

Church Parochial Reporting



SQL DATABASE CASE STUDY

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May 15, 2024

City College San Francisco CS150A Final Project

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ACKNOWLEDGEMENTS

I would like to extend my gratitude to my classmates for their support, insights, and essential feedback throughout this project. In particular, I would like to thank the following individuals for providing essential input that helped refine my approach

Tanya Cerda, Amber Stanley, Chantelle Willette, Tom Loftus

Alden Cheang – for their assistance with diagrams and data visualization.

Additionally, I would like to thank **Professor Daniel O'Leary** and **TA Sarah Cooke** for their guidance and support throughout the course, helping to lay a strong foundation for my understanding of SQL and database management.

I would also like to thank the Episcopal Diocese of Ohio for providing me with quantitative data, which I supplemented with synthesized data to create this case study.

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Hi, my name is James, and I'm an ordained Episcopal priest, compassionate educator, AI developer, and community leader with over 10 years of experience in ministry, technology and social impact. I recently completed an AI bootcamp at Purdue University, which deepened my interest in using data science to inform and shape mission. To effectively harness the power of AI for nonprofit work, I am expanding my technical skill set with a focus on SQL and database management.



My professional and academic goals include pursuing a degree in data science, where I can combine my skills in AI, data analytics, and technology to create inclusive, innovative solutions for underserved communities. The foundational knowledge I'm gaining in CS 150A is a critical part of this journey, equipping me with the technical skills to manage and analyze complex datasets as I work toward these goals.

DISCOVERY

INVESTIGATION

Database Designer: I understand you're building a database to help understand neighborhood demographics and parish statistics for the Diocese of California. Can you tell me a little about what you hope this database will help you accomplish?

Database Client: The Diocese is looking to be more intentional about how it allocates resources. These resources include education opportunities, finances, and personnel, but to do that effectively, we need a clear understanding of who lives in our neighborhoods and how our congregations are engaging with them. Right now, that information is scattered across census data, parish reports, and individual knowledge. We want a centralized database that integrates these sources, making it accessible to diocesan staff and parish leadership.

Designer: Let's talk about the database's design and structure. What sort of reports would you like to create from this database? Tell me about your data.

Client: One key report would be a **"Neighborhood Snapshot"** that provides demographic data by ZIP code, including median age, median income, race/ethnicity breakdowns, and housing trends. We'd also like a **"Parish Engagement Report"** that compares this neighborhood data to internal parish statistics, like average Sunday attendance, total baptized members, outreach efforts, and clergy count. This will help us identify gaps—for example, if a parish is in a neighborhood with a significant Spanish-speaking population but offers no Spanish-language ministries. Additionally, we want to track trends over time, so including historical data is essential. We're also interested in aligning these local trends with broader trends in the national church.

Designer: What forms do you need to keep your data organized? What will be input into these forms?

Client: We'll need at least two primary input forms. One is a **"Parish Profile Form"** for entering or updating information like average Sunday attendance (ASA), total baptized members, languages spoken in worship, clergy count, and outreach efforts. The second is a **"Neighborhood Update Form"** for uploading census data or summaries by ZIP code, including data like median income, race/ethnicity breakdowns, and housing trends. These forms will feed data into tables like **Neighborhood**, **CensusData**, **Parish**, **ParishReport**, and

ParishLanguage.

Designer: Are you imagining this database being used only by diocesan staff, or will parish leaders also interact with it?

Client: Ideally both. Diocesan staff would manage overall data entry and analysis, but we want parish leaders to be able to view and input some data—especially if they're conducting their own community surveys or tracking outreach efforts.

Designer: What kind of queries do you anticipate needing?

Client: We might want to ask questions like, "**Show me all parishes with declining attendance but located in areas with growing populations,**" or "**List all ZIP codes where the median age is under 35 and there is no parish nearby.**" This will allow us to spot mission opportunities and adjust our outreach strategies accordingly.

Designer: Would you like to store historical data so you can track changes over time?

Client: Yes—both for census updates and parish reports. We want to be able to see if our ministries are adapting to shifts in neighborhood demographics over time.

