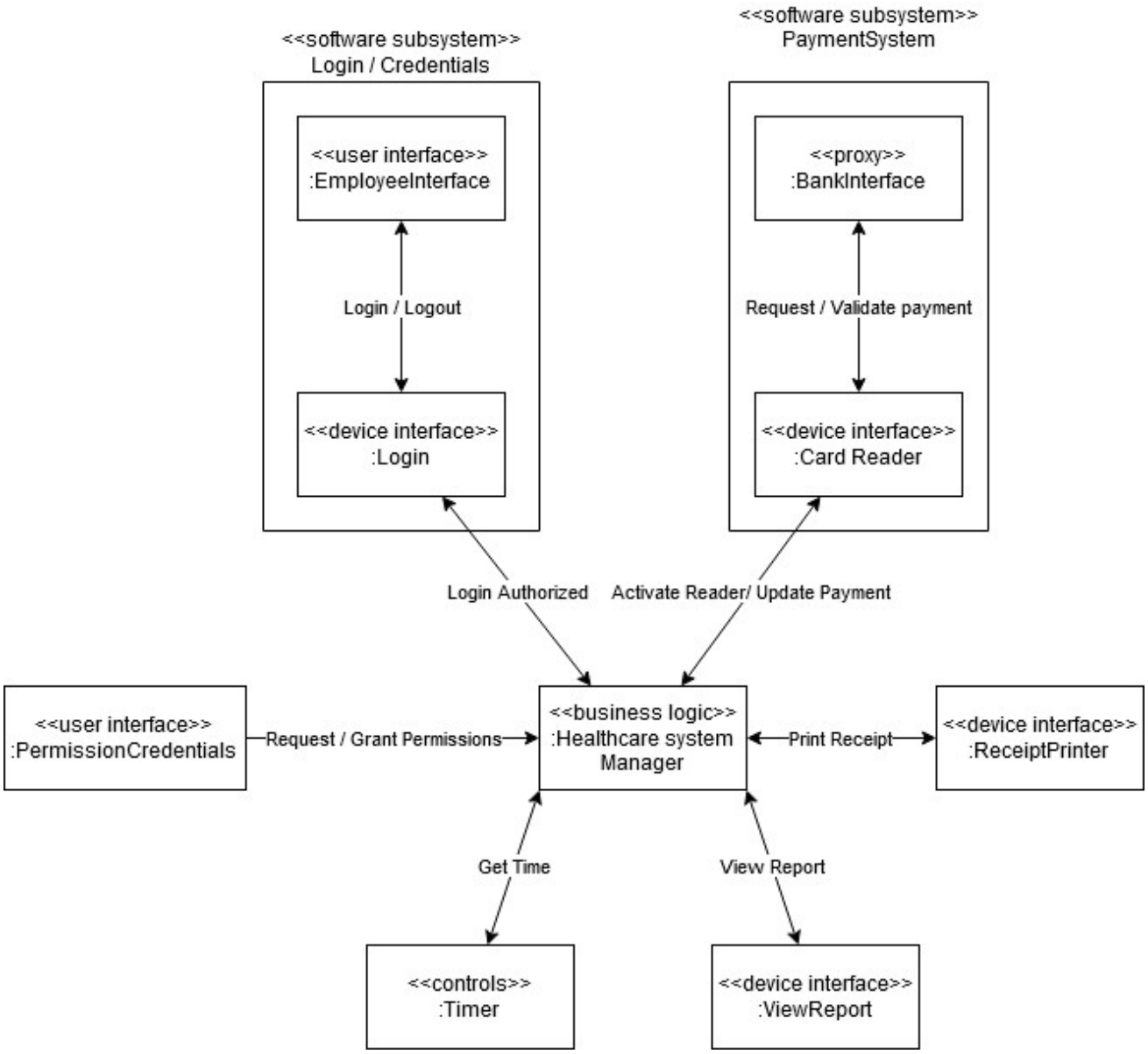
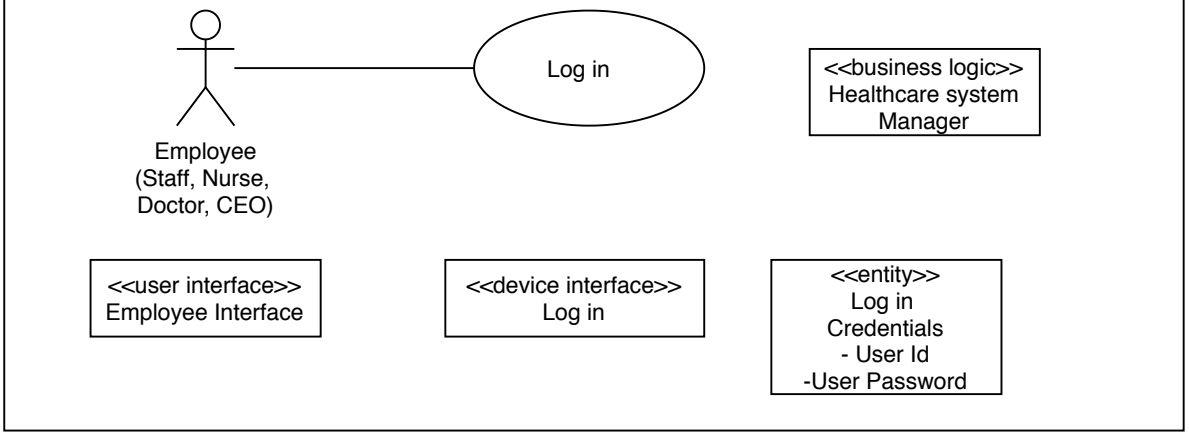
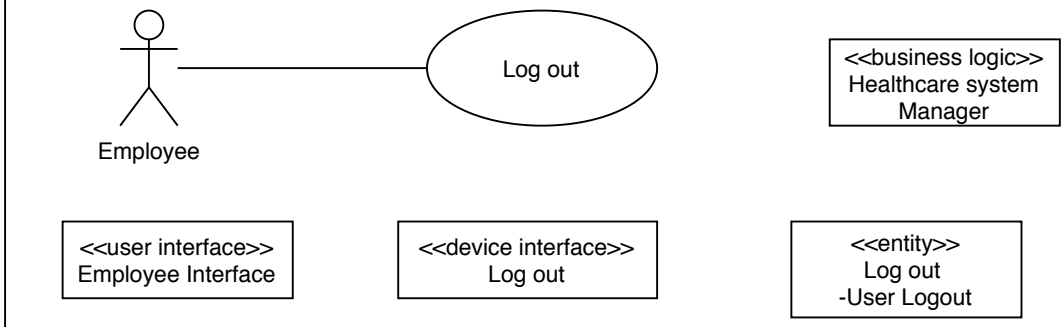

<<software subsystem>>
Login / Credentials
<<user interface>>
:EmployeeInterface
Login / Logout
<<device interface>>
:Login
<<software subsystem>>
PaymentSystem
<<proxy>>
:BankInterface
Request / Validate payment
<<device interface>>
:Card Reader
Login Authorized
Activate Reader/ Update Payment
<<user interface>>
:PermissionCredentials
Request / Grant Permissions
<<business logic>>
:Healthcare system
Manager
Print Receipt
<<device interface>>
:ReceiptPrinter
Get Time
View Report
<<controls>>
:Timer
<<device interface>>
:ViewReport

