ITERATION 05

Dairy Farm Management

Client Name:

Dr. Taimoor Khan

Submitted by:

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Requirements:

- The CEO/Admin of the Dairy Farm will be provided with admin account that has access to all the data of employees and the management system.
- Only the CEO/Admin can create further accounts of managers, employees, accountants and workers.
- The account has its username and password to verify whether employee's data is available or not.
- For account creation of accountant, employee or worker, the name, CNIC, gender, phone, address, password is required as an input.
- The manager of cow's expenses can view/update/delete the data of the cows, including their registration number, age etc, the selling of cows and the accountants to calculate the expenses for the cows including their food and vaccinations.
- The manager of the sales department has the data of the shops and customers and the accountants to calculate the profit/loss.
- The manager of the salaries department has the data of managers, accountants and employees to manage their pays.
- The customer's account is created by the manager of Sales Management module that includes the information and data of the customers..
- When a baby cow is born or bought from outside, the entry is made for it. It mentions the number of cattle, its weight and expenses that includes the buying amount of the cattle while making payment and the health expenses.
- The city/sector management includes the milkmen division according to the area.
- Payments received from customers are updated in their account.
- The profit/loss is calculated by the accounting cycle at the end of the month.
- Milk sheet is generated that contains the amount of milk, obtained by each cow to show the quantity of milk.

- To view the profit/loss, the graphical report is generated that consists of the amount of milk produced by all the cows for a time period against the sum of all expenses of the cows.

Use Cases:

Admin Account:

- The CEO/Admin of the Dairy Farm will be provided with admin account.
- Admin has access to all the data of employees and the management system.
- Admin can view and edit the data of the employees.

Create Account:

- Only the CEO/Admin can create the accounts of managers, employees, accountants and workers.
- The Admin will add the data of the users.
- The users can view their data and salaries etc, on their account.

Account Login:

- The account has its username and password to verify whether emplopyee's data is available or not.
- The username can only contain letters or numbers.
- The password must contain special characters.
- Check if the username and password is available in the database.
- In case of invalid password for the username, the recovery is through phone number.

Account Requirements:

- To create a new account of accountant, employee or worker, the Name, Father Name, CNIC, Gender, Phone, Address are required to be mentioned by the user.
- The info for the username is stored in the database.
- For login, the user is asked to enter the username and password is required as input.

Cow Expenses:

- The buying of calves is managed by the Manager of the Cow's department.
- The manager views the cow's expanses and the data of the cows, including their registration number, age, health status and profitability etc.
- The accountants to calculate the expenses for the cows, including their food and vaccinations.
- The selling of aged cows or cows having bad health situation, when they cannot produce more milk and need to be sold for slaughtering. The profit after selling is also calculated by the accountant.

Sales Calculation:

- The milk is supplied to the customers via home delivery system, to shops in raw form and in packets to the market.
- The manager of the sales department has the data of the shops and customers.
- The accountants to calculate the profit/loss.

Salaries Expenses:

- The manager of the salaries department has the data of managers, accountants and employees.

Customer's Account:

- Add new customers.
- Each customer has its number, name and address etc.
- View customer's list in which the data is stored.
- Add and view all customers' payments.
- Generate/Print bills of customers.

Add New Animal:

- When baby cow is born or bought from outside, the entry is made and addAnimal() is called.
- The cattle is assigned a number for registration
- The expanse for buying is mentioned.
- This cow's data entered, including the weight, birth date etc.

City/Sector Management:

- Addresses of all customers.
- With the entry of new customer, the function of storing the address of customers for delivering milk to them.

Customer bills payment:

- Bills received from customers are entered to the customer's bill portion in the customer's data.
- The bills received are summed up by the accountant of milk delivery management.

Accounting Cycle:

- The accounting cycle is conducted for each month.
- The salaries of employees are entered as an expense.
- The electricity, gas and water bills are expensed out.
- The expenses regarding buying of cows, the food and vaccinations are credited.
- The payments received from customers are debited.
- The money received by the selling of cows is debited.

Generate Milk Sheet:

- Amount of milk generated in a day.
- The milk sheet contains the amount of milk, obtained by each cow to show the quantity of milk.

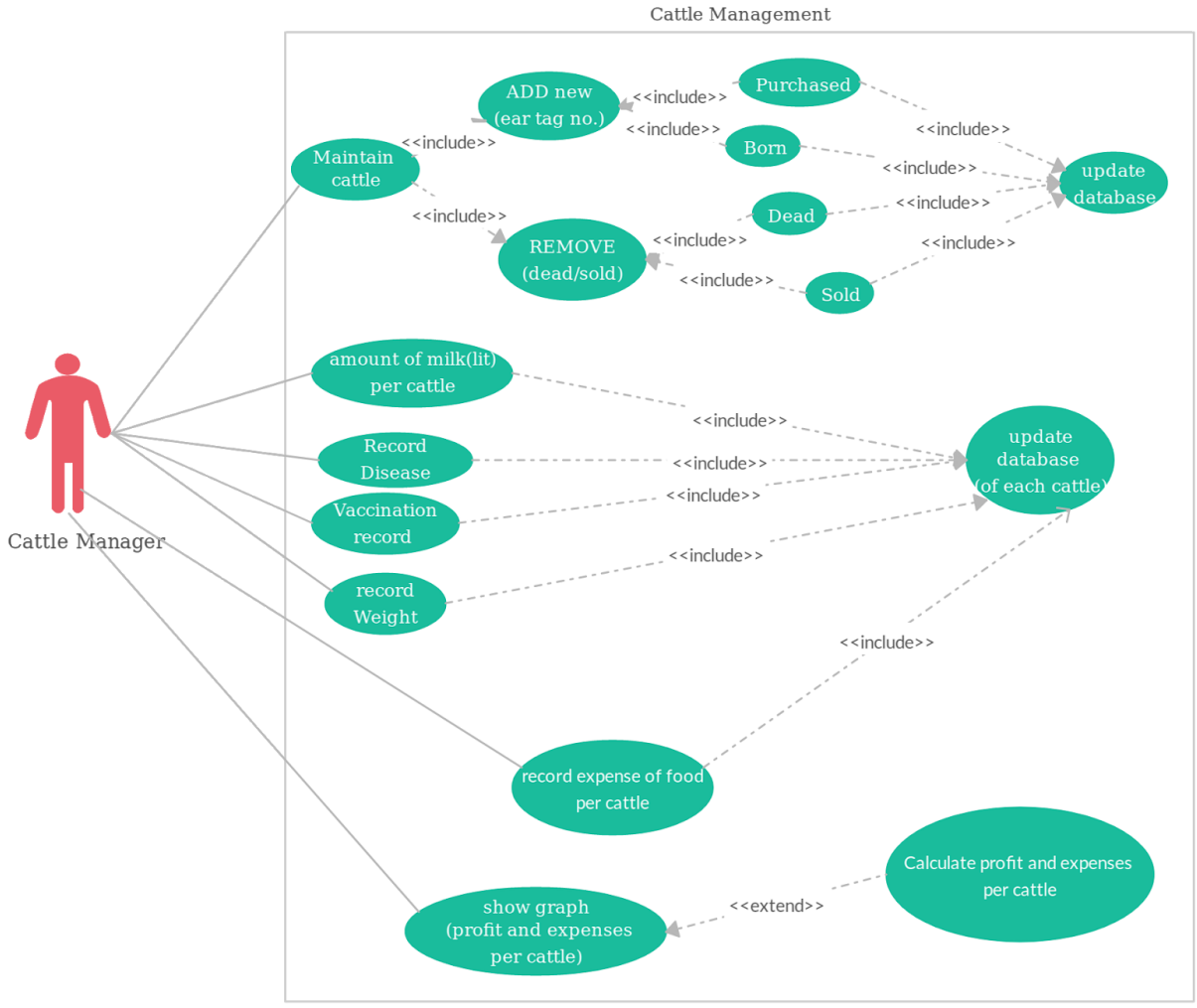
Generate Graph:

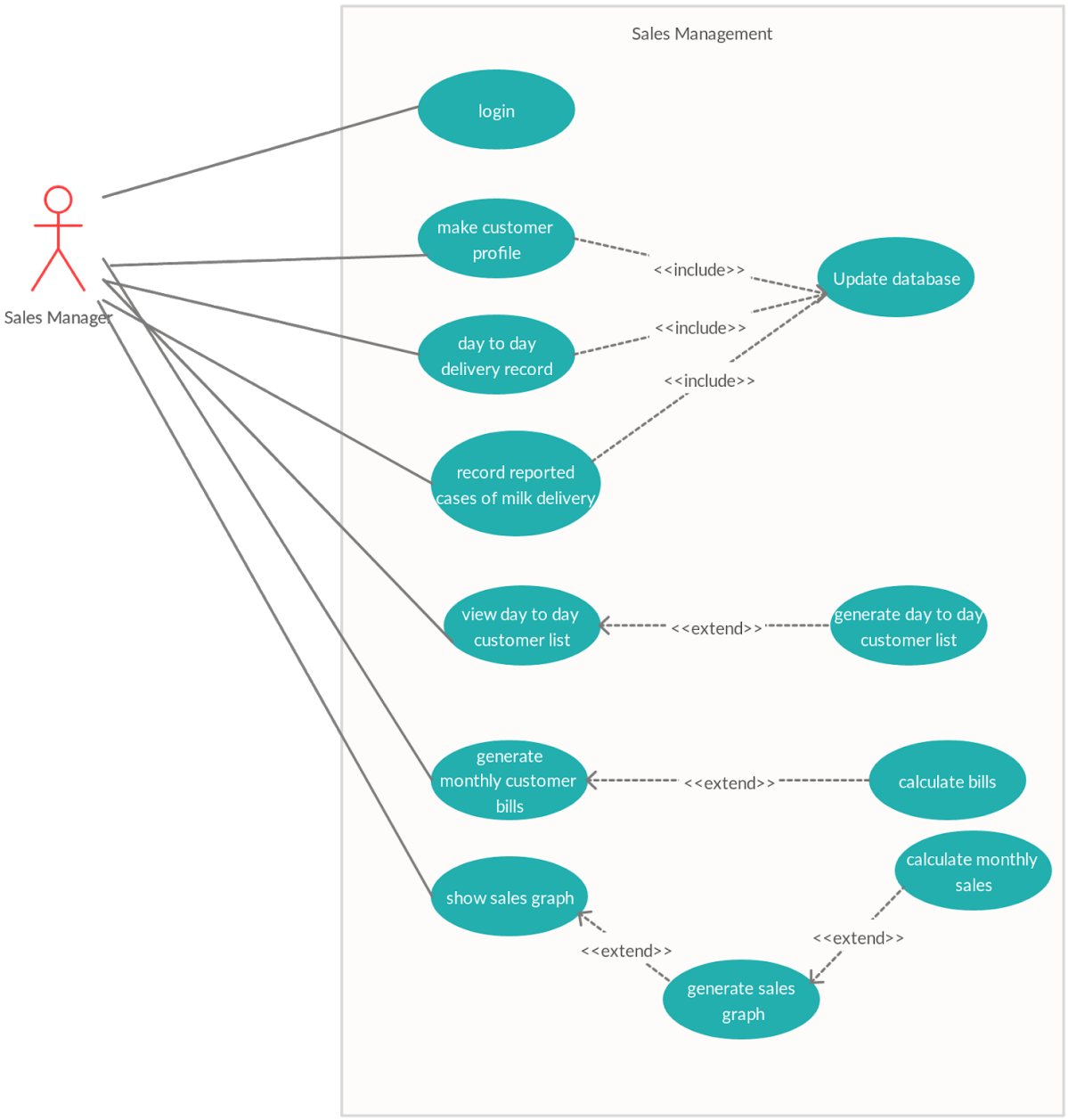
- A graph is created to check how the Cow is benefiting.
- The graph contains the amount of expenses drawn against the milk produced by the cow.