Designer: I know this is further down the road, but what kind of visualizations might be helpful for you as an end result?

Client: We're planning to use this data alongside APIs like Google Maps and Eventbrite, so it would be helpful to include geographic data, like neighborhood names (zip codes) for mapping purposes.

Designer: Are there any internal structures already in place that could help organize this data? For example, do you categorize churches regionally or by size? This will help us design the primary and foreign keys to keep the data organized.

Client: Yes, we organize our parishes by **Mission Area**, each with a unique ID. This will help us keep track of geographical regions and ensure that data aligns across both church and neighborhood datasets.

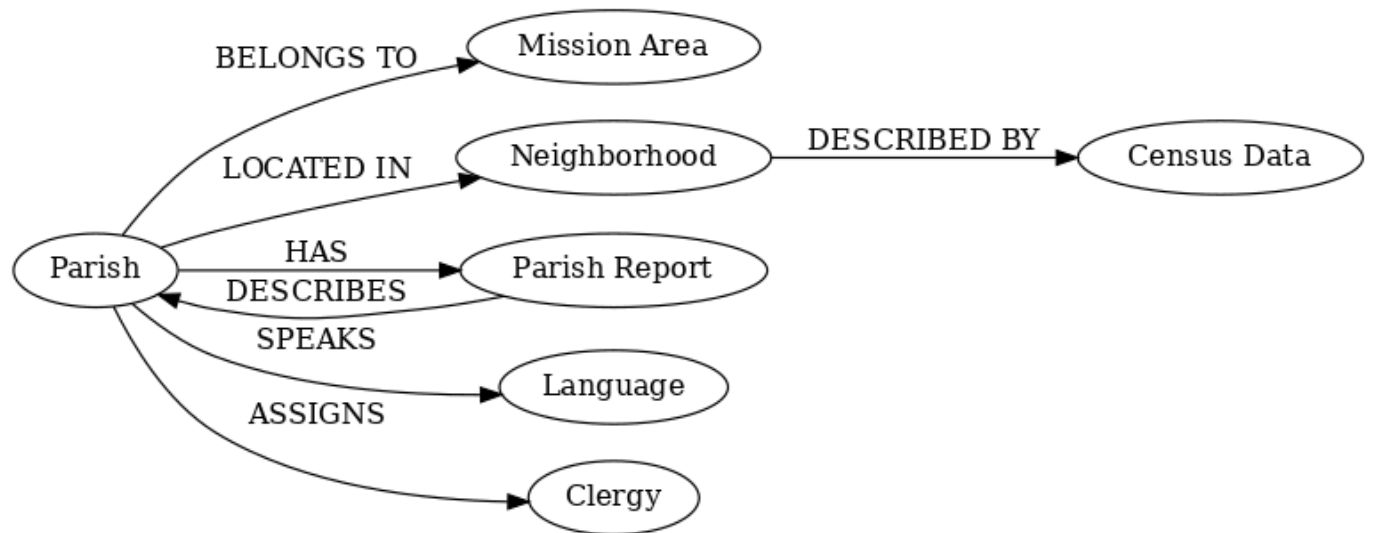
Data Dictionary

Entity	Synonyms	Description
Parish	Church	A congregation, either a mission or parish church, within the Episcopal Diocese of California.
Parish Report	Parochial Report	A report submitted by a parish or mission containing attendance, sacramental acts, outreach efforts, clergy information, and languages spoken.
Neighborhood	ZIP Code Area	A named geographic area defined by ZIP code, containing demographic information like age, income, housing, and race/ethnicity statistics.
Census Data	Demographic Data	Public demographic information collected by census organizations and uploaded to the database by ZIP code.
Language	Worship Language	A language used in worship services at parishes (e.g., Spanish, Cantonese, Tagalog, English).
Clergy	Vicar/Priest, Deacon	Individuals assigned to parishes for pastoral leadership and ministry.
Mission Area	Mission Region, Deanery	A group of parishes organized geographically for oversight and coordination.