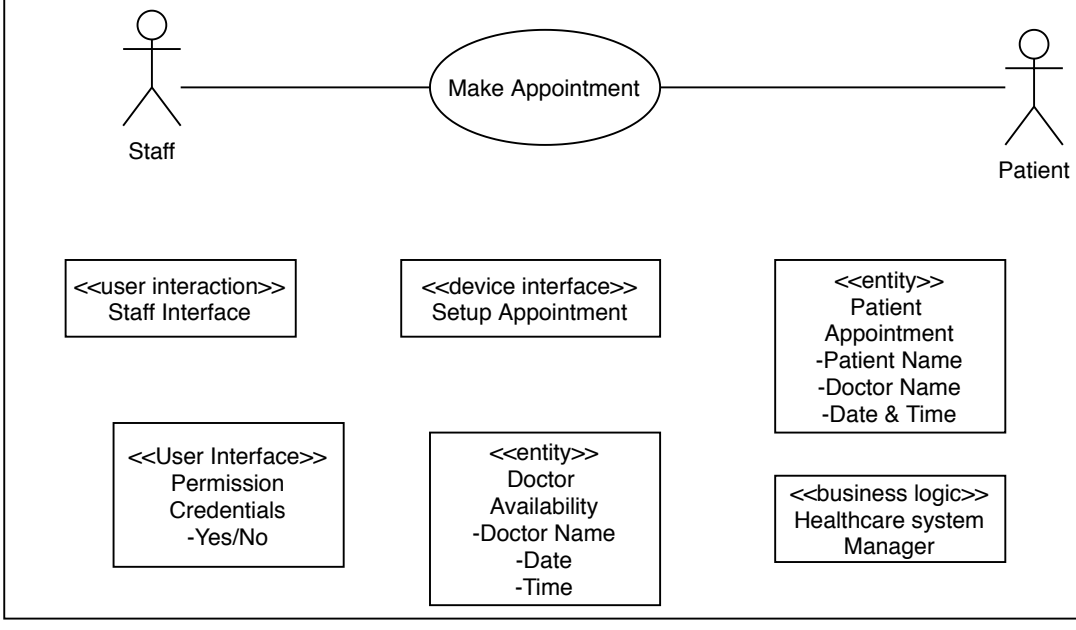
## Classes for Log in use case



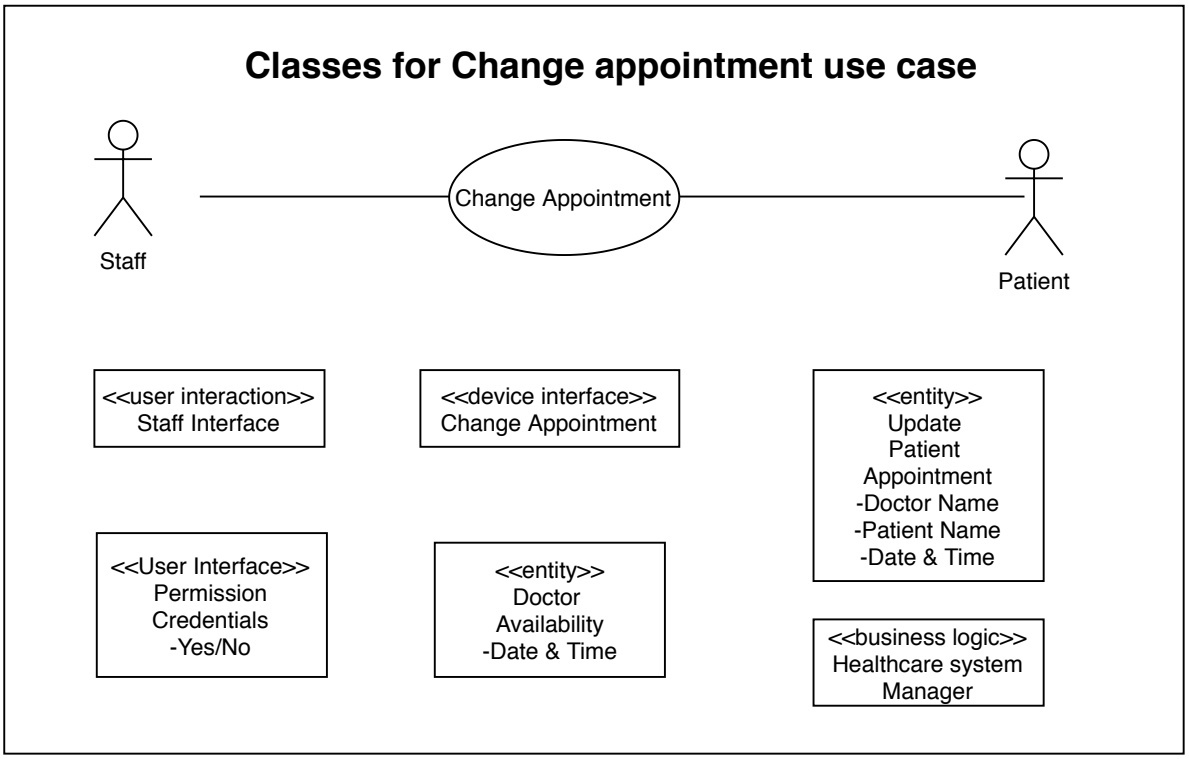

## Classes for Log out use case



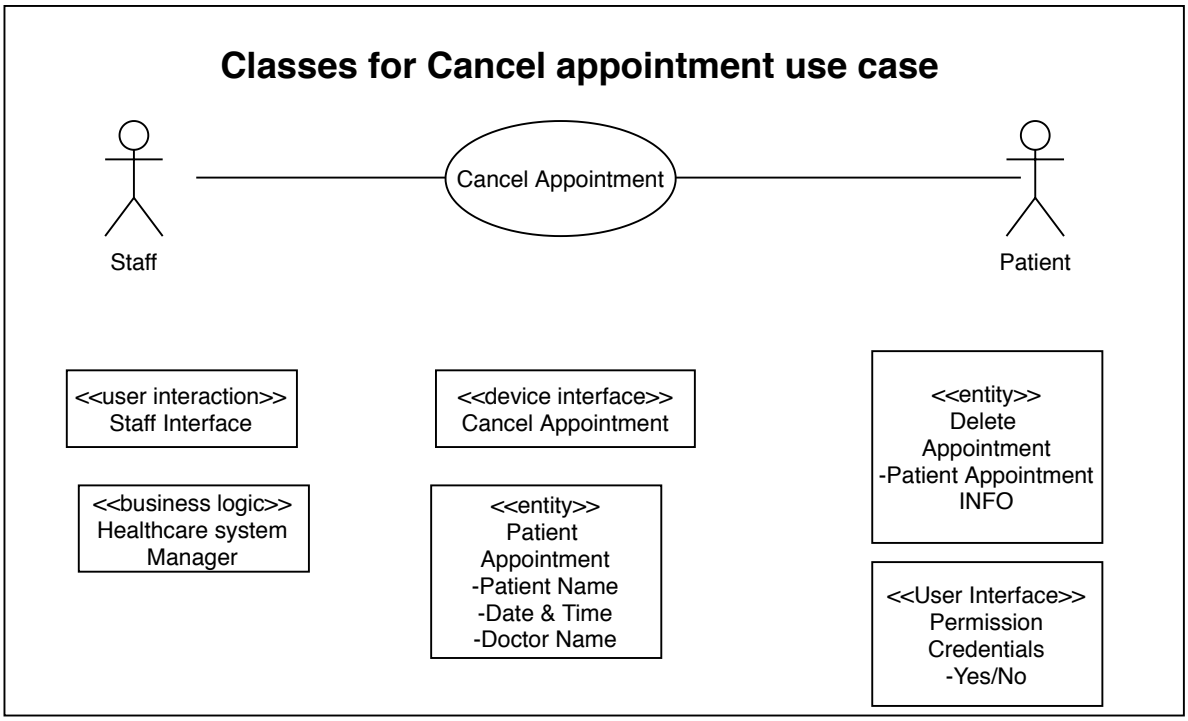

## Classes for Make appointment use case



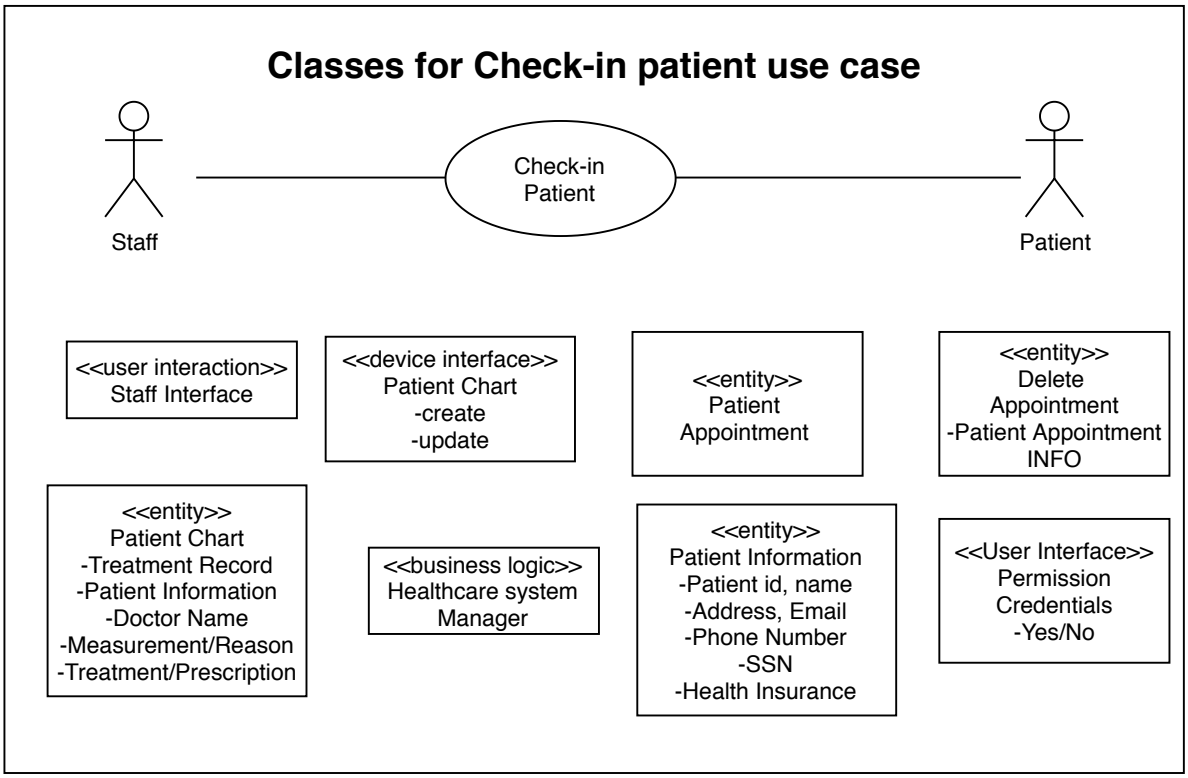
## Classes for Change appointment use case



