UNIVERSITY OF DHAKA

Department of Computer Science and Engineering

UML Diagram using PlantUML

Course: Software Engineering Lab

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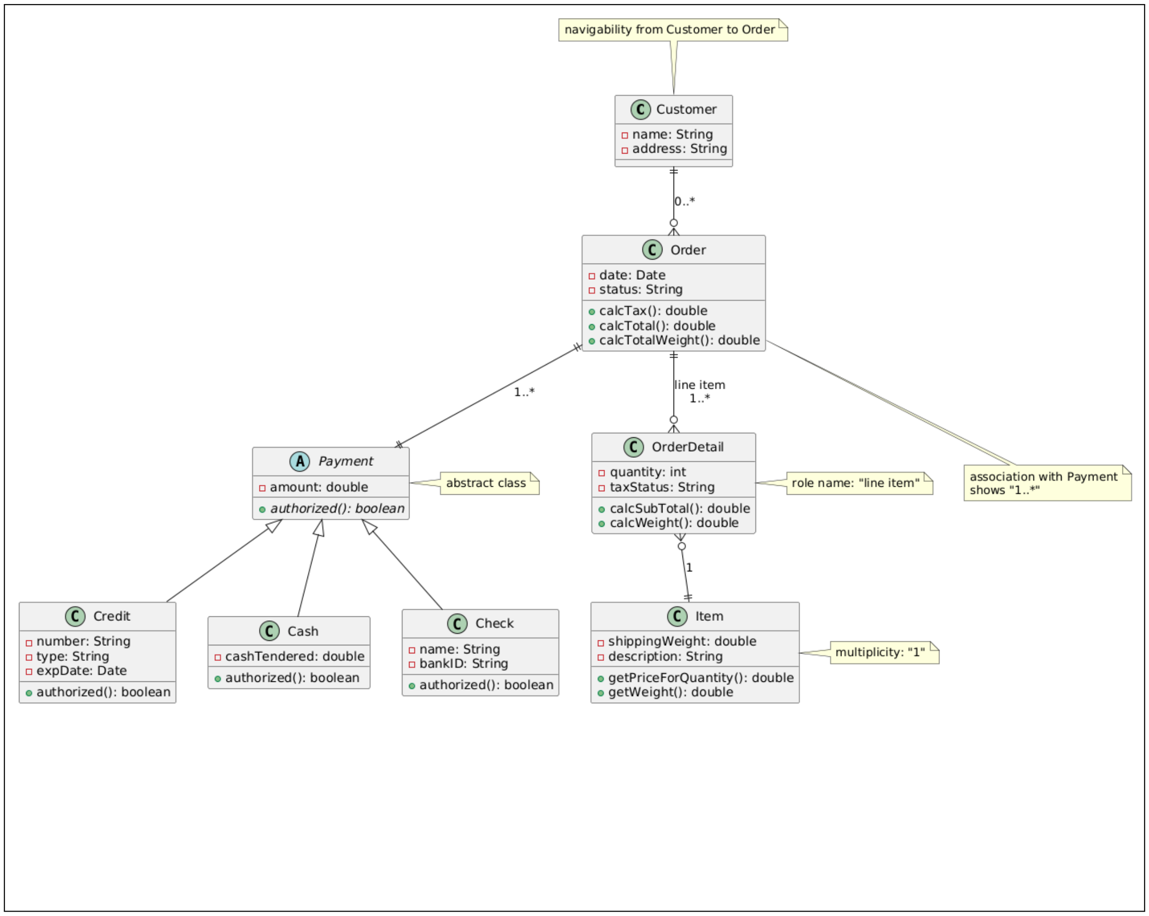
1 Class Diagram

