

Ecommerce Application

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Classes

Cart

```
from entity.customers import Customers
from entity.products import Products

class Cart(Customers, Products):
    def __init__(self):
        super().__init__()
        self.cart_id = 0
        self.quantity = ''

    def get_cart_id(self):
        return self.cart_id

    def get_quantity(self):
        return self.quantity

    def set_card_id(self, cart_id):
        self.cart_id=cart_id

    def set_quantity(self, quantity):
        self.quantity=quantity
```

Orders

```
from entity.customers import Customers

class Orders(Customers):
    def __init__(self):
        super().__init__()
        self.order_id = 0
        self.order_date = ''
        self.shipping_address=''
        self.total_price=0.0

    def get_order_id(self):
        return self.order_id

    def get_order_date(self):
        return self.order_date

    def get_shipping_address(self):
        return self.shipping_address

    def get_total_price(self):
```

```

        return self.total_price

    def set_order_id(self, order_id):
        self.order_id=order_id

    def set_order_date(self, order_date):
        self.order_date=order_date

    def set_shipping_address(self, shipping_address):
        self.shipping_address=shipping_address

    def set_total_price(self, total_price):
        self.total_price=total_price

```

Customers

```

from util.DBconnection import DBConnection

class Customers(DBConnection):
    def __init__(self):
        super().__init__()
        self.customer_id = 0
        self.name = ''
        self.email = ''
        self.password = ''

    def get_customer_id(self):
        return self.customer_id

    def set_customer_id(self, customer_id):
        self.customer_id = customer_id

    def get_name(self):
        return self.name

    def set_name(self, name):
        self.name = name

    def get_email(self):
        return self.email

    def set_email(self, email):
        self.email = email

    def get_password(self):
        return self.password

    def set_password(self, password):
        self.password = password

```

Products

```
from util.DBconnection import DBConnection

class Products(DBConnection):
    def __init__(self):
        super().__init__()
        self.product_id = 0
        self.name = ''
        self.price = 0.0
        self.description = ''
        self.stockQuantity = 0

    def get_product_id(self):
        return self.product_id

    def set_product_id(self, product_id):
        self.product_id = product_id

    def get_name(self):
        return self.name

    def set_price(self, price):
        self.price = price

    def get_description(self):
        return self.description

    def set_description(self, description):
        self.description = description

    def get_stockQuantity(self):
        return self.stockQuantity

    def set_stockQuantity(self, stockQuantity):
        self.stockQuantity = stockQuantity
```

OrderItems

```
from entity.orders import Orders
from entity.products import Products

class OrderItems(Orders, Products):
    def __init__(self):
        super().__init__()
        self.order_item_id = 0
        self.quantity = 0
```

```
def get_order_item_id(self):
    return self.order_item_id

def set_order_item_id(self, order_item_id):
    self.order_item_id = order_item_id

def get_quantity(self):
    return self.quantity

def set_quantity(self, quantity):
    self.quantity = quantity
```

Daos

Order Processor Repository

```
from dao.productsdao import ProductsDao
from dao.customersdao import CustomersDao
from dao.cartdao import CartDao
from dao.ordersdao import OrdersDao
from exception.Customer_not_FoundException import CustomerNotFoundException

class OrderProcessorRepository(CartDao, OrdersDao):
    def create_product(self) -> bool:
        p = ProductsDao()
        p.add_product()
        p.select_product()
        pass

    def create_customer(self) -> bool:
        c = CustomersDao()
        c.add_customer()
        c.select_customer()
        pass

    def delete_product(self) -> bool:
        p = ProductsDao()
        p.delete_product()
        p.select_product()
        pass

    def delete_customer(self) -> bool:
        c = CustomersDao()
        c.delete_customer()
        c.select_customer()

        pass

    def add_to_cart(self) -> bool:
        c = CartDao()
        c.add_cart()
```

```

        c.select_cart()
        pass

    def remove_from_cart(self) -> bool:
        c = CartDao()
        c.delete_cart()
        c.select_cart()
        pass

    def get_all_from_cart(self) -> bool:
        c = CartDao()
        c.select_cart()
        pass

    def place_order(self) -> bool:
        o = OrdersDao()
        o.add_order()
        o.select_order()
        return True

    def viewCustomerOrder(self, customer_id) -> bool:
        try:
            self.open()
            # customer_id = int(input("Enter customer ID: "))
            self.stmt.execute(f'''SELECT COUNT(*) FROM Orders WHERE
customer_id = {customer_id}''')
            count = self.stmt.fetchone()[0]
            if count == 0:
                return CustomerNotFoundException(customer_id)
            else:
                self.stmt.execute(f'''SELECT * FROM Orders WHERE
customer_id = {customer_id} ''')
                records = self.stmt.fetchall()
                self.close()
                return records
        except CustomerNotFoundException as e:
            return e
        except Exception as e:
            return e