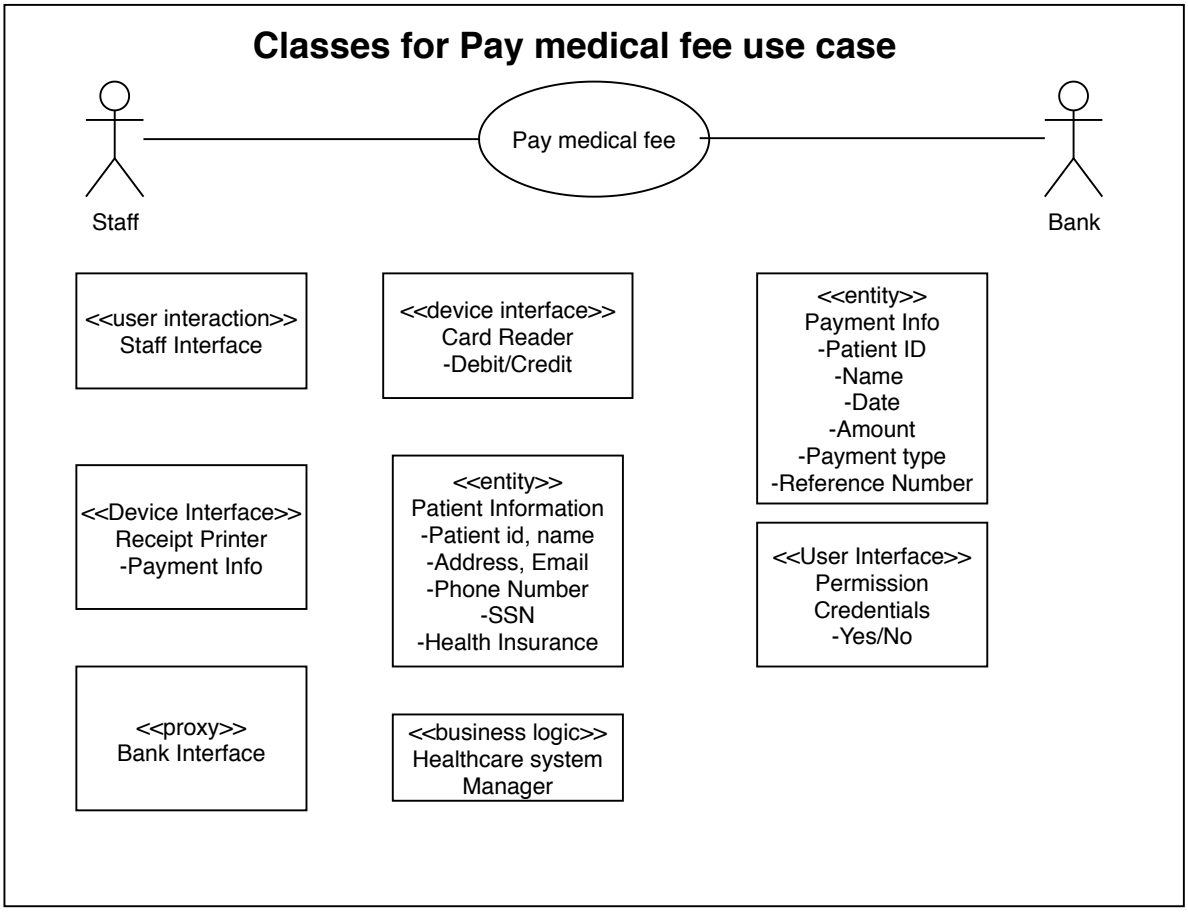

## Classes for Cancel appointment use case



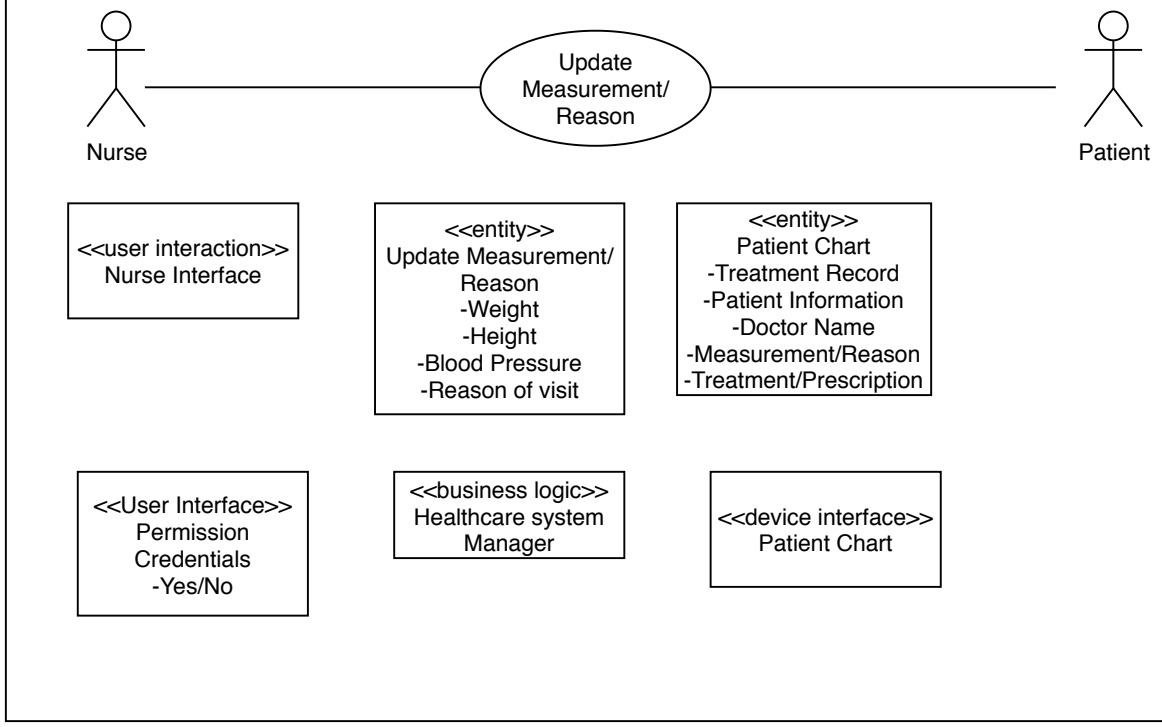
## Classes for Check-in patient use case



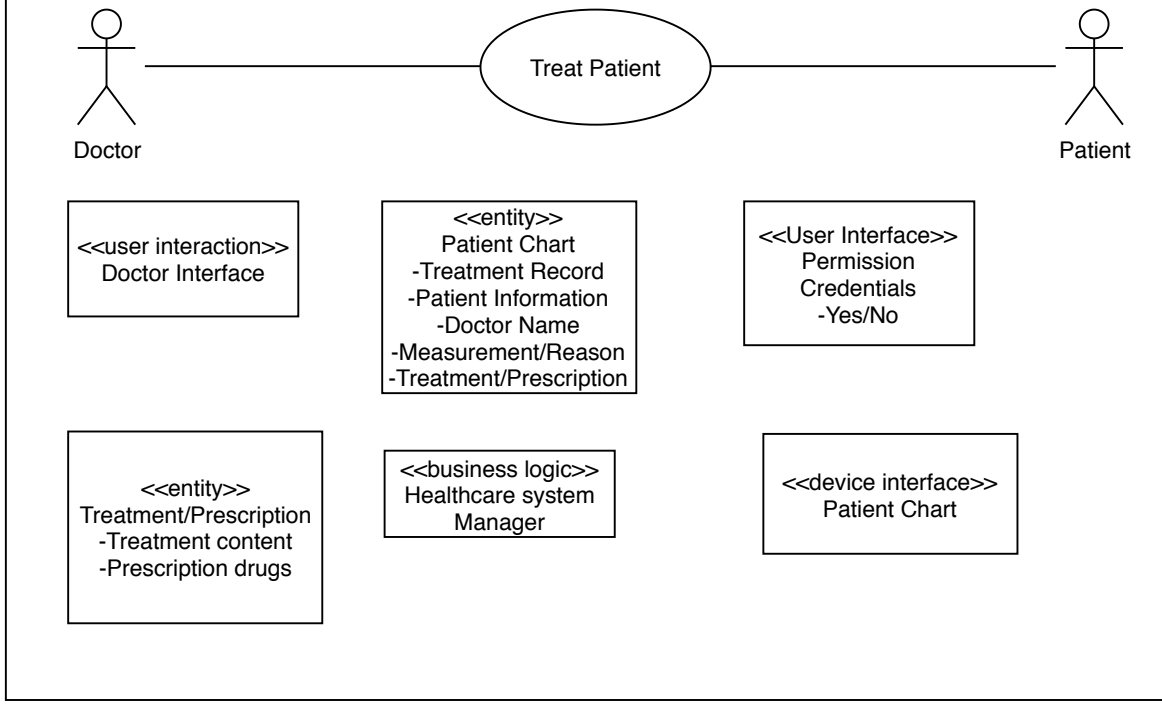

## Classes for Pay medical fee use case

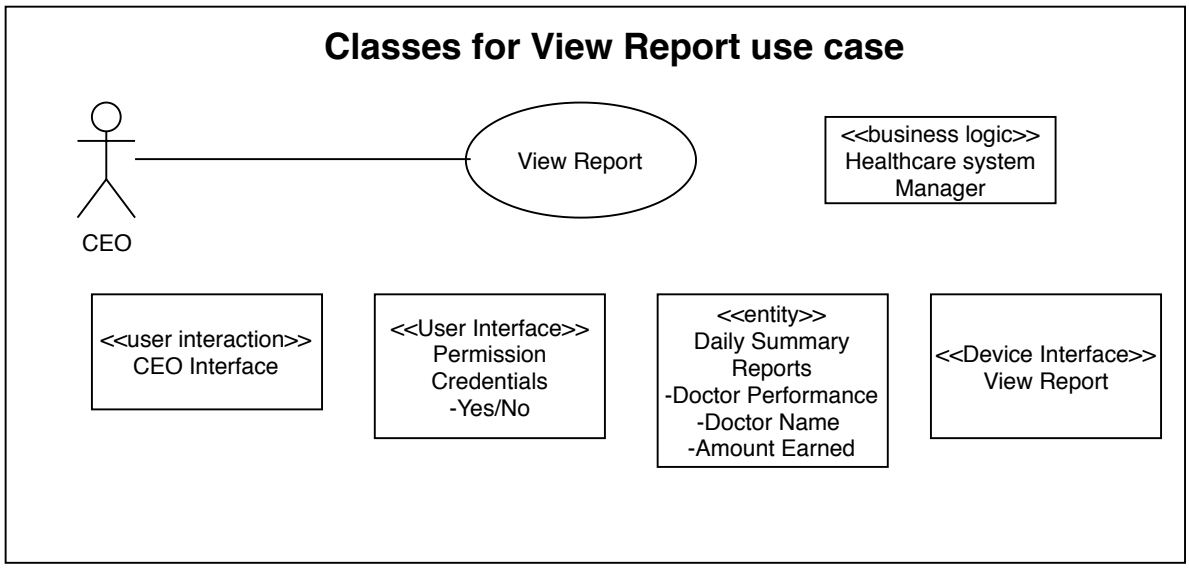


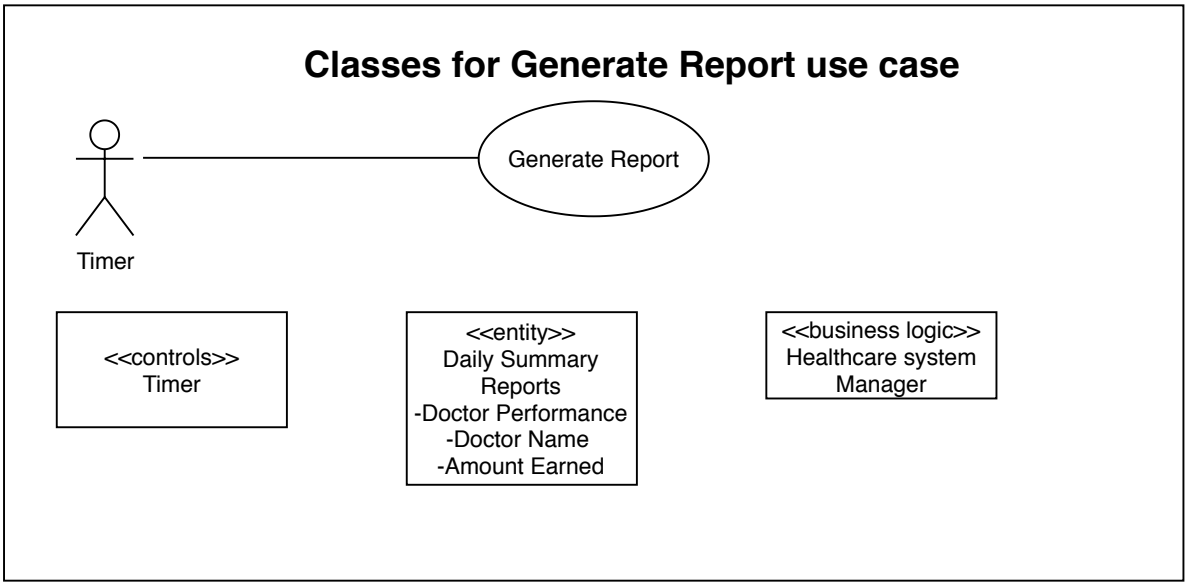
## Classes for Update Measurement/Reason use case