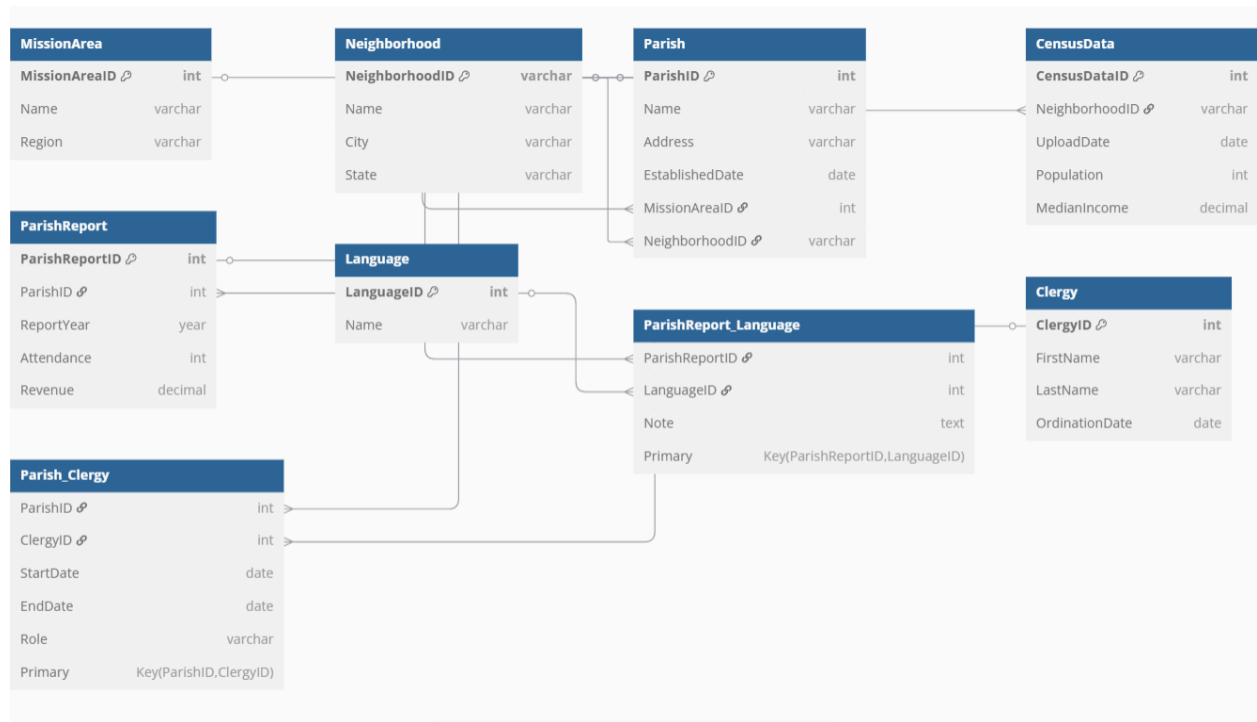
Entity Relationship Glossary

Entity	Attributes	Relationships
Parish	ParishID (PK), Name, Address, ZipCode (FK), MissionAreaID (FK)	Parish belongs to Mission Area, Parish located in Neighborhood, Parish has Parish Report, Parish speaks Languages, Parish assigns Clergy.
Parish Report	ReportID (PK), ParishID (FK), ASA, TotalBaptizedMembers, EasterAttendance, ActiveBaptizedMembers, ConfirmedMembers, NewMembers, BaptismsUnder16, BaptismsOver16, Confirmations, Receptions, Reaffirmations, Marriages, Burials, OutreachEfforts, LanguagesSpoken, ClergyCount, AnnualGiving	Parish Report Describes Parish.
Neighborhood	ZipCode (PK), MedianAge, MedianIncome, RaceEthnicityBreakdown, HousingTrends	Neighborhood described by Census Data.
Census Data	CensusID (PK), UploadDate, ZipCode (FK)	Census Data Describes Neighborhood.
Language	LanguageID (PK), Name	Language used by Parish.
Clergy	ClergyID (PK), Name, ParishID (FK)	Clergy (Priest, Deacon) assigned to Parish.
Mission Area	MissionAreaID (PK), Name	Mission Area groups Parishes.