```

ProductsDao

```

from entity.products import Products

class ProductsDao(Products):
    def __init__(self):
        super().__init__()

    def perform_product_actions(self):
        while True:
            print("(Products) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE 5.SELECT 0.EXIT")
            ch=int(input("Enter Choice: "))
            if ch==1:

```

```

        self.create_product_table()
    elif ch==2:
        print(self.add_product())
    elif ch==3:
        print(self.update_product())
    elif ch==4:
        print(self.delete_product())
    elif ch==5:
        self.select_product()
    elif ch==0:
        break
    else:
        print("Invalid Choice")

def create_product_table(self):
    try:
        create_str = '''CREATE TABLE IF NOT EXISTS Product(
        product_id int primary key,
        name varchar(50) not null,
        description varchar(50),
        price double(10,2) not null ,
        stockQuantity int not null
        )'''
        self.open()
        self.stmt.execute(create_str)
        self.close()
        print("Products Table created Successfully")
    except Exception as e:
        print(e)

def add_product(self):
    try:
        self.open()
        self.product_id=int(input("Product ID: "))
        self.name=input("Product Name : ")
        self.description = input("Description : ")
        self.price = input("Price : ")
        self.stockQuantity = int(input("Quantity in stock : "))
        data =
[(self.product_id,self.name,self.description,self.price,self.stockQuantity)
]
        insert_str = '''INSERT into
Product(product_id,name,description,price,stockQuantity)
values(%s,%s,%s,%s,%s)'''
        self.stmt.executemany(insert_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

def update_product(self):
    try:
        self.open()
        self.product_id = int(input("Product ID: "))
        self.name = input("Product Name : ")
        self.description = input("Description : ")

```

```

        self.price = input("Price : ")
        self.stockQuantity = int(input("Quantity in stock : "))
        data = [(self.product_id, self.name, self.description,
self.price, self.stockQuantity)]
        update_str = '''Update Product set
product_id=%s,name=%s,description=%s,price=%s,
        stockQuantity=%s '''
        self.stmt.executemany(update_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

    def delete_product(self):
        try:
            self.open()
            productId = input("Enter Product Id to be Deleted : ")
            delete_str = f'''Delete from Product where product_id =
{productId}'''
            self.stmt.execute(delete_str)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return e

    def select_product(self):
        try:
            select_str = '''select * from Product'''
            self.open()
            self.stmt.execute(select_str)
            records = self.stmt.fetchall()
            self.close()
            print("Records in Product Table : ")
            for i in records:
                print(i)
        except Exception as e:
            print(e)

```

OrdersDao

```

from entity.orders import Orders

class OrdersDao(Orders):
    def __init__(self):
        super().__init__()

    def perform_orders_actions(self):
        while True:
            print("(Orders) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE 5.SELECT
0.EXIT")

