Wilson', '2007-03-12', 175, 66, '990011123', 'MED990011123', '5147654321', '444 Cedar Blvd', 'Dorval', 'QC', 'H9G2T3', 6, 3, 'Brother'),
    ('Harper', 'Harris', '2009-12-01', 162, 55, '112233335', 'MED112233335', '5142468101', '555 Spruce Ln', 'Longueuil', 'QC', 'J4N3K1', 7, 4, 'Sister');

```

```

-- Populate OperatesAt Table (Tracking Work History)
INSERT INTO OperatesAt (personnel_id, location_id, start_date, end_date)
VALUES
    (1, 1, '2020-01-01', NULL), -- John Doe is still at Montreal Main
    (2, 2, '2021-06-15', NULL), -- Jane Smith is at Laval
    (3, 3, '2019-09-20', '2022-12-31'),
    (3, 1, '2023-01-01', NULL), -- Robert moved to Montreal
    (4, 1, '2022-05-01', NULL),
    (5, 4, '2023-01-10', NULL),
    (6, 2, '2021-09-01', '2022-08-31'),
    (6, 3, '2022-09-01', NULL), -- Michael moved from Laval to Dorval
    (11, 1, '2023-12-12', NULL), -- Henry Johnson as Personnel
    (12, 2, '2021-06-24', NULL), -- Olivia Davis as Personnel
    (13, 1, '2012-02-02', NULL),
    (14, 1, '2016-08-12', NULL);

```

✓ 12 rows inserted.
Inserted row id: 12 (Query took 0.0155 seconds)

```

INSERT INTO OperatesAt (personnel_id, location_id, start_date, end_date) VALUES
    (1, 1, '2020-01-01', NULL), -- John Doe is still at Montreal Main
    (2, 2, '2021-06-15', NULL), -- Jane Smith is at Laval
    (3, 3, '2019-09-20', '2022-12-31'),
    (3, 1, '2023-01-01', NULL), -- Robert moved to Montreal
    (4, 1, '2022-05-01', NULL),
    (5, 4, '2023-01-10', NULL),
    (6, 2, '2021-09-01', '2022-08-31'),
    (6, 3, '2022-09-01', NULL), -- Michael moved from Laval to Dorval
    (11, 1, '2023-12-12', NULL), -- Henry Johnson as Personnel
    (12, 2, '2021-06-24', NULL), -- Olivia Davis as Personnel
    (13, 1, '2012-02-02', NULL),
    (14, 1, '2016-08-12', NULL);

```

```
INSERT INTO FamilyMembers (first_name, last_name, date_of_birth, ssn, medicare_number, phone_number, address, city, province, postal_code, email, location_id)
VALUES
    ('Sophia', 'Williams', '1970-02-25', '112233445', 'MED112233445', '5141239876', '123 Main Road', 'Montreal', 'QC', 'H1A2B3', 'sophiawilliams@email.com', 1),
    ('James', 'Brown', '1965-05-10', '998877665', 'MED998877665', '5144567890', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 'jamesbrown@email.com', 2),
    ('Laura', 'White', '1972-11-10', '667788554', 'MED667788554', '5149995555', '789 Elm St', 'Dorval', 'QC', 'H9K3L1', 'laurawhite@email.com', 3),
    ('Henry', 'Johnson', '1978-08-22', '123456787', 'MED123456787', '5145554444', '987 Cedar Ave', 'Montreal', 'QC', 'H3G1P4', 'henryjohnson@email.com', 1),
    ('Olivia', 'Davis', '1980-07-15', '223344556', 'MED223344556', '5146667777', '654 Birch St', 'Laval', 'QC', 'H7G1J3', 'oliviadavis@email.com', 2),
    ('Michael', 'Martinez', '1969-03-10', '334455667', 'MED334455667', '5148886666', '543 Willow Ln', 'Dorval', 'QC', 'H9R2Y8', 'michaelmartinez@email.com', 3),
    ('Emma', 'Clark', '1975-11-30', '445566778', 'MED445566778', '5149993333', '222 Pine Rd', 'Longueuil', 'QC', 'J4G1Z9', 'emmaclark@email.com', 4),
    ('Daniel', 'Rodriguez', '1982-06-12', '556677889', 'MED556677889', '514221111', '123 Spruce Ave', 'Montreal', 'QC', 'H1A3B4', 'danielrodriguez@email.com', 1),
    ('Sophia', 'Miller', '1973-09-25', '667788990', 'MED667788990', '5147778888', '555 Poplar St', 'Laval', 'QC', 'H7T2X3', 'sophiamiller@email.com', 2),
    ('Ethan', 'Garcia', '1985-04-18', '778899001', 'MED778899001', '5143332222', '777 Elmwood Dr', 'Dorval', 'QC', 'H9N4M5', 'ethangarcia@email.com', 3);
```

✓ 10 rows inserted.
Inserted row id: 10 (Query took 0.0213 seconds)

