

# HealthCare System[HCS]

**Software Engineering I (CS - 3365)**

**Class of Fall 2020**

**Group Project**

**Requirement Analysis**

**Design**

**Project Group: 23**

***Group Members:***

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Dylan Scott

Adib Shakib

Jacob Stahl

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1. Static Model
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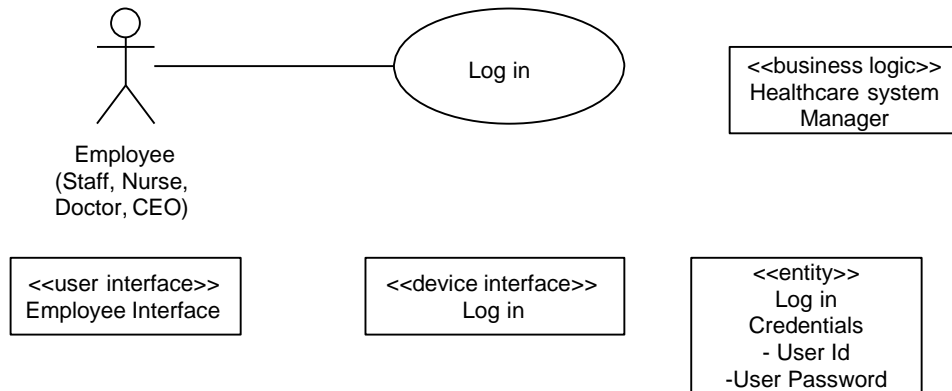


# 1. Static Model

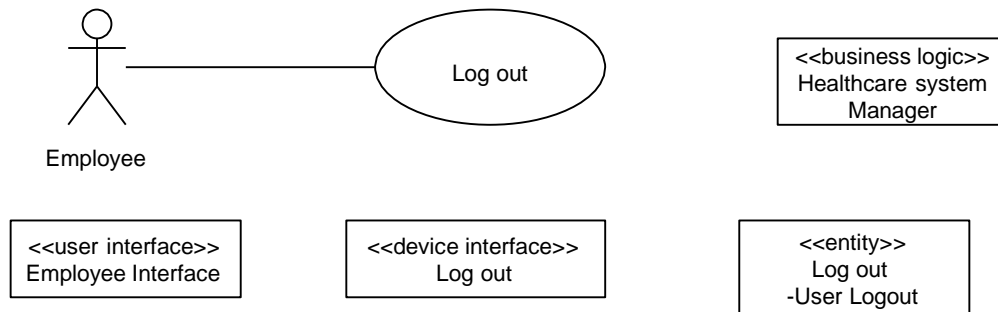
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For Each Use Case Diagram

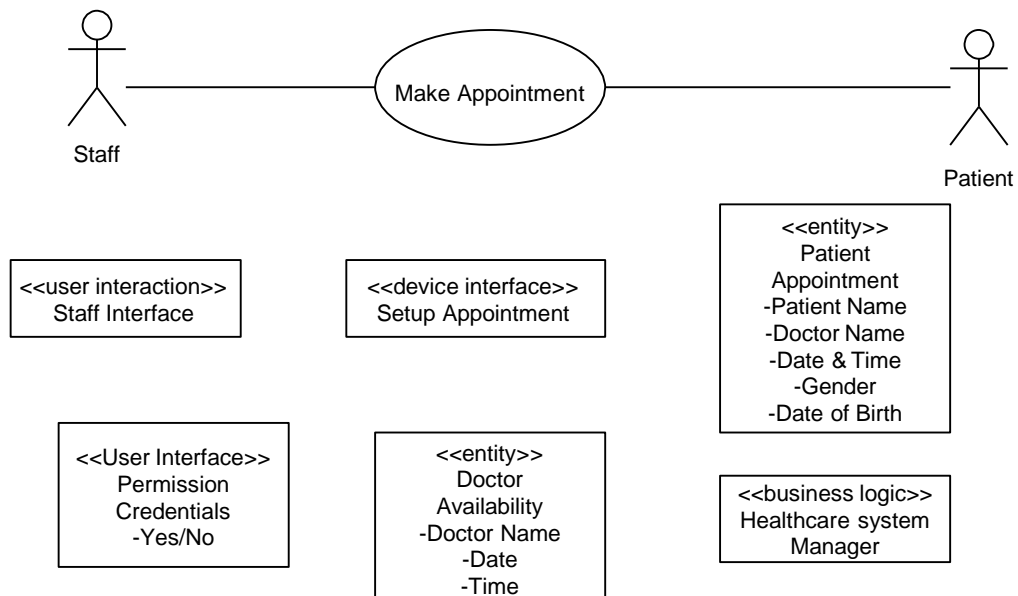
## Classes for Log in use case



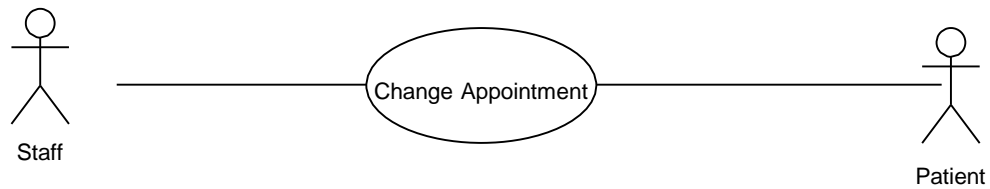
## Classes for Log out use case



## Classes for Make appointment use case



## Classes for Change appointment use case



<<user interaction>>  
Staff Interface

<<device interface>>  
Change Appointment

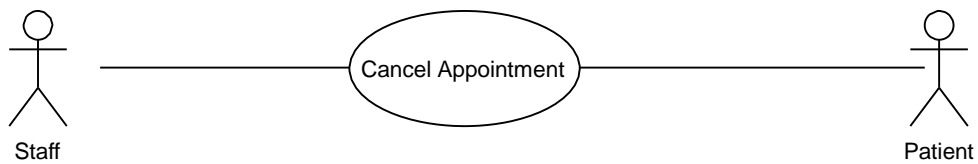
<<entity>>  
Update Patient  
Appointment  
-Patient Name  
-Doctor Name  
-Date & Time  
-Gender  
-Date of Birth

<<User Interface>>  
Permission  
Credentials  
-Yes/No

<<entity>>  
Doctor  
Availability  
-Date & Time

<<business logic>>  
Healthcare system  
Manager

## Classes for Cancel appointment use case



<<user interaction>>  
Staff Interface

<<device interface>>  
Cancel Appointment

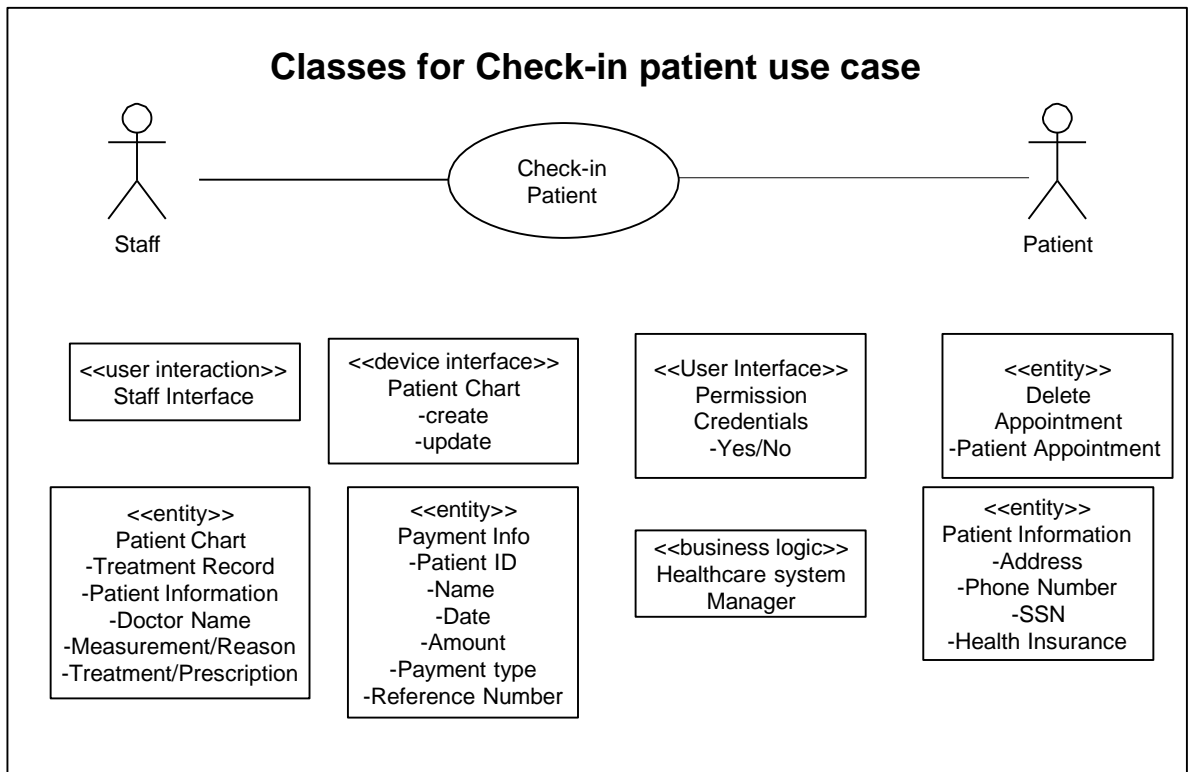
<<entity>>  
Delete  
Appointment  
-Patient Appointment  
INFO