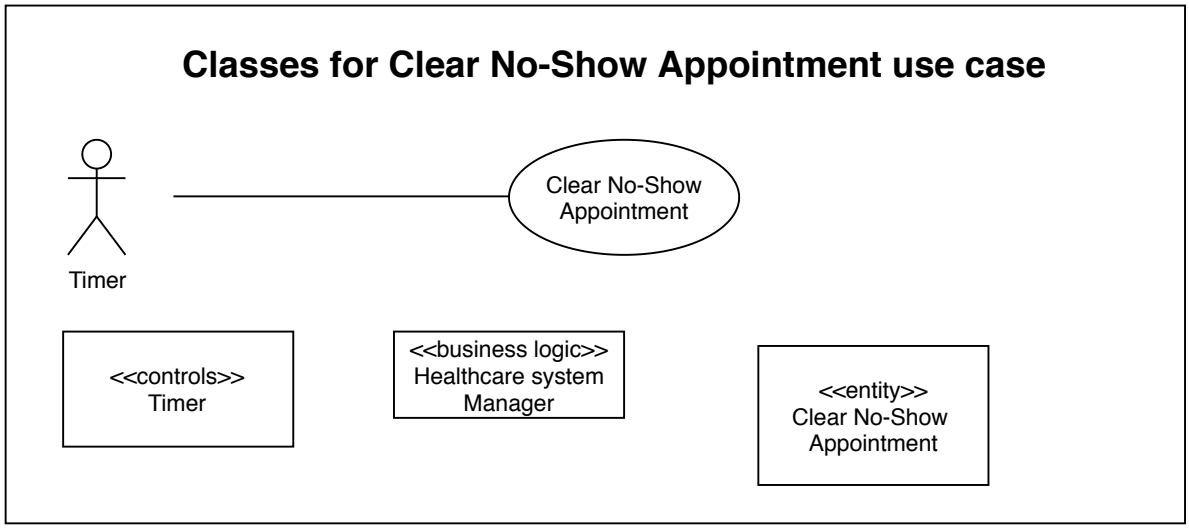



## Classes for Treat Patient use case

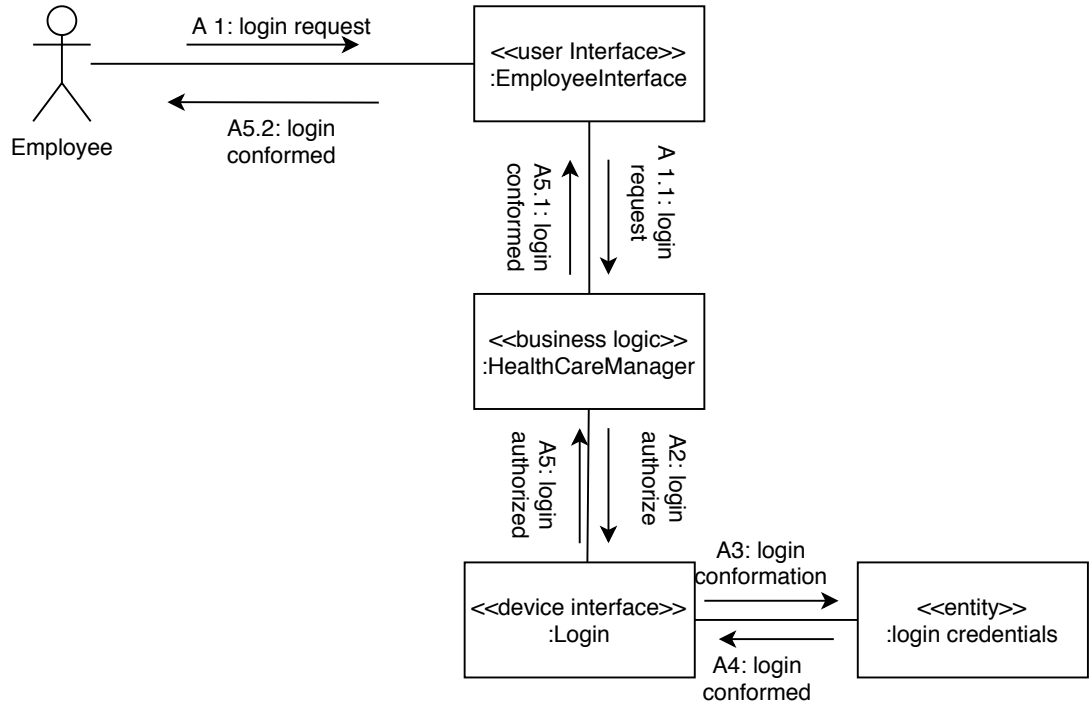



Classes for View Report use case
CEO
View Report
<<business logic>>
Healthcare system
Manager
<<user interaction>>
CEO Interface
<<User Interface>>
Permission
Credentials
-Yes/No
<<entity>>
Daily Summary
Reports
-Doctor Performance
-Doctor Name
-Amount Earned
<<Device Interface>>
View Report

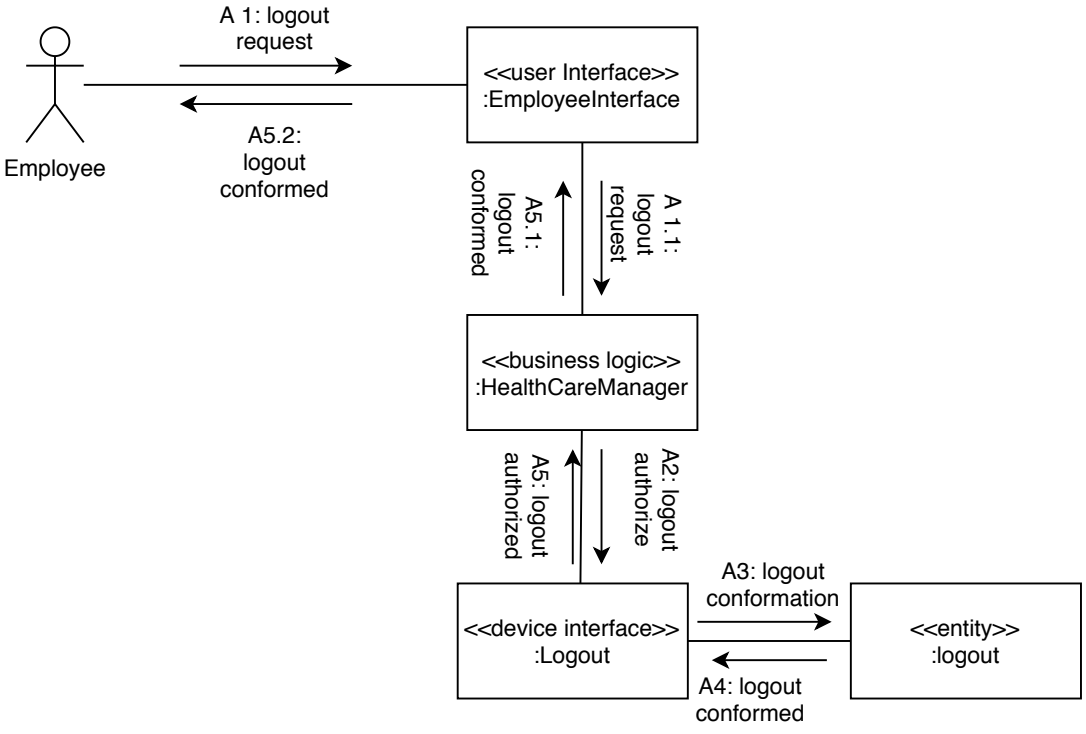

Classes for Generate Report use case
Timer
Generate Report
<<controls>>
Timer
<<entity>>
Daily Summary
Reports
-Doctor Performance
-Doctor Name
-Amount Earned
<<business logic>>
Healthcare system
Manager


Classes for Clear No-Show Appointment use case
Timer
Clear No-Show
Appointment
<<controls>>
Timer
<<business logic>>
Healthcare system
Manager
<<entity>>
Clear No-Show
Appointment

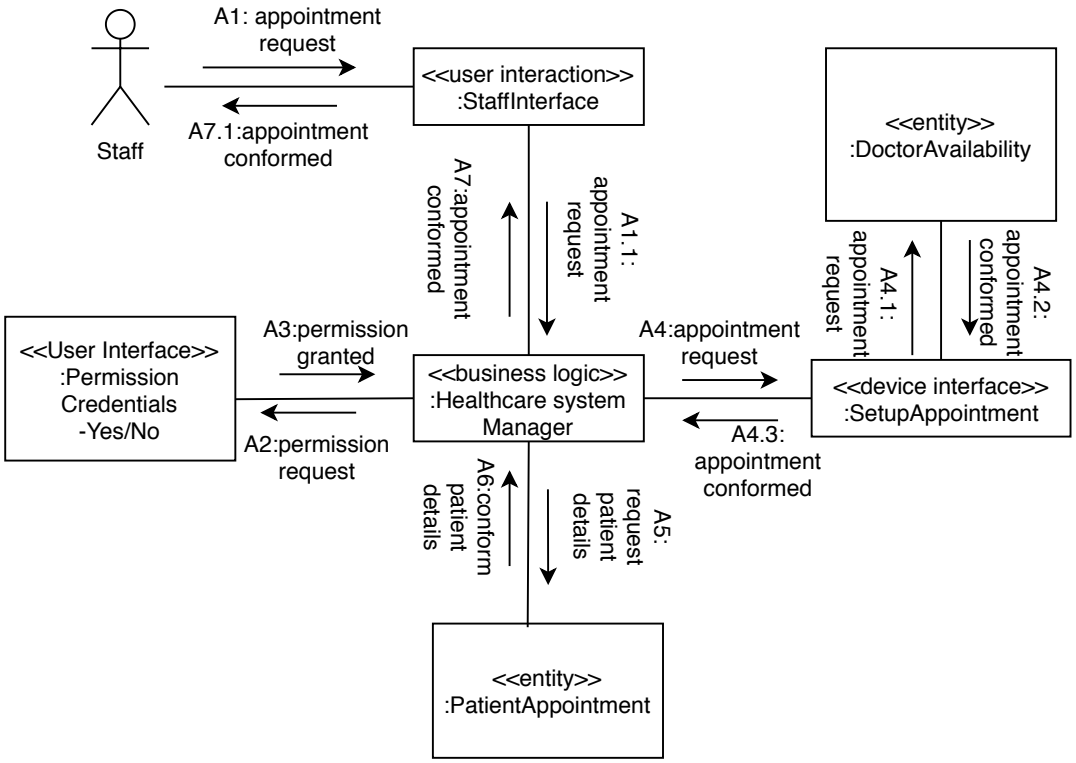
## Communication Diagram For Log-In Use Case