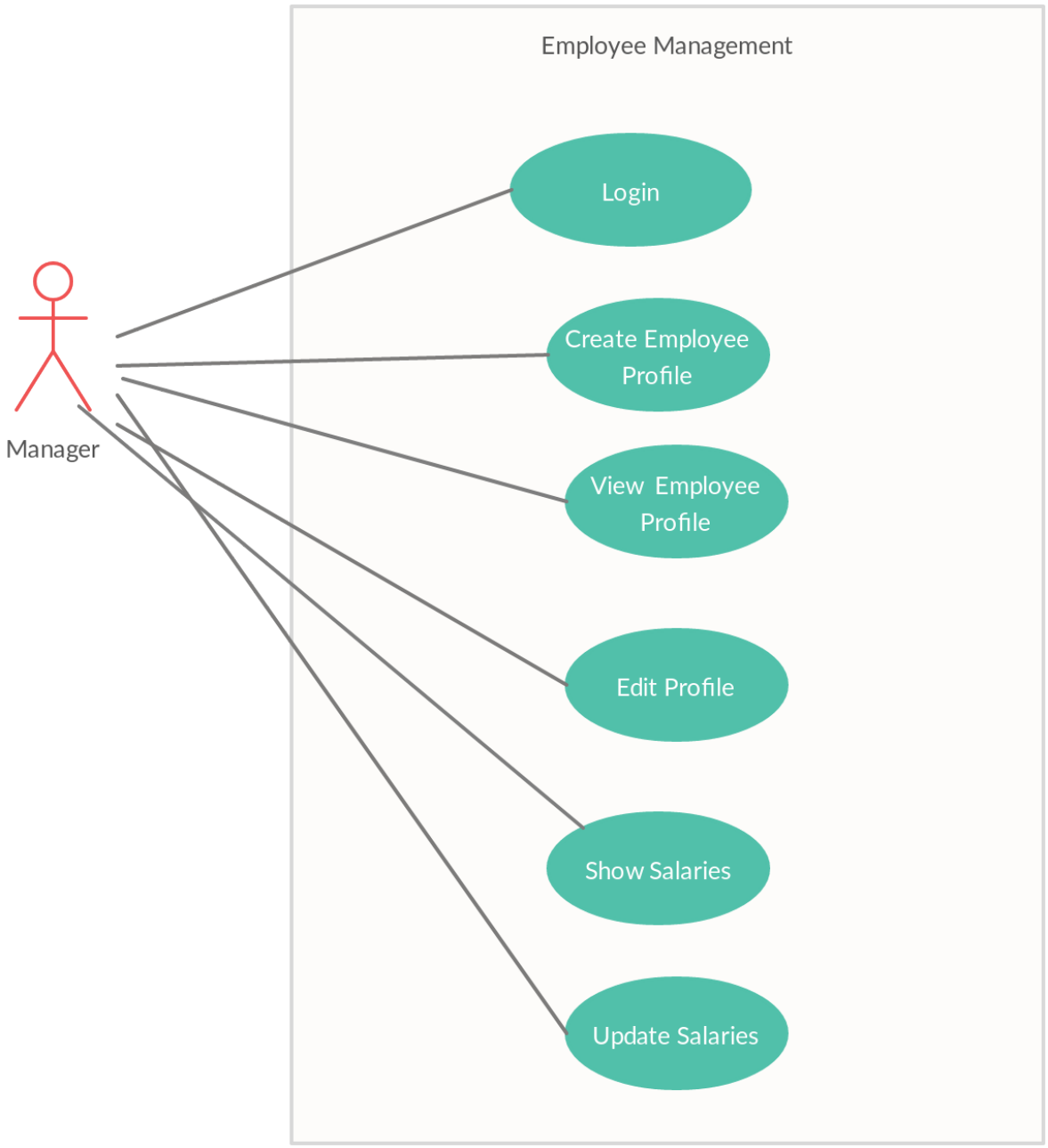
Graphical Report:

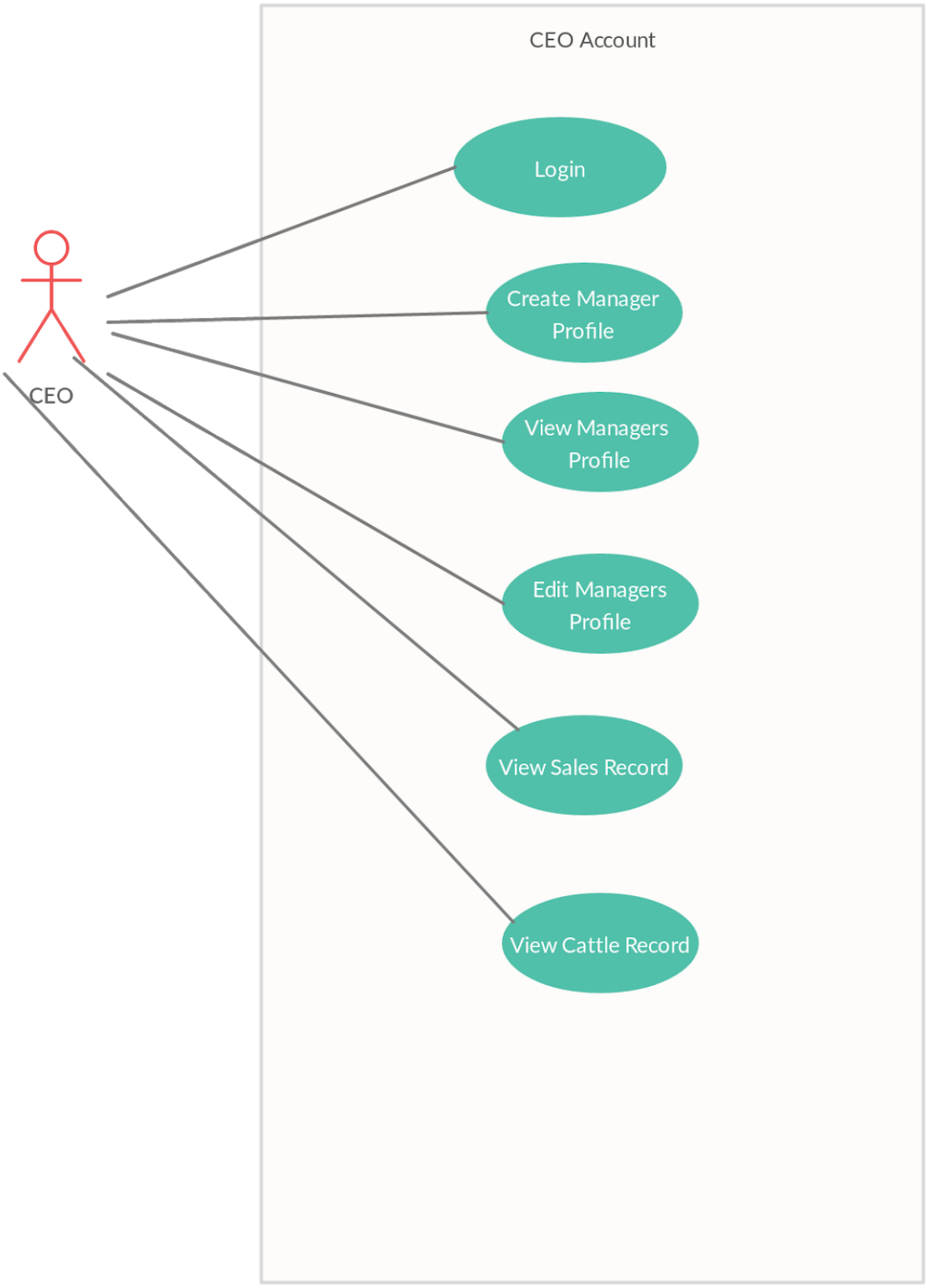
- The user is asked for the graph report options.
- The graph report options include the daily, weekly and monthly reports.
- The graphical report has the amount of milk produced by all the cows for the respective time period against the sum of expenses of the cows.