<<business logic>>  
Healthcare system  
Manager

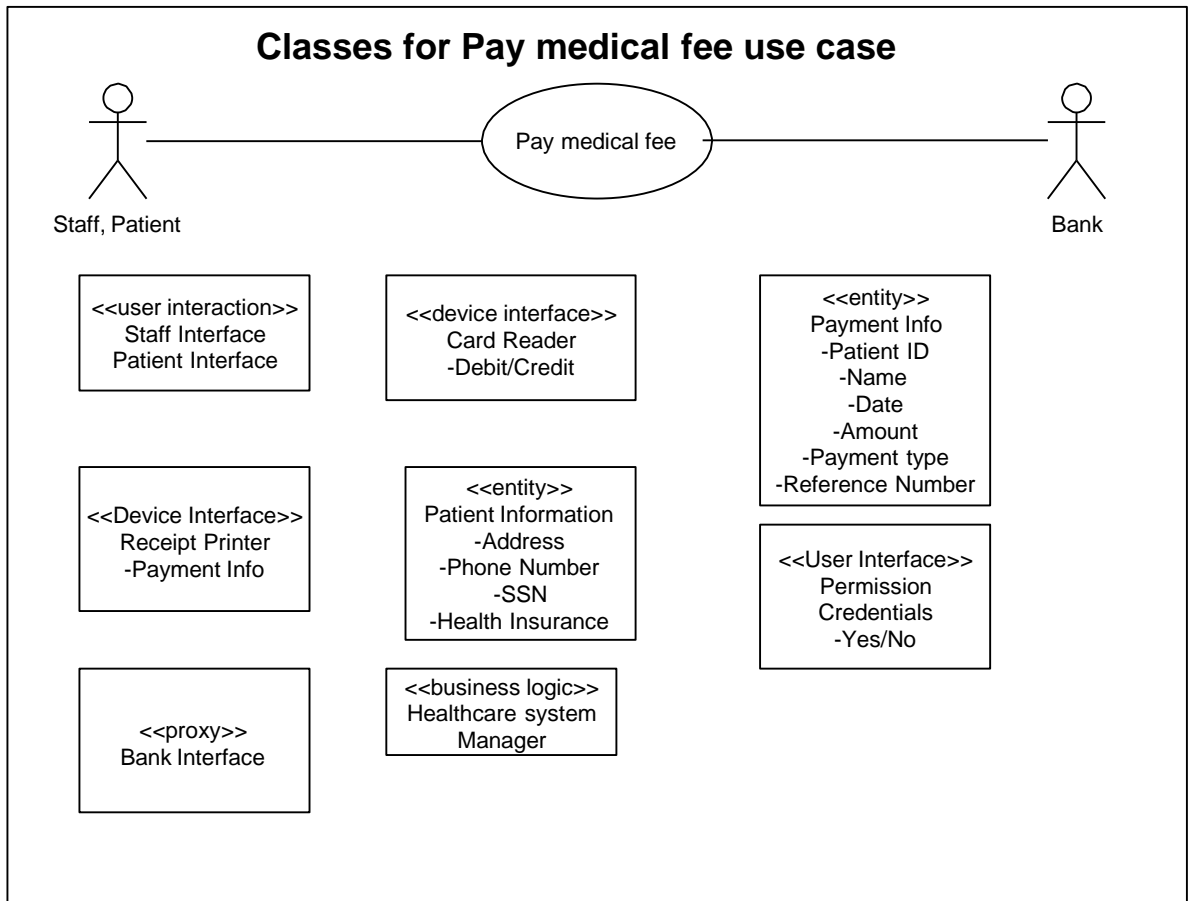
<<entity>>  
Patient  
Appointment  
-Patient Name  
-Date & Time  
-Doctor Name  
-Gender  
-Date of Birth

<<User Interface>>  
Permission  
Credentials  
-Yes/No

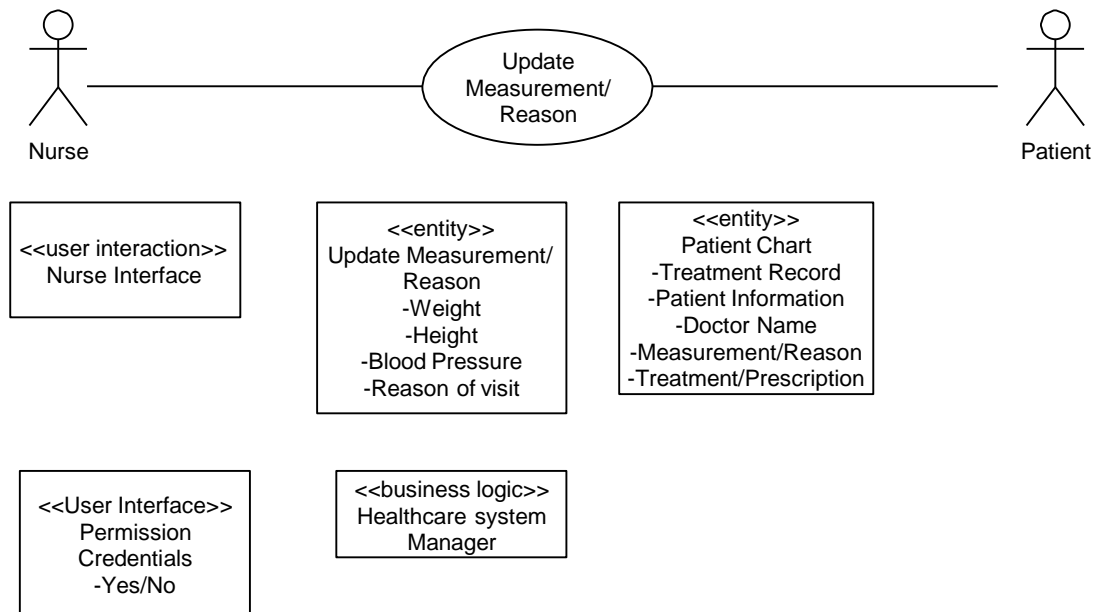
## Classes for Check-in patient use case



