# Week 10: Portfolio Assignment

For Master of Science ICT

Adrienne Lawson

University of Denver University College

March 8th, 2021

Faculty: Cathie Wilson

**[Business Case]**

Seth's Apothecary is a disabled, veteran owned, medical marijuana dispensary collective in and around Attleboro, Massachusetts. This center group has been in operation for five years and specializes in medical grade cannabis cultivation and sales across their four locations with the main goal of helping the sick and disabled of Bristol and Norfolk counties with pain management, medical treatment side effects & end of life care. A percentage of monthly profit is donated to disabled veteran charities in and around Attleboro, MA (the location of the first and main dispensary). Seth's Apothecary is more community-focused than canna-corporation and wishes to stay that way regardless of legislation and technology.

Recently, this dispensary collective upgraded their database system from separate databases at each location (with very little to no access to other location information when that could be crucial to patient and caregiver sales) to an Oracle ERP Cloud service that includes a connected Enterprise Cloud Database that can be accessed at any of the four locations. The third party payment system, that also includes state government sales restriction monitoring, feeds into the ERP service and the database. Having the connection between all locations is meant to improve accessibility and improve sales. The cloud service is also meant to improve and evolve the care center group's cultivation processing and product monitoring. Improving the database model and redesigning to fit all of these changes is the main point of this project.

**[Reporting Requirements]**

* How many employees are listed as active?
* Which categories are listed as indica concentrates?
* How many registered patients are there?
* Which caregivers were born on August 5th (Business Anniversary)?
* What is the license expiration for Dispensary #3 (7713)?
* How many orders has Caregiver 131775 made this month?

**[ER Diagram]**

Diagram

Description automatically generated

**[Business Rules]**

* One patient or one caregiver can have one or more orders. Multiple orders can only be by that specific one patient or caregiver (state law).
* One dispensary can have one or more orders.
* One dispensary can have multiple staff members.
* A single category can include a multitude of products.

**[Normalization Diagrams]**Diagram

Description automatically generated with medium confidence

**[SQL]**  
create database seths\_apothecary;

create table patient (

mmj\_license\_number int PRIMARY KEY NOT NULL,

patient\_last\_name varchar(100) NOT NULL,

patient\_first\_name varchar(100) NOT NULL,

patient\_birth\_date varchar(100) NOT NULL,

patient\_address varchar(100) NOT NULL,

patient\_phone int NOT NULL,

patient\_email varchar(100) NOT NULL,

mmj\_license\_expiration varchar(100) NOT NULL

);

insert into patient (mmj\_license\_number, patient\_last\_name, patient\_first\_name, patient\_birth\_date, patient\_address, patient\_email, mmj\_license\_expiration)

values('88845689225', 'Latch', 'Patty', 'April 5th 1946', '231 South St Attleboro MA 02703', 'patty\_latch@gmail.com', 'April 5th 2022'),

('888456689227', 'Irvin', 'Mitchell', 'January 18th 1976', '13 Bryan Ave Attleboro MA 02703', 'imconsulting@aol.com', 'January 18th 2023'),

('888456689200', 'Lawson', 'Shirley', 'May 7th 1958', '1435 Baldwin St Plymouth MA 02360', 'didiask4youropinionjan@gmail.com', 'May 7th 2021'),

('888456689334', 'Beverly', 'Alastair', 'October 9th 1999', '614 Albany St Cambridge MA 02139', 'abeverly@mit.edu', 'October 9th 2022'),

('888456689300', 'Masters', 'Jasmine', 'May 1st 1969', '777 Tremont St Boston MA 02118', 'andioop@gmail.com', 'May 1st 2021'),

('888456689200', 'Heron', 'Cady', 'June 8th 1986', '654 Orange St Framingham MA 01702', 'shedoesntevengohere@hotmail.com', 'June 8th 2021'),

('888456689225', 'Monsoon', 'Jinxx', 'May 12th 1985', '756 S Main St Boston MA 02118', 'contact@jinxmonsoon.com', 'May 12th 2022'),

('888456689223', 'Gummer', 'MaryLouise', 'June 22 1949', '32 Stearn St Malden MA 02148', 'khuvane@caa.com', 'June 22 2021'),