1.1 Code

```
@startuml
’ Classes
class Customer {
    - name: String
    - address: String
}

class Order {
    - date: Date
    - status: String
    + calcTax(): double
    + calcTotal(): double
    + calcTotalWeight(): double
}

class OrderDetail {
    - quantity: int
    - taxStatus: String
    + calcSubTotal(): double
    + calcWeight(): double
}

class Item {
    - shippingWeight: double
    - description: String
    + getPriceForQuantity(): double
    + getWeight(): double
}

abstract class Payment {
    - amount: double
    + {abstract} authorized(): boolean
}

class Credit extends Payment {
    - number: String
    - type: String
    - expDate: Date
    + authorized(): boolean
}

class Cash extends Payment {
    - cashTendered: double
    + authorized(): boolean
}

class Check extends Payment {
    - name: String
    - bankID: String
    + authorized(): boolean
}

’ Relationships
Customer ||--o{ Order : "0..*"
Order ||--o{ OrderDetail : "line item\n1..*"
OrderDetail }o--|| Item : "1"
Order ||--|| Payment : "1..*"

’ Notes for UML concepts shown
note right of Payment : abstract class
note right of OrderDetail : role name: "line item"
note right of Item : multiplicity: "1"
note bottom of Order : association with Payment\nshows "1..*"
note top of Customer : navigability from Customer to Order
@enduml
```

1.2 Image

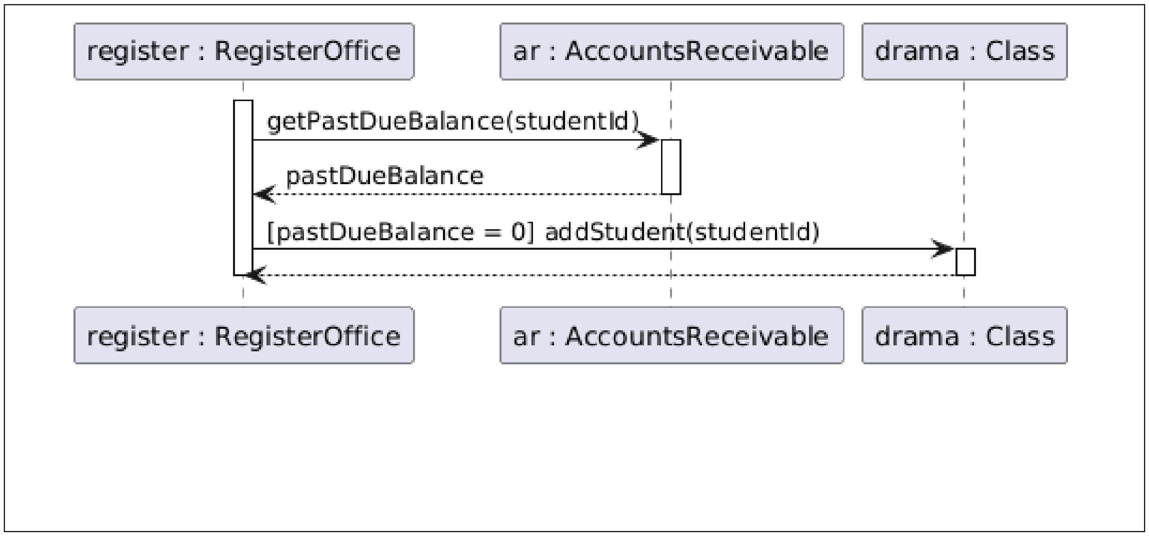

navigability from Customer to Order
Customer
name: String
address: String
0..*
Order
date: Date
status: String
calcTax(): double
calcTotal(): double
calcTotalWeight(): double
1..*
line item
1..*
Payment
amount: double
authorized(): boolean
abstract class
OrderDetail
quantity: int
taxStatus: String
calcSubTotal(): double
calcWeight(): double
role name: "line item"
association with Payment
shows "1..*"
1
Credit
number: String
type: String
expDate: Date
authorized(): boolean
Cash
cashTendered: double
authorized(): boolean
Check
name: String
bankID: String
authorized(): boolean
Item
shippingWeight: double
description: String
getPriceForQuantity(): double
getWeight(): double
multiplicity: "1"

2 Sequence Diagram

2.1 Code

```
@startuml
participant "register : RegisterOffice" as register
participant "ar : AccountsReceivable" as ar
participant "drama : Class" as drama

activate register

register -> ar : getPastDueBalance(studentId)
activate ar

ar --> register : pastDueBalance
deactivate ar

register -> drama : [pastDueBalance = 0] addStudent(studentId)
activate drama

drama --> register :
deactivate drama

deactivate register
@enduml
```

2.2 Image


register : RegisterOffice
ar : AccountsReceivable
drama : Class
getPastDueBalance(studentId)
pastDueBalance
[pastDueBalance = 0] addStudent(studentId)
register : RegisterOffice
ar : AccountsReceivable
drama : Class