```

```

        ch=int(input("Enter Choice: "))
        if ch==1:
            self.create_orders_table()
        elif ch==2:
            print(self.add_order())
        elif ch==3:
            print(self.update_order())
        elif ch==4:
            print(self.delete_order())
        elif ch==5:
            self.select_order()
        elif ch==0:
            break
        else:
            print("Invalid Choice")

def create_orders_table(self):
    try:
        create_str = '''CREATE TABLE IF NOT EXISTS Orders(
            order_id int primary key,
            customer_id int,
            order_date Date,
            total_price float,
            shipping_address varchar(255),
            foreign key (customer_id) references Customers(customer_id)
        )'''
        self.open()
        self.stmt.execute(create_str)
        self.close()
        print("Cart Table created Successfully")
    except Exception as e:
        print(e)

def add_order(self):
    try:
        self.open()
        self.order_id = int(input("Order ID: "))
        self.customer_id = int(input("Customer Id : "))
        self.order_date = input("Order Date : ")
        self.total_price = int(input("Total Price : "))
        self.shipping_address = input("Shipping Address : ")
        data =
[(self.order_id,self.customer_id,self.order_date,self.total_price,self.ship
ping_address)]
        insert_str = '''INSERT into
Orders(order_id,customer_id,order_date,total_price,shipping_address)
values(%s,%s,%s,%s,%s)'''
        self.stmt.executemany(insert_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

def update_order(self):
    try:

```



```

        self.open()
        self.order_id = int(input("Order ID: "))
        self.customer_id = int(input("Customer Id : "))
        self.order_date = input("Order Date : ")
        self.total_price = int(input("Total Price : "))
        self.shipping_address = input("Shipping Address : ")
        data = [(self.order_id, self.customer_id, self.order_date,
self.total_price, self.shipping_address)]
        update_str = '''Update Orders set
order_id=%s,customer_id=%s,order_date=%s,
total_price=%s,shipping_address=%s'''
        self.stmt.executemany(update_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

    def delete_order(self):
        try:
            self.open()
            order_id = input("Enter Order Id to be Deleted : ")
            delete_str = f'''Delete from Orders where order_id =
{order_id}'''
            self.stmt.execute(delete_str)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return e

    def select_order(self):
        try:
            select_str = '''select * from Orders'''
            self.open()
            self.stmt.execute(select_str)
            records = self.stmt.fetchall()
            self.close()
            print("Records in Orders Table : ")
            for i in records:
                print(i)
        except Exception as e:
            print(e)

```

OrderItemsDao

```

from entity.orderitems import OrderItems
# from entity.orders import Orders
# from entity.products import Products

class OrderItemsDao(OrderItems):
    def __init__(self):
        super().__init__()

```

```

def perform_orderitems_actions(self):
    while True:
        print("(OrdersItems) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE
5.SELECT 0.EXIT")

        ch=int(input("Enter Choice: "))
        if ch==1:
            self.create_orderitems_table()
        elif ch==2:
            print(self.add_orderitem())
        elif ch==3:
            print(self.update_orderitem())
        elif ch==4:
            print(self.delete_orderitem())
        elif ch==5:
            self.select_orderitem()
        elif ch==0:
            break
        else:
            print("Invalid Choice")

def create_orderitems_table(self):
    try:
        create_str = '''CREATE TABLE IF NOT EXISTS OrderItems (
order_item_id int primary key,
order_id int,
product_id int,
quantity int,
foreign key (order_id) references Orders(order_id),
foreign key (product_id) references Product(product_id)
)'''
        self.open()
        self.stmt.execute(create_str)
        self.close()
        print("Cart Table created Successfully")
    except Exception as e:
        print(e)

def add_orderitem(self):
    try:
        self.open()
        self.order_item_id = int(input("Order Item ID: "))
        self.order_id= int(input("Order Id : "))
        self.product_id = int(input("Product Id : "))
        self.quantity = input("Quantity : ")
        data =
[(self.order_item_id,self.order_id,self.product_id,self.quantity)]
        insert_str = '''INSERT into
OrderItems(order_item_id,order_id,product_id,quantity)
values(%s,%s,%s,%s)'''
        self.stmt.executemany(insert_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

