Cairo University
Faculty of Computers and Artificial Intelligence
IS Department

Course code: IS332
Course: Analysis and Design of Information Systems
Under supervision: Dr. Iman Helal – Dr. Dina Ezzat
Academic Year: 2022-2023

m Project Details

Project number   *Your project number as in sent sheet file*
Project title   *Your project title*

Corresponding TA\LA   *Lamia*
Deliverable   *4*

Team Details

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Phase 4: Use case Realization

Deliver a complete electronic report to deliver the following requirements using CASE/modeling tool(s):

1. Select **TWO** simple use cases using the provided Use case diagram (that have been developed during the analysis phase of your project)

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a. Generate and draw a **partial class diagram** using **CRC cards** (**show steps**).

CRC card 1 : Admin usecases

CRC card 2: supplier usecases

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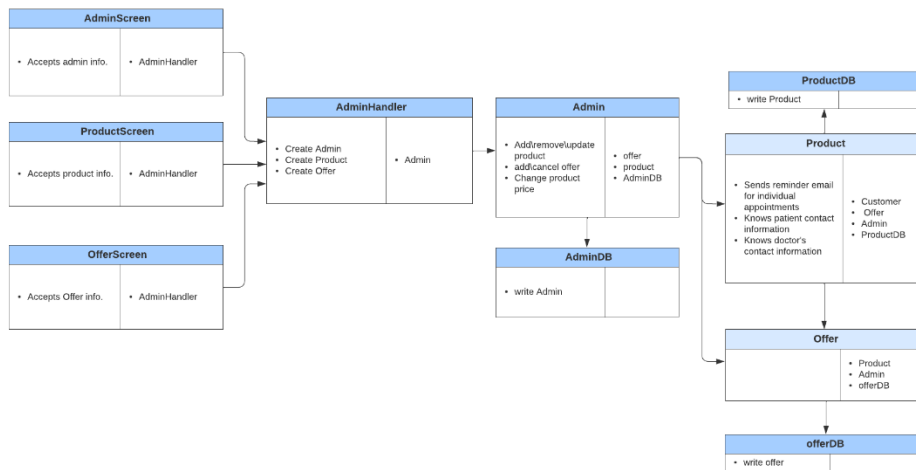Academic Year: 2022-2023

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<<controller>>
AdminHandler

+createAdmin(name,phoneNumber,nationalID,userName,password)
+createProduct(productName,productID,price,amount,category,
productionDate,expiryDate,description,policyDetails)
+createOffer(offerID,typeOfOffer,salePercentage,startOfferDate
,endOfferDate,description,promoCode)

Admin

-userName :string {key}
-password : string
-name:string
-phoneNumber:string
-nationalID :stirng {key}

+createAdmin(name,phoneNumber,nationalID,userName,password)
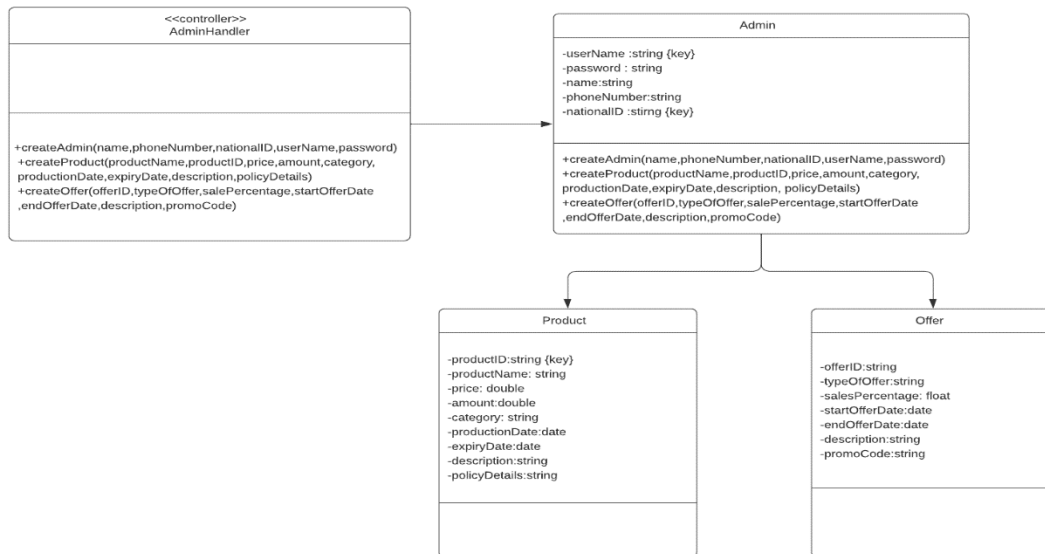+createProduct(productName,productID,price,amount,category,
productionDate,expiryDate,description, policyDetails)
+createOffer(offerID,typeOfOffer,salePercentage,startOfferDate
,endOfferDate,description,promoCode)