```
INSERT INTO FamilyMembers (first_name, last_name, date_of_birth, ssn, medicare_number, phone_number, address, city, province, postal_code, email, location_id) VALUES ('Sophia', 'Williams', '1970-02-25', '112233445', 'MED112233445', '5141239876', '123 Main Road', 'Montreal', 'QC', 'H1A2B3', 'sophiawilliams@email.com', 1), ('James', 'Brown', '1965-05-10', '998877665', 'MED998877665', '5144567890', '456 Laval Blvd', 'Laval', 'QC', 'H7A4B5', 'jamesbrown@email.com', 2), ('Laura', 'White', '1972-11-10', '667788554', 'MED667788554', '5149995555', '789 Elm St', 'Dorval', 'QC', 'H9K3L1', 'laurawhite@email.com', 3), ('Henry', 'Johnson', '1978-08-22', '123456787', 'MED123456787', '5145554444', '987 Cedar Ave', 'Montreal', 'QC', 'H3G1P4', 'henryjohnson@email.com', 1), ('Olivia', 'Davis', '1980-07-15', '223344556', 'MED223344556', '5146667777', '654 Birch St', 'Laval', 'QC', 'H7G1J3', 'oliviadavis@email.com', 2), ('Michael', 'Martinez', '1969-03-10', '334455667', 'MED334455667', '5148886666', '543 Willow Ln', 'Dorval', 'QC', 'H9R2Y8', 'michaelmartinez@email.com', 3), ('Emma', 'Clark', '1975-11-30', '445566778', 'MED445566778', '5149993333', '222 Pine Rd', 'Longueuil', 'QC', 'J4G1Z9', 'emmaclark@email.com', 4), ('Daniel', 'Rodriguez', '1982-06-12', '556677889', 'MED556677889', '514221111', '123 Spruce Ave', 'Montreal', 'QC', 'H1A3B4', 'danielrodriguez@email.com', 1), ('Sophia', 'Miller', '1973-09-25', '667788990', 'MED667788990', '5147778888', '555 Poplar St', 'Laval', 'QC', 'H7T2X3', 'sophiamiller@email.com', 2), ('Ethan', 'Garcia', '1985-04-18', '778899001', 'MED778899001', '5143332222', '777 Elmwood Dr', 'Dorval', 'QC', 'H9N4M5', 'ethangarcia@email.com', 3);
```