```

```

def update_orderitem(self):
    try:
        self.open()
        self.order_item_id = int(input("Order Item ID: "))
        self.order_id = int(input("Order Id : "))
        self.product_id = int(input("Product Id : "))
        self.quantity = input("Quantity : ")
        data = [(self.order_item_id, self.order_id, self.product_id,
self.quantity)]
        insert_str = '''Update OrderItems set
order_item_id=%s,order_id=%s,product_id=%s,quantity=%s'''
        self.stmt.executemany(insert_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

def delete_orderitem(self):
    try:
        self.open()
        order_item_id = input("Enter Order Item Id to be Deleted : ")
        delete_str = f'''Delete from OrderItems where order_item_id =
{order_item_id}'''
        self.stmt.execute(delete_str)
        self.conn.commit()
        self.close()
        return True
    except Exception as e:
        return e

def select_orderitem(self):
    try:
        select_str = '''select * from OrderItems'''
        self.open()
        self.stmt.execute(select_str)
        records = self.stmt.fetchall()
        self.close()
        print("Records in Orders Table : ")
        for i in records:
            print(i)
    except Exception as e:
        print(e)

```

CustomerDao

```

from entity.customers import Customers

class CustomersDao(Customers):
    def __init__(self):
        super().__init__()

```

```

def perform_customer_actions(self):
    while True:
        print("(Customers) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE 5.SELECT 0.EXIT")

        ch=int(input("Enter Choice: "))
        if ch==1:
            self.create_customer_table()
        elif ch==2:
            print(self.add_customer())
        elif ch==3:
            print(self.update_customer())
        elif ch==4:
            print(self.delete_customer())
        elif ch==5:
            self.select_customer()
        elif ch==0:
            break
        else:
            print("Invalid Choice")

def create_customer_table(self):
    try:
        create_str = '''CREATE TABLE IF NOT EXISTS Customers(
customer_id int primary key,
name varchar(50) not null,
email varchar(50),
password varchar(50) not null
)'''
        self.open()
        self.stmt.execute(create_str)
        self.close()
        print("Customers Table created Successfully")
    except Exception as e:
        print(e)

def add_customer(self):
    try:
        self.open()
        self.customer_id=int(input("Customer ID: "))
        self.name=input("Customer Name : ")
        self.email = input("Email : ")
        self.password = input("Password : ")
        data = [(self.customer_id,self.name,self.email,self.password)]
        insert_str = '''INSERT into
Customers(customer_id,name,email,password)
values(%s,%s,%s,%s)'''
        self.stmt.executemany(insert_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

def update_customer(self):
    try:

```

```

        self.open()
        self.customer_id = int(input("Customer ID: "))
        self.name = input("Customer Name : ")
        self.email = input("Email : ")
        self.password = input("Password : ")
        data = [(self.customer_id, self.name, self.email,
self.password)]
        update_str = '''Update Customers set
customer_id=%s,name=%s,email=%s,password=%s'''
        self.stmt.executemany(update_str, data)
        self.conn.commit()
        self.close()
        return True

    except Exception as e:

        return e

    def delete_customer(self):
        try:
            self.open()
            customer_id = input("Enter Customer Id to be Deleted : ")
            delete_str = f'''Delete from Customers where customer_id =
{customer_id}'''
            self.stmt.execute(delete_str)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return e

    def select_customer(self):
        try:
            select_str = '''select * from Customers'''
            self.open()
            self.stmt.execute(select_str)
            records = self.stmt.fetchall()
            self.close()
            print("Records in Customers Table : ")
            for i in records:
                print(i)
        except Exception as e:
            print(e)

```

Cart

```

from entity.cart import Cart

class CartDao(Cart):
    def __init__(self):
        super().__init__()

    def perform_cart_actions(self):