Product

-productID:string {key}
-productName: string
-price: double
-amount:double
-category: string
-productionDate:date
-expiryDate:date
-description:string
-policyDetails:string

Offer

-offerID:string
-typeOfOffer:string
-salesPercentage: float
-startOfferDate:date
-endOfferDate:date
-description:string
-promoCode:string

CRC Card (1) partial class diagram for usecases :addOffer &addProduct

<<controller>>
supplierHandler

+createSupplier(supplierID,supplierName,phoneNumber,nationalID)
+updateWarehouse(warehouseID,product)

Supplier

-supplierID: string {key}
-supplierName:string
-phoneNumber: string
-nationalID:string

+createSupplier(supplierID,supplierName,phoneNumber,nationalID)
+updateWarehouse(warehouseID,product)

Warehouse

-wareHouseID: string {key}
-product: list
-warhouseName:string
-location : string
-capacity: string

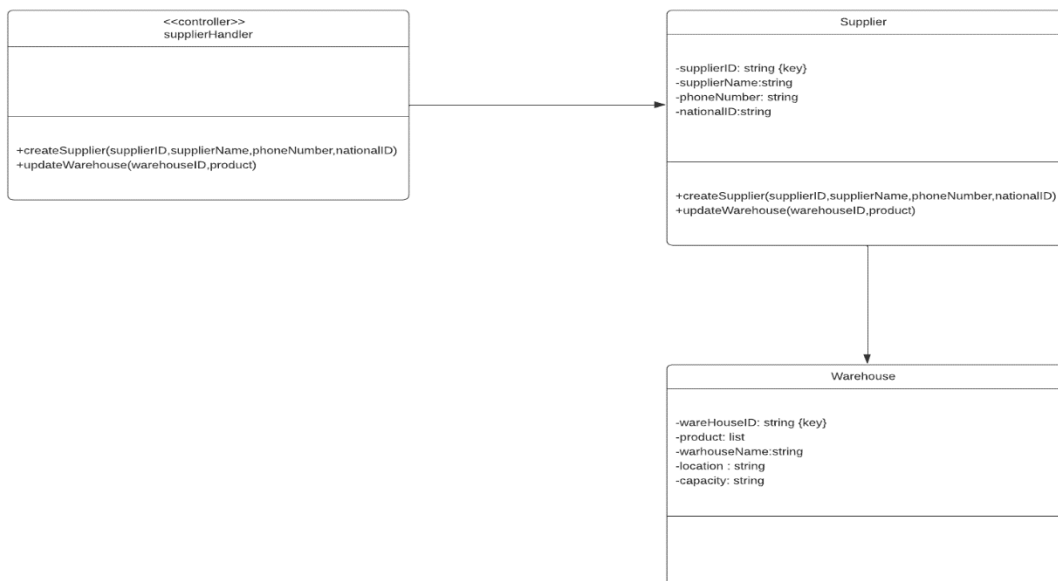**CRC Card (2) partial class diagram for usecase : supply warehouse**

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b. Generate and draw a **partial class diagram** using **communication diagram** (**show steps**).