ENTITY-RELATIONSHIP MODEL



Relationship Cardinality



Summary of Cardinalities

Relationship Type	Entities Involved	Cardinality
Many-to-One	Parish → Mission Area	Many Parishes belong to one Mission Area
Many-to-One	Parish → Neighborhood	Many Parishes belong to one Neighborhood
One-to-One	Parish → Parish Report	Each Parish has one Parish Report
One-to-One	Neighborhood → Census Data	Each Neighborhood has one Census Data entry
Many-to-Many	Parish ↔ Language	Many Parishes use many Languages, and many Languages are used by many Parishes
One-to-Many	Parish → Clergy	One Parish can have many Clergy members

Database SQL

```
DROP TABLE IF EXISTS ParishLanguage;
DROP TABLE IF EXISTS ParishReport;
DROP TABLE IF EXISTS Clergy;
DROP TABLE IF EXISTS Parish;
DROP TABLE IF EXISTS CensusData;
DROP TABLE IF EXISTS Language;
DROP TABLE IF EXISTS Neighborhood;
DROP TABLE IF EXISTS MissionArea;

-- Mission Area
CREATE TABLE MissionArea (
    MissionAreaID INT PRIMARY KEY AUTO_INCREMENT,
    Name VARCHAR(100) NOT NULL
);

-- Neighborhood
CREATE TABLE Neighborhood (
    ZipCode VARCHAR(10) PRIMARY KEY,
    MedianAge INT,
    MedianIncome INT,
    RaceEthnicityBreakdown VARCHAR(255),
    HousingTrends VARCHAR(255)
);

-- Census Data
CREATE TABLE CensusData (
    CensusID INT PRIMARY KEY AUTO_INCREMENT,
```

```

UploadDate DATE NOT NULL,

ZipCode VARCHAR(10) NOT NULL,

FOREIGN KEY (ZipCode) REFERENCES Neighborhood(ZipCode)
);

-- Parish
CREATE TABLE Parish (
    ParishID INT PRIMARY KEY AUTO_INCREMENT,
    Name VARCHAR(255) NOT NULL,
    Address VARCHAR(255),
    ZipCode VARCHAR(10) NOT NULL,
    MissionAreaID INT NOT NULL,
    FOREIGN KEY (ZipCode) REFERENCES Neighborhood(ZipCode),
    FOREIGN KEY (MissionAreaID) REFERENCES MissionArea(MissionAreaID)
);

-- Parish Report
CREATE TABLE ParishReport (
    ReportID INT PRIMARY KEY AUTO_INCREMENT,
    ParishID INT NOT NULL,
    ASA INT,
    TotalBaptizedMembers INT,
    EasterAttendance INT,
    ActiveBaptizedMembers INT,
    ConfirmedMembers INT,
    NewMembers INT,
    BaptismsUnder16 INT,
    BaptismsOver16 INT,
    Confirmations INT,
    Receptions INT,

```

```

    Reaffirmations INT,
    Marriages INT,
    Burials INT,
    OutreachEfforts INT,
    ClergyCount INT,
    AnnualGiving INT,
    FOREIGN KEY (ParishID) REFERENCES Parish(ParishID)
);

-- Language
CREATE TABLE Language (
    LanguageID INT PRIMARY KEY AUTO_INCREMENT,
    Name VARCHAR(50) NOT NULL
);

-- ParishLanguage (many-to-many)
CREATE TABLE ParishLanguage (
    ParishID INT NOT NULL,
    LanguageID INT NOT NULL,
    PRIMARY KEY (ParishID, LanguageID),
    FOREIGN KEY (ParishID) REFERENCES Parish(ParishID),
    FOREIGN KEY (LanguageID) REFERENCES Language(LanguageID)
);

-- Clergy
CREATE TABLE Clergy (
    ClergyID INT PRIMARY KEY AUTO_INCREMENT,
    Name VARCHAR(100) NOT NULL,
    ParishID INT NOT NULL,
    FOREIGN KEY (ParishID) REFERENCES Parish(ParishID)
);