```
-- Populate Payments Table (Adding 25 transactions for 2024)
INSERT INTO Payments (club_member_id, payment_date, amount, payment_year, installment_number, method)
VALUES
    -- Membership payments (non-donations) and donations by overpayments (210 in overpayments)
    (1, '2024-01-05', 120, 2024, 1, 'Credit Card'),
    (2, '2024-02-12', 50, 2024, 1, 'Cash'),
    (2, '2024-03-10', 70, 2024, 2, 'Cash'),
    (3, '2024-01-20', 100, 2024, 1, 'Debit Card'),
    (4, '2024-04-05', 100, 2024, 1, 'Credit Card'),
    (5, '2024-02-18', 50, 2024, 1, 'Debit Card'),
    (5, '2024-03-15', 50, 2024, 2, 'Debit Card'),
    (6, '2024-05-01', 100, 2024, 1, 'Credit Card'),
    (7, '2024-06-10', 200, 2024, 1, 'Cash'),
    (8, '2024-07-14', 160, 2024, 1, 'Credit Card'),
    (9, '2024-08-20', 100, 2024, 1, 'Debit Card'),
    (10, '2024-09-05', 50, 2024, 1, 'Cash'),
    (10, '2024-10-01', 50, 2024, 2, 'Cash'),
    (11, '2024-10-20', 10, 2024, 1, 'Credit Card'), -- Elijah Wilson will not have fees paid for the year so not active
    (12, '2024-11-10', 110, 2024, 1, 'Debit Card'),

    -- Donations (190 in donations, 400 counting overpayments from above)
    (1, '2024-01-20', 20, 2024, 2, 'Credit Card'),
    (2, '2024-02-28', 15, 2024, 3, 'Cash'),
    (3, '2024-03-10', 25, 2024, 2, 'Debit Card'),
    (5, '2024-04-15', 50, 2024, 3, 'Credit Card'),
    (6, '2024-05-20', 10, 2024, 2, 'Cash'),
    (7, '2024-06-25', 30, 2024, 2, 'Credit Card'),
    (9, '2024-08-15', 40, 2024, 2, 'Debit Card');

    -- might require new rows to add active status in 2025

    -- rows for payments in 2025
```

✓ 22 rows inserted
Inserted row id: 22 (Query took 0.0107 seconds)

```
INSERT INTO Payments (club_member_id, payment_date, amount, payment_year, installment_number, method) VALUES -- Membership payments (non-donations) and donations by overpayments (210 in overpayments) (1, '2024-01-05', 120, 2024, 1, 'Credit Card'), (2, '2024-02-12', 50, 2024, 1, 'Cash'), (2, '2024-03-10', 70, 2024, 2, 'Cash'), (3, '2024-01-20', 100, 2024, 1, 'Debit Card'), (4, '2024-04-05', 100, 2024, 1, 'Credit Card'), (5, '2024-02-18', 50, 2024, 1, 'Debit Card'), (5, '2024-03-15', 50, 2024, 2, 'Debit Card'), (6, '2024-05-01', 100, 2024, 1, 'Credit Card'), (7, '2024-06-10', 200, 2024, 1, 'Cash'), (8, '2024-07-14', 160, 2024, 1, 'Credit Card'), (9, '2024-08-20', 100, 2024, 1, 'Debit Card'), (10, '2024-09-05', 50, 2024, 1, 'Cash'), (10, '2024-10-01', 50, 2024, 2, 'Cash'), (11, '2024-10-20', 10, 2024, 1, 'Credit Card'), -- Elijah Wilson will not have fees paid for the year so not active (12, '2024-11-10', 110,...)
```

```
-- Fills the payments table
INSERT INTO Payments (club_member_id, payment_date, amount, payment_year, installment_number, method)
VALUES
(1, '2025-03-12', 80, 2025, 1, 'Cash'),
(1, '2025-12-24', 50, 2025, 2, 'Cash'),
(3, '2025-09-06', 200, 2025, 1, 'Credit Card'),
(3, '2025-03-15', 12, 2025, 2, 'Cash'),
(4, '2025-05-03', 10, 2025, 1, 'Credit Card'),
(4, '2025-10-02', 90, 2025, 2, 'Cash'),
(5, '2024-06-22', 170, 2025, 1, 'Credit Card'),
(6, '2025-04-13', 120, 2025, 1, 'Debit Card'),
(7, '2025-02-27', 120, 2025, 1, 'Cash'),
(8, '2025-11-30', 80, 2025, 1, 'Cash'),
(8, '2025-11-22', 122, 2025, 2, 'Credit Card'),
(9, '2025-02-13', 40, 2025, 1, 'Cash'),
(10, '2025-06-13', 160, 2025, 1, 'Cash'),
(11, '2025-12-13', 120, 2025, 1, 'Credit Card'),
(12, '2025-10-11', 10, 2025, 1, 'Debit Card'),
(12, '2025-12-23', 20, 2025, 2, 'Debit Card');
```

✓ 16 rows inserted
Inserted row id: 38 (Query took 0.0146 seconds.)