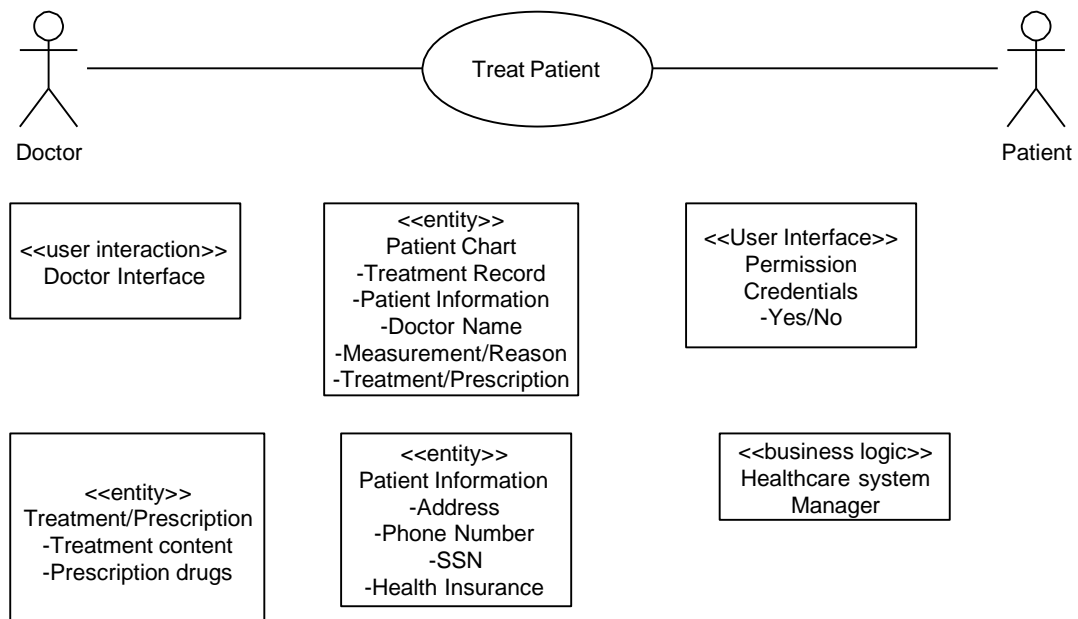
## Classes for Pay medical fee use case



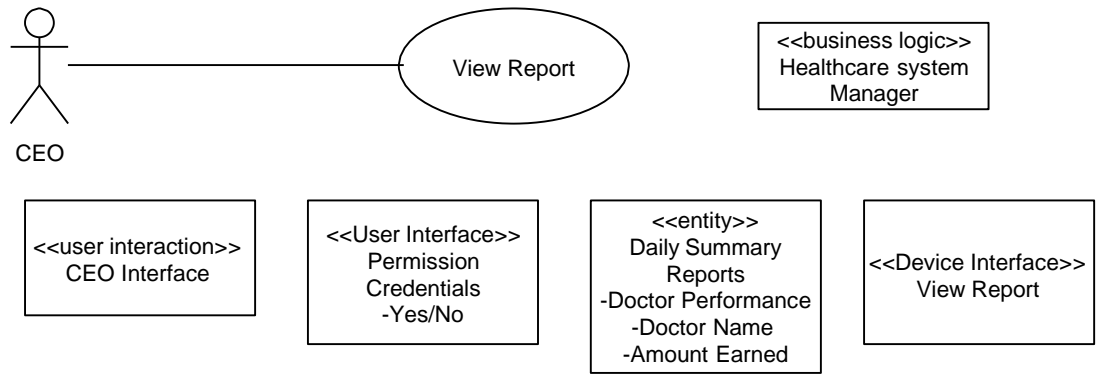
## Classes for Update Measurement/Reason use case



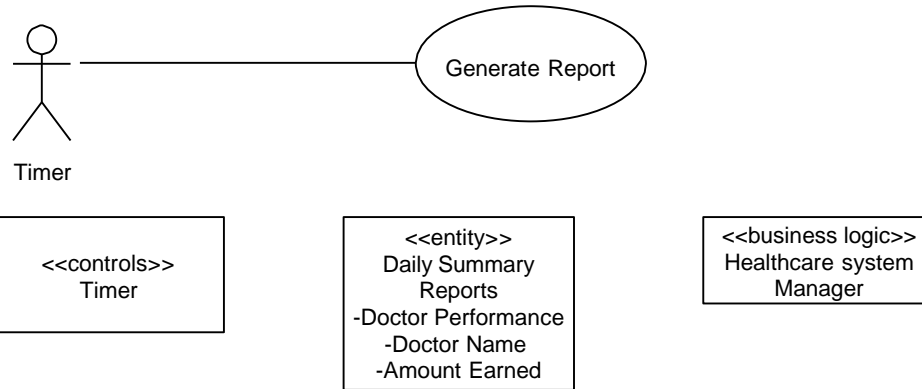
## Classes for Treat Patient use case



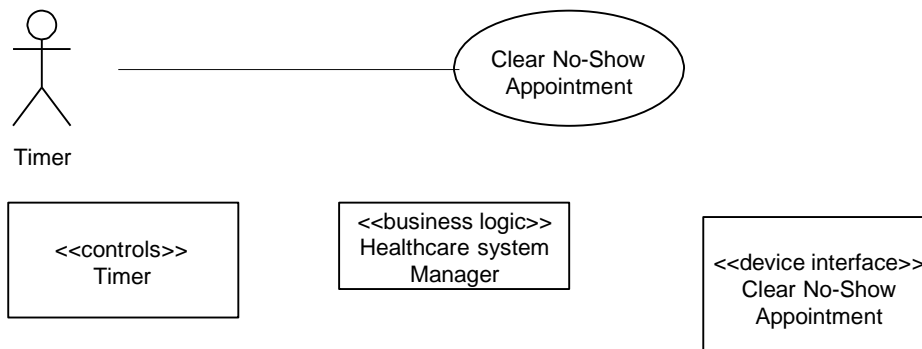
### Classes for View Report use case



### Classes for Generate Report use case



### Classes for Clear No-Show Appointment use case



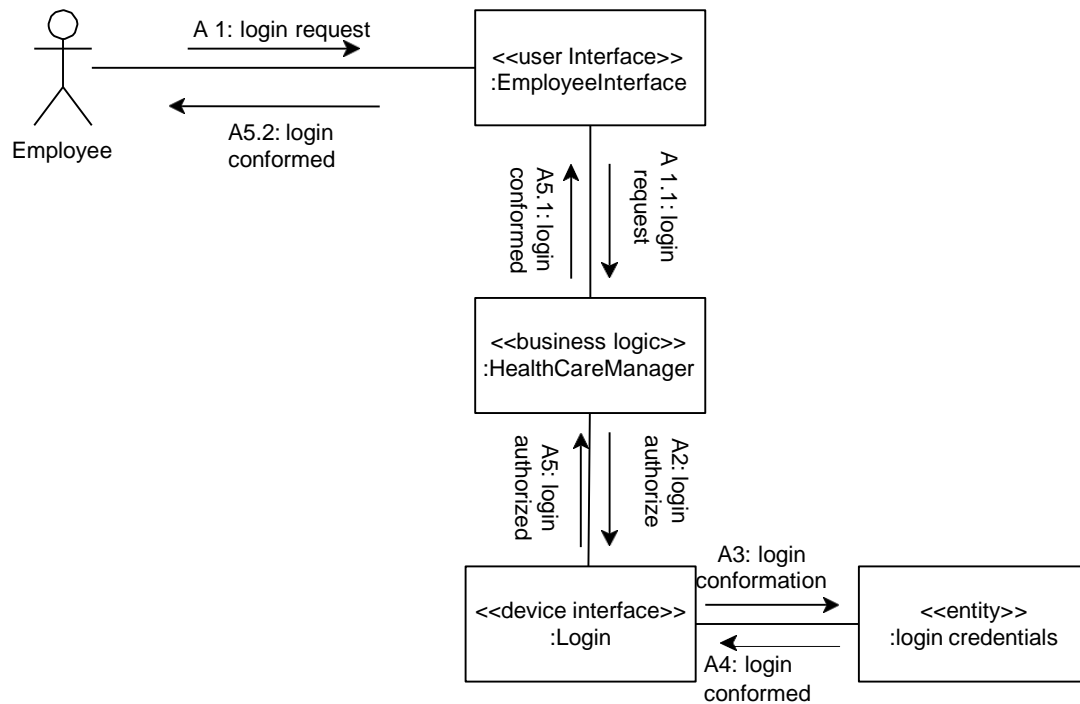


## 2. Interaction Model

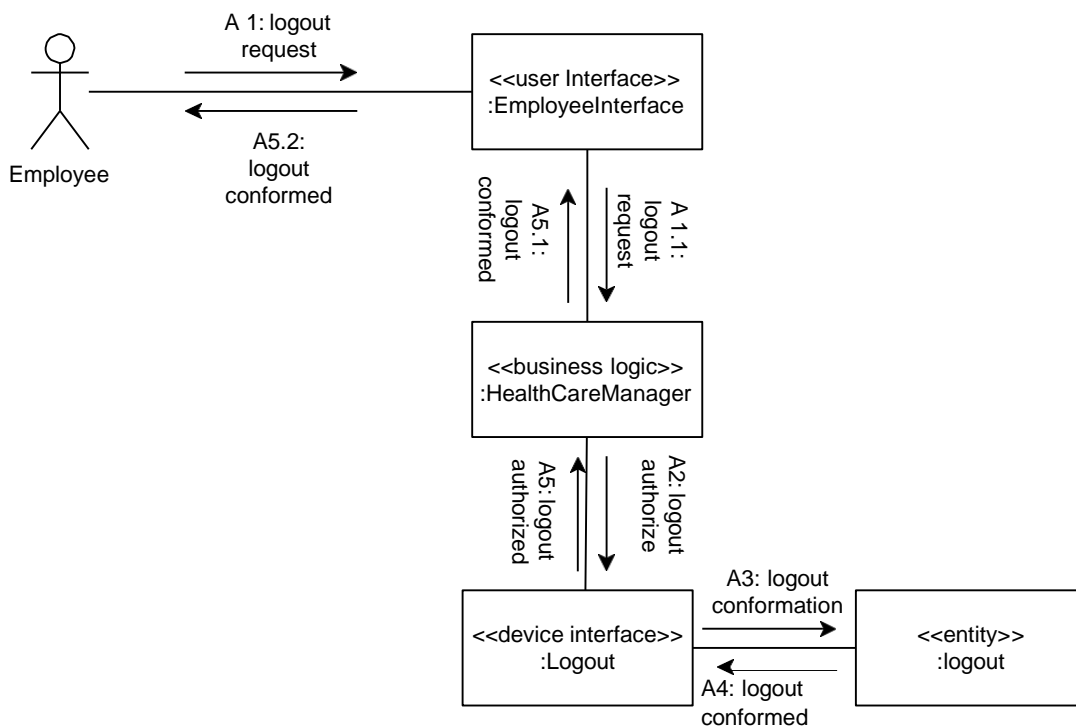
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Communication Diagram for each  
Use Case Diagram