```

DATA

```
-- Drop existing tables (start from least dependent to most dependent)
```

```
DROP TABLE IF EXISTS ParishLanguage;
```

```
DROP TABLE IF EXISTS ParishReport;
```

```
DROP TABLE IF EXISTS Clergy;
```

```
DROP TABLE IF EXISTS Parish;
```

```
DROP TABLE IF EXISTS CensusData;
```

```
DROP TABLE IF EXISTS Language;
```

```
DROP TABLE IF EXISTS Neighborhood;
```

```
DROP TABLE IF EXISTS MissionArea;
```

```
-- 1. MissionArea
```

```
CREATE TABLE MissionArea (
```

```
    MissionAreaID INT PRIMARY KEY AUTO_INCREMENT,
```

```
    MissionName VARCHAR(100) NOT NULL);
```

```
-- 2. Neighborhood
```

```
CREATE TABLE Neighborhood (
```

```
    ZipCode VARCHAR(10) PRIMARY KEY,
```

```
    MedianAge INT,
```

```
    MedianIncome INT,
```

```
    RaceEthnicityBreakdown VARCHAR(255),
```

```
    HousingTrends VARCHAR(255));
```

```
-- 3. CensusData
```

```
CREATE TABLE CensusData (
```

```
    CensusID INT PRIMARY KEY AUTO_INCREMENT,
```

```
    UploadDate DATE NOT NULL,
```

```
    ZipCode VARCHAR(10) NOT NULL,
```

```

FOREIGN KEY (ZipCode) REFERENCES Neighborhood(ZipCode));

-- 4. Parish
CREATE TABLE Parish (
    ParishID INT PRIMARY KEY AUTO_INCREMENT,
    ParishName VARCHAR(255) NOT NULL,
    Address VARCHAR(255),
    ZipCode VARCHAR(10) NOT NULL,
    MissionAreaID INT NOT NULL,
    FOREIGN KEY (ZipCode) REFERENCES Neighborhood(ZipCode),
    FOREIGN KEY (MissionAreaID) REFERENCES MissionArea(MissionAreaID));

-- 5. ParishReport
CREATE TABLE ParishReport (
    ReportID INT PRIMARY KEY AUTO_INCREMENT,
    ParishID INT NOT NULL,
    ASA INT,
    TotalBaptizedMembers INT,
    EasterAttendance INT,
    ActiveBaptizedMembers INT,
    ConfirmedMembers INT,
    NewMembers INT,
    BaptismsUnder16 INT,
    BaptismsOver16 INT,
    Confirmations INT,
    Receptions INT,
    Reaffirmations INT,
    Marriages INT,
    Burials INT,
    OutreachEfforts INT,

```



```

        ClergyCount INT,

        AnnualGiving INT,

        FOREIGN KEY (ParishID) REFERENCES Parish(ParishID));

-- 6. Language
CREATE TABLE Language (
    LanguageID INT PRIMARY KEY AUTO_INCREMENT,
    LanguageName VARCHAR(50) NOT NULL);

-- 7. ParishLanguage
CREATE TABLE ParishLanguage (
    ParishID INT NOT NULL,
    LanguageID INT NOT NULL,
    PRIMARY KEY (ParishID, LanguageID),
    FOREIGN KEY (ParishID) REFERENCES Parish(ParishID),
    FOREIGN KEY (LanguageID) REFERENCES Language(LanguageID));

-- 8. Clergy
CREATE TABLE Clergy (
    ClergyID INT PRIMARY KEY AUTO_INCREMENT,
    ClergyName VARCHAR(100) NOT NULL,
    ParishID INT NOT NULL,
    FOREIGN KEY (ParishID) REFERENCES Parish(ParishID));

-- 1. MissionArea data
INSERT INTO MissionArea (MissionName)
VALUES
    ('Akron Area'),
    ('Cleveland Area'),
    ('Columbus Area'),

```

```

('Dayton Area'),
('Toledo Area'),
('Cincinnati Area'),
('Youngstown Area'),
('Ashland Area'),
('Marietta Area'),
('Lima Area');

```

```
-- 2. Neighborhood data
```

```

INSERT INTO Neighborhood (ZipCode, MedianAge, MedianIncome,
RaceEthnicityBreakdown, HousingTrends)

