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import sqlite3
import csv
class DataPopulator:
   def __init__(self, database_file):
        # Connect to SQLite3 database
        self.connection = sqlite3.connect(database_file) # Create a connection object
        self.cursor = self.connection.cursor()
                                                    # Creates a cursor to interact with the database
   def populate database(self, folder):
        # Specify the path to each spreadsheet
        file 0_path = f"{folder}/shipping_data_0.csv"
        file_1_path = f"{folder}/shipping_data_1.csv"
        file_2_path = f"{folder}/shipping_data_2.csv"
        # Read the file and process the data
        with open(file_0_path, newline='') as file_0:
            reader 0 = csv.reader(file 0) # Create a reader object to read shipping data 0.csv
            self._populate_shipping_data_1(reader_0) # Call a method to process the data in Spreadsheet 1
        with open(file 1 path, newline='') as file 1, open(file 2 path, newline='') as file 2:
            reader_1 = csv.reader(file_1)  # Create a reader object to read shipping_data_1.csv
reader_2 = csv.reader(file_2)  # Create a reader object to read shipping_data_2.csv
            self. populate shipping data 2 (reader 1, reader 2) # Call a method to process the data in Spreadsheet 2
   def populate shipping data 1 (self, reader 0):
        # Process the data in Spreadsheet 1
        for row idx, row in enumerate(reader 0):
            if row idx > 0:
               product_name = row[2] # Extract the product name
                product_quantity = row[4] # Extract product quantity
                                       # Extract the origin of shipping
                origin = row[0]
                destination = row[1]
                                        # Extract the destination
                # Output the extracted data
                print(product_name, product_quantity, origin, destination)
                # Insert the product into the database
                self._insert_product(product_name)
                # Insert shipment data into the database
                self._insert_shipment(product_name, product_quantity, origin, destination)
   def _populate_shipping_data_2(self, reader_1, reader_2):
        # Process the data in Spreadsheet 2
        shipment info = {}
        for row_idx, row in enumerate(reader_2):
            if row idx > 0:
                shipment_identifier = row[0] # Extract the shipment identifier
                origin = row[1]
                                               # Extract the origin of shipping
                destination = row[2]
                                              # Extract the destination
                # Store shipping information in dictionary
                shipment info[shipment identifier] = {
                    "origin": origin,
                    "destination": destination,
                    "products": {}
        for row_idx, row in enumerate(reader_1):
            if row idx > 0:
                shipment_identifier = row[0] # Extract the shipment identifier
                product name = row[1] # Extract product name
               products = shipment info[shipment identifier]["products"]
                # Increase product quantity by adding into the list
                products[product_name] = products.get(product_name, 0) + 1
        # Populate the database based on shipping information
        for shipment identifier, shipment in shipment info.items():
            origin = shipment["origin"]
            destination = shipment["destination"]
            for product_name, product_quantity in shipment["products"].items():
                self. insert product(product name)
                self. insert shipment (product name, product quantity, origin, destination)
   def insert product(self, product name):
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# Insert product into database
        query = '''
            INSERT OR IGNORE INTO product(name)
            VALUES(?);
        self.cursor.execute(query, (product_name,))
        self.connection.commit()
   def _insert_shipment(self, product_name, product_quantity, origin, destination):
        # Insert shipment data into the database
        # Search for the product in the database to get the product ID
       query = '''
           SELECT id
            FROM product
           WHERE name = ?;
       self.cursor.execute(query, (product_name,))
        # Gets the ID of the searched product
       product id = self.cursor.fetchone()[0]
        # Insert product and shipment data into the database.
       query = '''
            INSERT OR IGNORE INTO shipment(product_id, quantity, origin, destination)
            VALUES(?,?,?,?);
        self.cursor.execute(query, (product id, product quantity, origin, destination))
       self.connection.commit()
   def close_connection(self):
       # Close the database connection
        self.connection.close()
if __name__ == '__main_
    # Set the path to the folder containing database files and spreadsheet data
   data_populator = DataPopulator("C:/Users/Heeju/Documents/GitHub/forage-walmart-task-4/shipment_database.db")
    # Populate the database
   data populator.populate database("C:/Users/Heeju/Documents/GitHub/forage-walmart-task-4/data")
    # Close the database connection after all processes are complete
   data_populator.close_connection()
```