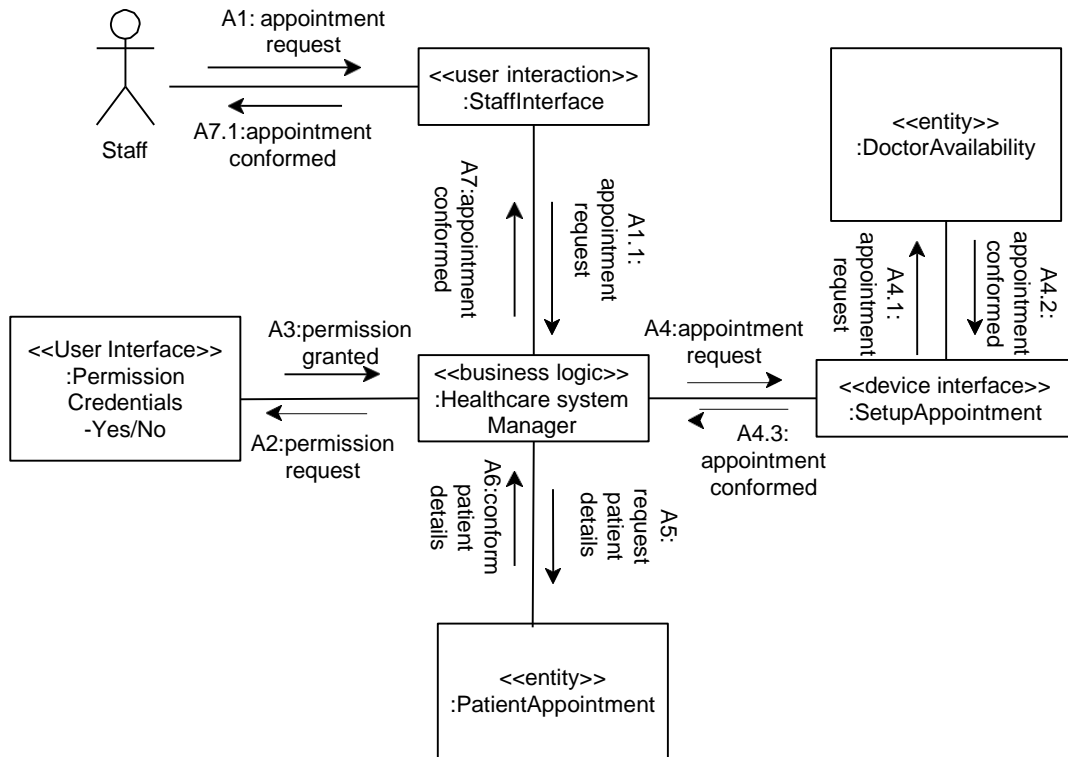
## Communication Diagram For Log-In Use Case



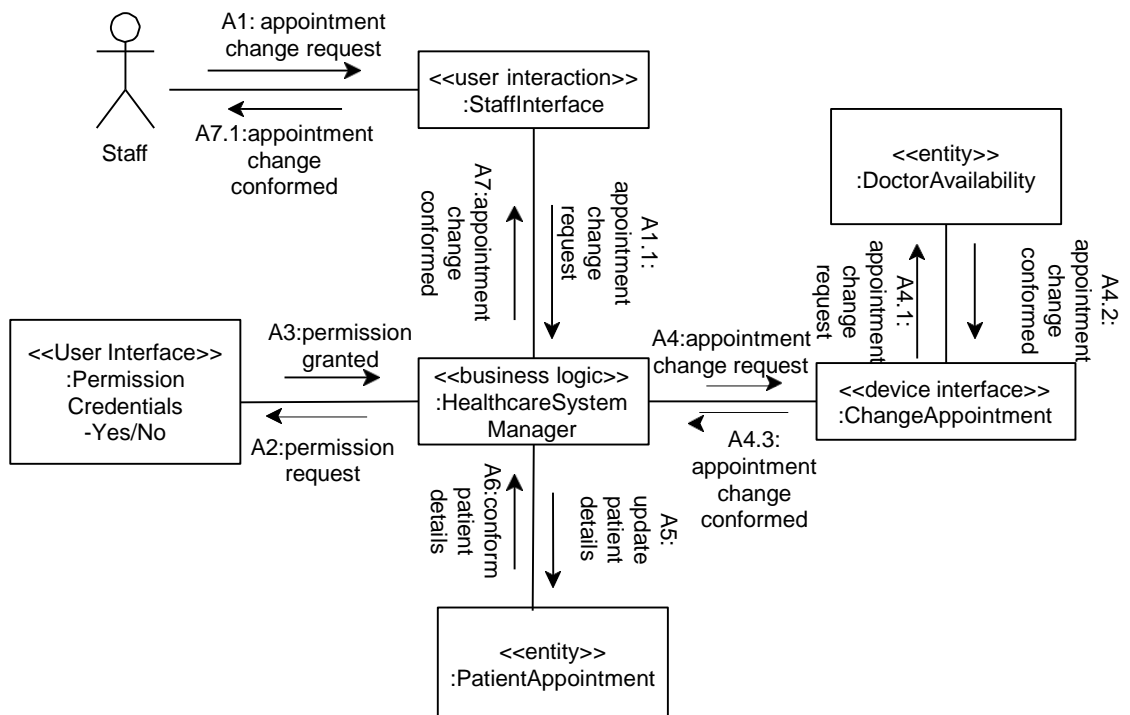
## Communication Diagram For Log Out Use Case



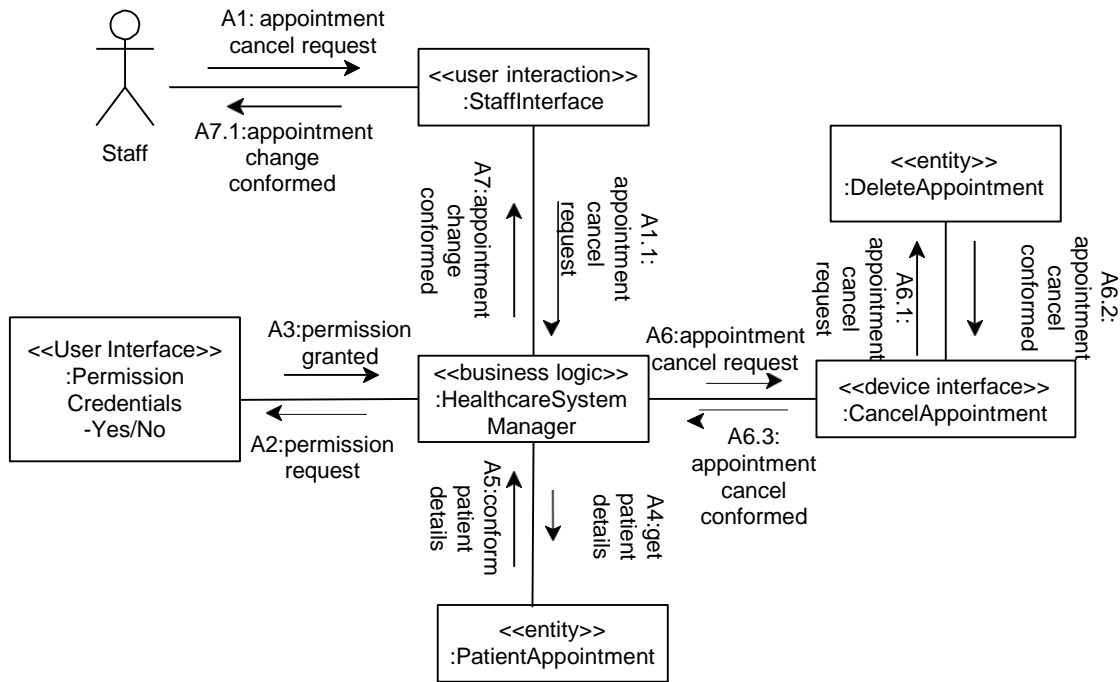
## Communication Diagram For Make Appointment Use Case