```

```
VALUES
```

```

('44302-1500', 40, 38000, 'Caucasian: 75%, African American: 15%, Hispanic:
5%', 'Rising housing costs, gentrification in downtown Akron'),
('44313-7186', 42, 42000, 'Caucasian: 80%, African American: 10%, Hispanic:
5%', 'Stable, suburban neighborhood with family-oriented development'),
('44320-3646', 45, 37000, 'Caucasian: 70%, African American: 20%, Hispanic:
5%', 'Older homes, some areas experiencing revitalization'),
('44601-4021', 38, 39000, 'Caucasian: 85%, African American: 10%', 'Rural
area with lower population growth'),
('44805-3648', 50, 41000, 'Caucasian: 90%', 'Declining housing market,
aging community'),
('44203', 41, 42000, 'Caucasian: 95%, African American: 3%', 'Stable, older
housing stock, mixed residential and commercial'),
('44140-1644', 35, 47000, 'Caucasian: 90%, African American: 5%, Hispanic:
3%', 'Popular suburban neighborhood, newer developments'),
('44811-0372', 40, 35000, 'Caucasian: 80%, African American: 15%', 'Small
town, stagnant housing market'),
('44709-1369', 43, 42000, 'Caucasian: 85%, African American: 12%',
'Moderate-income neighborhood, schools underperforming'),
('44022-3544', 46, 44000, 'Caucasian: 88%, African American: 7%', 'Stable
residential area with moderate housing development'),
('44103-4400', 38, 36000, 'African American: 60%, Caucasian: 30%, Hispanic:
8%', 'Urban area with mixed development'),
('44102-1915', 36, 38000, 'Hispanic: 40%, Caucasian: 35%, African American:
20%', 'Diverse urban neighborhood with revitalization efforts'),

```

```
    ('44115', 32, 45000, 'Caucasian: 50%, African American: 35%, Asian: 10%',  
    'Downtown area with growing residential development'),
```

```
    ('43812', 48, 40000, 'Caucasian: 92%, African American: 5%', 'Rural  
community with stable housing market');
```

```
-- 3. CensusData data
```

```
INSERT INTO CensusData (UploadDate, ZipCode)
```

```
VALUES
```

```
    ('2023-06-01', '44302-1500'),
```

```
    ('2023-06-01', '44313-7186'),
```

```
    ('2023-06-01', '44320-3646'),
```

```
    ('2023-06-01', '44601-4021'),
```

```
    ('2023-06-01', '44805-3648'),
```

```
    ('2023-06-01', '44203'),
```

```
    ('2023-06-01', '44140-1644'),
```

```
    ('2023-06-01', '44811-0372'),
```

```
    ('2023-06-01', '44709-1369'),
```

```
    ('2023-06-01', '44022-3544'),
```

```
    ('2023-06-01', '44103-4400'),
```

```
    ('2023-06-01', '44102-1915'),
```

```
    ('2023-06-01', '44115'),
```

```
    ('2023-06-01', '43812');
```

```
-- 4. Parish data
```

```
INSERT INTO Parish (ParishName, Address, ZipCode, MissionAreaID)
```

```
VALUES
```

```
    ('Akron, Church of Our Saviour', '471 Crosby Street', '44302-1500', 1),
```

```
    ('Akron, St. Paul's Church', 'Attn: Rector 1361 W Market St.',  
    '44313-7186', 1),
```

```
    ('Akron, St. Philip's Church', '1130 Mercer Avenue', '44320-3646', 1),
```

```
    ('Alliance, Trinity Church', '1200 S Union Avenue', '44601-4021', 1),
```

```
    ('Ashland, St. Matthew's Church', '1515 Mifflin Avenue', '44805-3648', 8),
```

```

('Barberton, St. Andrew's Church', 'Parish Office 583 W. Hopocan Ave.',
'44203', 1),

('Bay Village, St. Barnabas Church', '468 Bradley Road', '44140-1644', 2),

('Bellevue, St. Paul's Church', '285 Main Street', '44811-0372', 5),

('Canton, St. Mark's Church', '515 48th Street NW', '44709-1369', 1),

('Chagrin Falls, St. Martin's Church', '6295 Chagrin River Road',
'44022-3544', 2),

('Cleveland, St. Andrew's Church', '2171 E 49th St', '44103-4400', 2),

('Cleveland, St. Luke's Church', '1349 W 78th Street', '44102-1915', 2),

('Cleveland, Trinity Cathedral', '2230 Euclid Avenue', '44115', 2),

('Coshocton, Trinity Church', 'PO Box 595', '43812', 3);