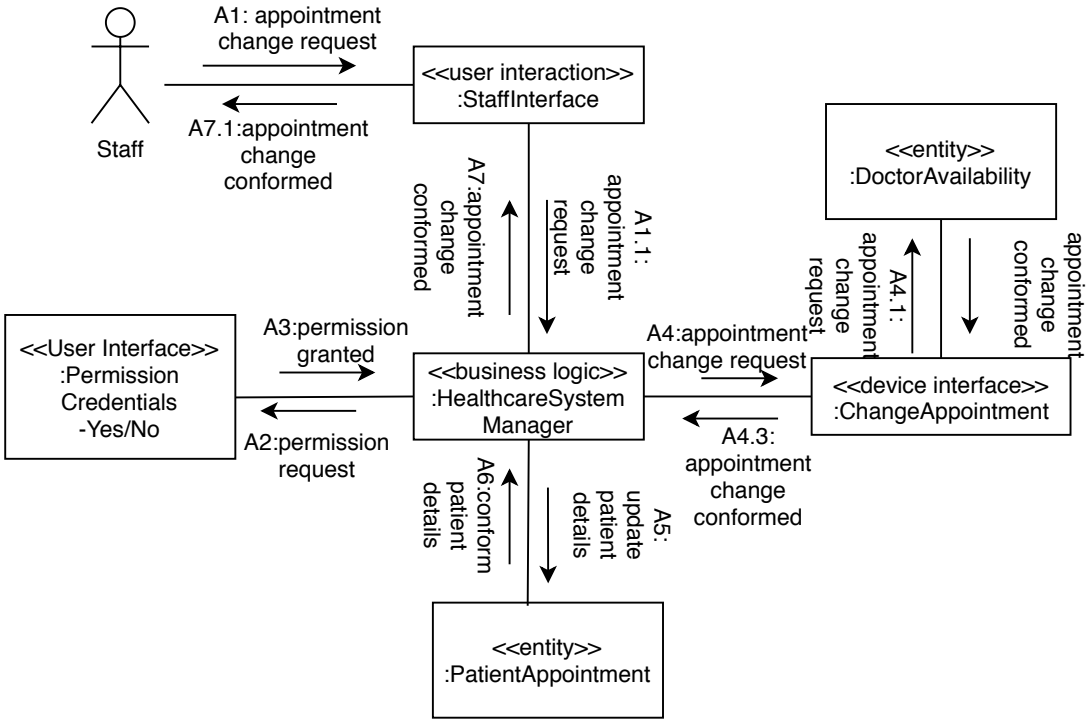

## Communication Diagram For Log Out Use Case



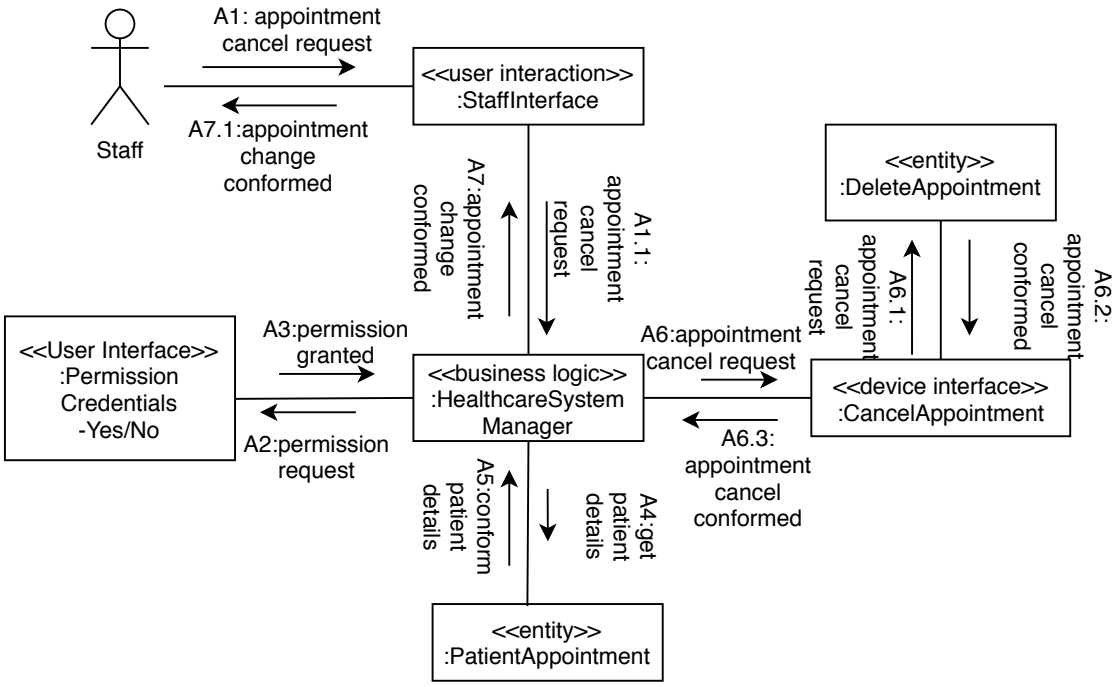
## Communication Diagram For Make Appointment Use Case