Use Case Diagrams:

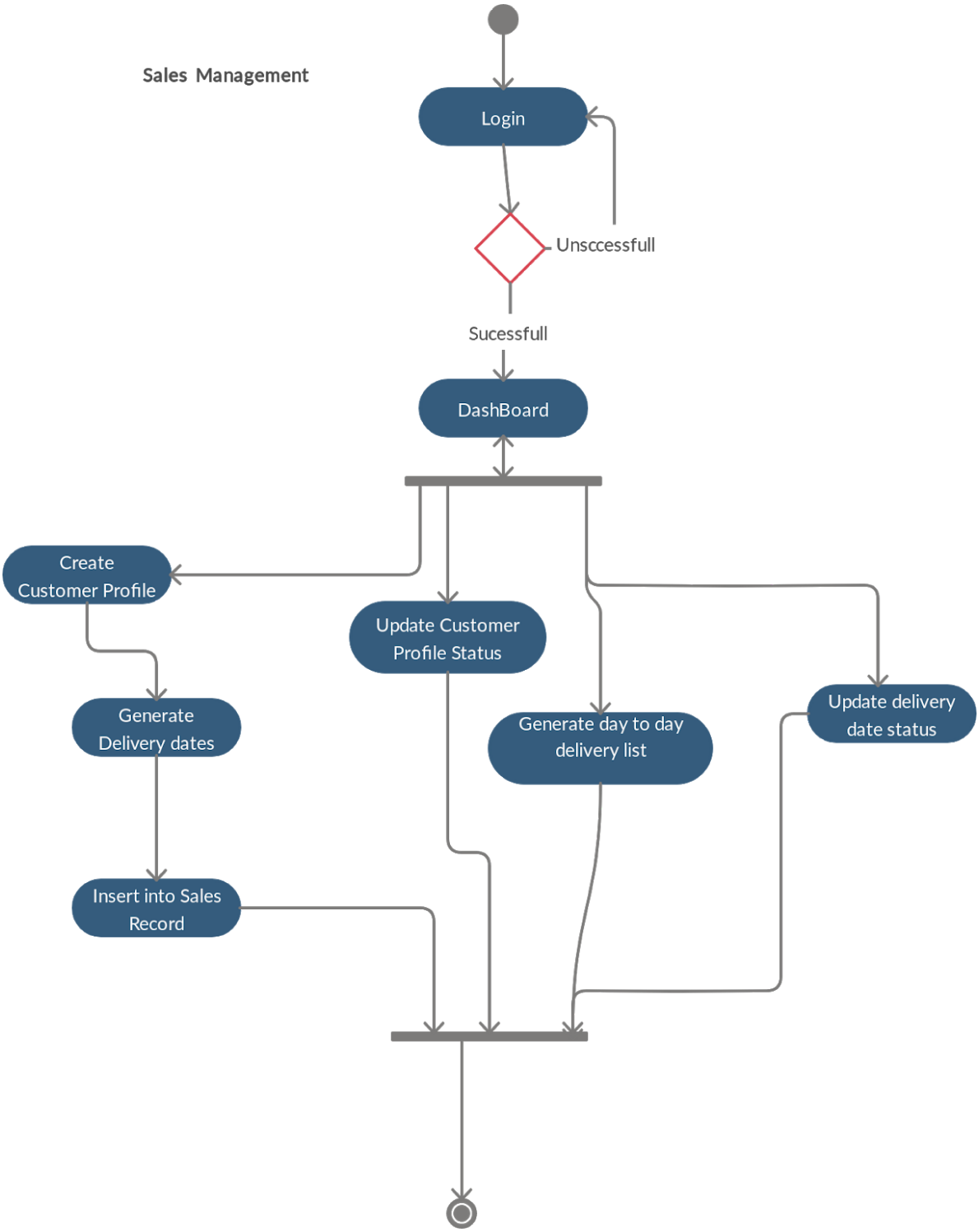


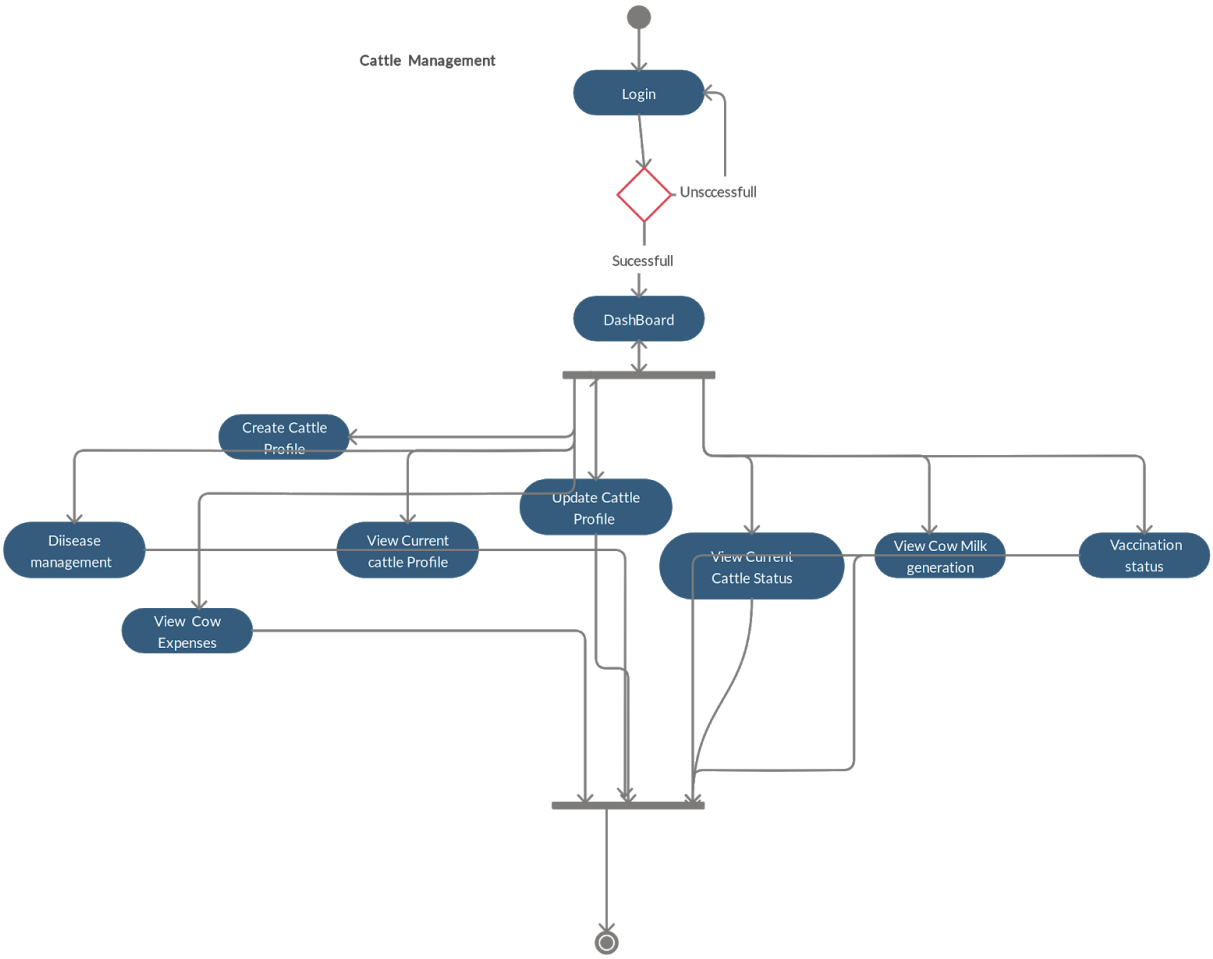

Sales Management
login
make customer profile
day to day delivery record
record reported cases of milk delivery
view day to day customer list
generate monthly customer bills
show sales graph
Update database
generate day to day customer list
calculate bills
calculate monthly sales
generate sales graph
<<include>>
<<include>>
<<include>>
<<extend>>
<<extend>>
<<extend>>
<<extend>>
Sales Manager

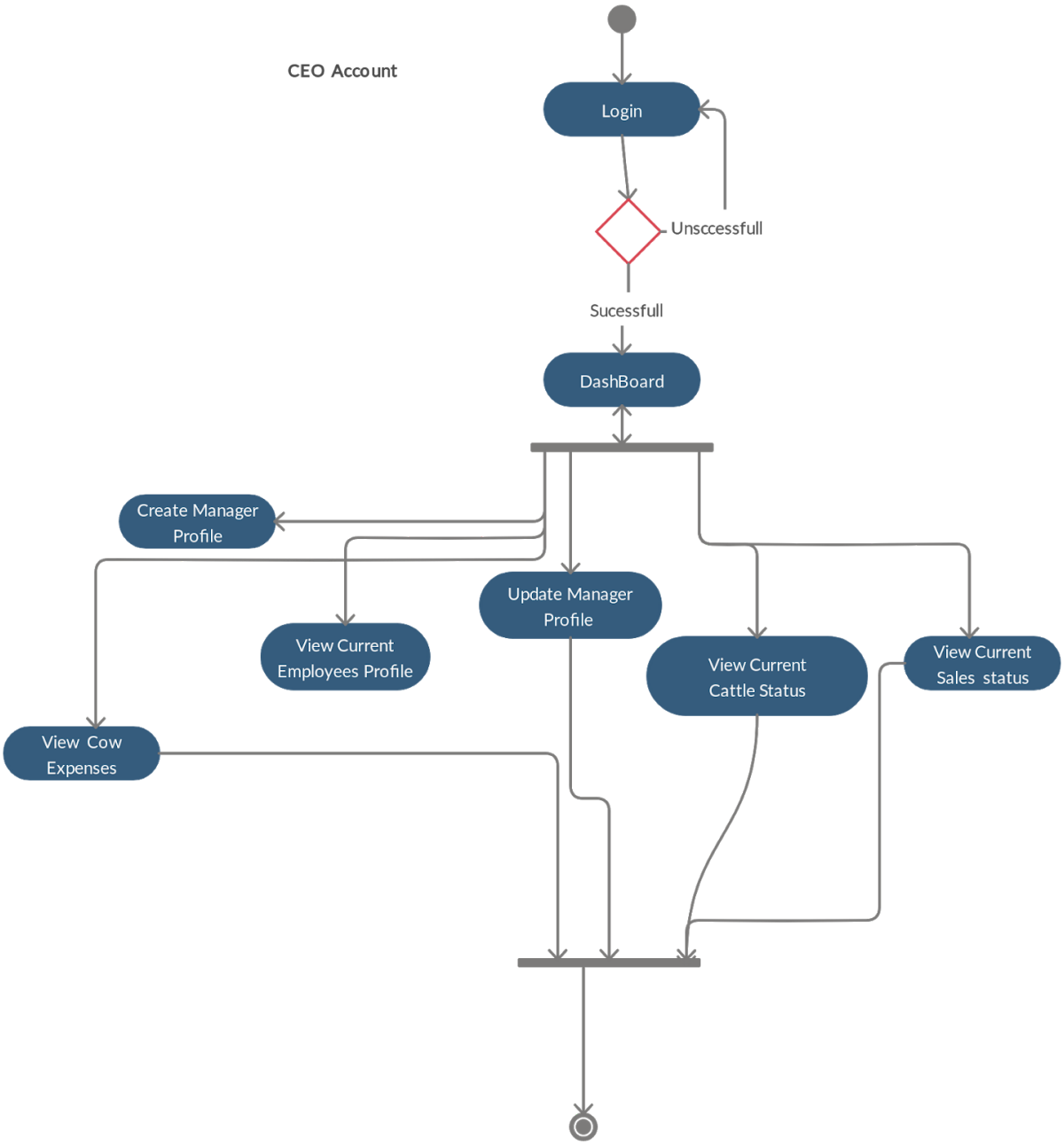

Employee Management
Login
Create Employee Profile
View Employee Profile
Edit Profile
Show Salaries
Update Salaries
Manager


