PYTHON CODING ASSIGNMENT

Here is a simplified example using FLASK and SQLite as a database .

Setting up Project Structure

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from flask import Flask, request, jsonify
from flask_sqlalchemy import SQLAlchemy

app = Flask(__name)
app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:///mydatabase.db'
db = SQLAlchemy(app)

class Product(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    name = db.Column(db.String(100), nullable=False, unique=True)
    price = db.Column(db.Float, nullable=False)

class Order(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    items = db.relationship('OrderItem', backref='order', lazy=True)

class OrderItem(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    product_id = db.Column(db.Integer, db.ForeignKey('product.id'), nullable=False)
    quantity = db.Column(db.Integer, nullable=False)
    order_id = db.Column(db.Integer, db.ForeignKey('order.id'), nullable=False)

@app.route('/products', methods=['POST'])
def create_or_update_product():
    data = request.get_json()
```

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    product = Product.query.filter_by(name=data['name']).first()
    if product:
        product.price = data['price']
    else:
        new_product = Product(name=data['name'], price=data['price'])
        db.session.add(new_product)
    db.session.commit()
    return jsonify({'message': 'Product created or updated'})

@app.route('/orders', methods=['POST'])
def create_order():
    data = request.get_json()
    new_order = Order()
    db.session.add(new_order)
    for item in data['items']:
        product = Product.query.filter_by(name=item['product_name']).first()
        if product:
            order_item = OrderItem(product_id=product.id, quantity=item['quantity'],
order=new_order)
            db.session.add(order_item)
    db.session.commit()
    return jsonify({'message': 'Order created'})

@app.route('/orders/report', methods=['GET'])
def orders_report():
    # Implement logic to generate the report
    return jsonify({'message': 'Orders report'})

if __name__ == '__main__':
    db.create_all()
```

```
app.run(debug=True)
```

It is just a basic single file example of a Flask based REST API with the Product , Order , and Order Item models , along with basic API endpoints .