```
INSERT INTO Payments (club_member_id, payment_date, amount, payment_year, installment_number, method) VALUES (1, '2025-03-12', 80, 2025, 1, 'Cash'), (1, '2025-12-24', 50, 2025, 2, 'Cash'), (3, '2025-09-06', 200, 2025, 1, 'Credit Card'), (3, '2025-03-15', 12, 2025, 2, 'Cash'), (4, '2025-05-03', 10, 2025, 1, 'Credit Card'), (4, '2025-10-02', 90, 2025, 2, 'Cash'), (5, '2024-06-22', 170, 2025, 1, 'Credit Card'), (6, '2025-04-13', 120, 2025, 1, 'Debit Card'), (7, '2025-02-27', 120, 2025, 1, 'Cash'), (8, '2025-11-30', 80, 2025, 1, 'Cash'), (8, '2025-11-22', 122, 2025, 2, 'Credit Card'), (9, '2025-02-13', 40, 2025, 1, 'Cash'), (10, '2025-06-13', 160, 2025, 1, 'Cash'), (11, '2025-12-13', 120, 2025, 1, 'Credit Card'), (12, '2025-10-11', 10, 2025, 1, 'Debit Card'), (12, '2025-12-23', 20, 2025, 2, 'Debit Card');
```

[Edit inline](#) [Edit](#) [Create PHP code](#)

SQL statements formulated to express the required queries

1. Get complete details for every location in the system. Details include address, city, province, postal code, phone number, web address, type (Head, Branch), capacity, general manager name, number of personnel, and the number of club members associated with that location. The results should be displayed sorted in ascending order by Province, then by city.

```

SELECT
    Locations.*,
    COUNT(ClubMembers.club_member_id) AS NumberOfMembers,
    (CASE
        WHEN PersonnelSum.personnel_count IS NULL THEN 0
        ELSE PersonnelSum.personnel_count
    END) AS NumberOfPersonnel,
    (CASE
        WHEN Locations.type = 'Head' THEN
        (
            SELECT CONCAT(Personnel.first_name, ' ', Personnel.last_name)
            FROM Personnel, OperatesAt, Locations
            WHERE OperatesAt.location_id = Locations.location_id
                AND OperatesAt.personnel_id = Personnel.personnel_id
                AND Personnel.role = 'General Manager'
        )
        ELSE 'N/A'
    END) AS `GM Name`
FROM Locations
LEFT JOIN ClubMembers ON Locations.location_id = ClubMembers.location_id
LEFT JOIN (
    SELECT
        location_id,
        COUNT(OperatesAt.personnel_id) AS personnel_count
    FROM OperatesAt
    WHERE OperatesAt.end_date IS NULL
    GROUP BY location_id
) AS PersonnelSum ON PersonnelSum.location_id = Locations.location_id
GROUP BY Locations.location_id
ORDER BY Locations.province ASC, Locations.city ASC;

```

Output:

location_id	type	name	address	city	province	postal_code	phone_number	web_address	max_capacity	numberOfMembers	NumberOfPersonnel	GM Name
9	Branch	Brossard Branch	159 Brossard Blvd	Brossard	QC	J4W2G6	4593219876	www.brossardbranch.com	300	0	0	N/A
11	Branch	Chicoutimi Branch	963 Saguenay Street	Chicoutimi	QC	G7H3M4	4185678901	www.chicoutimibranch.com	200	0	0	N/A
3	Branch	Dorval Branch	789 Dorval Avenue	Dorval	QC	H9P3H6	5147894561	www.dorvalbranch.com	150	2	1	N/A
10	Branch	Dremonville Branch	357 Dremonville Avenue	Dremonville	QC	J2B5R8	8197441939	www.dremonvilebranch.com	160	0	0	N/A
8	Branch	Drummondville Branch	1001 Hull Street	Drummondville	QC	J3B3P7	8379891724	www.drummondvilebranch.com	270	0	0	N/A
2	Branch	Laval Branch	456 Laval Street	Laval	QC	H7A1B2	4591234567	www.lavalbranch.com	200	5	2	N/A
4	Branch	Longueuil Branch	321 Longueuil Blvd	Longueuil	QC	J4V2H1	4598676543	www.longueuilbranch.com	300	1	1	N/A
1	Head	Montreal Main	123 Main Street	Montreal	QC	H1A1A1	5141234567	www.montrealmain.com	500	4	6	John Doe
5	Branch	Quebec City Branch	987 Rue Saint-Jean	Quebec City	QC	G1R1S8	4181237890	www.quebeccitybranch.com	250	0	0	N/A
6	Branch	Sherbrooke Branch	654 King Street	Sherbrooke	QC	J3H1R5	8194567890	www.sherbrookebranch.com	180	0	0	N/A
7	Branch	Trois-Rivieres Branch	852 Mauricie Road	Trois-Rivières	QC	G9A2B3	8196543210	www.troisrivieresbranch.com	220	0	0	N/A

11 rows in set (0.01 sec)

- 2) For a given location, provide a report that lists for every family member who is currently registered in the location, the number of related active club members. Information includes family members' first name, last name, and the number of active club members that are associated with the family member.

