

## 250240128002 Aditya Bhawsar

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from abc import ABC, abstractmethod

class CartIsEmptyException(Exception):
    pass

class AmountInvalidException(Exception):
    pass

class DesertItem(ABC):
    def __init__(self, name):
        self.name = name

    @abstractmethod
    def getCost(self):
        pass

    def getName(self):
        return str(self.name)

class Candy(DesertItem):
    def __init__(self, name, weightInGms):
        super().__init__(name)
        if weightInGms < 0:
            raise AmountInvalidException("Weight must be positive")
        self.weightInGms = weightInGms

    def getCost(self):
        return (self.weightInGms * (50 / 1000))

class Cookie(DesertItem):
    def __init__(self, name, units):
        super().__init__(name)
        if units < 0:
            raise AmountInvalidException("Units must be positive")
        self.units = units

    def getCost(self):
        return (self.units * (120 / 12))

class IceCream(DesertItem):
    def __init__(self, name, units):
        super().__init__(name)
        if units < 0:
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        raise AmountInvalidException("Units must be positive")
        self.units = units

    def getCost(self):
        return self.units * 50

class Sundae(IceCream):
    def __init__(self, name, units):
        super().__init__(name, units)

    def getCost(self):
        return super().getCost() + 25

class Checkout:
    cashRegister = list()

    def addToCart(self, dessertItem):
        self.cashRegister.append(dessertItem)

    def getNoOfItemsInCart(self):
        return len(self.cashRegister)

    def getTotalCostOfCart(self):
        if not self.cashRegister:
            return 0
        total = 0
        for i in self.cashRegister:
            total += i.getCost()
        return total

    def clearCart(self):
        self.cashRegister.clear()

    def __repr__(self):
        if not self.cashRegister:
            return "{}"

        invoice = {}
        for i in self.cashRegister:
            invoice[i.getName()] = i.getCost()
        invoice["Total"] = self.getTotalCostOfCart()
        return str(invoice)

try:
    candy = Candy("Chocolate", 450)
    cookie = Cookie("Butter", 7)
    icecream = IceCream("ButterScotch", 3)

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sundae = Sundae("Butterscotch large", 2)

checkout = Checkout()

checkout.addToCart(candy)
checkout.addToCart(cookie)
checkout.addToCart(sundae)
checkout.addToCart(icecream)

print(checkout)
checkout.clearCart()
print(checkout)

if not checkout.cashRegister:
    raise CartIsEmptyException("Cart is empty.")

except CartIsEmptyException as e:
    print(e)
except AmountInvalidException as e:
    print("Error: ",e)
except Exception as e:
    print("An unexpected error occurred: ",e)
```