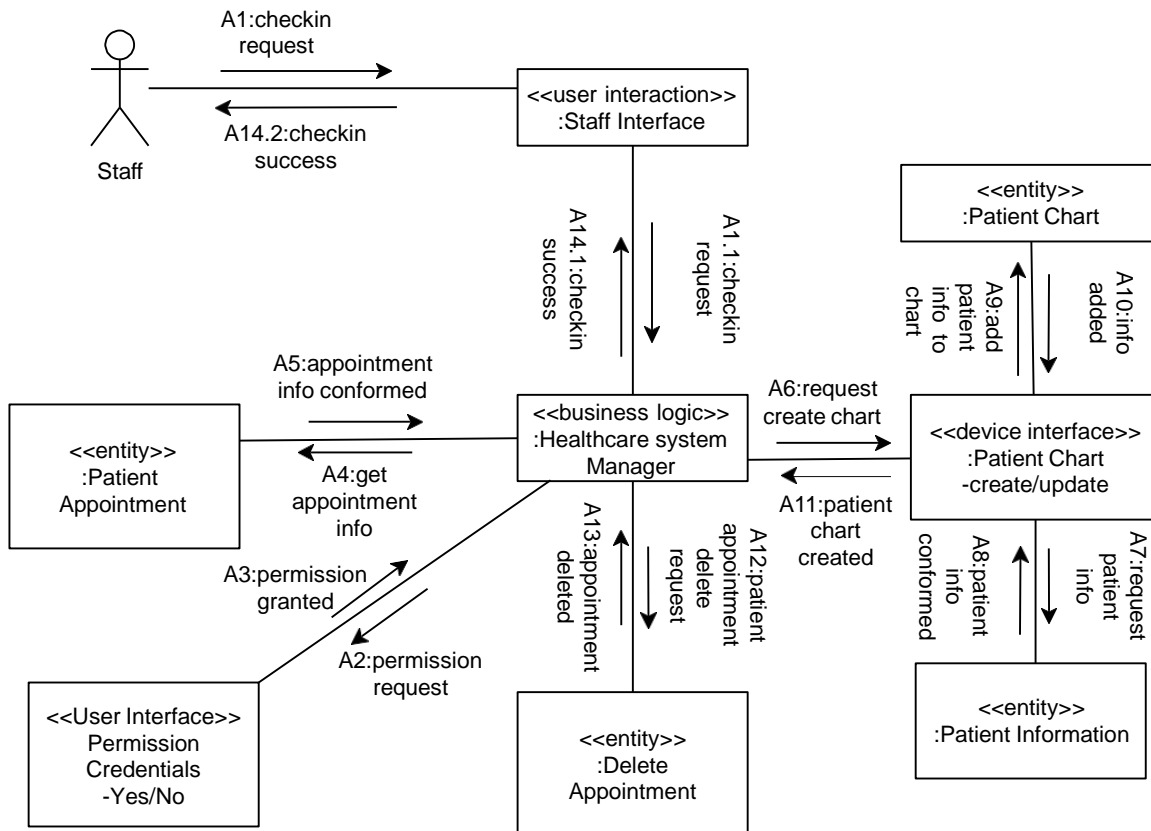
## Communication Diagram For Change Appointment Use Case



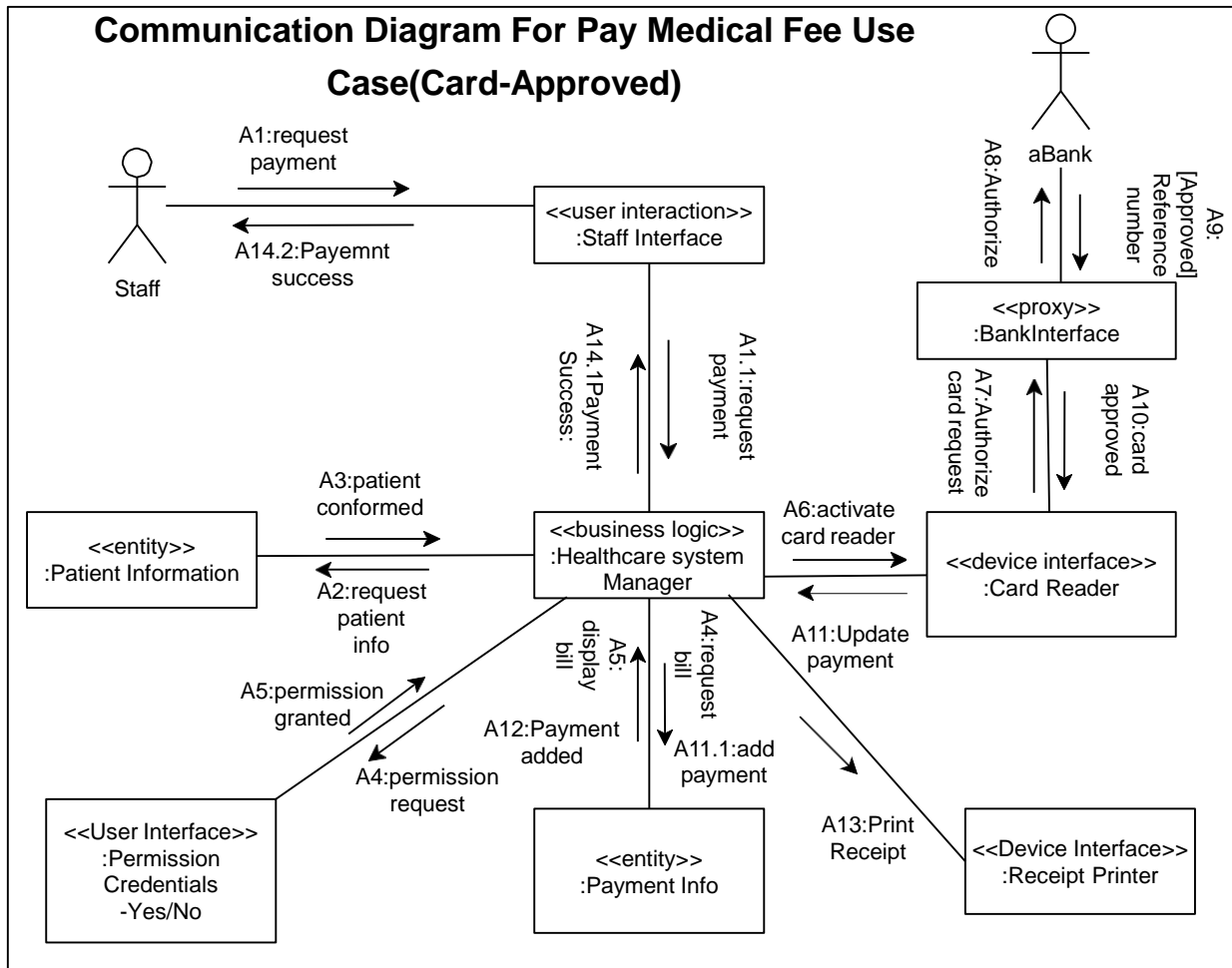
## Communication Diagram For Cancel Appointment Use Case