```

SELECT
    Locations.name AS LocationName,
    FamilyMembers.first_name AS FirstName,
    FamilyMembers.last_name AS LastName,
    (CASE
        WHEN ActiveClubMemberSums.active_count IS NULL THEN 0
        ELSE ActiveClubMemberSums.active_count
    END) AS ActiveMembers
FROM FamilyMembers
JOIN ClubMembers ON FamilyMembers.family_member_id = ClubMembers.family_member_id
JOIN Locations ON FamilyMembers.location_id = Locations.location_id
LEFT JOIN (
    SELECT
        COUNT(ActiveClubMembers.club_member_id) AS active_count,
        ActiveClubMembers.family_member_id
    FROM (
        SELECT
            ClubMembers.family_member_id,
            ClubMembers.club_member_id
        FROM Payments, ClubMembers
        WHERE Payments.club_member_id = ClubMembers.club_member_id
            AND Payments.payment_year = YEAR(CURDATE())
            AND TIMESTAMPDIFF(YEAR, ClubMembers.date_of_birth, CURDATE()) BETWEEN 11 AND 18
        GROUP BY ClubMembers.club_member_id
        HAVING SUM(Payments.amount) >= 100
    ) AS ActiveClubMembers
    GROUP BY ActiveClubMembers.family_member_id
) AS ActiveClubMemberSums
    ON ActiveClubMemberSums.family_member_id = FamilyMembers.family_member_id
WHERE Locations.name LIKE ?
GROUP BY Locations.name, FamilyMembers.family_member_id
ORDER BY Locations.name, FamilyMembers.last_name

```

For this query, we replaced the ? placeholder with “Laval%” as a given location.

LocationName	FirstName	LastName	ActiveMembers
Laval Branch	James	Brown	3
Laval Branch	Olivia	Davis	1

2 rows in set (0.01 sec)

- 3) For a given location, provide a report that displays information about the personnel who are currently operating in that location. The information includes first-name, last-name, date of birth, Social Security Number, Medicare card number, telephone number, address, city, province, postal code, email address, role (General manager, deputy manager, Coach, etc.) and mandate (Volunteer or Salaried)