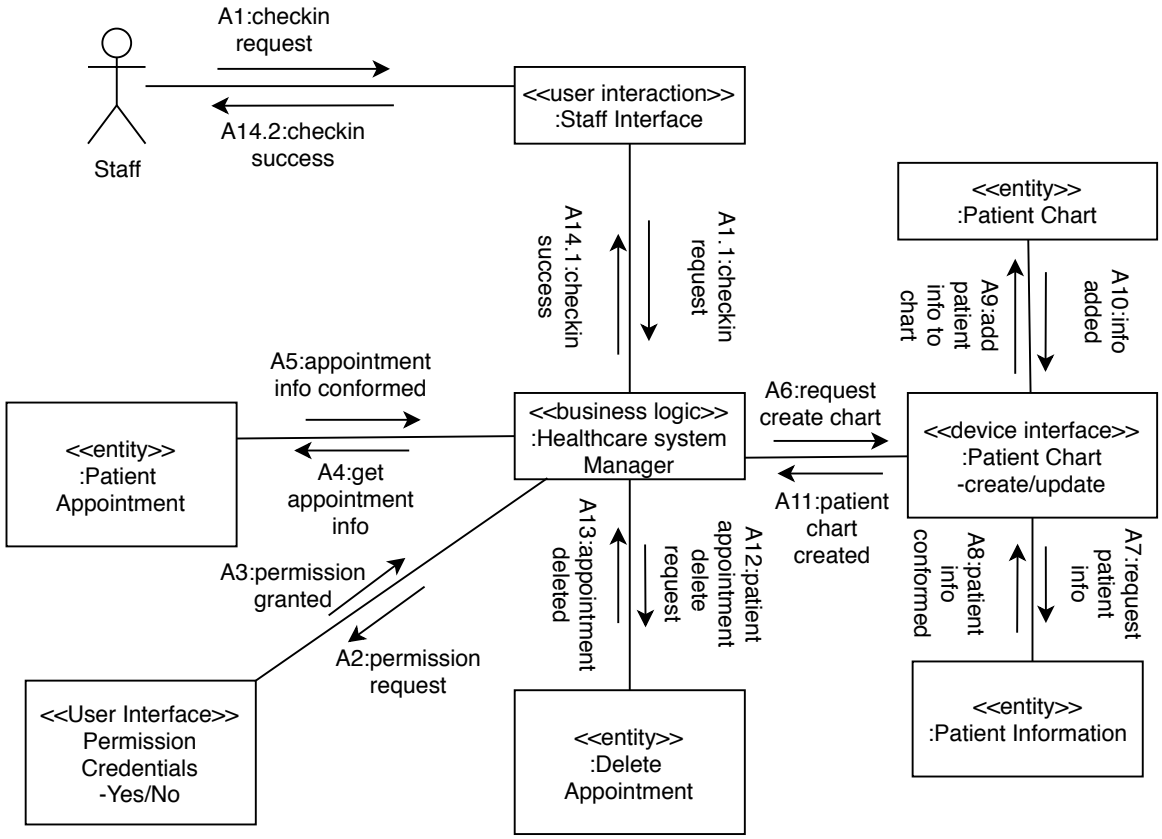

## Communication Diagram For Change Appointment Use Case

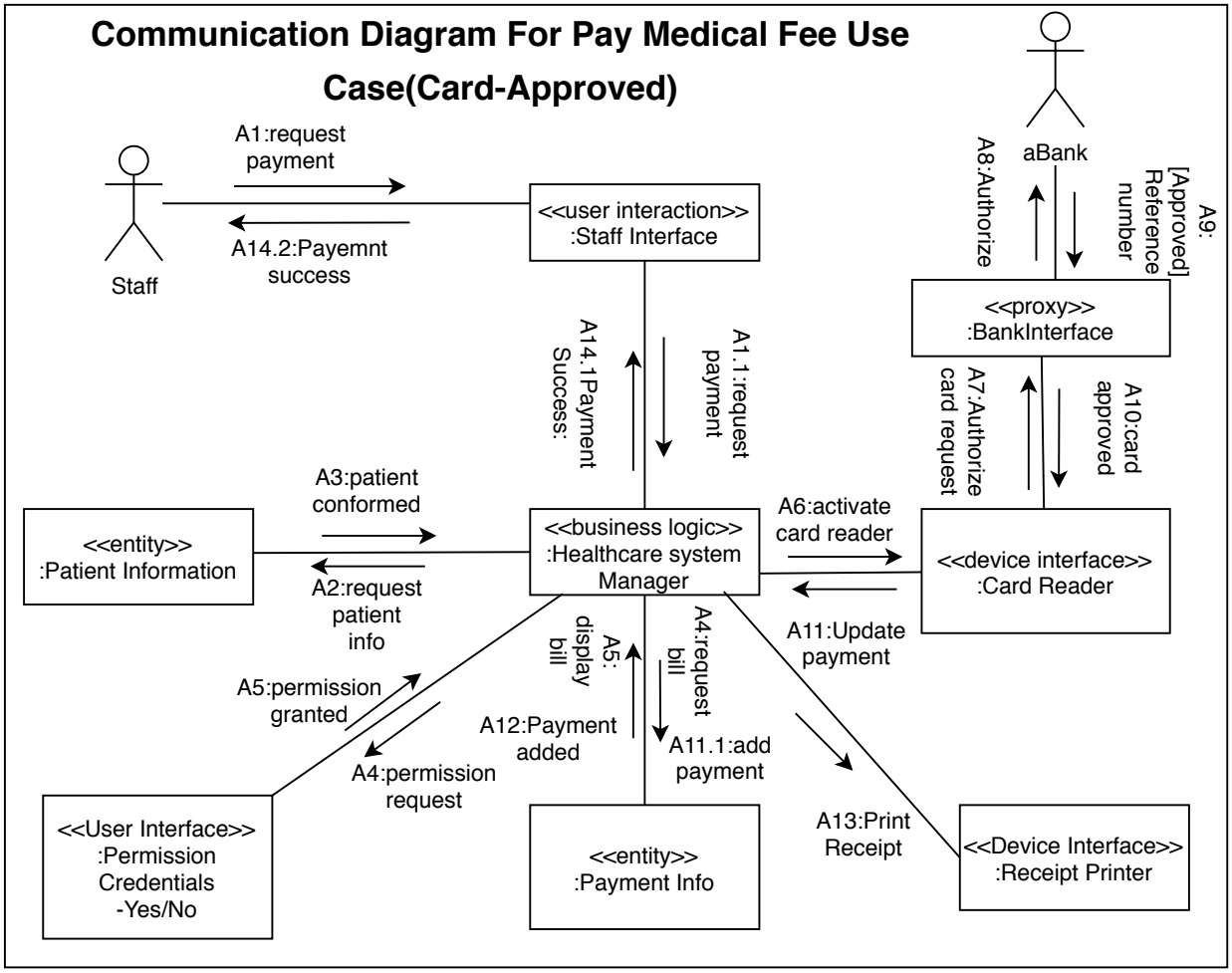


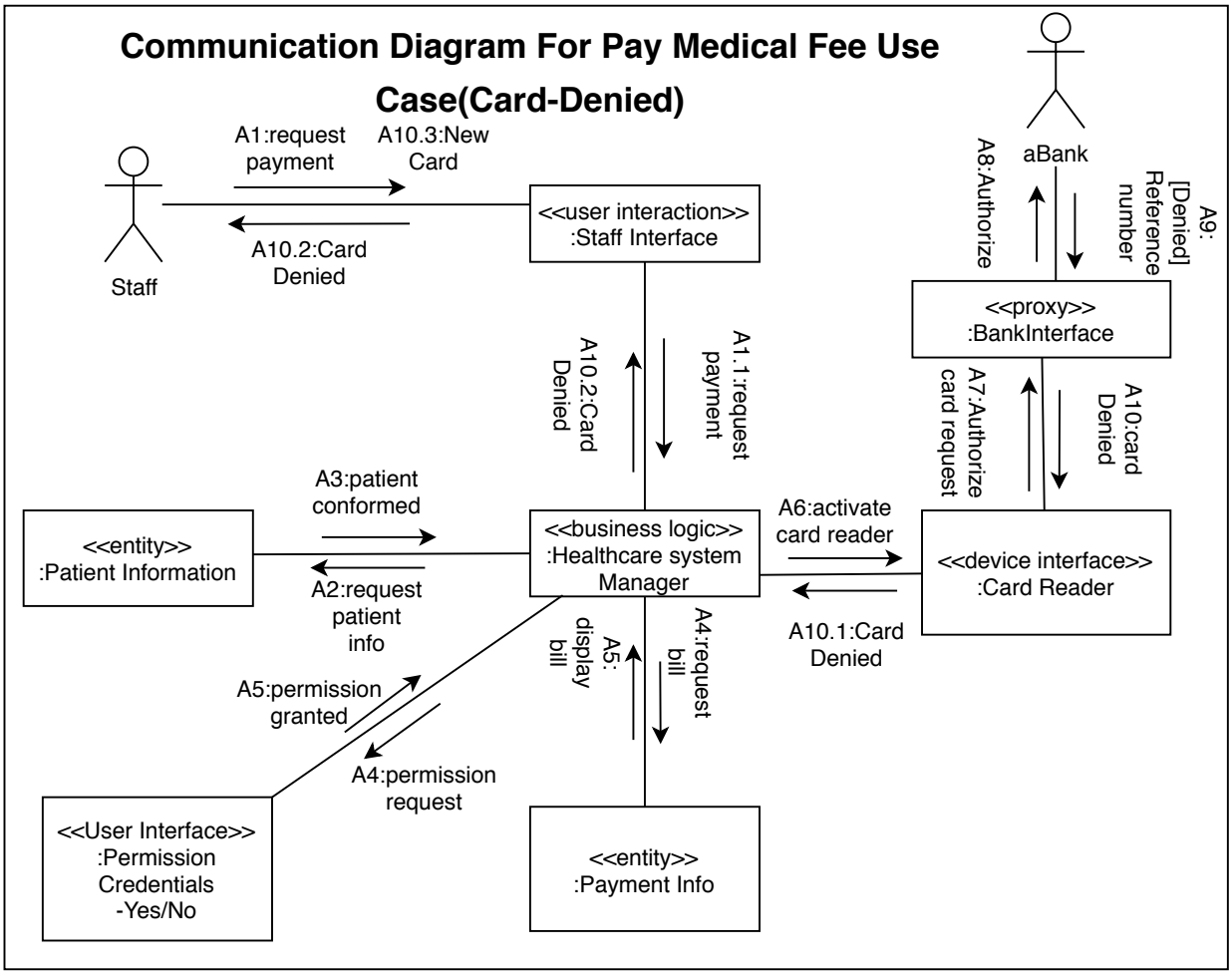
## Communication Diagram For Cancel Appointment Use Case