```

```
-- 5. ParishReport data
```

```

INSERT INTO ParishReport (ParishID, ASA, TotalBaptizedMembers,
EasterAttendance, ActiveBaptizedMembers, ConfirmedMembers, NewMembers,
BaptismsUnder16, BaptismsOver16, Confirmations, Receptions, Reaffirmations,
Marriages, Burials, OutreachEfforts, ClergyCount, AnnualGiving)

```

```
VALUES
```

```

(1, 120, 450, 200, 400, 250, 10, 20, 15, 30, 5, 5, 3, 5, 10, 2, 50000),
(2, 150, 600, 300, 500, 350, 20, 30, 25, 40, 6, 6, 4, 6, 15, 3, 60000),
(3, 100, 350, 150, 300, 200, 15, 25, 18, 35, 4, 4, 2, 4, 12, 2, 45000),
(4, 80, 250, 120, 200, 150, 10, 18, 13, 28, 3, 3, 2, 3, 8, 2, 40000),
(5, 140, 500, 250, 400, 300, 12, 22, 17, 38, 5, 5, 3, 5, 10, 3, 55000),
(6, 130, 450, 230, 380, 280, 14, 20, 16, 32, 4, 4, 3, 4, 9, 2, 52000),
(7, 110, 400, 180, 350, 230, 18, 27, 21, 30, 4, 4, 3, 4, 11, 3, 48000),
(8, 90, 320, 150, 280, 220, 10, 15, 12, 25, 2, 2, 1, 2, 7, 2, 43000),
(9, 120, 470, 200, 410, 270, 16, 24, 19, 33, 5, 5, 3, 5, 9, 3, 50000),
(10, 140, 510, 240, 430, 310, 13, 19, 15, 36, 6, 6, 4, 6, 14, 3, 55000),
(11, 130, 450, 200, 380, 270, 12, 22, 17, 32, 4, 4, 3, 4, 10, 2, 51000),
(12, 100, 350, 150, 300, 200, 15, 25, 20, 30, 4, 4, 2, 3, 12, 2, 46000),
(13, 110, 420, 170, 350, 230, 16, 28, 23, 34, 5, 5, 3, 5, 13, 3, 49000),
(14, 80, 300, 130, 270, 190, 8, 14, 11, 22, 3, 3, 2, 3, 7, 2, 42000);

```

```

-- 6. Language data
INSERT INTO Language (LanguageName)
VALUES
    ('English'),
    ('Spanish');

-- 7. ParishLanguage data
INSERT INTO ParishLanguage (ParishID, LanguageID)
VALUES
    (1, 1),
    (2, 1),
    (3, 1),
    (4, 1),
    (5, 1),
    (6, 1),
    (7, 1),
    (8, 1),
    (9, 1),
    (10, 1),
    (11, 1),
    (12, 1),
    (12, 2), -- Spanish service at St. Luke's in Cleveland (Hispanic
neighborhood)
    (13, 1),
    (14, 1);

-- 8. Clergy data
INSERT INTO Clergy (ClergyName, ParishID)
VALUES
    ('Karen Wolfe', 1),
    ('Jonathan Boyer', 2),

```

```
('Amber Williams', 3),  
( 'Mitchell Wright', 4),  
( 'Dawn Singleton', 5),  
( 'Zachary Roach', 6),  
( 'Sarah Jones', 7),  
( 'Glenn Charles', 8),  
( 'Gerald Brown', 9),  
( 'Travis Green', 10),  
( 'Mark Ramirez', 11),  
( 'Kristen Morris', 12),  
( 'Alexandra Conley', 13),  
( 'Christopher Howard', 14);
```

Demonstrations

Question: Which parishes have fewer than 5 outreach efforts despite having more than 200 active baptized members?

```
SELECT p.ParishName, pr.ActiveBaptizedMembers, pr.OutreachEfforts
FROM Parish p
JOIN ParishReport pr ON p.ParishID = pr.ParishID
WHERE pr.ActiveBaptizedMembers > 200 AND pr.OutreachEfforts < 5;
```

Description:

This query is useful for identifying parishes that may need support or improvement in community engagement, especially considering their size.

