class Product:

def \_init\_(self, product\_id, name, current\_stock, reorder\_point, reorder\_quantity):

self.product\_id = product\_id

self.name = name

self.current\_stock = current\_stock

self.reorder\_point = reorder\_point

self.reorder\_quantity = reorder\_quantity

class Warehouse:

def \_init\_(self, warehouse\_id, location):

self.warehouse\_id = warehouse\_id

self.location = location

self.products = []

def track\_inventory(products):

for product in products:

if product.current\_stock < product.reorder\_point:

print(f"Alert: {product.name} is below the reorder point. Current stock: {product.current\_stock}")

recommend\_reorder(product)

def recommend\_reorder(product):

new\_stock = product.current\_stock + product.reorder\_quantity

print(f"Recommended reorder for {product.name}: {product.reorder\_quantity} units. New stock level: {new\_stock}")

def calculate\_reorder\_point(historical\_sales, lead\_time, desired\_service\_level):

# Implement algorithms to calculate the optimal reorder point

# based on historical sales data, lead time, and desired service level

pass

def calculate\_reorder\_quantity(historical\_sales, lead\_time, holding\_cost, ordering\_cost):

# Implement algorithms to calculate the optimal reorder quantity

# based on historical sales data, lead time, holding cost, and ordering cost

pass

def generate\_inventory\_report(products):

# Generate reports on inventory turnover rates, stockout occurrences, and cost implications of overstock situations

pass

def user\_interface():

# Define sample products and warehouses

product1 = Product(1, "Product A", 50, 20, 30)

product2 = Product(2, "Product B", 15, 10, 25)

warehouse1 = Warehouse(1, "Warehouse A")

warehouse1.products = [product1, product2]

while True:

user\_input = input("Enter a product ID or name (or 'exit' to quit): ")

if user\_input.lower() == "exit":

break

# Look up the product and display current stock, reorder recommendations, and historical data

for product in warehouse1.products:

if str(product.product\_id) == user\_input or product.name.lower() == user\_input.lower():

print(f"Product: {product.name}")

print(f"Current Stock: {product.current\_stock}")

recommend\_reorder(product)

# Display historical data

break

else:

print("Product not found.")

# Test the application

user\_interface()