```

```

        while True:
            print("(Cart) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE 5.SELECT  
0.EXIT")

            ch=int(input("Enter Choice: "))
            if ch==1:
                self.create_cart_table()
            elif ch==2:
                print(self.add_cart())
            elif ch==3:
                print(self.update_cart())
            elif ch==4:
                print(self.delete_cart())
            elif ch==5:
                self.select_cart()
            elif ch==0:
                break
            else:
                print("Invalid Choice")

    def create_cart_table(self):
        try:
            create_str = '''CREATE TABLE IF NOT EXISTS Cart(
            cart_id int primary key,
            quantity varchar(50) not null,
            customer_id int,
            product_id int,
            foreign key (product_id) references Product(product_id),
            foreign key (customer_id) references Customers(customer_id)
            )'''
            self.open()
            self.stmt.execute(create_str)
            self.close()
            print("Cart Table created Successfully")
        except Exception as e:
            print(e)

    def add_cart(self):
        try:
            self.open()
            self.cart_id=int(input("Cart ID: "))
            self.quantity=input("Quantity : ")
            self.customer_id = int(input("Customer Id : "))
            self.product_id = int(input("Product Id : "))
            data =
[(self.cart_id,self.quantity,self.customer_id,self.product_id)]
            insert_str = '''INSERT into
Cart(cart_id,quantity,customer_id,product_id)
values(%s,%s,%s,%s)'''
            self.stmt.executemany(insert_str, data)
            self.conn.commit()
            self.close()
            return True

        except Exception as e:

            return e

    def update_cart(self):

```

```

        try:
            self.open()
            self.cart_id = int(input("Cart ID: "))
            self.quantity = input("Quantity : ")
            self.customer_id = int(input("Customer Id : "))
            self.product_id = int(input("Product Id : "))
            data = [(self.cart_id, self.quantity, self.customer_id,
self.product_id)]
            update_str = '''Update cart set cart_id=%s ,
quantity=%s,customer_id=%s,product_id=%s'''
            self.stmt.executemany(update_str, data)
            self.conn.commit()
            self.close()
            return True

        except Exception as e:

            return e

    def delete_cart(self):
        try:
            self.open()
            cart_id = input("Enter Cart Id to be Deleted : ")
            delete_str = f'''Delete from Cart where cart_id = {cart_id}'''
            self.stmt.execute(delete_str)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return e

    def select_cart(self):
        try:
            select_str = '''select * from Cart'''
            self.open()
            self.stmt.execute(select_str)
            records = self.stmt.fetchall()
            self.close()
            print("Records in Cart Table : ")
            for i in records:
                print(i)
        except Exception as e:
            print(e)

```

Exceptions

```

class CustomerNotFoundException(Exception):
    def __init__(self, message="Customer not found"):
        self.message = message
        super().__init__(self.message)

```

```

class OrderNotFoundException(Exception):
    def __init__(self, message="Order not found"):
        self.message = message
        super().__init__(self.message)

```

```

class ProductNotFoundException(Exception):
    def __init__(self, message="Product not found"):
        self.message = message
        super().__init__(self.message)

```

Main

```

from util.DBconnection import DBConnection
from dao.cartdao import CartDao
from dao.ordersdao import OrdersDao
from dao.productsdao import ProductsDao
from dao.customersdao import CustomersDao
from dao.orderitemsdao import OrderItemsDao
from dao.OrderProcessorRepository import OrderProcessorRepository
from exception.Order_not_FoundException import OrderNotFoundException
from exception.Product_not_FoundException import ProductNotFoundException
from exception.Customer_not_FoundException import CustomerNotFoundException

class EcommerceApplicationMain:

    @staticmethod
    def main():
        dbconnection = DBConnection()

        try:
            dbconnection.open()
            print("Database Connected")
        except Exception as e:
            print(e)

        try:
            print("_" * 30)
            print("Ecommerce Application")
            print("_" * 30)
            print("Welcome to Ecommerce Application!")

            order_processor = OrderProcessorRepository()

            while True:
                print("1.Products 2.Customers 3.Orders 4.OrderItems 5.Cart 0.EXIT")

                ch = int(input("Enter choice: "))
                if ch == 1:
                    p = ProductsDao()
                    p.perform_product_actions()
                elif ch == 2:
                    c = CustomersDao()
                    c.perform_customer_actions()
                elif ch == 3:
                    e = OrdersDao()
                    e.perform_orders_actions()
                elif ch == 4:
                    o = OrderItemsDao()