```

SELECT Locations.name AS LocationName,
       Personnel.first_name,
       Personnel.last_name,
       Personnel.date_of_birth,
       Personnel.ssn,
       Personnel.medicare_number,
       Personnel.phone_number,
       Personnel.address,
       Personnel.city,
       Personnel.province,
       Personnel.postal_code,
       Personnel.email,
       Personnel.role,
       Personnel.mandate
  FROM Personnel
 JOIN OperatesAt ON Personnel.personnel_id = OperatesAt.personnel_id
 JOIN Locations ON OperatesAt.location_id = Locations.location_id
 WHERE OperatesAt.end_date IS NULL
       AND Locations.name LIKE ?
 ORDER BY Locations.name;

```

For this query, we replaced the ? placeholder with “Laval%” as a given location.

LocationName	first_name	last_name	date_of_birth	ssn	medicare_number	phone_number	address	city	province	postal_code	email	role	mandate
Laval Branch	Jane	Smith	1985-04-20	223344555	MED223344555	5143334444	456 Oak Street	Laval	QC	H7A1C2	janesmith@email.com	Coach	Volunteer
Laval Branch	olivia	Davis	1980-07-15	223344556	MED223344556	5146667777	654 Birch St	Laval	QC	H7G1J3	oliviadavis@email.com	Other	Salaried

2 rows in set (0.00 sec)

4. Get a detailed list of all club members registered in the system. The list should include the location name that the club member that is currently associated with, the membership number of the club member, first-name, last-name, age, city, province, and status (active or inactive). The results should be displayed sorted in ascending order by location name, then by age.

```

SELECT
    Locations.name AS `Location Name`,
    TIMESTAMPDIFF(YEAR, ClubMembers.date_of_birth, CURDATE()) AS Age,
    ClubMembers.club_member_id,
    ClubMembers.first_name,
    ClubMembers.last_name,
    ClubMembers.city,
    ClubMembers.province,
    (CASE
        WHEN ActiveClubMembers.club_member_id IS NOT NULL THEN 'Active'
        ELSE 'Inactive'
    END) AS Status
FROM ClubMembers
JOIN Locations ON ClubMembers.location_id = Locations.location_id
LEFT JOIN (
    SELECT
        ClubMembers.club_member_id
    FROM Payments, ClubMembers
    WHERE Payments.club_member_id = ClubMembers.club_member_id
        AND Payments.payment_year = YEAR(CURDATE())
        AND TIMESTAMPDIFF(YEAR, ClubMembers.date_of_birth, CURDATE()) BETWEEN 11 AND 18
    GROUP BY ClubMembers.club_member_id
    HAVING SUM(Payments.amount) >= 100
) AS ActiveClubMembers
    ON ActiveClubMembers.club_member_id = ClubMembers.club_member_id
ORDER BY Locations.name ASC, Age ASC;

```

Output:

Location Name	Age	club_member_id	first_name	last_name	city	province	Status
Dorval Branch	15	6	Sophia	Miller	Dorval	QC	Active
Dorval Branch	18	11	Elijah	Wilson	Dorval	QC	Active
Laval Branch	13	5	Ethan	Brown	Laval	QC	Active
Laval Branch	13	10	Charlotte	Davis	Laval	QC	Active
Laval Branch	15	3	Liam	Brown	Laval	QC	Active
Laval Branch	16	9	Daniel	Davis	Laval	QC	Inactive
Laval Branch	17	4	Ava	Brown	Laval	QC	Active
Longueuil Branch	15	12	Harper	Harris	Longueuil	QC	Inactive
Montreal Main	14	2	Noah	Williams	Montreal	QC	Inactive
Montreal Main	14	8	Mia	Johnson	Montreal	QC	Active
Montreal Main	16	7	Lucas	Johnson	Montreal	QC	Active
Montreal Main	24	1	Emma	Williams	Montreal	QC	Inactive

12 rows in set (0.01 sec)

5. For a given family member, get details of all club members associated with him/her. Information includes club membership number, first-name, last-name, date of birth, Social Security Number, Medicare card number, telephone number, address, city, province, postal code, relationship with the family member, and status (active or inactive).