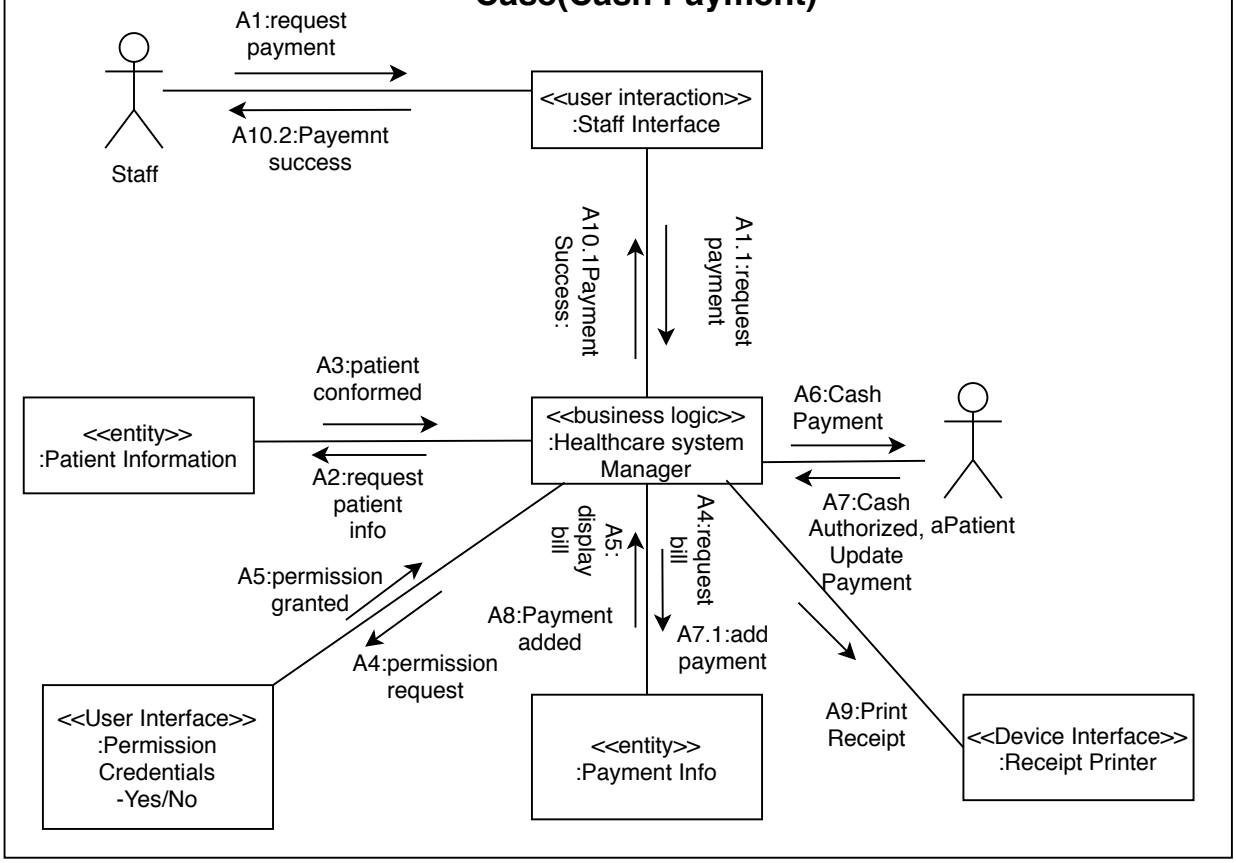

## Communication Diagram For Check-in Patient Use Case



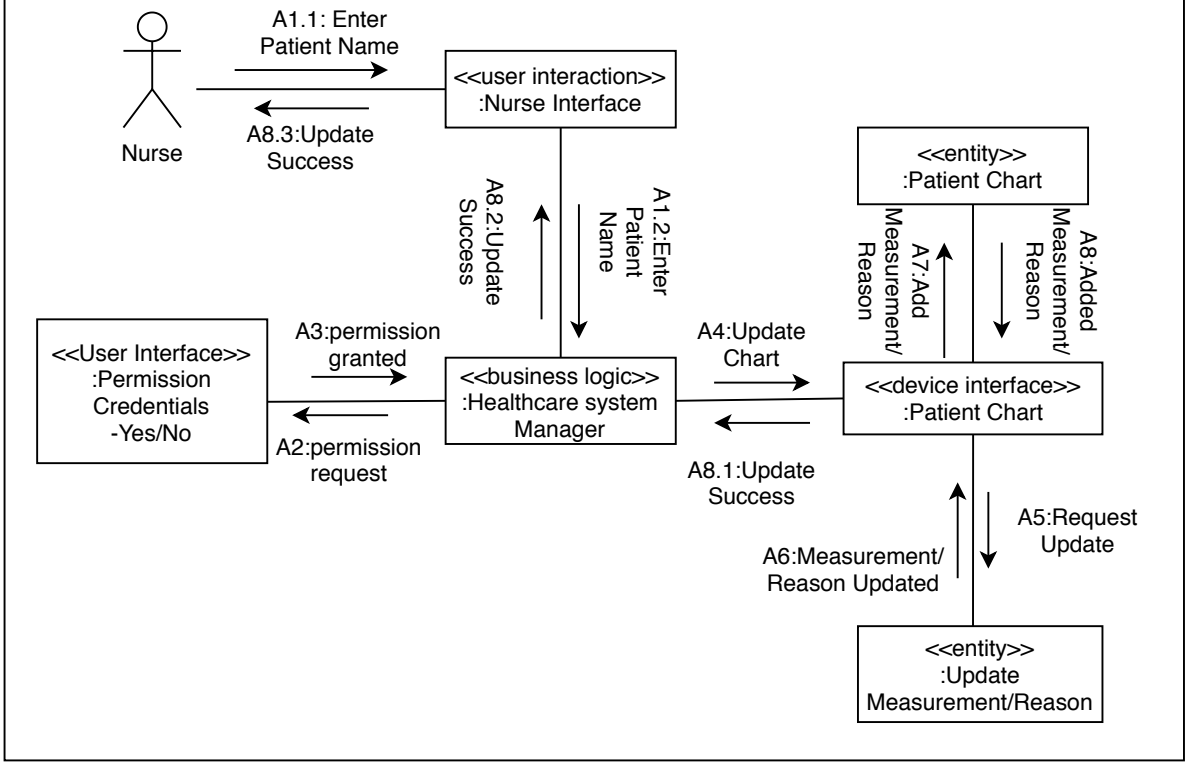

Communication Diagram For Pay Medical Fee Use Case(Card-Approved)
Staff
A1:request payment
A14.2:Payemnt success
<<user interaction>> :Staff Interface
A14.1Payment Success:
A1.1:request payment
aBank
A8:Authorize
A9: [Approved] Reference number
<<proxy>> :BankInterface
A7:Authorize card request
A10:card approved
A3:patient conformed
A2:request patient info
<<entity>> :Patient Information
<<business logic>> :Healthcare system Manager
A6:activate card reader
<<device interface>> :Card Reader
A11:Update payment
A5: display bill
A4:request bill
A5:permission granted
A4:permission request
A12:Payment added
A11.1:add payment
<<User Interface>> :Permission Credentials -Yes/No
<<entity>> :Payment Info
A13:Print Receipt
<<Device Interface>> :Receipt Printer


Communication Diagram For Pay Medical Fee Use Case(Card-Denied)
Staff
A1:request payment
A10.3:New Card
A10.2:Card Denied
<<user interaction>> :Staff Interface
A10.2:Card Denied
A1.1:request payment
aBank
A8:Authorize
A9: [Denied] Reference number
<<proxy>> :BankInterface
A7:Authorize card request
A10:card Denied
A3:patient conformed
A2:request patient info
<<entity>> :Patient Information
<<business logic>> :Healthcare system Manager
A6:activate card reader
<<device interface>> :Card Reader
A10.1:Card Denied
A5: display bill
A4:request bill
A5:permission granted
A4:permission request
<<User Interface>> :Permission Credentials -Yes/No
<<entity>> :Payment Info

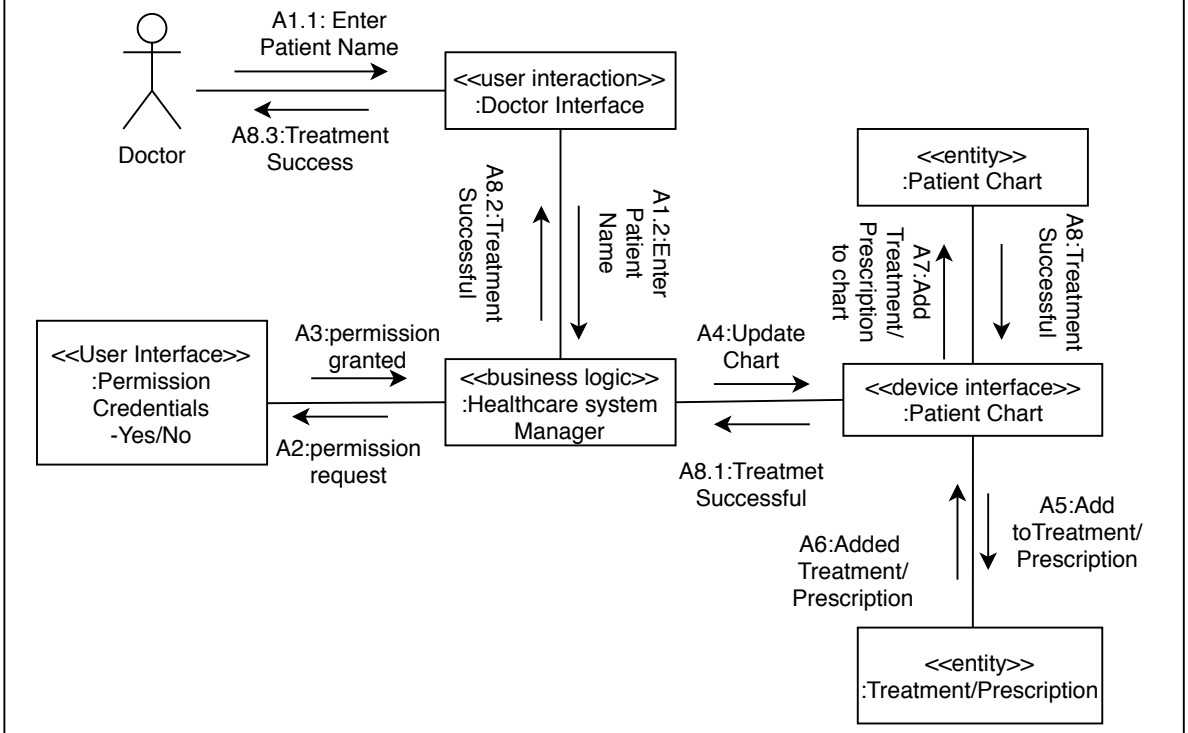
## Communication Diagram For Pay Medical Fee Use Case(Cash Payment)



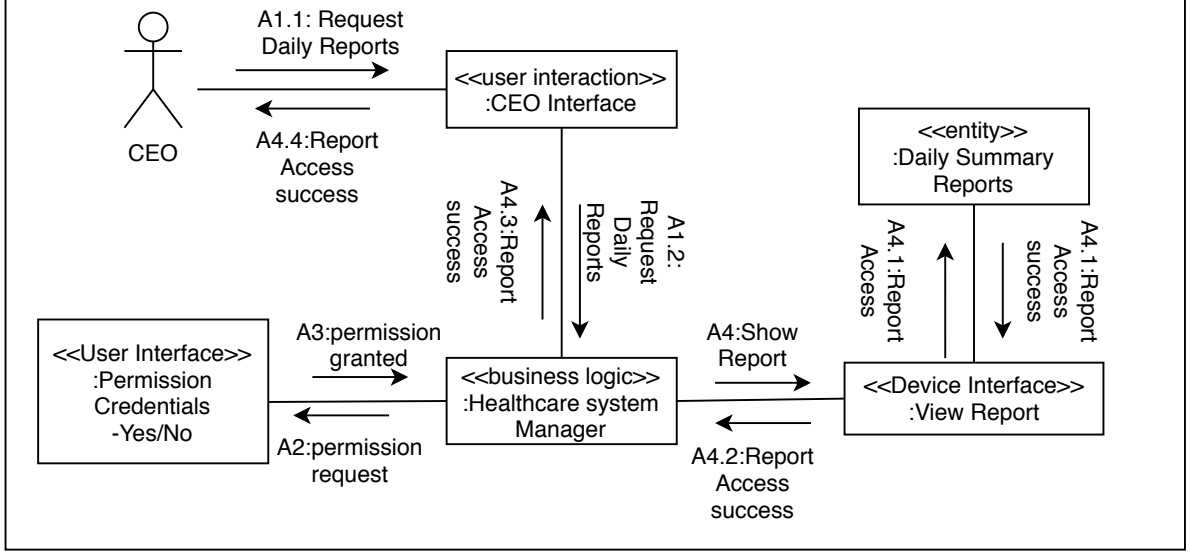

## Communication Diagram For Update Measurement/Reason Use Case



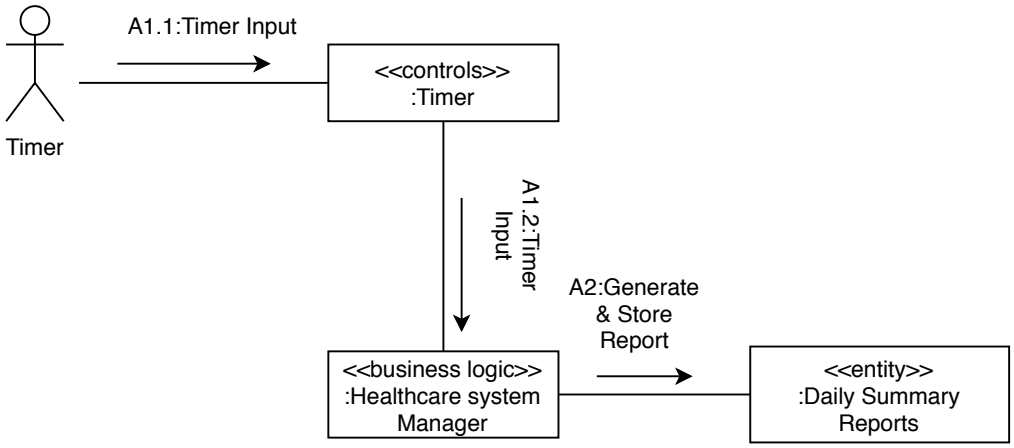
## Communication Diagram For Treat Patient Use Case



