In [1]:
```
from pathlib import Path
import os
import sqlite3

import s3fs
import pandas as pd
```

In [2]:
```
current_dir = Path(os.getcwd()).absolute()
results_dir = current_dir.joinpath('results')
kv_data_dir = results_dir.joinpath('kvdb')
kv_data_dir.mkdir(parents=True, exist_ok=True)
```

In [3]:
```
def read_cluster_csv(file_path, endpoint_url='https://storage.budsc.midwest-datas
    s3 = s3fs.S3FileSystem(
        anon=True,
        client_kwargs={
            'endpoint_url': endpoint_url
        }
    )
    return pd.read_csv(s3.open(file_path, mode='rb'))
```

Create and Load Measurements Table

In [4]:
```
def create_measurements_table(conn):
    sql = """
    CREATE TABLE IF NOT EXISTS measurements (
        visit_id integer NOT NULL,
        person_id text NOT NULL,
        quantity text,
        reading real,
        FOREIGN KEY (visit_id) REFERENCES visits (visit_id),
        FOREIGN KEY (person_id) REFERENCES people (people_id)
        );
    """

    c = conn.cursor()
    c.execute(sql)

def load_measurements_table(conn):
    create_measurements_table(conn)
    df = read_cluster_csv('data/external/tidynomicon/measurements.csv')
    measurements = df.values
    c = conn.cursor()
    c.execute('DELETE FROM measurements;') # Delete data if exists
    c.executemany('INSERT INTO measurements VALUES (?,?,?,?)', measurements)
```

Create and Load People Table

In [5]:
```
def create_people_table(conn):
    sql = """
    CREATE TABLE IF NOT EXISTS people (
        person_id text PRIMARY KEY,
        personal_name text NOT NULL,
        family_name text NOT NULL
        );
    """
    c = conn.cursor()
    c.execute(sql)

def load_people_table(conn):
    create_people_table(conn)
    df = read_cluster_csv('data/external/tidynomicon/person.csv')
    people = df.values
    c = conn.cursor()
    c.execute('DELETE FROM people;') # Delete data if exixsts
    c.executemany('INSERT INTO people VALUES (?,?,?)', people)
```

Create and Load Sites Table

In [6]:
```
def create_sites_table(conn):
    sql = """
    CREATE TABLE IF NOT EXISTS sites (
        site_id text PRIMARY KEY,
        latitude double NOT NULL,
        longitude double NOT NULL
        );
    """

    c = conn.cursor()
    c.execute(sql)

def load_sites_table(conn):
    create_sites_table(conn)
    ## TODO: Complete code
    df = read_cluster_csv('data/external/tidynomicon/site.csv')
    sites = df.values
    c = conn.cursor()
    c.execute('DELETE FROM sites;') # Delete data if exists
    c.executemany('INSERT INTO sites VALUES (?,?,?)', sites)
```

Create and Load Visits Table

In [7]:
```
def create_visits_table(conn):
    sql = """
    CREATE TABLE IF NOT EXISTS visits (
        visit_id integer PRIMARY KEY,
        site_id text NOT NULL,
        visit_date text,
        FOREIGN KEY (site_id) REFERENCES sites (site_id)
        );
    """

    c = conn.cursor()
    c.execute(sql)

def load_visits_table(conn):
    create_visits_table(conn)
    df = read_cluster_csv('data/external/tidynomicon/visited.csv')
    visits = df.values
    c = conn.cursor()
    c.execute('DELETE FROM visits;') # Delete data if exists
    c.executemany('INSERT INTO visits VALUES (?,?,?)', visits)
```

Create DB and Load Tables

In [8]:
```
db_path = results_dir.joinpath('patient-info.db')
conn = sqlite3.connect(str(db_path))
load_people_table(conn)
load_sites_table(conn)
load_visits_table(conn)
load_measurements_table(conn)

conn.commit()
conn.close()
```