Communication Diagram (1): adding products by admin
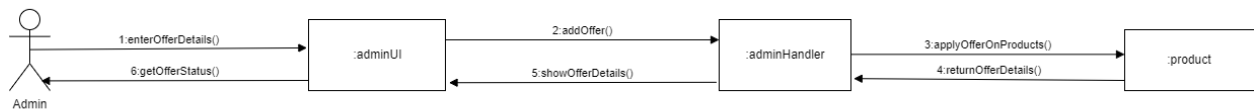
Communication Diagram (1): adding products by admin
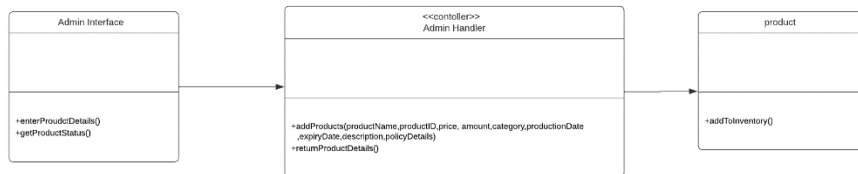
partial class diagram for communication diagram (1) : use case" add Product"
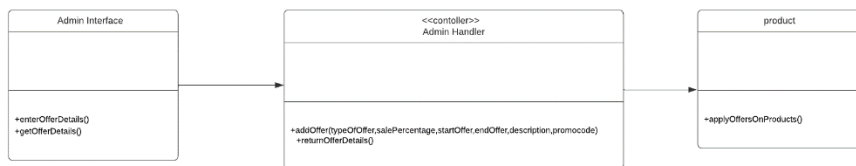
partial class diagram for communication diagram (2) : use case" add offer"

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2. Select two complex use cases:
   ● Generate and draw a **partial class diagram** using **multi-layer sequence diagram** (**show steps**).

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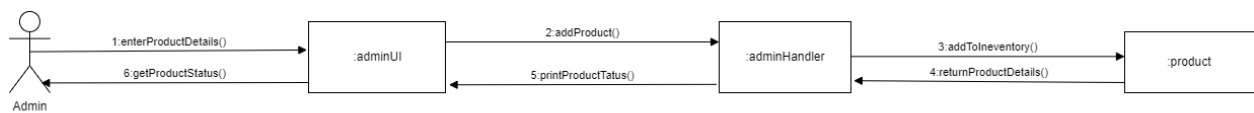**Under supervision:** Dr. Iman Helal – Dr. Dina Ezzat
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<<Boundary>> Return product		<<controller>> Return product		<<entity>> Product

```
<<Boundary>>                      <<controller>>                    <<entity>>
Return product                    Return product                    Product

-productName string                                                 -productName: string
-orderNumber:string                                                 -productID:string
                                  returnProduct(productName,         -price:double
+returnProduct()                  orderNumber)                       -amount:string
+confirmReturn()                                                     -category:string
                                                                     -productionDate:date
                                                                     -expiryDate:date
                                                                     -description:string
                                                                     -policyDetails:string

                                                                     +checkPolicy(orderNumber,productName)
```
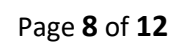
partial class diagram for sequence diagram (1): usecase "Return Product"

```
<<Boundary>>              <<controller >>            Customer
Login                     Account
                                                     -customerName:string
-userName:string                                     -phoneNumber:string
-password:string          +login(userName,password)  -username:string {key}
                                                     -password:string
+login()                                             -nationalID:string

                                                     +login(userName,password)


<<Boundary>>              <<controller>>             Product
product retrieval         product
                                                     -productName: string
-productName:string       -productList:product [ ]    -productID:string
-amount:int               -totalPrice:double          -price:double
                                                     -amount:string
                          +searchForProduct(productName)  -category:string
+addToCart()              +addToCart(productName,amount)  -productionDate:date
+searchForProduct(productName)  +buyProduct(list[productName,  -expiryDate:date
+buyProduct()             amount],totalPrice)         -description:string
                                                     -policyDetails:string

                                                     +searchForProduct(productName)
                                                     +addToCart(productName,amount)
                                                     +buyProduct(list[productName,
                                                     amount],totalPrice)

                                                     Cash
                                                     -state: string
<<Boundary>>              <<controller>>             -paymentID: string
Payment Form             Payment
                                                     +payOnDelivrey(totalPrice)
-totalprice:double        -cardnumber:string
-cardNumber: string       -password: string
-password: string         -totalPrice: double

+payForProducts()         +payOnDelivery(totalPrice)  credit
+choosePaymentMethods()   +enterCredentials(cardNumber, password)
+payOnDelivery()          +payWithCard(totalPrice)   -state: string
+payWithCard()                                       -paymenID: string
+enterCredentials()                                  -cardNumber:string
                                                     -password:string

                                                     +enterCredentials(cardNumber, password)
                                                     +payWithCard(totalPrice)
```