Question Which Parishes speak Spanish and have at least 50 members?

```
SELECT p.ParishName, pr.TotalBaptizedMembers, l.LanguageName
FROM Parish p
JOIN ParishLanguage pl ON p.ParishID = pl.ParishID
JOIN Language l ON pl.LanguageID = l.LanguageID
JOIN ParishReport pr ON p.ParishID = pr.ParishID
WHERE l.LanguageName = 'Spanish' AND pr.TotalBaptizedMembers >= 50;
```

Description:

This query would be helpful in identify the missional opportunities for Latino congregations, a growing demographic in the Episcopal Church.

Query List Mission Area for Each Parish

```
SELECT p.ParishName, ma.MissionName
FROM Parish p
JOIN MissionArea ma ON p.MissionAreaID = ma.MissionAreaID
ORDER BY ma.MissionName, p.ParishName;
```

Description:

Practical application of SQL for organization and parish mapping to geographic region.

Question: What is the average number of baptisms in each mission area?

```
SELECT ma.MissionName, AVG(pr.TotalBaptizedMembers) AS AvgTotalBaptizedMembers  
FROM Parish p  
JOIN MissionArea ma ON p.MissionAreaID = ma.MissionAreaID  
JOIN ParishReport pr ON p.ParishID = pr.ParishID  
GROUP BY ma.MissionName  
ORDER BY AvgTotalBaptizedMembers DESC
```

Description:

Could potentially understand the missional development or age demographics of a neighborhood (assuming infant baptism is the predominant age of initiation into the Church)

CONCLUSION

This case study demonstrates the successful development of a comprehensive SQL database designed to transform traditional church record-keeping into a dynamic tool for missional discernment and strategic planning. Through the creation of a relational database architecture with seven interconnected tables, a small yet scalable database, – Parish, ParishReport, Neighborhood, CensusData, Language, Clergy, and MissionArea – the system provides a foundation for managing and analyzing parish data in conjunction with demographic information. The intentional design of foreign key relationships enables church leadership to generate meaningful queries that reveal patterns between membership, attendance, sacramental activities, and community demographics, information crucial for developing a vital and thriving, contextually relevant church. This database shows what is possible for missional discernment with parochial data paired with demographic data.

The implementation of this database system addresses a critical gap in parish management- the lack of contextual information that directly relates to the ministry of a neighborhood parish. As demonstrated through the sample queries, diocesan leadership could identify parishes with resource allocation challenges, language service opportunities, and comparative mission area performance. The integration of neighborhood demographic data through ZIP code relationships creates particularly valuable opportunities for aligning ministry offerings with community needs, enabling evidence-based decision-making that was previously unattainable with traditional record-keeping methods, which tends to be church centric.

Looking forward, this database framework establishes the groundwork for additional analytics at the intersection of SQL databases and artificial intelligence applications—building on my AI bootcamp experience at Purdue University. By structuring church data in normalized SQL tables, diocesan leadership gains not only enhanced reporting capabilities but also the foundation necessary for AI-driven innovations: predictive modeling to forecast areas for growth, sentiment analysis to quantify qualitative ministry feedback and spiritual needs of a community, and custom AI applications that harness Census Bureau demographic data through APIs. The SQL structures developed in this case study provide the essential data architecture upon which these AI systems depend, serving as the bridge between traditional parish record-keeping and next-generation mission analytics. This integration of database fundamentals with emerging AI technologies illustrates how technological advancement directly translates to more responsive, relevant, and impactful ministry—creating a model that can be replicated across dioceses seeking to maximize their community influence through data-informed missional discernment.

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Please Note: The data used in this case study is synthesized and is not reflective of actual parochial or demographic numbers, congregations or personnel in the Episcopal Diocese of Ohio.