('888456689201', 'Waits', 'Thomas', 'December 7th 1946', '101 Lucinda SQ Brockton MA 02301', 'leaveamessagelucille@gmail.com', 'December 7th 2021'),

('888456689148', 'Belli', 'Willam', 'January 8th 1981', '1237 Arbor St Boston MA 02118', 'trade@willambelli.com', 'January 8th 2020');

create table caregiver (

cg\_mmj\_license\_number int PRIMARY KEY NOT NULL,

caregiver\_last\_name varchar(100) NOT NULL,

caregiver\_first\_name varchar(100) NOT NULL,

caregiver\_birthdate varchar(100) NOT NULL,

caregiver\_phone int NOT NULL,

caregiver\_email varchar(100) NOT NULL,

cg\_mmj\_license\_expiration varchar(100) NOT NULL

);

insert into caregiver (cg\_mmj\_license\_number, caregiver\_last\_name, caregiver\_first\_name, caregiver\_birthdate, caregiver\_phone, caregiver\_email, cg\_mmj\_license\_expiration)

values ('51588698778', 'Hill', 'Lauryn', 'October 12th 1979', '3518049783', 'freebritney@gmail.com', 'October 12th 2023'),

('51588699856', 'Earl', 'Duke', 'November 14th 1968', '4155887645', 'earlduke@simons.com', 'November 14th 2021'),

('51588699489', 'Taylor', 'Teyana', 'April 12th 1991', '4125786211', 'reps@defjam.com', 'April 12th 2021'),

('51588610059', 'Mason', 'Vernon', 'June 15th 1998', '4158875645', 'mvpstyle@gmail.com', 'June 15th 2020'),

('51588692959', 'Fortner', 'Kieran', 'November 21st 1989', '5125789666', 'kieran.fortner@goldmansachs.com', 'November 21st 2022'),

('51588685956', 'Danbridge', 'Eloise', 'July 4th 1966', '4158867755', 'eloise@suicidegirls.com', 'July 4th 2021'),

('51588699786', 'Farthing', 'Benjamin', 'August 12th 1976, '4121152575', 'benfarth@gmail.com', 'August 12th 2020'),

('51588699999', 'Darby', 'Rhys', 'October 22nd 1971', '3595561411', 'contact@caa.com', 'October 22nd 2021'),

('51588697979', 'Hurtle', 'Shawna', 'February 8th 1970', '3126563030', 'shawnastop@shawnastop.com', 'February 8th 2020'),

('51588685955', 'Placido', 'Jaime', 'July 11th 1963', '4155512517', 'jaimeplacido@inkstainedtattoos.com', 'July 11th 2021');

create table dispensary (

dispensary\_id int PRIMARY KEY NOT NULL,

dispensary\_name varchar(100) NOT NULL,

dispensary\_phone\_number int NOT NULL,

dispensary\_address varchar(100) NOT NULL,

dispensary\_email varchar(100) NOT NULL,

dispensary\_mmj\_license\_no int NOT NULL,

dispensary\_license\_expiration varchar(100) NOT NULL

);

insert into dispensary (dispensary\_id, dispensary\_name, dispensary\_phone\_number, dispensary\_address, dispensary\_mmj\_license\_no, dispensary\_license\_expiration)

values ('100', 'Seth's Apothecary #1', '5082265784', '318 Elm St North Attleboro MA 02760', '31815', 'December 16th 2021'),

('101', 'Seth's Apothecary #2', '5082216594', '107 Park St Attleboro MA 02703', '31825', 'December 16th 2021'),

('102', 'Seth's Apothecary #3', '5082265151', '2134 Sanford St Attleboro MA 02703', '31836', 'December 16th 2021'),