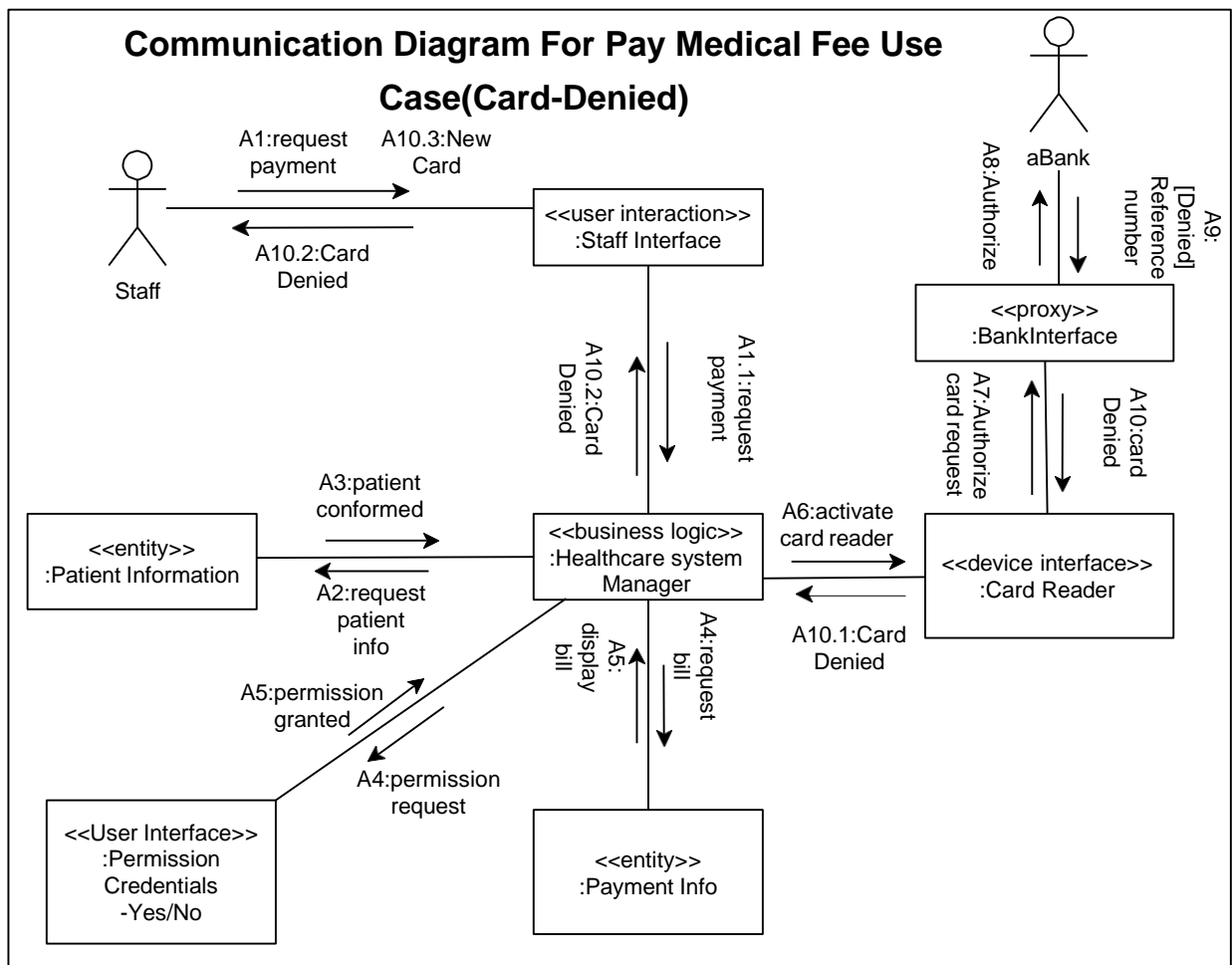
## Communication Diagram For Check-in Patient Use Case