```

SELECT
    FamilyMembers.first_name AS `Relative's First Name`,
    FamilyMembers.last_name AS `Relative's Last Name`,
    ClubMembers.club_member_id,
    ClubMembers.first_name AS `ClubMember's First Name`,
    ClubMembers.last_name AS `ClubMember's Last Name`,
    ClubMembers.date_of_birth,
    ClubMembers.ssn,
    ClubMembers.medicare_number,
    ClubMembers.phone_number,
    ClubMembers.address,
    ClubMembers.city,
    ClubMembers.province,
    ClubMembers.postal_code,
    ClubMembers.relation AS `Relationship`,
    (CASE
        WHEN ActiveClubMembers.club_member_id IS NOT NULL THEN 'Active'
        ELSE 'Inactive'
    END) AS Status
FROM ClubMembers
JOIN FamilyMembers
    ON FamilyMembers.family_member_id = ClubMembers.family_member_id
LEFT JOIN (
    SELECT
        ClubMembers.club_member_id
    FROM Payments, ClubMembers
    WHERE Payments.club_member_id = ClubMembers.club_member_id
        AND Payments.payment_year = YEAR(CURDATE())
        AND TIMESTAMPDIFF(YEAR, ClubMembers.date_of_birth, CURDATE()) BETWEEN 11 AND 18
    GROUP BY ClubMembers.club_member_id
    HAVING SUM(Payments.amount) >= 100
) AS ActiveClubMembers
    ON ActiveClubMembers.club_member_id = ClubMembers.club_member_id
WHERE FamilyMembers.first_name LIKE ? OR FamilyMembers.last_name LIKE ?
ORDER BY FamilyMembers.first_name, FamilyMembers.last_name, ClubMembers.first_name;

```

For this query, we replaced the ? placeholders with “%James” as a given first name and “%Brown” as a given last name.

Relative's First Name	Relative's Last Name	club_member_id	ClubMember's First Name	ClubMember's Last Name	date_of_birth	ssn	medicare_number	phone_number	address	city	province	postal_code	Relationship	Status
James	Brown	4	Ava	Brown	2007-12-05	112299338	MED112299338	5143211234	456 Laval Blvd	Laval	QC	H7A4B5	Sister	Active
James	Brown	5	Ethan	Brown	2011-08-17	334455668	MED334455668	5146541237	456 Laval Blvd	Laval	QC	H7A4B5	Mother	Active
James	Brown	3	Liam	Brown	2010-03-22	776655443	MED0776655443	4586667777	456 Laval Blvd	Laval	QC	H7A4B5	Brother	Active

3 rows in set (0.00 sec)

6. For a given location, get the list of all family members who have currently active club members associated with them and are also an operator personnel member for the same location. Information includes first-name, last-name, and phone number of the family member.

```

SELECT DISTINCT
    Locations.name AS `Location`,
    FamilyMembers.first_name AS `First Name`,
    FamilyMembers.last_name AS `Last Name`,
    FamilyMembers.phone_number AS `Phone Number`
FROM FamilyMembers
JOIN (
    SELECT
        ClubMembers.club_member_id,
        ClubMembers.family_member_id,
        ClubMembers.location_id
    FROM Payments, ClubMembers
    WHERE Payments.club_member_id = ClubMembers.club_member_id
        AND Payments.payment_year = YEAR(CURDATE())
        AND TIMESTAMPDIFF(YEAR, ClubMembers.date_of_birth, CURDATE()) BETWEEN 11 AND 18
    GROUP BY ClubMembers.club_member_id
    HAVING SUM(Payments.amount) >= 100
) AS ActiveClubMembers
ON FamilyMembers.family_member_id = ActiveClubMembers.family_member_id -- matches family member to active club member
JOIN Personnel
ON FamilyMembers.ssn = Personnel.ssn                               -- TODO: This will have to be changed to a better reference.
JOIN OperatesAt
ON Personnel.personnel_id = OperatesAt.personnel_id
AND OperatesAt.end_date IS NULL                                     -- Currently working at location
JOIN Locations
ON FamilyMembers.location_id = Locations.location_id
AND ActiveClubMembers.location_id = Locations.location_id
AND OperatesAt.location_id = Locations.location_id -- All entities must match location
WHERE Locations.name LIKE ?
ORDER BY FamilyMembers.first_name, FamilyMembers.last_name;

```

For this query, we replaced the ? placeholder with “Laval%” as a given location.

Location	First Name	Last Name	Phone Number
Laval Branch	olivia	Davis	5146667777

1 row in set (0.01 sec)

7. For a given club member, give details of all payments for the membership fees.

Information includes date of payment, amount of payment, and year of payment. The results should be displayed sorted in ascending order by date.