partial class diagram for sequence diagram (2): usecase "buy product" with its includes

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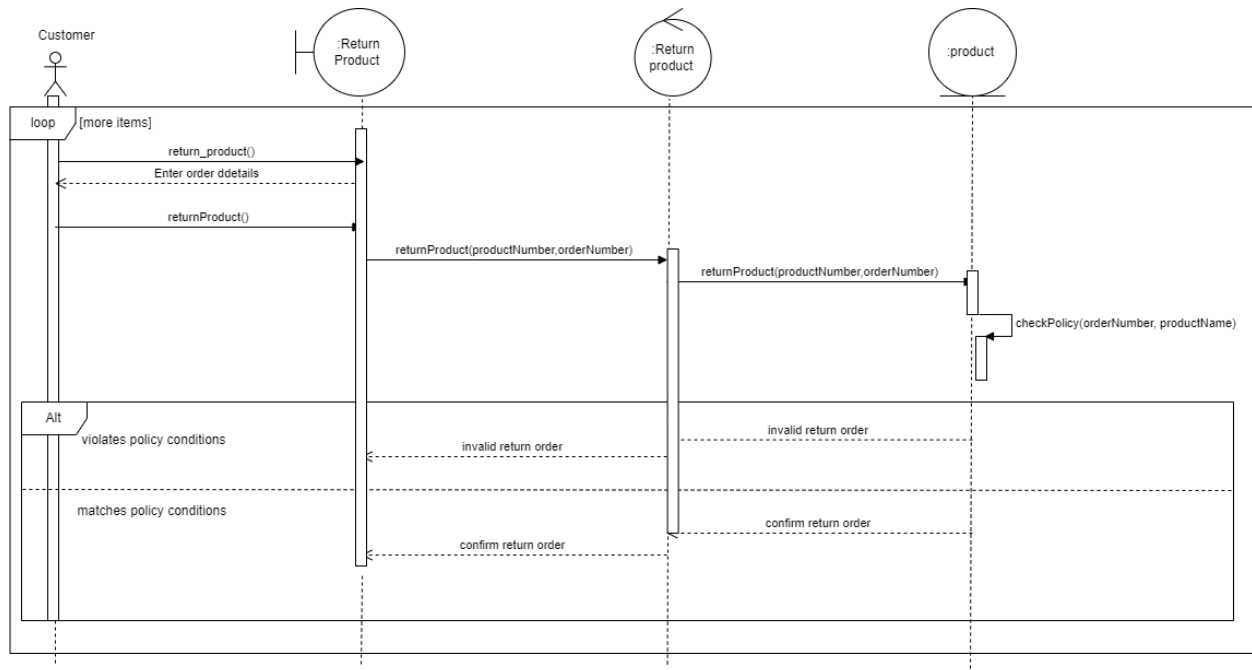**Faculty of Computers and Artificial Intelligence**
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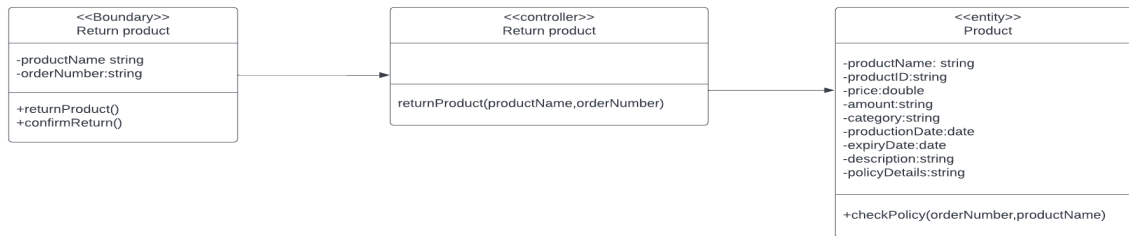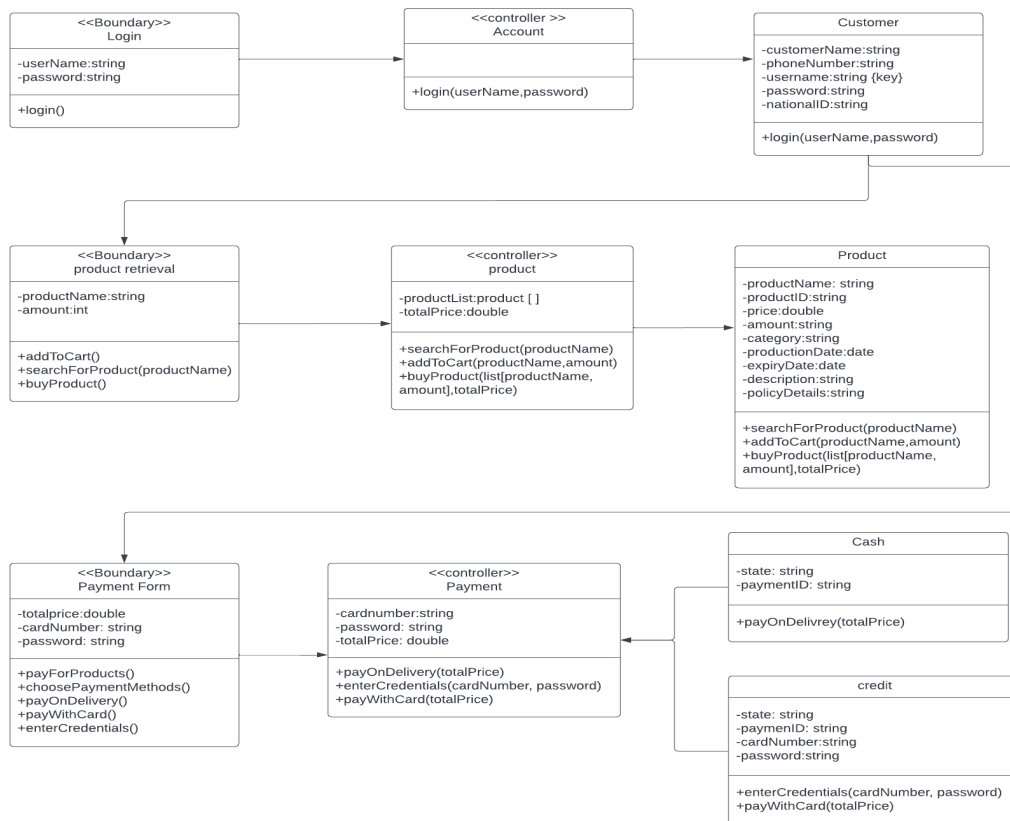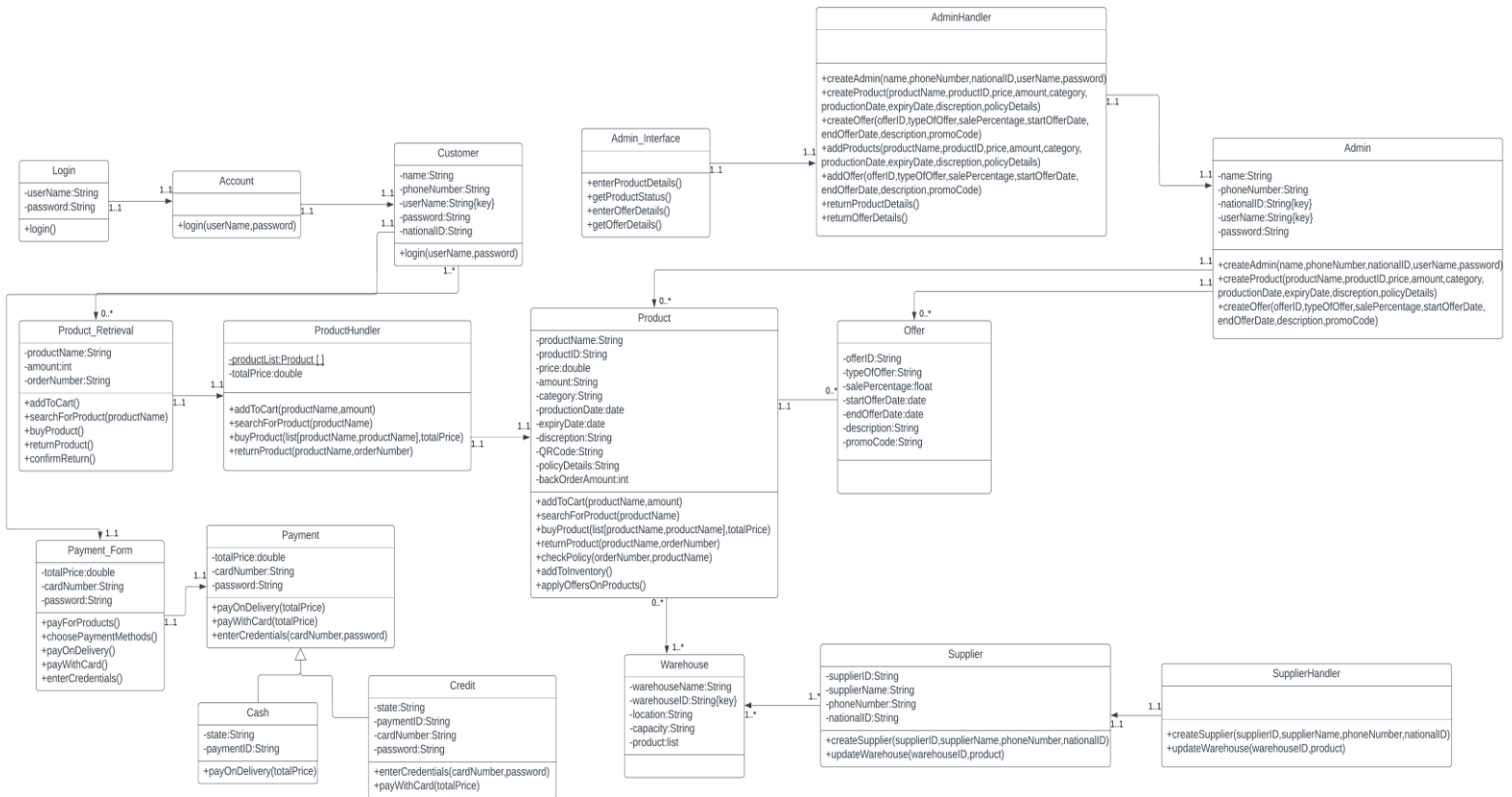**Under supervision:** Dr. Iman Helal – Dr. Dina Ezzat
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3. Generate and draw **final-cut class diagram** output from 1.a, 1.b, and 2
    [**Fully defined attributes and methods, navigation, multiplicity**].

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4. Generate and draw **package diagram** from the resulted detailed class diagram in 3.

View Layer

Login	ProductScreen
AdminScreen	OfferScreen
Payment_Form	SupplierScreen

Domain Layer

AdminHandler	Product
ProductHandler	Supplier
SupplierHandler	Admin
Customer	Offer
Account	Product_Retrieval
Cash	Warehouse
Credit	Paymernt

Data Access Layer

OfferDB	ProductDB
WarehouseDB	
SupplierDB	