## Communication Diagram For Pay Medical Fee Use Case(Card-Approved)

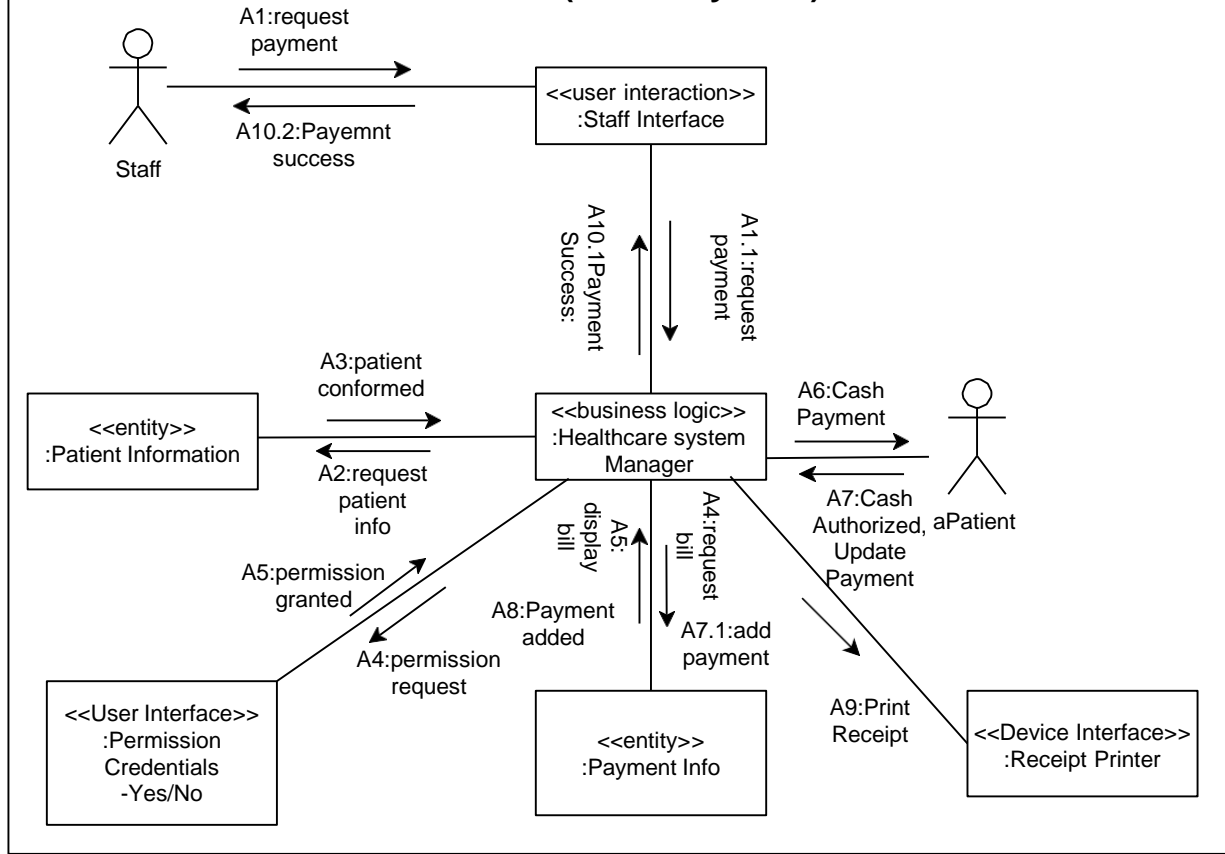


## Communication Diagram For Pay Medical Fee Use Case(Card-Denied)

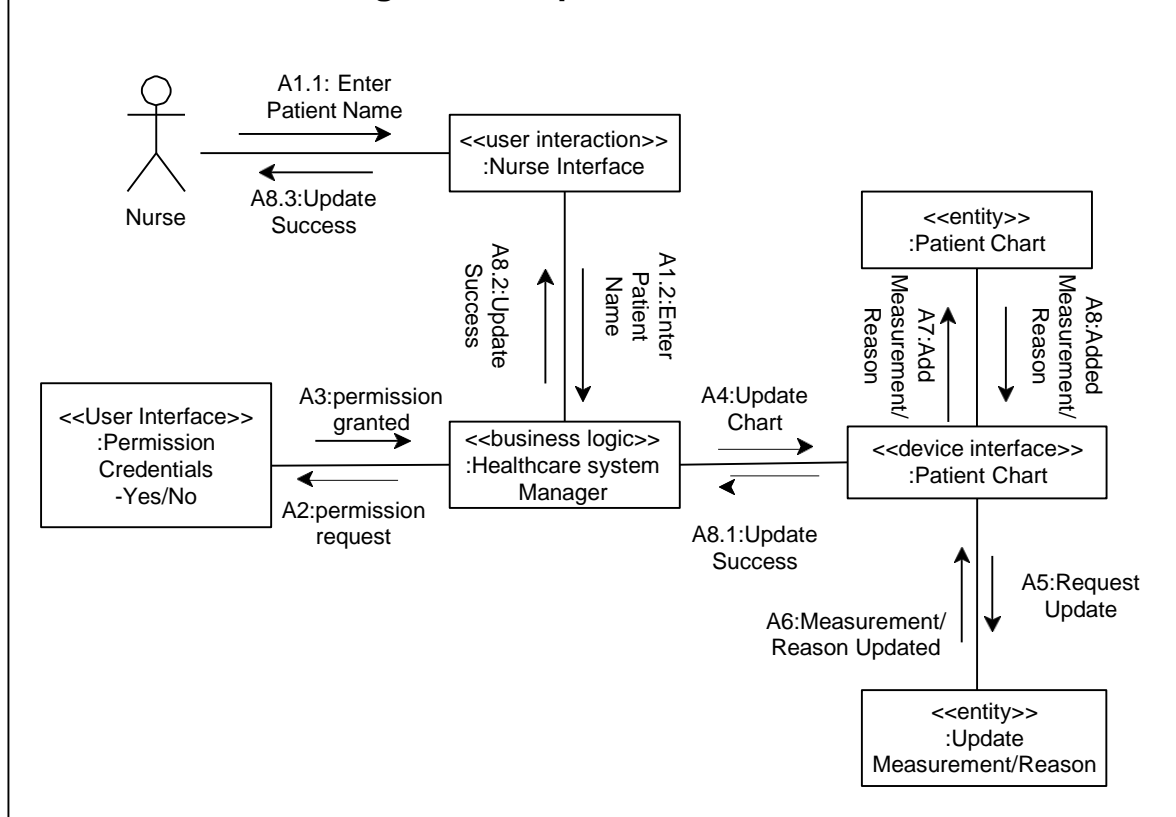




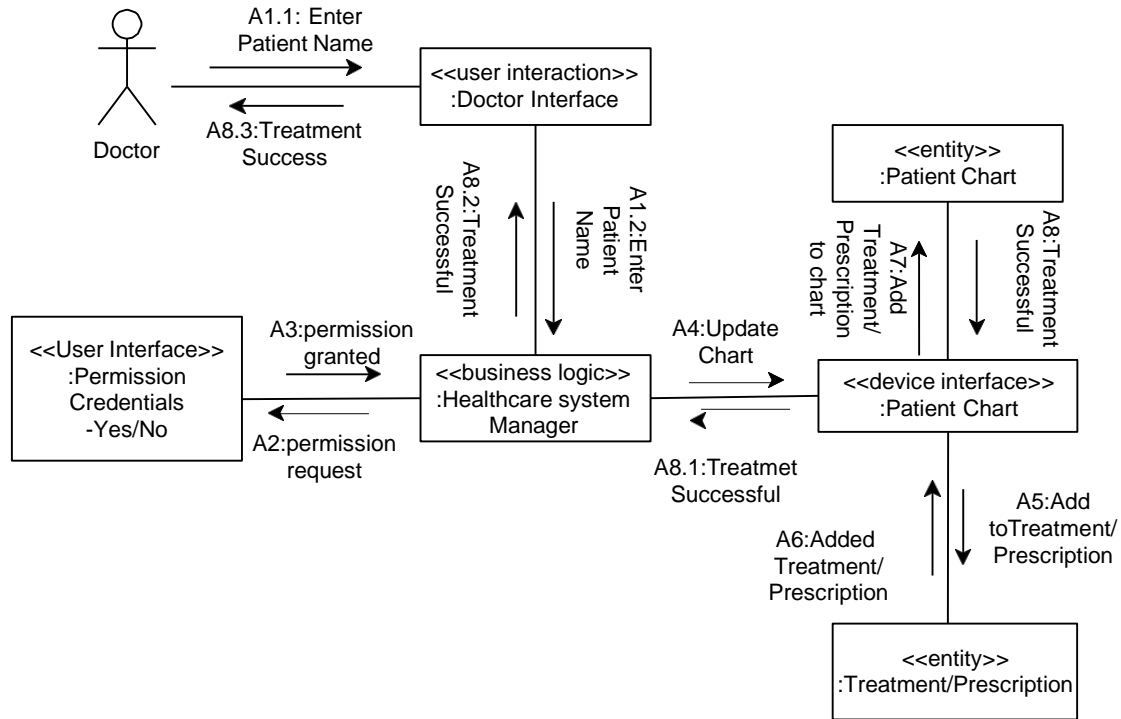
## Communication Diagram For Pay Medical Fee Use Case(Cash Payment)



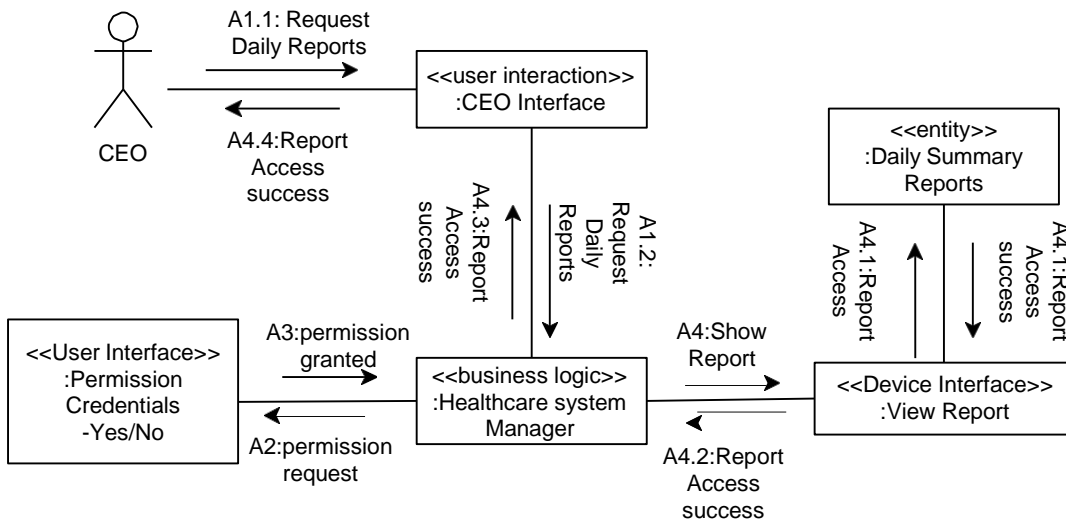
## Communication Diagram For Update Measurement/Reason Use Case



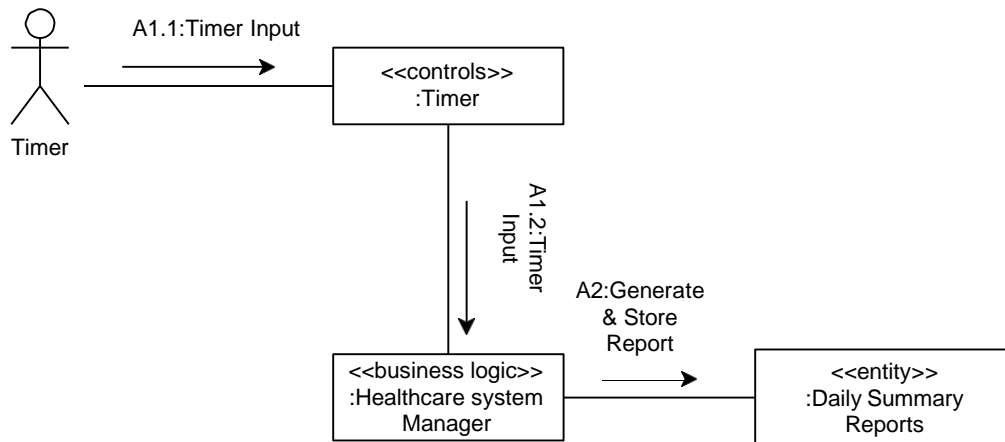
## Communication Diagram For Treat Patient Use Case



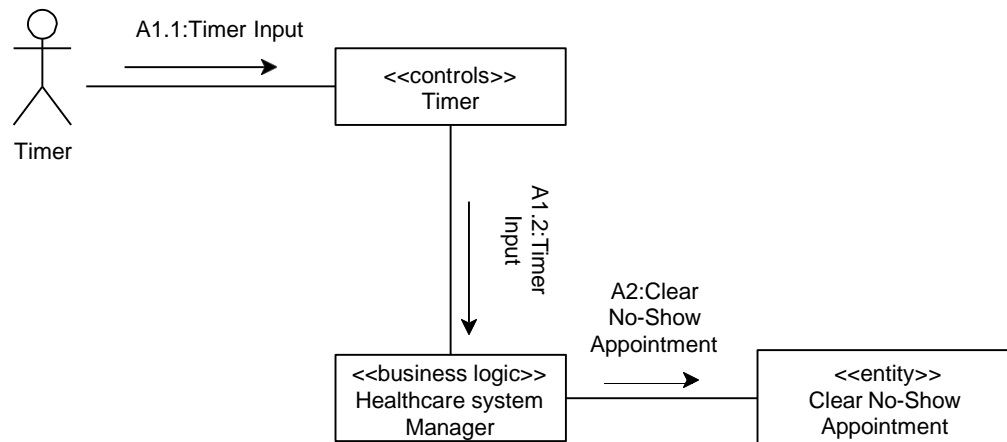
## Communication Diagram For View Report Use Case