('103', 'Seth's Apothecary #4', '5082215346', '1276 West St Attleboro MA 02703', '31837', 'December 16th 2021');

create table brand (

brand\_id int PRIMARY KEY,

brand\_name varchar(100) NOT NULL

);

insert into brand (brand\_id, brand\_name)

values ('', 'Complemetary'),

('89', 'Stiizy'),

('65', 'Cresco'),

('35', 'Grizzly Peak'),

('110', 'West Coast Cure'),

('115', 'Peak'),

('710', 'Sira Naturals'),

('91', 'Berkshire Roots'),

('75', 'Theory Wellness'),

('46', 'SA Brand');

create table category (

category\_id int PRIMARY KEY NOT NULL,

category\_name varchar(100) NOT NULL

);

insert into category (category\_id, category\_name)

values ('VH', 'vape hybrid'),

('VI', 'vape indica'),

('VS', 'vape sativa'),

('FS', 'flower sativa'),

('FI', 'flower indica'),

('FH', 'flower hybrid'),

('VCBD', 'vape cbd'),

('FCBD', 'flower cbd'),

('CH', 'concentrate hybrid'),

('CI', 'concentrate indica');

create table product (

product\_id int PRIMARY KEY,

product\_name varchar(100),

brand\_id int FOREIGN KEY REFERENCES brand(brand\_id),

category\_id varchar(100) FOREIGN KEY REFERENCES category(category\_id),

product\_price varchar(100)

);

insert into product (product\_id, product\_name, brand\_id, category\_id, product\_price)

values ('743956008', 'Stiizy Vape Indica 1G Biscotti Original Pod', '89', 'VI', '45.00'),

('', 'Stiizy Vape Indica HalfGram IncredibleHulk Pod', '89', 'VI', 'NONE'),

('743956009', 'Stiizy Vape Hybrid 1G PExpress Pod', '89', 'VH', '45.00'),

('743956007', 'Stiizy Vape Sativa 1G BlueDream Pod', '89', 'VS', '55.00'),

('743956010', 'Stiizy Vape Sativa HalfGram PremJack Pod', '89', 'VS', '20.00'),

('743956006', 'Stiizy Vape Sativa 1G SourTangie Pod', '89', 'VS', '45.00'),

('', 'Stiizy Vape Indica HalfGram Slurricane Pod', '89', 'VI', 'NONE'),

('743956005', 'Stiizy Vape Indica 1G Skywalker Pod', '89', 'VI', '45.00'),

('743956011', 'Stiizy Vape Hybrid HalfGram Gelato Pod', '89', 'VH', '33.00'),

('743956004', 'Stiizy Vape Hybrid 1G BirthdayCake Pod', '89', 'VH', '45.00');

create table stock (

dispensary\_id int FOREIGN KEY REFERENCES dispensary(dispensary\_id),

product\_id int FOREIGN KEY REFERENCES product(product\_id),

stock\_quantity int NOT NULL

);

insert into stock (dispensary\_id, product\_id, stock\_quantity)

values ('100', '743956004', '5'),

('100', '743956006', '7'),

('101', '743956004', '2'),

('103', '743956004', '1'),

('102', '', '5'),

('101', '743956011', '2'),

('102', '743956005', '3'),

('100', '', '2'),

('101', '743956008', '4'),

('103', '743956008', '2');

create table staff (

staff\_id int PRIMARY KEY NOT NULL,

staff\_last\_name varchar(100) NOT NULL,

staff\_first\_name varchar(100) NOT NULL,

staff\_activity varchar(100) NOT NULL,

staff\_address varchar(100) NOT NULL,

staff\_phone int NOT NULL,

staff\_email varchar(100) NOT NULL,

staff\_mmj\_license\_number int NOT NULL,

staff\_mmj\_license\_expiration varchar(100) NOT NULL,

dispensary\_id int FOREIGN KEY REFERENCES dispensary(dispensary\_id)

);

insert into staff (staff\_id, staff\_last\_name, staff\_first\_name, staff\_activity)

values ('541234', 'Abner', 'Seth', 'growops 100'),

('541200', 'David', 'Marshawn', 'cultivation 100'),

('541201', 'Harrow', 'Ty', 'budtending 102'),

('541203', 'Garrett', 'April', 'budtending 101'),

('541202', 'Hefner', 'Paulina', 'cultivation 100'),

('541198', 'Stevensen', 'Deejay', 'growops 100'),

('541204', 'Hanover', 'Elliott', 'budtending 103'),

('541195', 'Luton', 'Gabriela', 'budtending 100'),

('541190', 'Sanderson', 'Bremen', 'growops 100'),

('541205', 'Bird', 'Dee', 'cultivation 100');

create table order (

order\_id int PRIMARY KEY NOT NULL,

mmj\_license\_number int FOREIGN KEY REFERENCES patient(mmj\_license\_number) NOT NULL,

order\_date varchar(100) NOT NULL,

dispensary\_id int FOREIGN KEY REFERENCES dispensary(dispensary\_id) NOT NULL,

cg\_mmj\_license\_number int FOREIGN KEY REFERENCES caregiver(cg\_mmj\_license\_number) NOT NULL,

staff\_id int FOREIGN KEY REFERENCES staff(staff\_id) NOT NULL

);

insert into order (order\_id, dispensary\_id, staff\_id)

values ('1357', '101', '541203'),

('2000', '102', '541201'),

('3574', '103', '541204'),

('2525', '102', '541201'),

('2255', '101', '541203'),

('3000', '103', '541204'),

('2999', '102', '541201'),

('3152', '100', '541195'),

('3010', '100', '541195'),

('2001', '103', '541204');

create table order\_detail (

order\_id int FOREIGN KEY REFERENCES order(order\_id) NOT NULL,

product\_id int FOREIGN KEY REFERENCES product(product\_id),

order\_quantity int NOT NULL,

order\_amount int NOT NULL,

order\_activity varchar(100) NOT NULL

);

insert into order\_detail (order\_id, order\_quantity, order\_amount)

values ('3574', '4', '175.50'),

('3010', '6', '595.65'),

('2255', '3', '260'),

('2001', '2', '96.50'),

('2525', '6', '305.56'),

('3000', '4', '205.00'),

('2001', '8', '556.95'),

('3152', '1', '48.50'),

('2999', '1', '14.50'),

('2000', '5', '556.00');

**[SQL Reporting]**  
1. select \* from staff where staff\_mmj\_license\_expiration=’not active’;

2. select \* from categories where category\_id=’CI’;

3. select count (mmj\_license\_number) from patient;

4. select \* from caregiver where caregiver\_birthdate=’August 5th’;

5. select distinct dispensary\_id, dispensary\_license\_expiration from dispensary where dispensary\_id= ‘102’;

6. select distinct mmj\_license\_number, order\_date from order where mmj\_license\_number= ‘888456689200’AND order\_date between ‘March 1st 2021’ and ‘March 31st 2021’;  
  
**[User Interface]**A picture containing diagram

Description automatically generated

**[Future]**

As the designer of this database I see two specific things happening with the organization and the database combined. The first being that with the closer march toward cannabis legalization nationwide this is going to impact the medical cannabis side just as much. All businesses like Seth's Apothecary that specialize in the medical side will have to evolve. That means either having to set up a recreational cannabis side to their business model or double down on medical and offer a wider variety products while reaching a wider audience. Either way will change the database system currently being set up. Either there will be a reshuffle of the current model for a small recreational section of business or a separate database for recreational cannabis sales.

For the moment, things are in a stasis of sorts with COVID-19 and the cannabis industry in Massachusetts. People are getting their medicine and Seth's Apothecary is taking every possible precaution to maintain all state rules and regulations. Things will not always be that way though. The next big change looming on the horizon is the environmental impact of cannabis growth. Greenhouse emissions for indoor grow operations are extremely high compared to outdoor grows. Everything must be monitored and controlled. This cannot be ignored. What does this have to do with the database designed in this project? Well, if regulations are placed on indoor grow operations that limit cannabis grows then this could impact sales until solutions are made. A drop in sales could mean problems with paying for cloud database services. This could also impact paying a database administrator to maintain the database system.

Overall, upkeep is steady yet depends heavily on federal and state changes in the next two to five years. Design-wise, I do see there being frequent database model changes depending on organizational feedback yet nothing too outlandish immediately. This project is a huge improvement for Seth’s Apothecary as it gives the business one accessible database available to all locations versus the current build which is separate databases per location. Having one database for all locations that employees can utilize saves time, resources and improves productivity.