```



```

        o.perform_orderitems_actions()
    elif ch == 5:
        u = CartDao()
        u.perform_cart_actions()

    elif ch == 0:
        break
    else:
        print("Invalid choice")

while True:
    print("=" * 10)
    print("---Main Menu---")
    print("=" * 10)
    print('''
1.Create Product
2.Create Customer
3.Delete Product
4.Delete Customer
5.Add to Cart
6.Remove from Cart
7.Get All Products
8.Place Order
9.View Customer Order
0.EXIT''')
    ch = int(input("Enter choice: "))
    if ch == 1:
        print(f'Product Created :
{order_processor.create_product() }')
    elif ch == 2:
        print(f'Customer Created :
{order_processor.create_customer() }')
    elif ch == 3:
        print(f'Product Deleted :
{order_processor.delete_product() }')
    elif ch == 4:
        print(f'Customer Deleted :
{order_processor.delete_customer() }')
    elif ch == 5:
        print(f'Added to Cart :
{order_processor.add_to_cart() }')
    elif ch == 6:
        print(f'Removed from
Cart{order_processor.remove_from_cart() }')
    elif ch == 7:
        print(f'All from Cart :
{order_processor.get_all_from_cart() }')
    elif ch == 8:
        print(f'Order Placed :
{order_processor.place_order() }')
    elif ch == 9:
        print(f'Customer Orders :
{order_processor.viewCustomerOrder(int(input("Enter Customer Id : ")))}')
    elif ch == 0:
        break
    else:
        print("Invalid choice")

except CustomerNotFoundException as e:

```

```

        print(e)

    except OrderNotFoundException as e:
        print(e)

    except ProductNotFoundException as e:
        print(e)

    except Exception as e:
        print(e)

if __name__ == "__main__":
    EcommerceApplicationMain.main()

```

Util

```

class DBUtil:
    connection_properties = None

    @staticmethod
    def getDBConn():
        if DBUtil.connection_properties is None:
            host = 'localhost'
            database = 'Ecommerce_application'
            port = '3306'
            user = 'root'
            password = 'root'
            DBUtil.connection_properties = {'host': host, 'database':
database, 'port': port, 'user': user, 'password': password}
        return DBUtil.connection_properties

```

```

import sys
import mysql.connector as sql
from util.DBUtil import DBUtil

class DBConnection:
    def open(self):
        try:
            connection_properties=DBUtil.getDBConn()
            self.conn=sql.connect(**connection_properties)
            self.stmt=self.conn.cursor()
        except Exception as e:
            print(str(e) + 'Database not Connected:')
            sys.exit(1)

    def close(self):
        self.conn.close()

```

Unit Testing

```
import unittest
from unittest.mock import Mock
from dao.OrderProcessorRepository import OrderProcessorRepository
from dao.productsdao import ProductsDao
from dao.customersdao import CustomersDao

class TestOrderProcessorRepository(unittest.TestCase):
    def setUp(self):
        # Set up any necessary objects or mocks
        self.order_processor_repo = OrderProcessorRepository

    def test_create_product(self):
        # Mocking a product
        product = ProductsDao()

        # Mocking the repository's interaction with the database
        self.order_processor_repo.create_product = Mock(return_value=True)

        # Testing the create_product method
        result = self.order_processor_repo.create_product(product)

        self.assertTrue(result)

    def test_add_to_cart(self):
        customer = CustomersDao()
        product = ProductsDao()
        quantity = 3

        self.order_processor_repo.add_to_cart = Mock(return_value=True)
        result = self.order_processor_repo.add_to_cart(customer,
product, quantity)

        self.assertTrue(result)

if __name__ == '__main__':
    unittest.main()
```

Some Screen Shots