## Communication Diagram For Generate Report Use Case



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

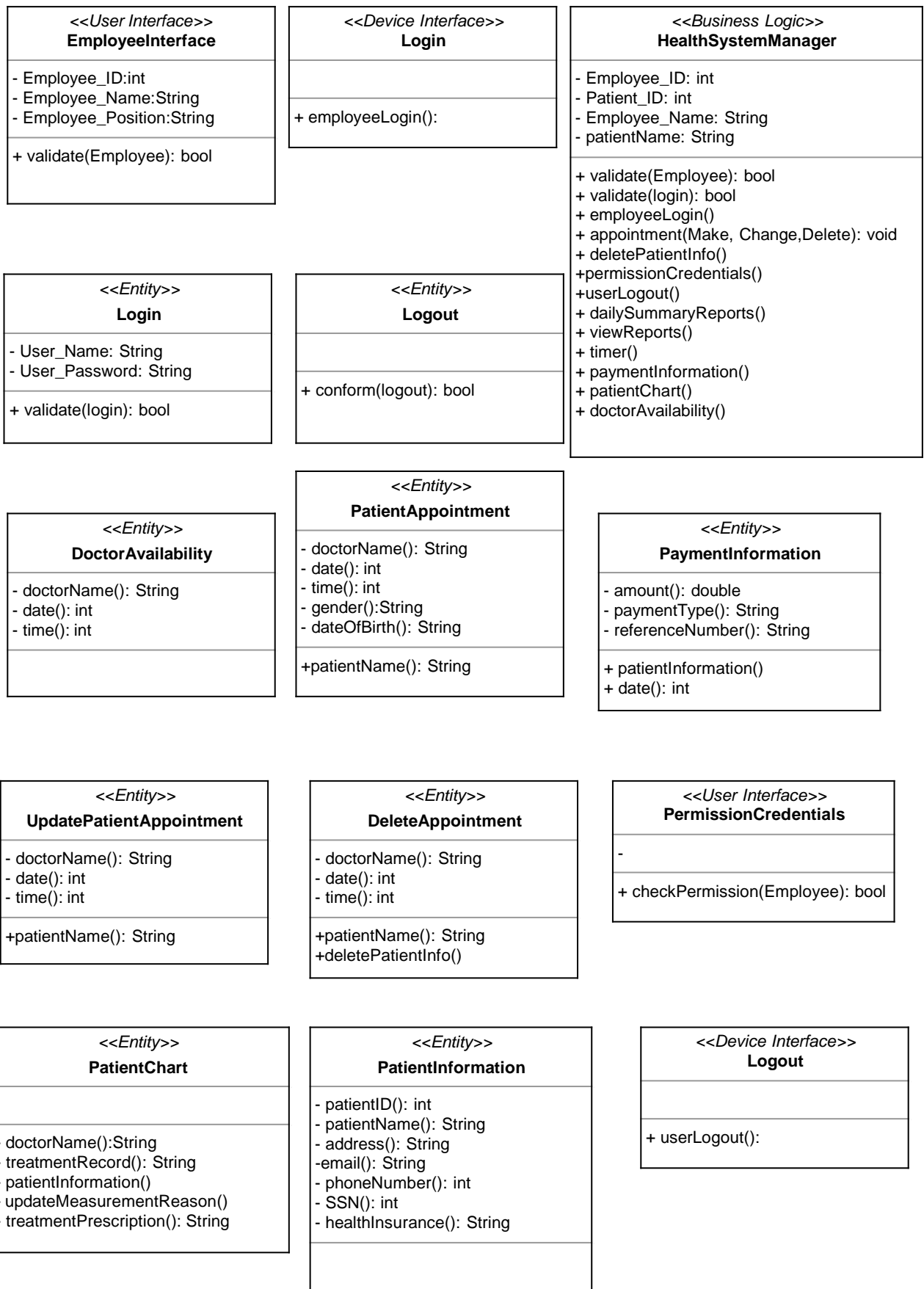


## 3. Class Operations

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Class Diagram For HealthCare  
System

# Class Operation for Healthcare System(HCS)





<<Entity>> <b>UpdateMeasurementReason</b>
- weight(): double - height(): double - bloodPressure(): double - reasonOfVisit(): String

<<Entity>> <b>TreatmentPrescription</b>
-treatmentContent(): String -prescriptionDrugs(): String

<<Entity>> <b>DailySummaryReports</b>
- doctorPerformance(): int
+ doctorName():String +amount(): double

<<Device Interface>> <b>ViewReport</b>
+ displayDailySummaryReports()

<<Controls>> <b>Timer</b>
+ closintTime(time, date)

<<Entity>> <b>ClearNoShowAppointment</b>
+ clearPatientAppointment()

<<Device Interface>> <b>CardReader</b>
+ cardType(credit, debit)

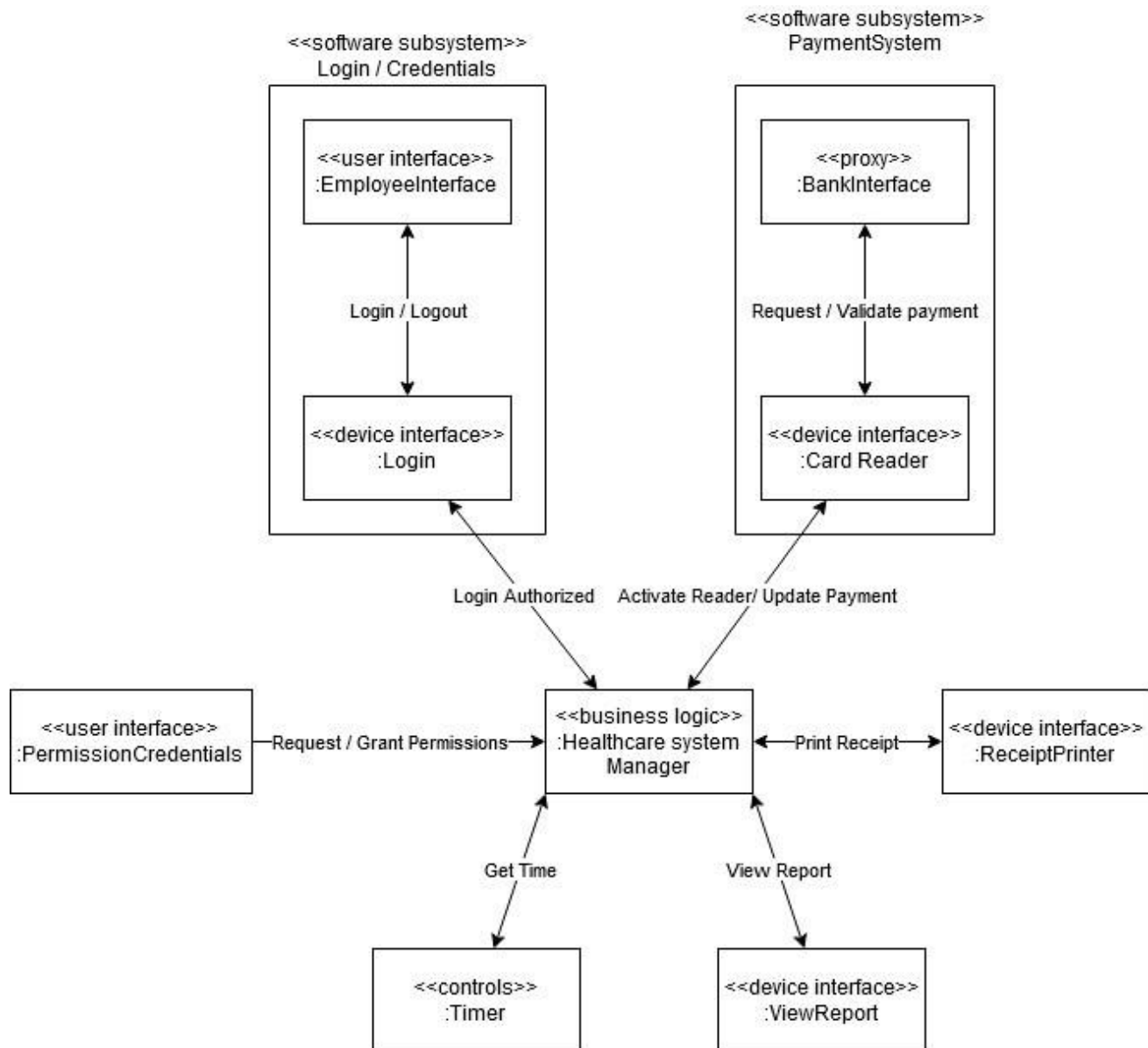
<<Proxy>> <b>BankInterface</b>
+ authorize(cardNumber): int

<<Device Interface>> <b>ReceiptPrinter</b>
+ paymentInformation()

## 4. Design

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Software Architecture For  
Healthcare System





## 5. Database Table Design

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Database tables to store information about appointments, patient charts, payments, and reports in the healthcare system

## Patient

<b>Patient_id(PK)</b>	<b>varchar(10)</b>
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

<b>apt_id(PK)</b>	<b>varchar(10)</b>
<i>patient_id(FK)</i>	varchar(10)
<i>Doctor_id(FK)</i>	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

<b>apt_id(PK)</b>	<b>varchar(10)</b>
<i>patient_id(FK)</i>	varchar(10)
Date	date
Visit_Reason	text
Weight	float
height	varchar(5)
Blood_pressure	varchar(10)
treatment	text
prescription	varchar(25)

## Employee

<b>employee_id(PK)</b>	<b>varchar(10)</b>
username	varchar(20)
pass_hash	varchar(64)
Name	varchar(30)
Position	varchar(15)



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Thank You