```
SELECT
    ClubMembers.first_name,
    ClubMembers.last_name,
    payment_date,
    amount,
    payment_year
FROM Payments
JOIN ClubMembers
    ON ClubMembers.club_member_id = Payments.club_member_id
WHERE ClubMembers.first_name LIKE ? OR ClubMembers.last_name LIKE ?
ORDER BY payment_date ASC;
```

For this query, we replaced the ? placeholders with “%James” as a given first name and “%Brown” as a given last name.

first_name	last_name	payment_date	amount	payment_year
Liam	Brown	2024-01-20	100.00	2024
Ethan	Brown	2024-02-18	50.00	2024
Liam	Brown	2024-03-10	25.00	2024
Ethan	Brown	2024-03-15	50.00	2024
Ava	Brown	2024-04-05	100.00	2024
Ethan	Brown	2024-04-15	50.00	2024
Ethan	Brown	2024-06-22	170.00	2025
Liam	Brown	2025-03-15	12.00	2025
Ava	Brown	2025-05-03	10.00	2025
Liam	Brown	2025-09-06	200.00	2025
Ava	Brown	2025-10-02	90.00	2025

11 rows in set (0.01 sec)

8. Get the sum of membership fees paid and the sum of donations that are collected by the club in the year 2024.

```
SELECT
    SUM(CASE
        WHEN ClubMemberPaymentSums.payment_sum >= 100 THEN 100
        ELSE ClubMemberPaymentSums.payment_sum
    END) AS `Total Membership Fees in 2024`,
    SUM(CASE
        WHEN ClubMemberPaymentSums.payment_sum - 100 <= 0 THEN 0
        ELSE ClubMemberPaymentSums.payment_sum - 100
    END) AS `Total Donations in 2024`
FROM (
    SELECT SUM(Payments.amount) AS payment_sum, ClubMembers.club_member_id, Payments.payment_date
    FROM Payments, ClubMembers
    WHERE Payments.club_member_id = ClubMembers.club_member_id
    AND YEAR(Payments.payment_date) = 2024      -- TODO change this depends whether it should be
    GROUP BY ClubMembers.club_member_id) AS ClubMemberPaymentSums
```

Output:

Total Membership Fees in 2024	Total Donations in 2024
1110.00	570.00

1 row in set (0.00 sec)

Results from querying total counts from each Relation

```
▶ Run on active connection | ⌂ Select block
1 USE lqc353_4;
2
3 -- Disable foreign key checks
4 SET FOREIGN_KEY_CHECKS = 0;
5
6 SELECT COUNT(*) AS "TOTAL LOCATIONS:" FROM Locations;
7
8 SELECT COUNT(*) AS "TOTAL PERSONNEL:" FROM Personnel;
9
10 SELECT COUNT(*) AS "TOTAL OPERATING LOCATIONS:" FROM OperatesAt;
11
12 SELECT COUNT(*) AS "TOTAL FAMILY MEMBERS:" FROM FamilyMembers;
13
14 SELECT COUNT(*) AS "TOTAL CLUB MEMBERS:" FROM ClubMembers;
15
16 SELECT COUNT(*) AS "TOTAL PAYMENTS" FROM Payments;
```

```
[willpower] [/nfs/www/groups/l/lq_comp353_4] > mysql
Enter password:
TOTAL LOCATIONS:
11
TOTAL PERSONNEL:
14
TOTAL OPERATING LOCATIONS:
12
TOTAL FAMILY MEMBERS:
10
TOTAL CLUB MEMBERS:
12
TOTAL PAYMENTS
38
[willpower] [/nfs/www/groups/l/lq_comp353_4] > [ ]
```