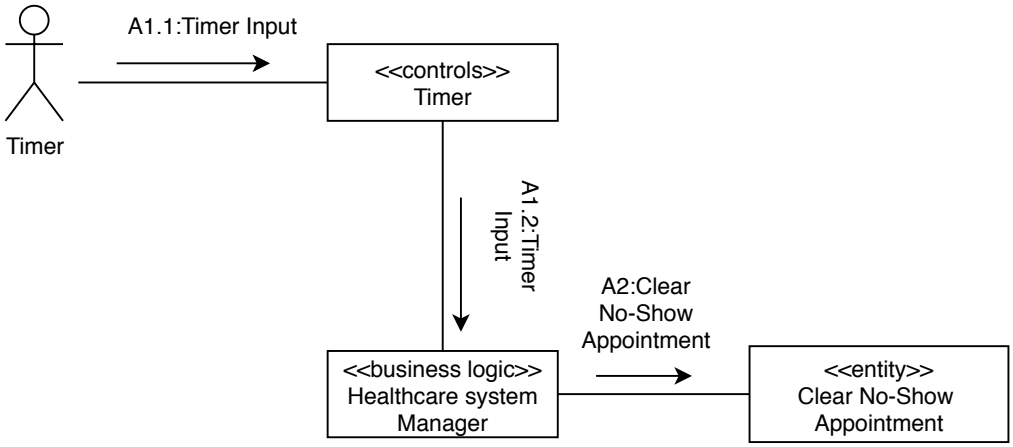

## Communication Diagram For View Report Use Case



## Communication Diagram For Generate Report Use Case




## Communication Diagram For Clear No-Show Appointment Use Case



## Patient

| **Patient_id(PK)** | **varchar(10)** |
|---|---|
| Patient_name | varchar(20 |
| Birthday | date |
| Gender | varchar(1) |
| Address | varchar(30) |
| City | varchar(20) |
| State | varchar(2) |
| Zip | int(10) |
| Phone_no | varchar(12) |
| Email | varchar(30) |
| Social | varchar(9) |
| Insurance | varchar(20) |

## Appointment

| **apt_id(PK)** | **varchar(10)** |
|---|---|
| *patient_id(FK)* | varchar(10) |
| *Doctor_id(FK)* | varchar(10) |
| Patient_name | varchar(20) |
| Date | date |
| Time | time |
| amount_paid | decimal(15,2) |
| payment | varchar(10) |
| card_no | varchar(16) |
| Name_on_card | varchar(30) |
| Expr | varchar(5) |
| ref_no | int(10) |

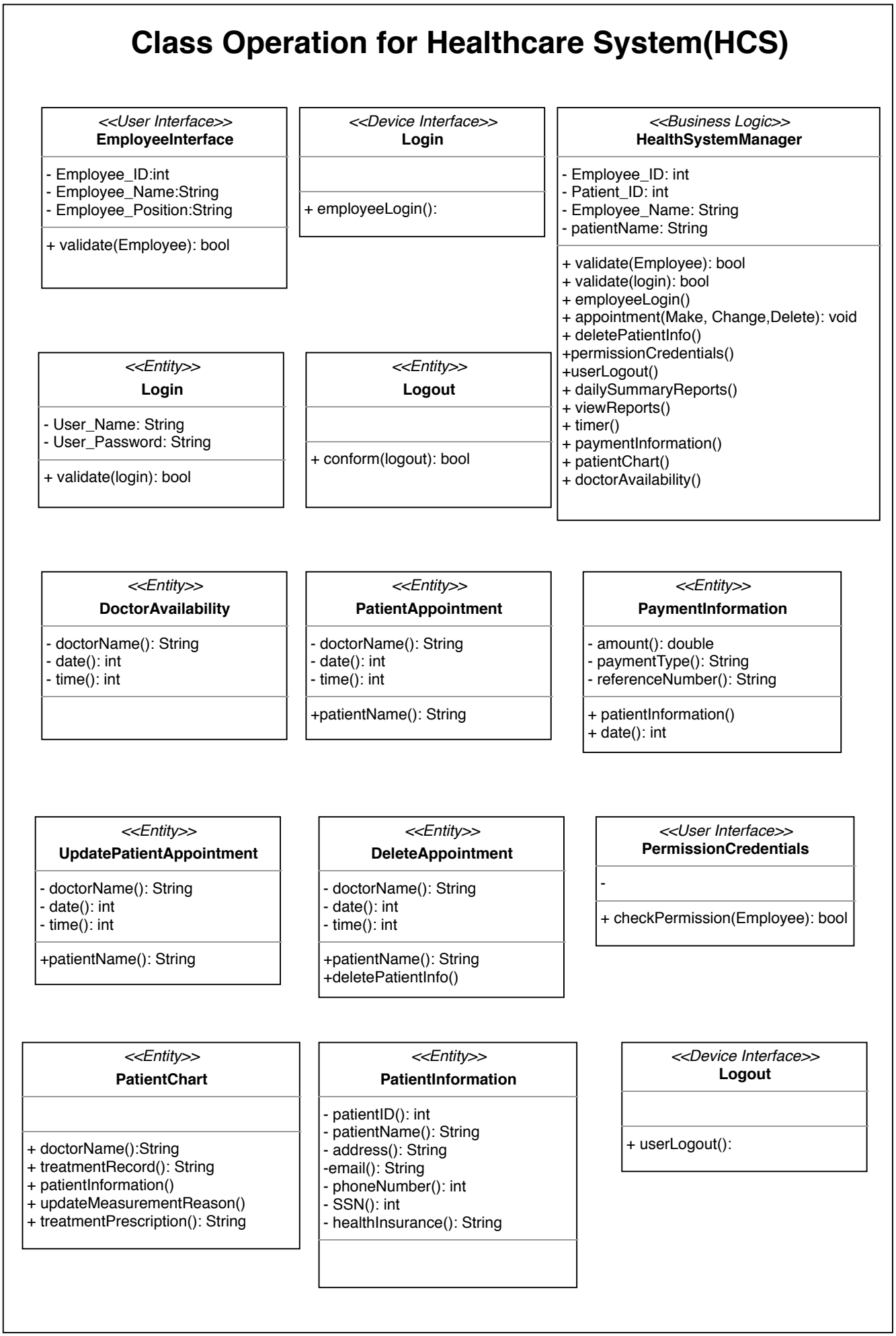
## Record

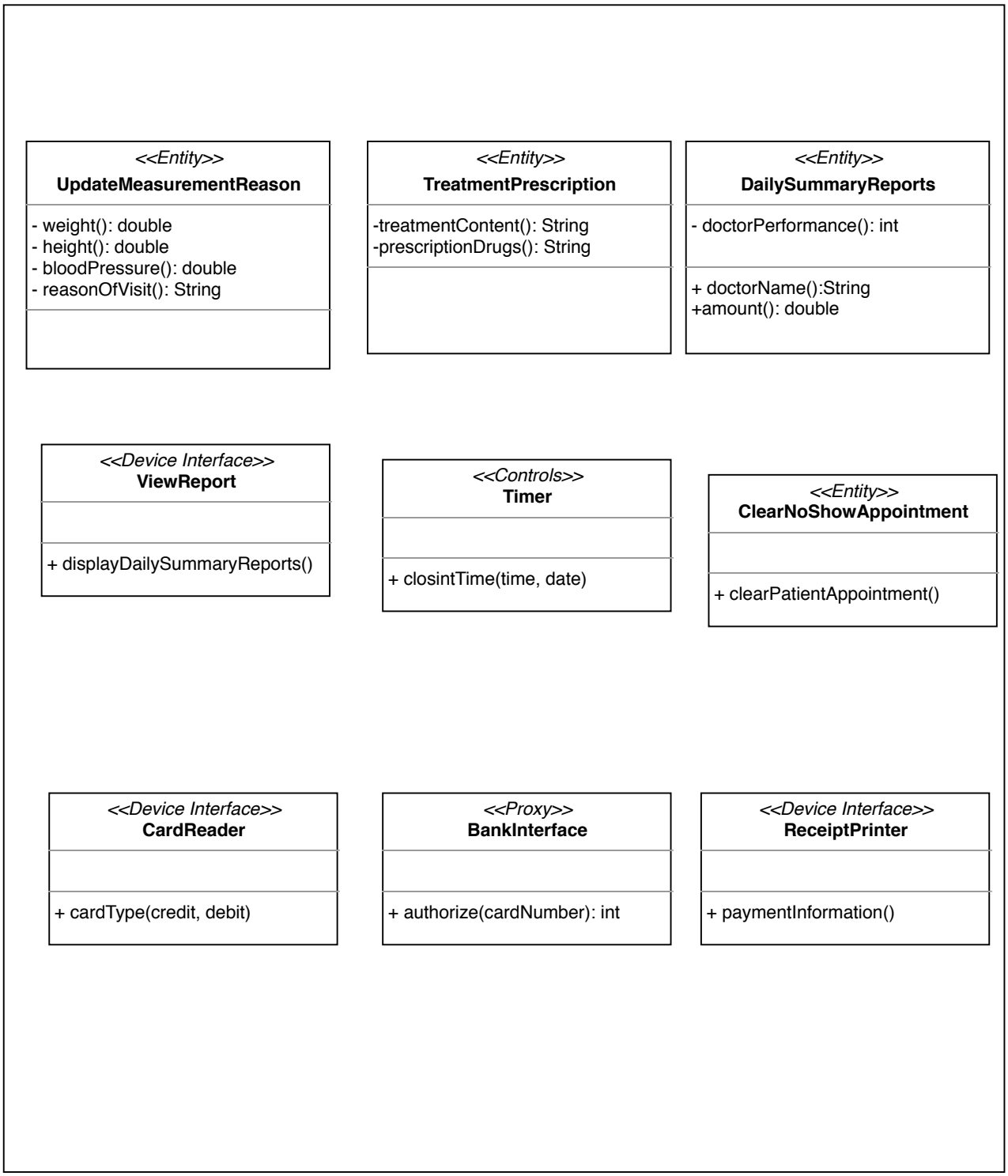
| **apt_id(PK)** | **varchar(10)** |
|---|---|
| *patient_id(FK)* | varchar(10) |
| Date | date |
| Visit_Reason | text |
| Weight | float |
| height | varchar(5) |
| Blood_pressure | varchar(10) |
| treatment | text |
| prescription | varchar(25) |

## Employee

| **employee_id(PK)** | **varchar(10)** |
|---|---|
| username | varchar(20) |
| pass_hash | varchar(64) |
| Name | varchar(30) |
| Position | varchar(15) |

# Class Operation for Healthcare System(HCS)




<<Entity>>
UpdateMeasurementReason
- weight(): double
- height(): double
- bloodPressure(): double
- reasonOfVisit(): String
<<Entity>>
TreatmentPrescription
-treatmentContent(): String
-prescriptionDrugs(): String
<<Entity>>
DailySummaryReports
- doctorPerformance(): int
+ doctorName():String
+amount(): double
<<Device Interface>>
ViewReport
+ displayDailySummaryReports()
<<Controls>>
Timer
+ closintTime(time, date)
<<Entity>>
ClearNoShowAppointment
+ clearPatientAppointment()
<<Device Interface>>
CardReader
+ cardType(credit, debit)
<<Proxy>>
BankInterface
+ authorize(cardNumber): int
<<Device Interface>>
ReceiptPrinter
+ paymentInformation()