CEO Account
Login
Create Manager Profile
View Managers Profile
Edit Managers Profile
View Sales Record
View Cattle Record
CEO

Activity Diagrams:

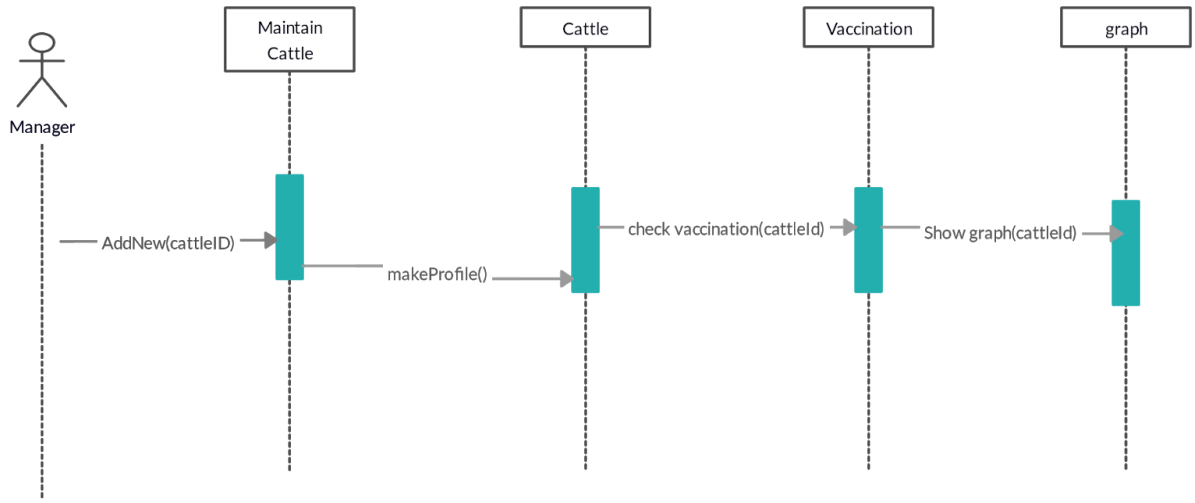



Cattle Management
Login
Unsccessfull
Sucessfull
DashBoard
Create Cattle Profile
Update Cattle Profile
Diisease management
View Current cattle Profile
View Current Cattle Status
View Cow Milk generation
Vaccination status
View Cow Expenses

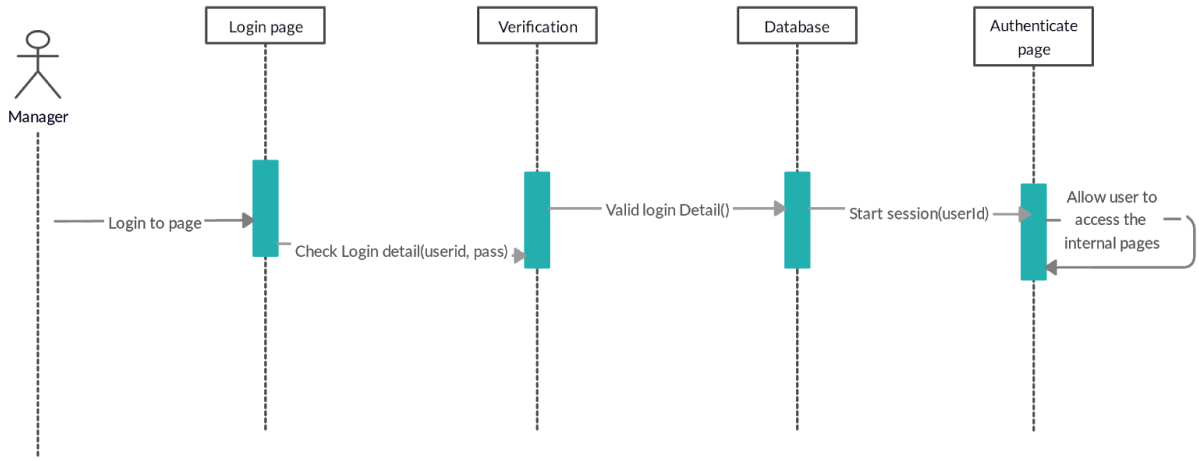

CEO Account
Login
Unsccessfull
Sucessfull
DashBoard
Create Manager Profile
Update Manager Profile
View Current Employees Profile
View Current Cattle Status
View Current Sales status
View Cow Expenses

Sequence Diagrams:

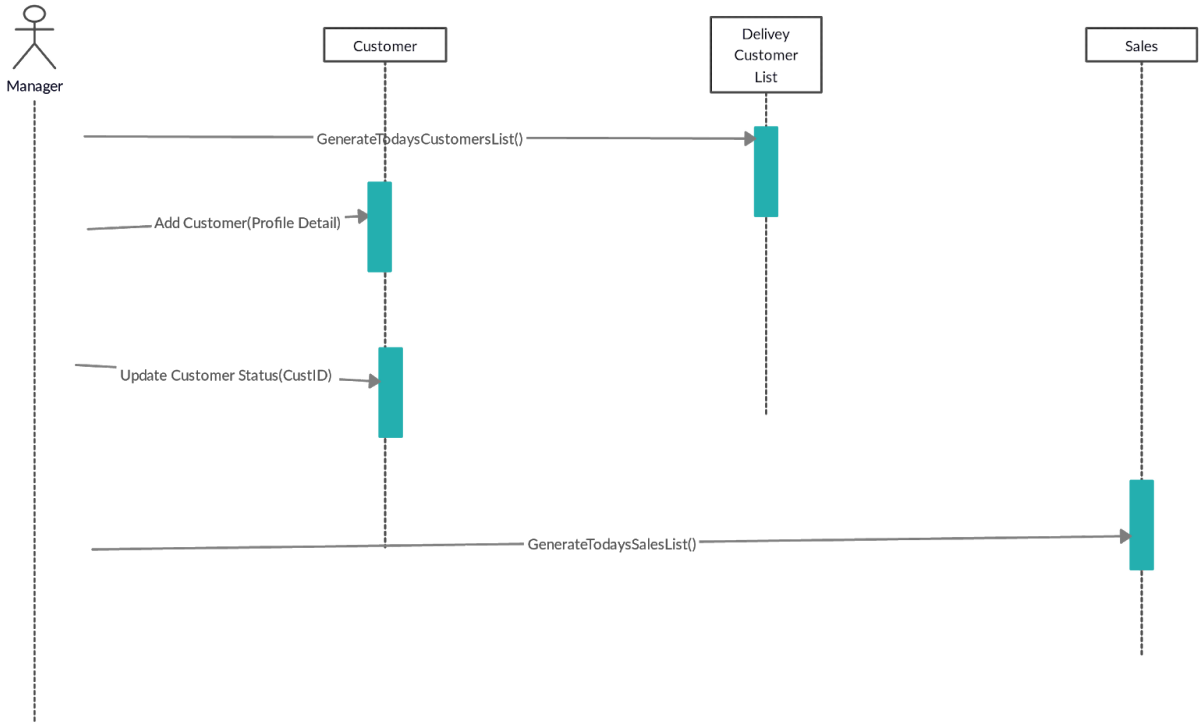
Cattle Account:



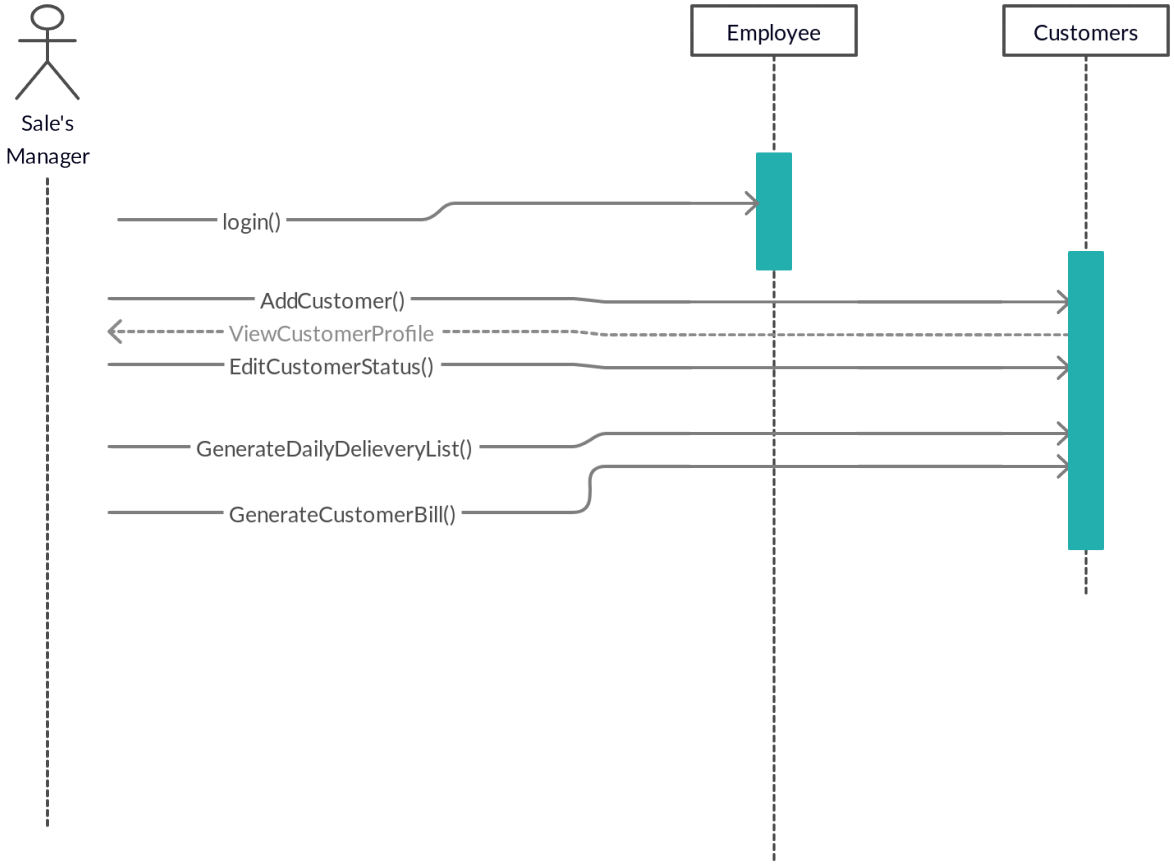
Manager’s Login:



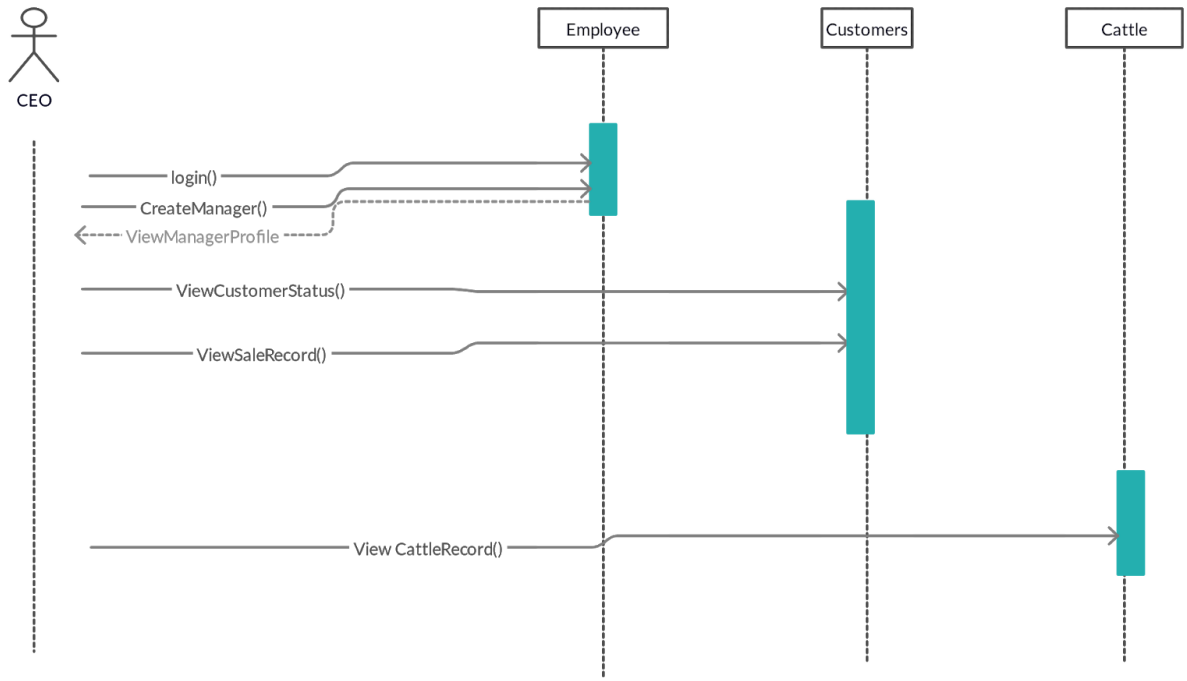
Sales Management:



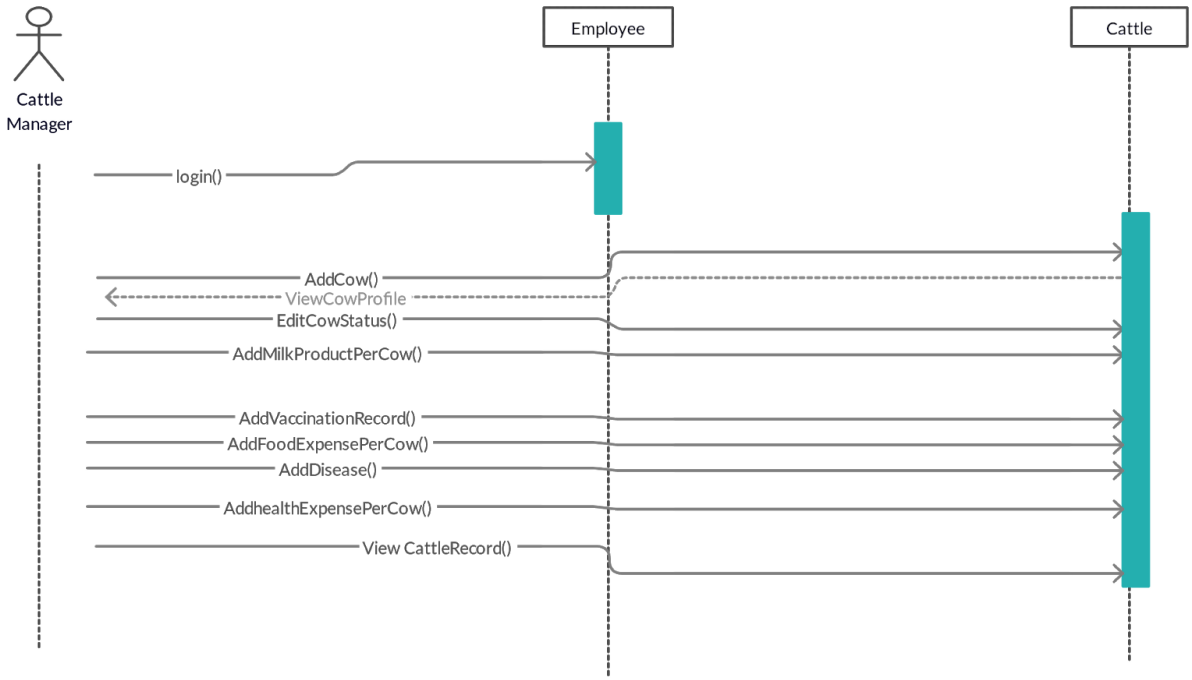
Customer’s Management:



CEO Account:

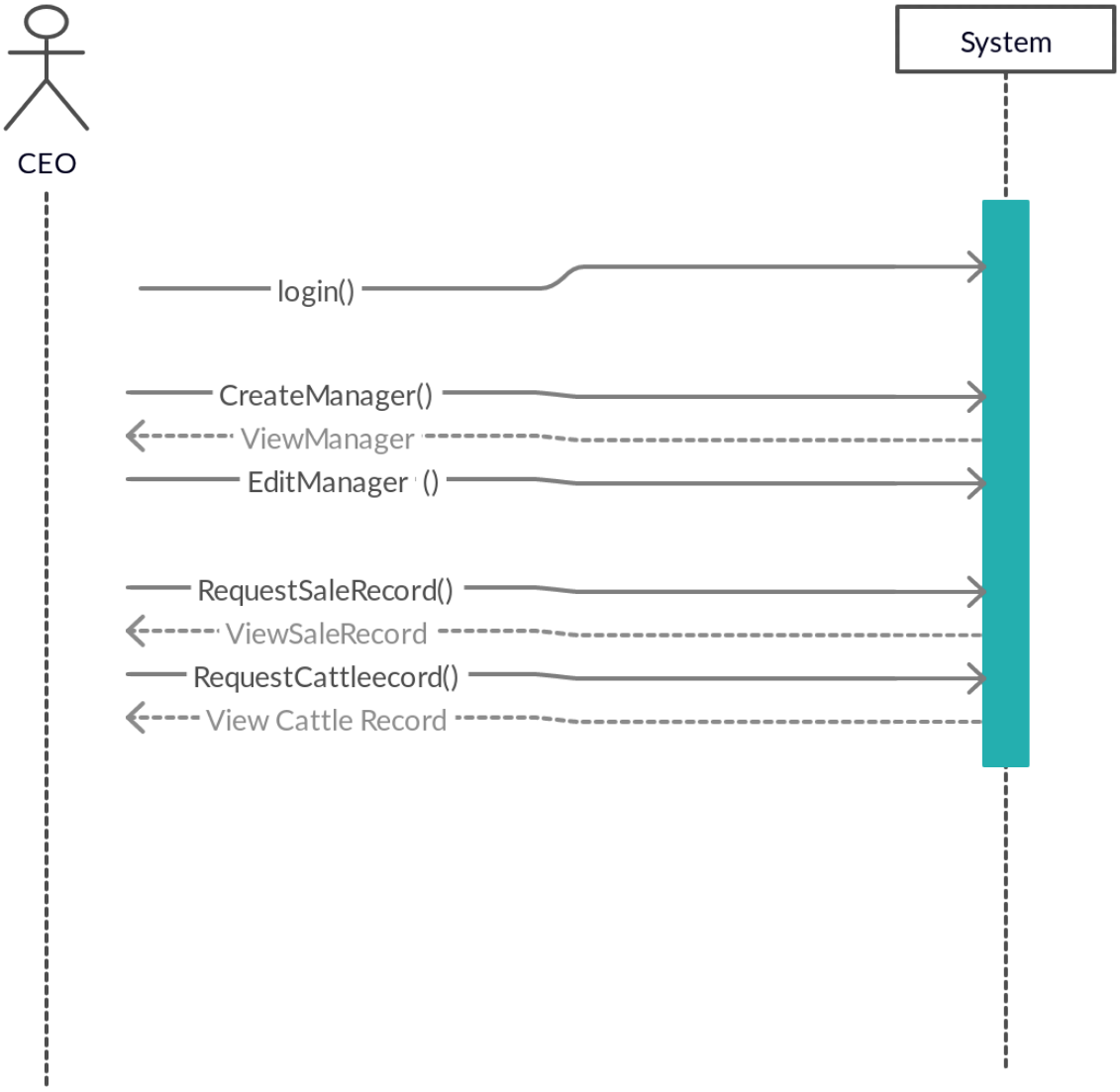

CEO
Employee
Customers
Cattle
login()
CreateManager()
ViewManagerProfile
ViewCustomerStatus()
ViewSaleRecord()
View CattleRecord()

Cattle Management:

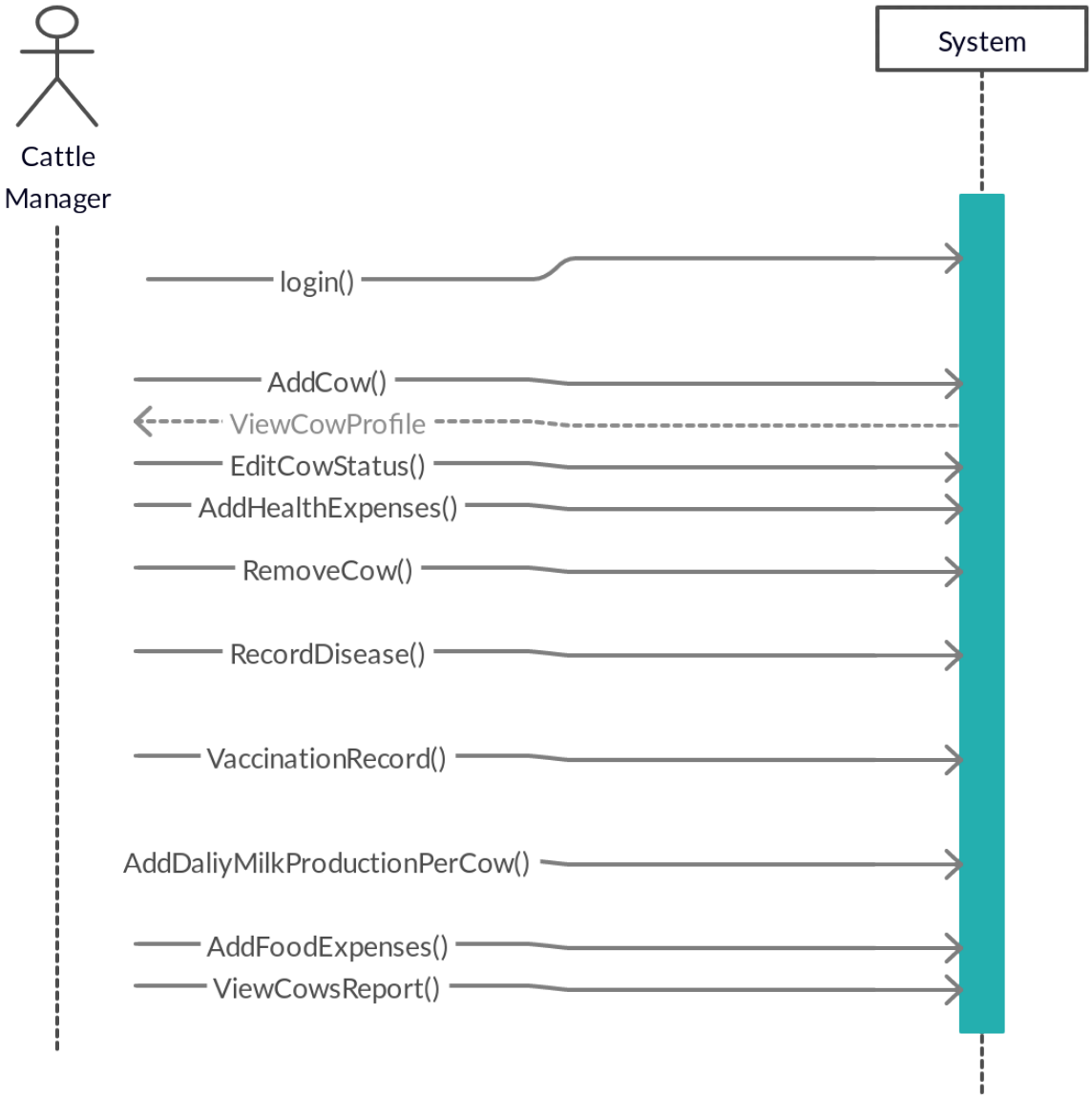


System Sequence Diagrams:

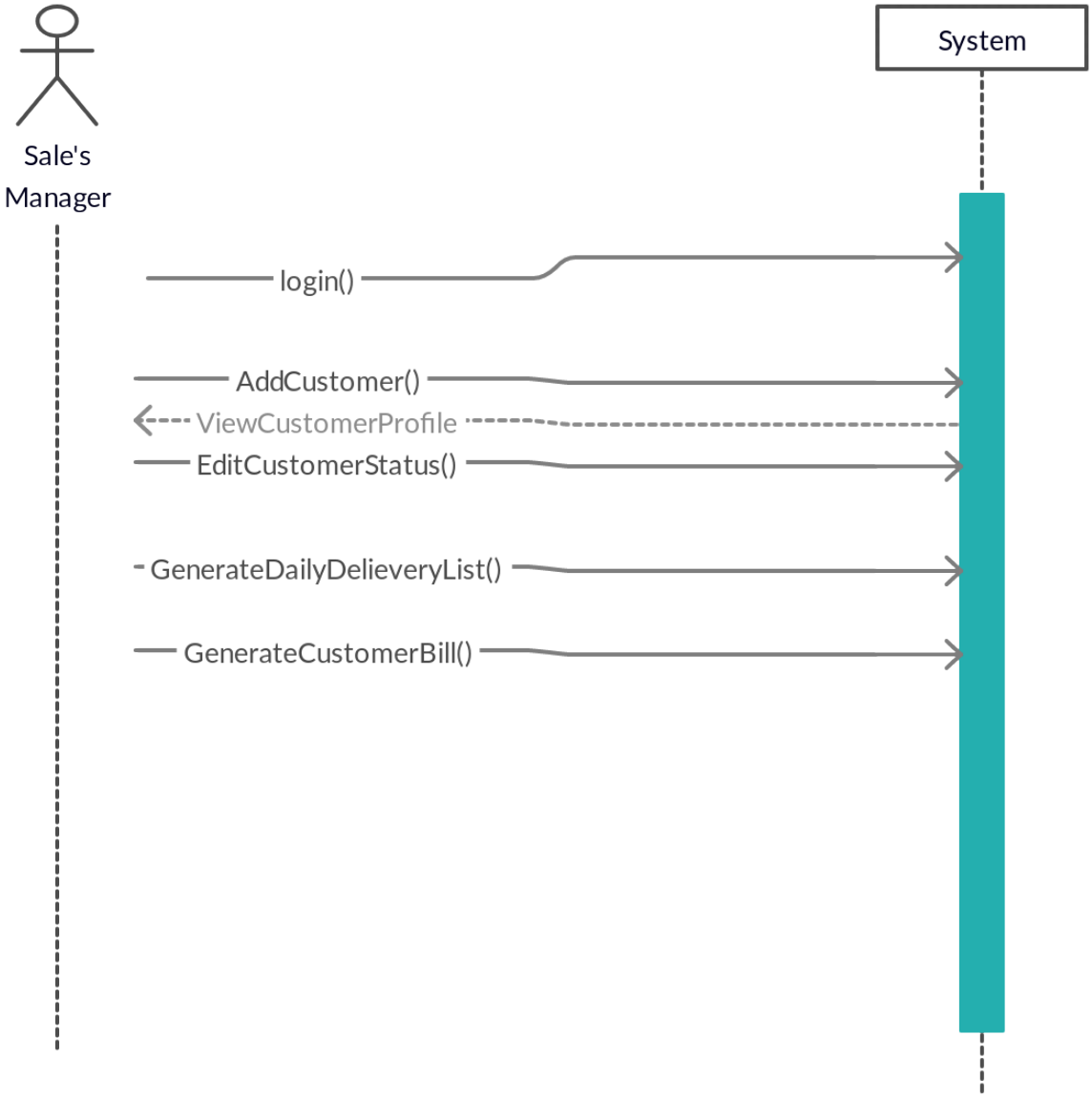
CEO Account:



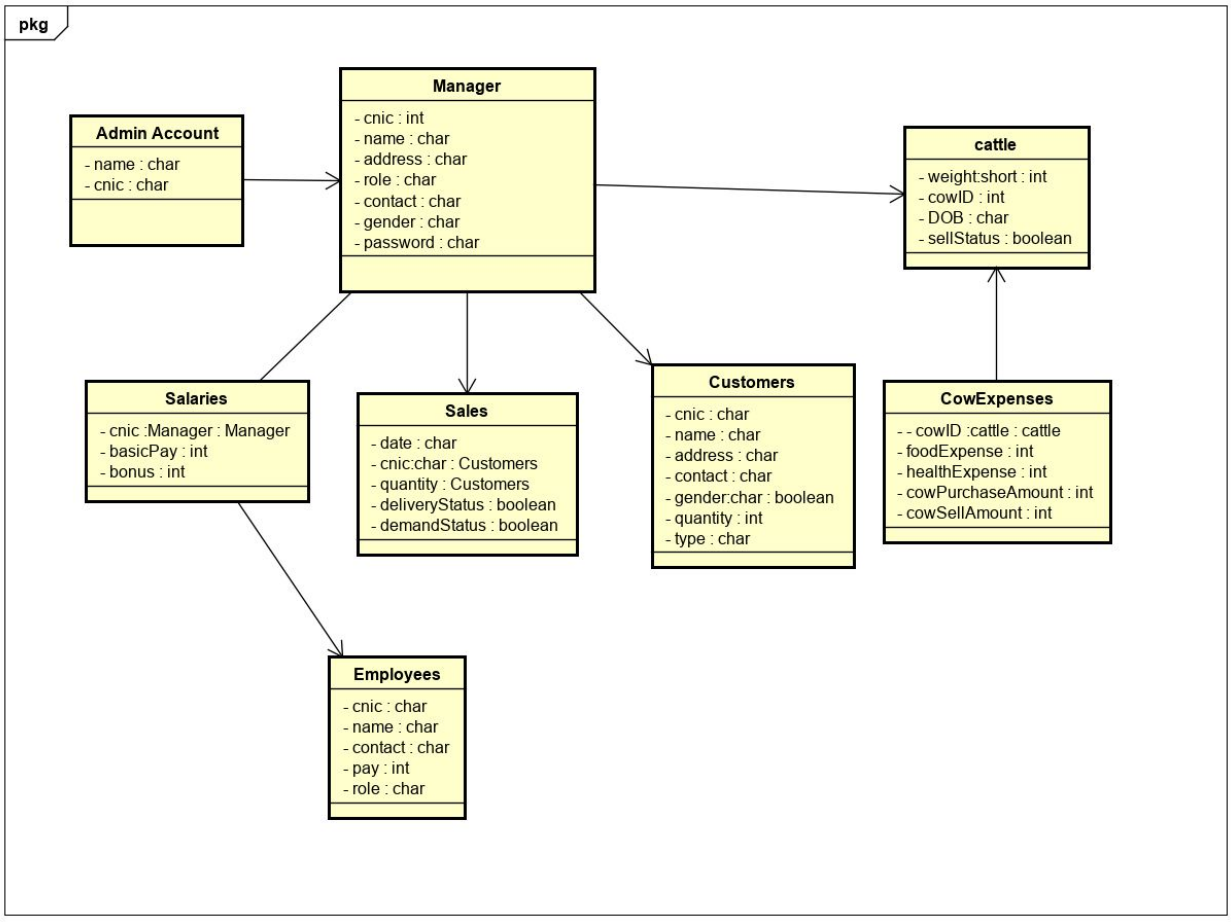
Cattle Management:



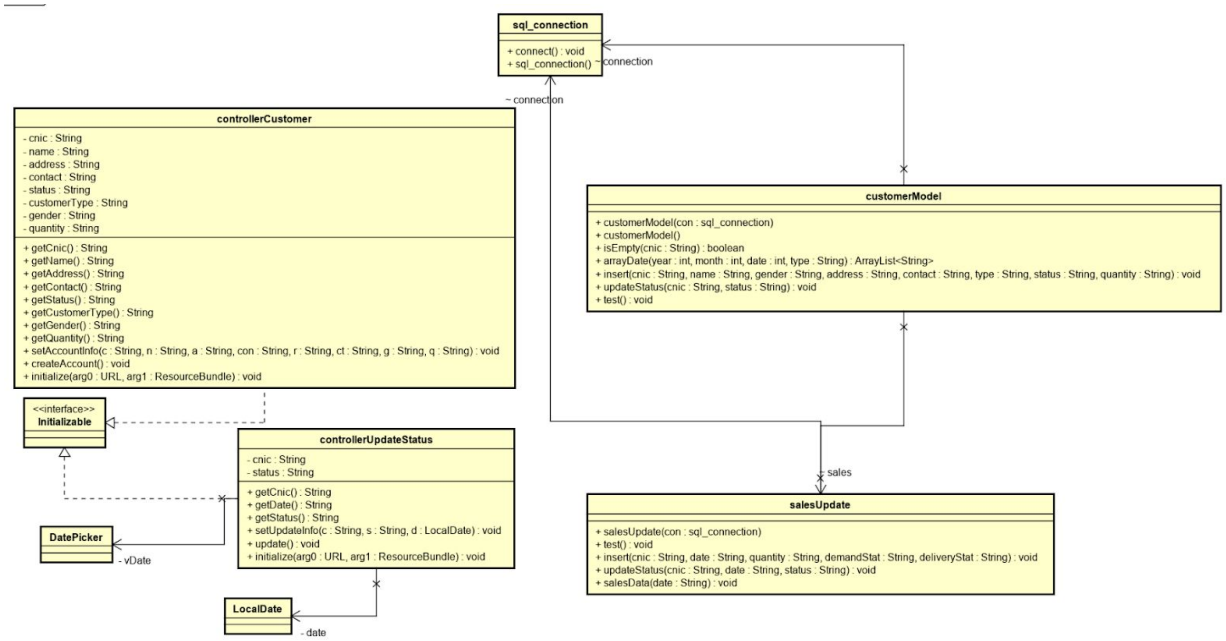
Sales Management:

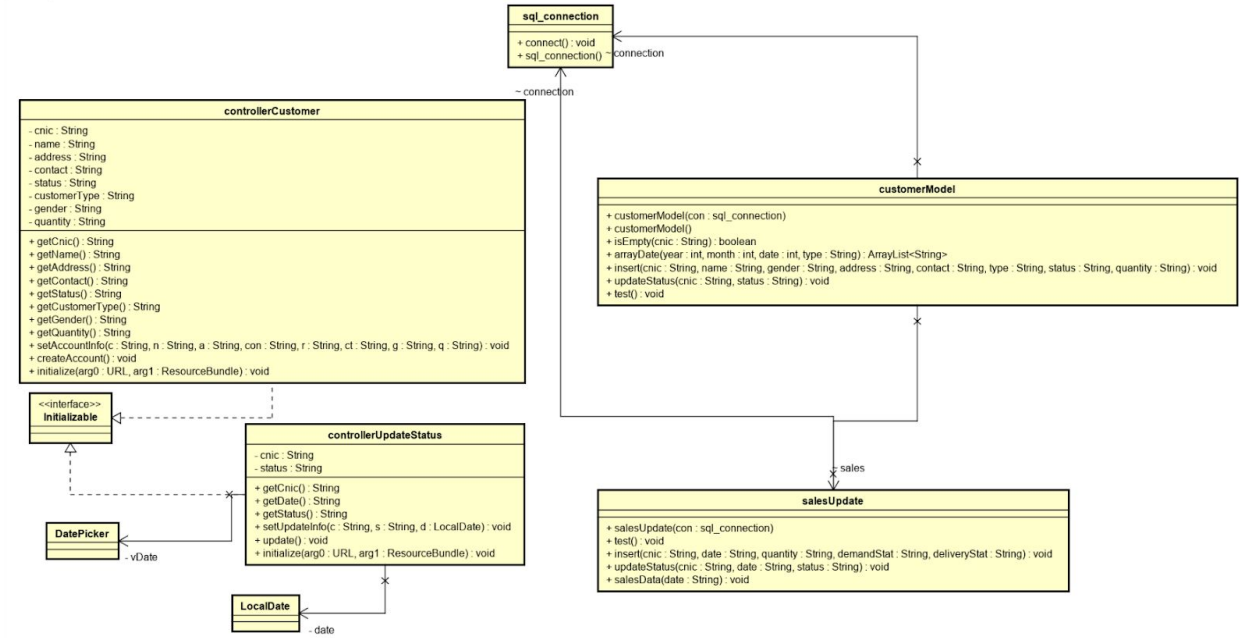


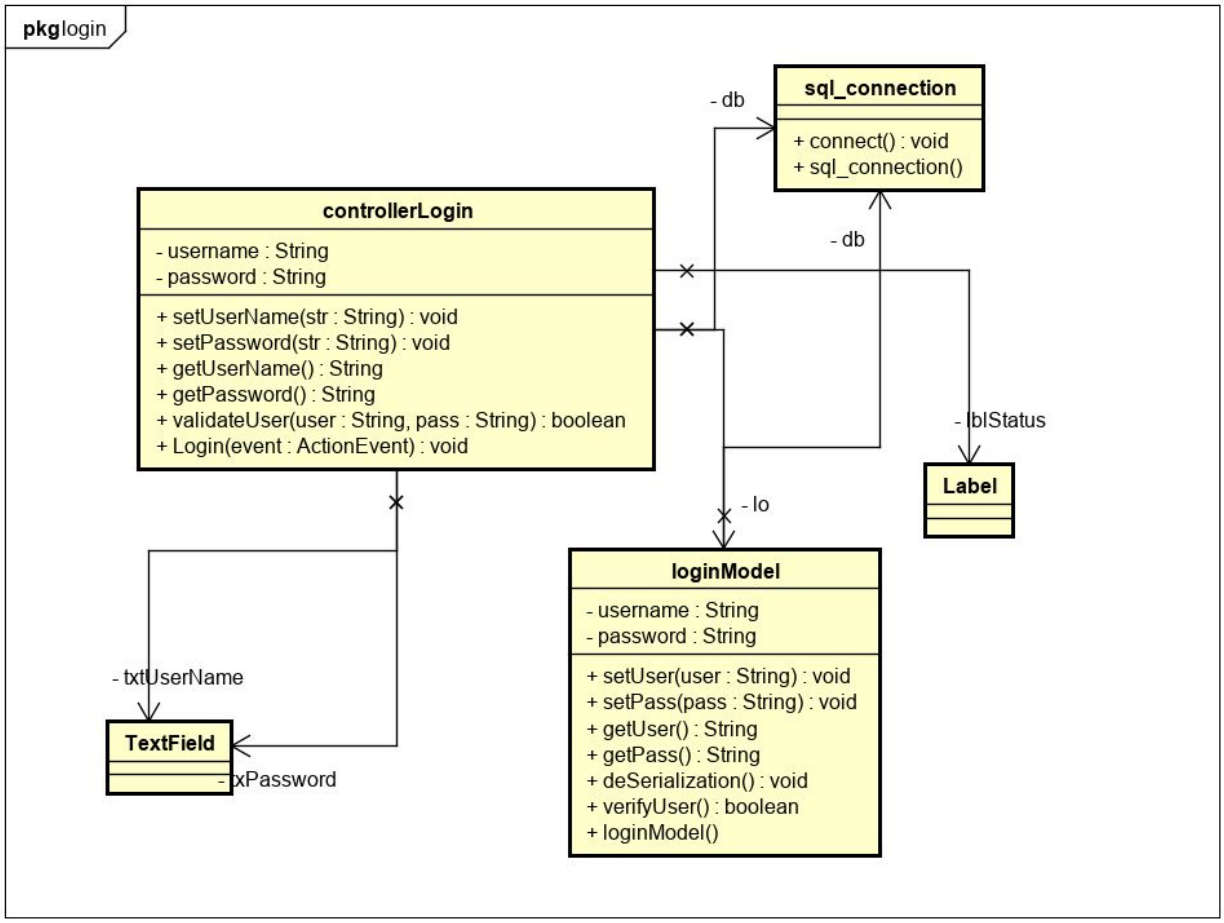
Domain Model:

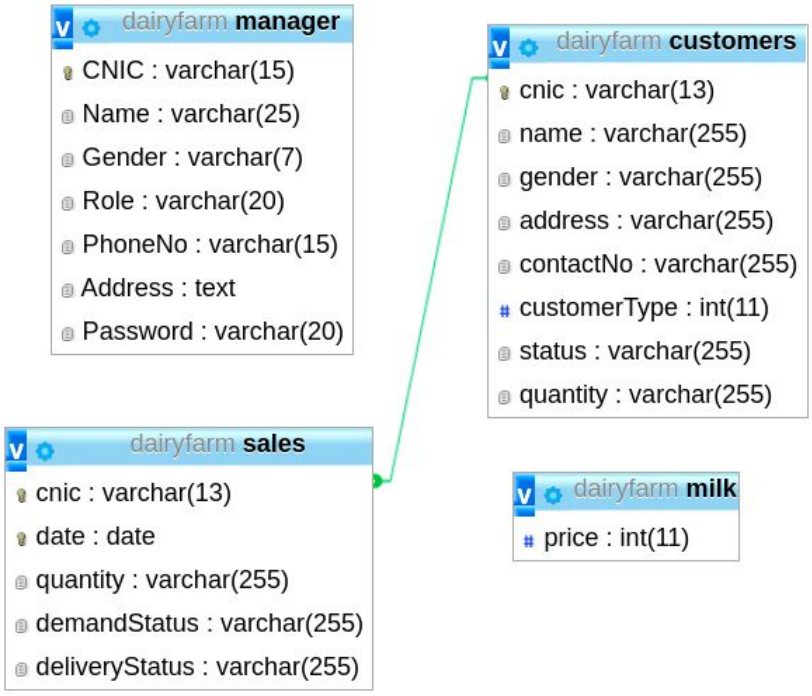


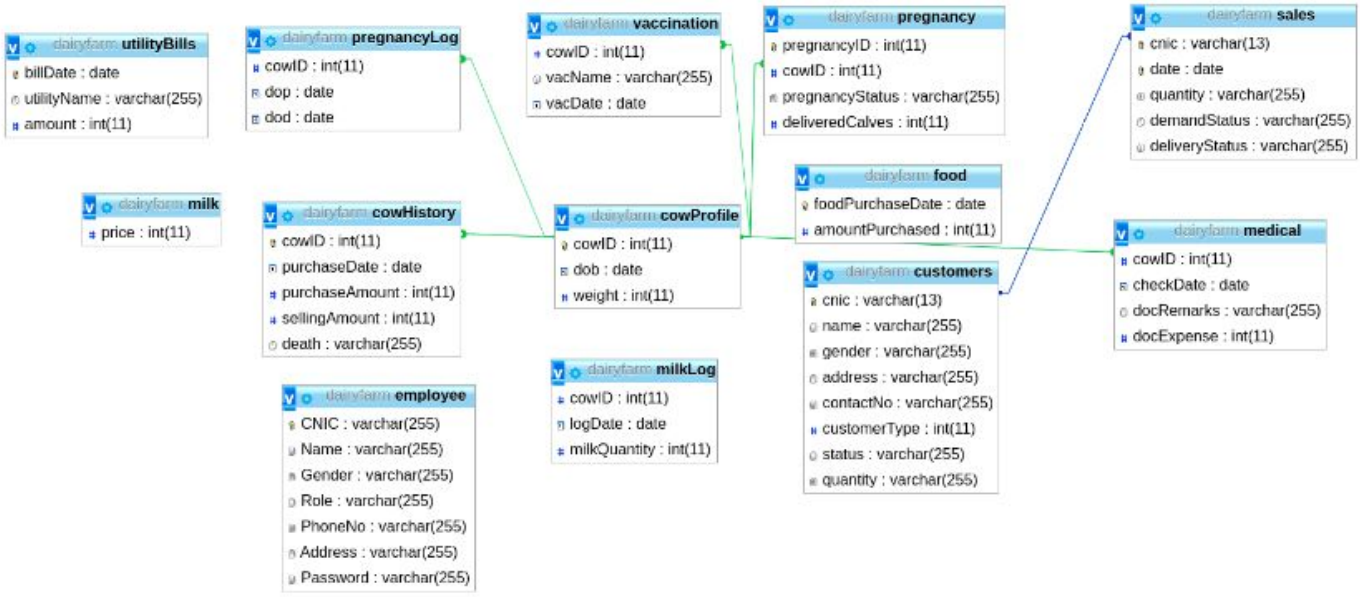
Class Diagrams:




sql_connection
+ connect() : void
+ sql_connection()
~ connection
~ connection
controllerCustomer
- cnic : String
- name : String
- address : String
- contact : String
- status : String
- customerType : String
- gender : String
- quantity : String
+ getCnic() : String
+ getName() : String
+ getAddress() : String
+ getContact() : String
+ getStatus() : String
+ getCustomerType() : String
+ getGender() : String
+ getQuantity() : String
+ setAccountInfo(c : String, n : String, a : String, con : String, r : String, ct : String, g : String, q : String) : void
+ createAccount() : void
+ initialize(arg0 : URL, arg1 : ResourceBundle) : void
customerModel
+ customerModel(con : sql_connection)
+ customerModel()
+ isEmpty(cnic : String) : boolean
+ arrayDate(year : int, month : int, date : int, type : String) : ArrayList<String>
+ insert(cnic : String, name : String, gender : String, address : String, contact : String, type : String, status : String, quantity : String) : void
+ updateStatus(cnic : String, status : String) : void
+ test() : void
<<interface>>
Initializable
controllerUpdateStatus
- cnic : String
- status : String
+ getCnic() : String
+ getDate() : String
+ getStatus() : String
+ setUpdateInfo(c : String, s : String, d : LocalDate) : void
+ update() : void
+ initialize(arg0 : URL, arg1 : ResourceBundle) : void
~ sales
salesUpdate
+ salesUpdate(con : sql_connection)
+ test() : void
+ insert(cnic : String, date : String, quantity : String, demandStat : String, deliveryStat : String) : void
+ updateStatus(cnic : String, date : String, status : String) : void
+ salesData(date : String) : void
DatePicker
- vDate
LocalDate
- date


pkglogin
sql_connection
+ connect() : void
+ sql_connection()
- db
controllerLogin
- username : String
- password : String
+ setUserName(str : String) : void
+ setPassword(str : String) : void
+ getUserName() : String
+ getPassword() : String
+ validateUser(user : String, pass : String) : boolean
+ Login(event : ActionEvent) : void
- db
- lblStatus
Label
- lo
loginModel
- username : String
- password : String
+ setUser(user : String) : void
+ setPass(pass : String) : void
+ getUser() : String
+ getPass() : String
+ deSerialization() : void
+ verifyUser() : boolean
+ loginModel()
- txtUserName
TextField
- txPassword


dairyfarm manager
CNIC : varchar(15)
Name : varchar(25)
Gender : varchar(7)
Role : varchar(20)
PhoneNo : varchar(15)
Address : text
Password : varchar(20)
dairyfarm customers
cnic : varchar(13)
name : varchar(255)
gender : varchar(255)
address : varchar(255)
contactNo : varchar(255)
customerType : int(11)
status : varchar(255)
quantity : varchar(255)
dairyfarm sales
cnic : varchar(13)
date : date
quantity : varchar(255)
demandStatus : varchar(255)
deliveryStatus : varchar(255)
dairyfarm milk
price : int(11)


dairyfarm utilityBills
billDate : date
utilityName : varchar(255)
amount : int(11)
dairyfarm pregnancyLog
cowID : int(11)
dop : date
dod : date
dairyfarm vaccination
cowID : int(11)
vacName : varchar(255)
vacDate : date
dairyfarm pregnancy
pregnancyID : int(11)
cowID : int(11)
pregnancyStatus : varchar(255)
deliveredCalves : int(11)
dairyfarm sales
cnic : varchar(13)
date : date
quantity : varchar(255)
demandStatus : varchar(255)
deliveryStatus : varchar(255)
dairyfarm milk
price : int(11)
dairyfarm cowHistory
cowID : int(11)
purchaseDate : date
purchaseAmount : int(11)
sellingAmount : int(11)
death : varchar(255)
dairyfarm cowProfile
cowID : int(11)
dob : date
weight : int(11)
dairyfarm food
foodPurchaseDate : date
amountPurchased : int(11)
dairyfarm customers
cnic : varchar(13)
name : varchar(255)
gender : varchar(255)
address : varchar(255)
contactNo : varchar(255)
customerType : int(11)
status : varchar(255)
quantity : varchar(255)
dairyfarm medical
cowID : int(11)
checkDate : date
docRemarks : varchar(255)
docExpense : int(11)
dairyfarm employee
CNIC : varchar(255)
Name : varchar(255)
Gender : varchar(255)
Role : varchar(255)
PhoneNo : varchar(255)
Address : varchar(255)
Password : varchar(255)
dairyfarm milkLog
cowID : int(11)
logDate : date
milkQuantity : int(11)

Traceability Matrix:

Req no:	Req Description	Test Case Id	Status
1	Login to Application	TC1, TC2, TC3	TC1- Passed TC2- Passed TC3- Passed
2	Create Account	TC4, TC5, TC6, TC7	TC4- Passed TC5- Passed TC6- Passed TC7- Passed
3	Cow Record	TC8, TC9,TC10	TC8- Passed TC9- Passed TC10- Passed
4	Customer Record	TC4, TC5, TC6, TC7, TC11	TC4- Passed TC5- Passed TC6- Passed TC7- Passed TC11- Passed

Sr. No.	Test Case Id	Detail
1	**TC1**	UserName Validation
2	**TC2**	Password Encryption and Validation
3	**TC3**	Login based on roles
4	**TC4**	Name Validation
5	**TC5**	Phone Number Validation
6	**TC6**	CNIC Validation
7	**TC7**	Address Validation
8	**TC8**	Cow Id Validation
9	**TC9**	Purchase Amount Validation
10	**TC10**	Cow Birth Validation
11	**TC11**	Milk Amount Validation

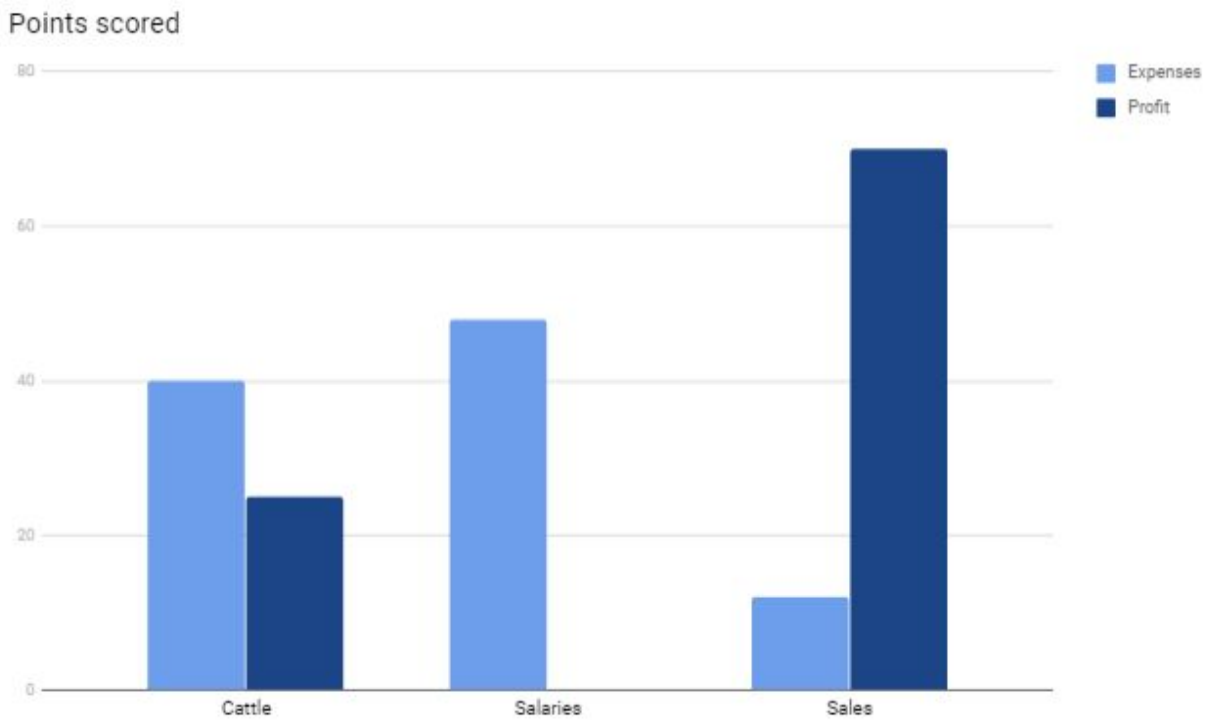



Chart Showing Profit/Loss: