Assignment 11 Report

This assignment is about NoSQL data modeling for the clinic database using Cassandra. While similar to SQL in syntax, there are fundamental differences in the design of the data models, which will be reflected in this assignment. I wrote the script in notepad and tested using cql shell. My Cassandra has version 3.0.9. Below are some important parts of the assignment.

```
CREATE KEYSPACE cs548 WITH replication = {'class' : 'SimpleStrategy','replication_factor':1};

USE cs548;

CREATE TABLE cs548.patient (id UUID PRIMARY KEY, patient_id int, name text, dob date);

CREATE TABLE cs548.provider (id UUID PRIMARY KEY, npi int, name text, specialization text);

CREATE TYPE cs548.drug (drug text, dosage float);

CREATE TYPE cs548.surgery (form text);

CREATE TYPE cs548.radiology ( dates list<date>);


CREATE TABLE cs548.patient_treatments (id UUID, start_date date, start_year int,
    diagnosis text, patient_id int, patient_name text,
    dtrmt FROZEN<drug>, strmt FROZEN<surgery>, rtrmt FROZEN<radiology>,
    PRIMARY KEY (patient_id,start_date)) WITH CLUSTERING ORDER BY (start_date DESC);

CREATE TABLE cs548.provider_treatments (id UUID, start_date date, start_year int,
    diagnosis text,npi int, provider_name text,
    dtrmt FROZEN<drug>, strmt FROZEN<surgery>, rtrmt FROZEN<radiology>,
    PRIMARY KEY ((npi, start_year),start_date)) WITH CLUSTERING ORDER BY (start_date DESC);
```

The main data model along with the keyspace.

Partitioning is used to store data across nodes, and clustering order will present the data in order before querying.

Unlike SQL, users have to add data to different tables since no foreign key design is used.

For this assignment the uuid is generated by uuid() function in Cassandra.