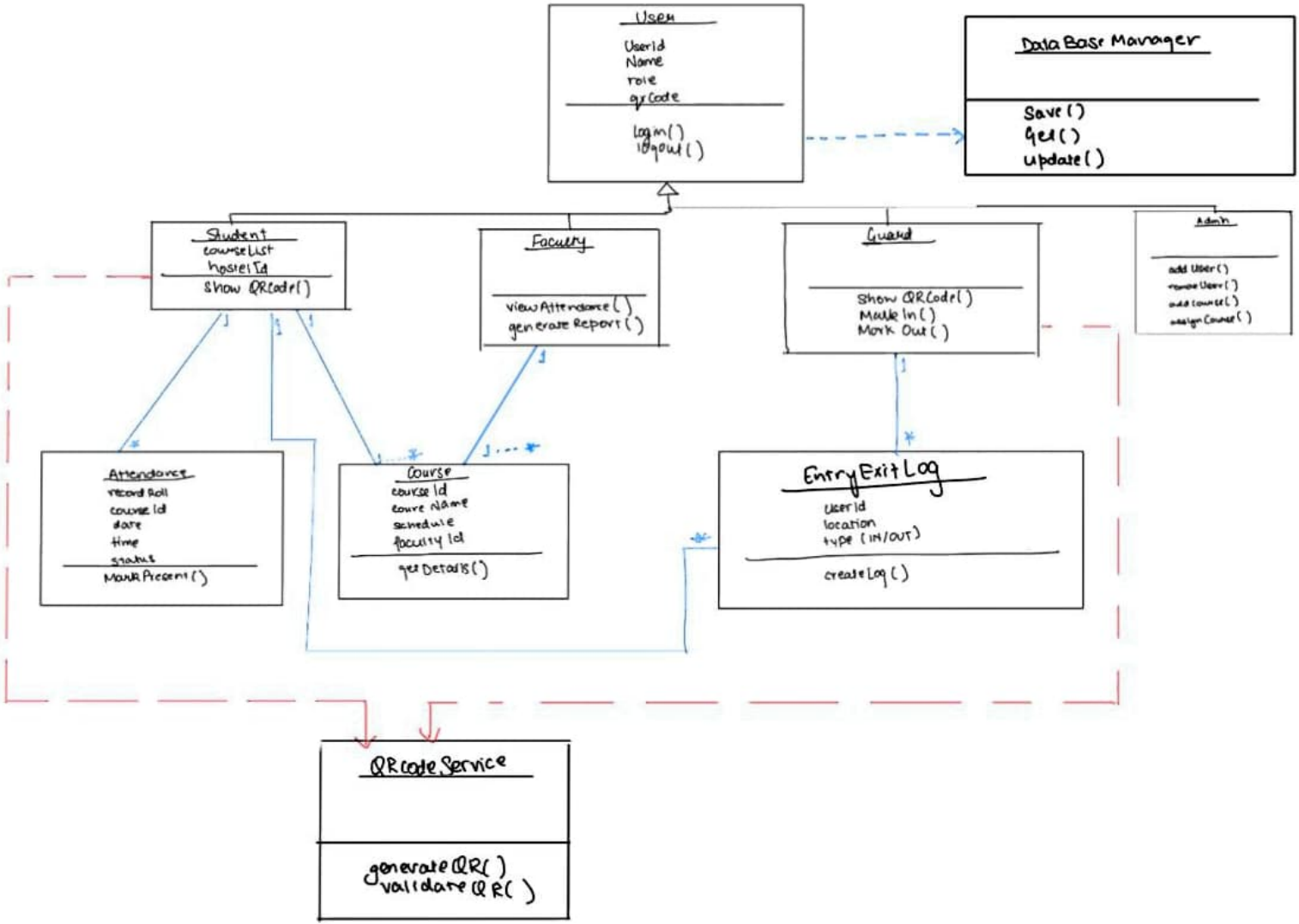
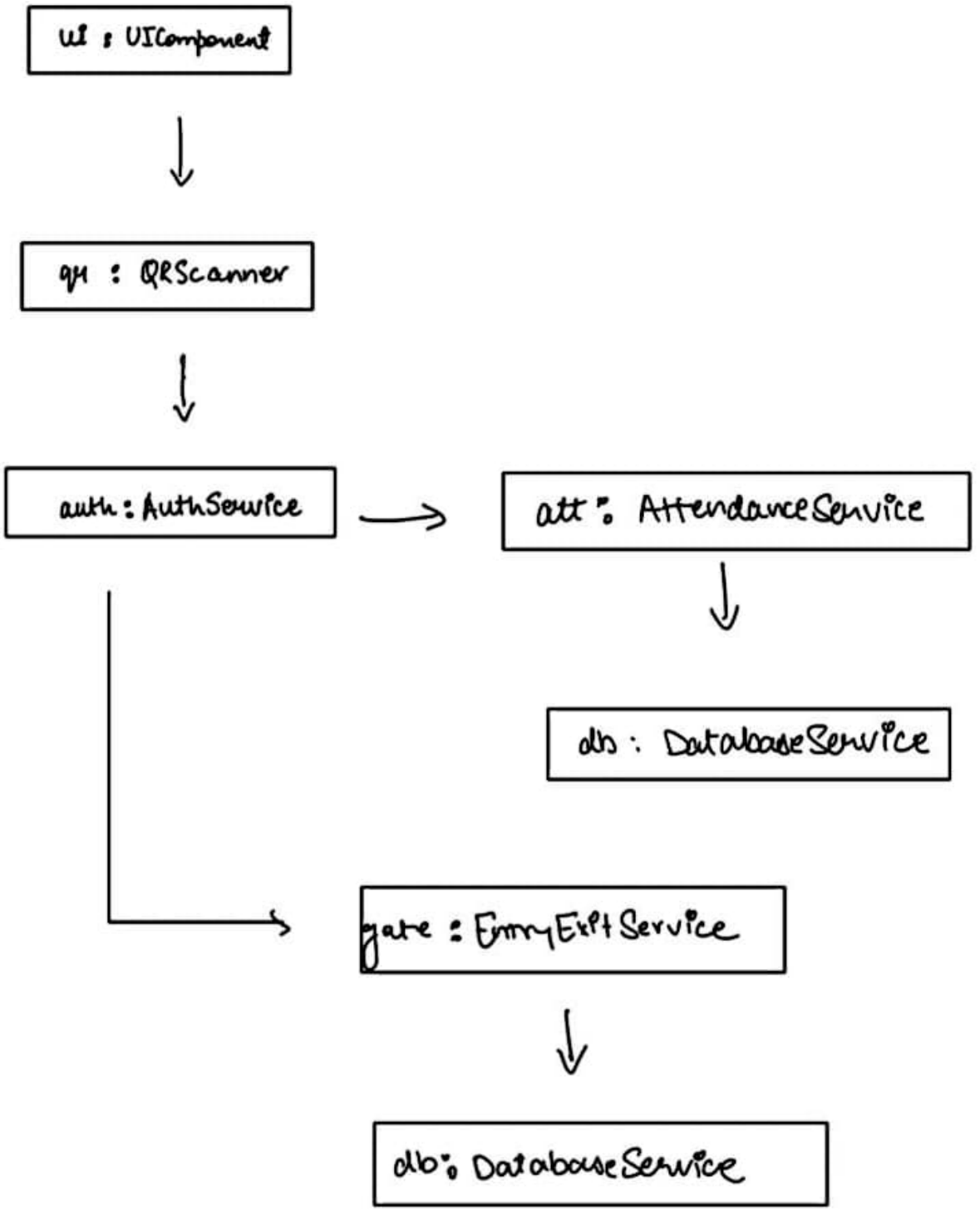
Class UML


User
UserId
Name
role
qrCode
login()
logout()
Data Base Manager
Save()
Get()
Update()
Student
courseList
hostelId
showQRCode()
Faculty
viewAttendance()
generateReport()
Guard
showQRCode()
MarkIn()
MarkOut()
Admin
addUser()
removeUser()
addCourse()
assignCourse()
Attendance
recordRoll
courseId
date
time
status
MarkPresent()
Course
courseId
coureName
schedule
facultyId
getDetails()
EntryExitLog
userId
location
type (IN/OUT)
createLog()
QRcodeService
generateQR()
validateQR()

Campus QR System



UML COMPONENT DIAGRAM

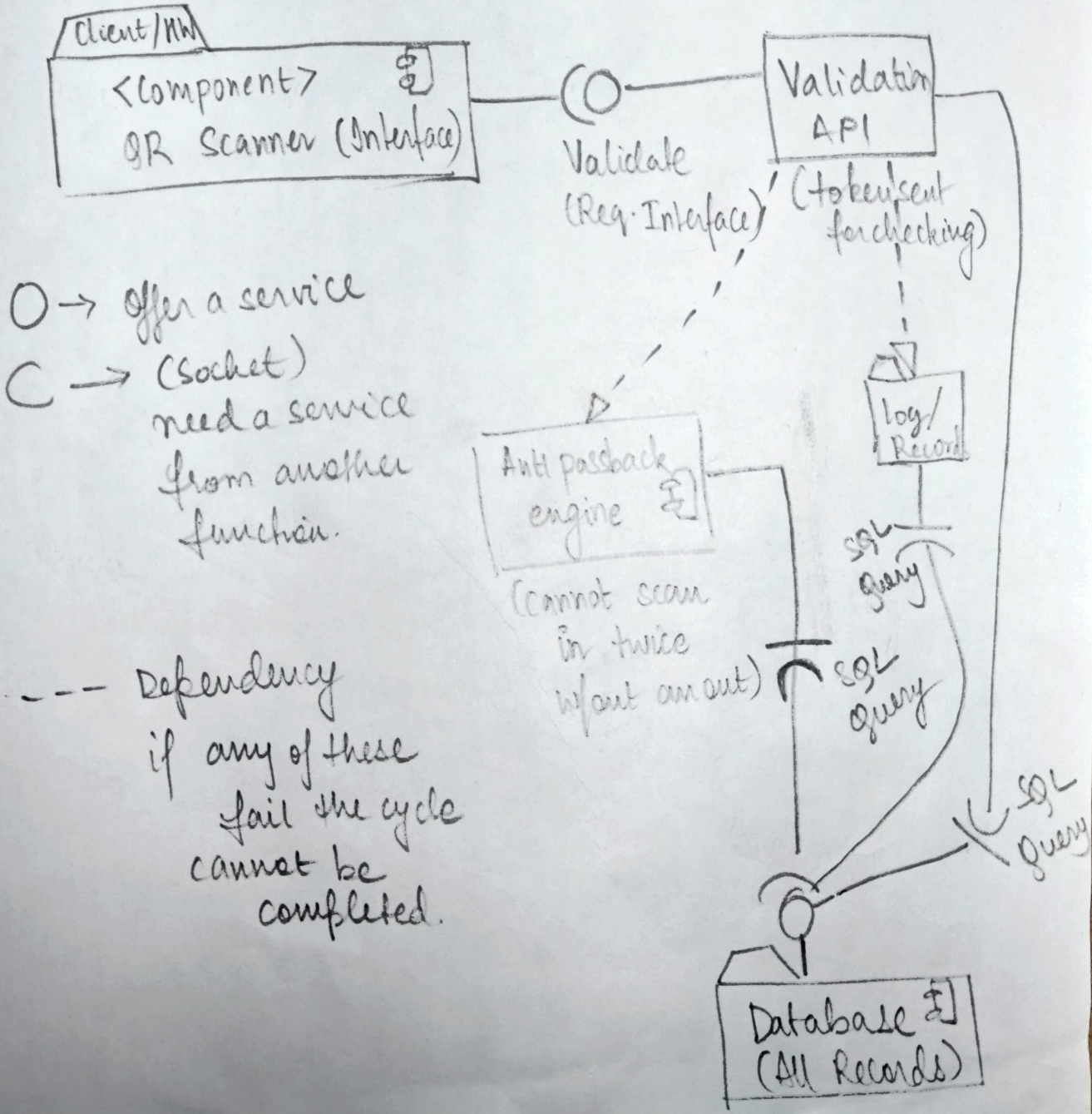
Illustrates how physical components are wired and organised along with their interfaces and relationships to form a larger system. (Highlevel)

Can be broken down into three layers.

Client / Hardware layer [Scanner]

Application / Service Layer [Validation + API]

Data Layer [DBMS]



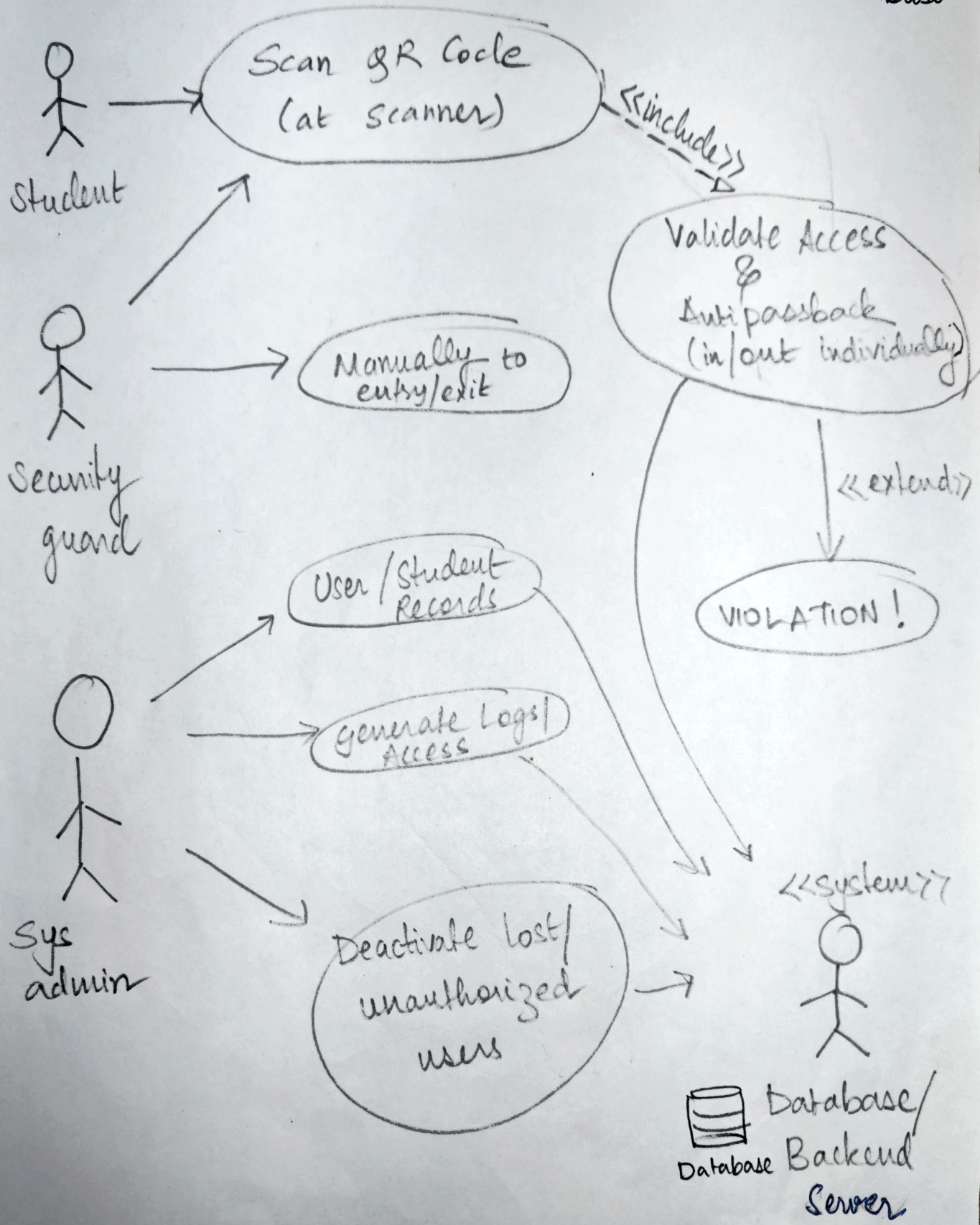
○ → offer a service

C → (socket) need a service from another function.

--- Dependency if any of these fail the cycle cannot be completed.

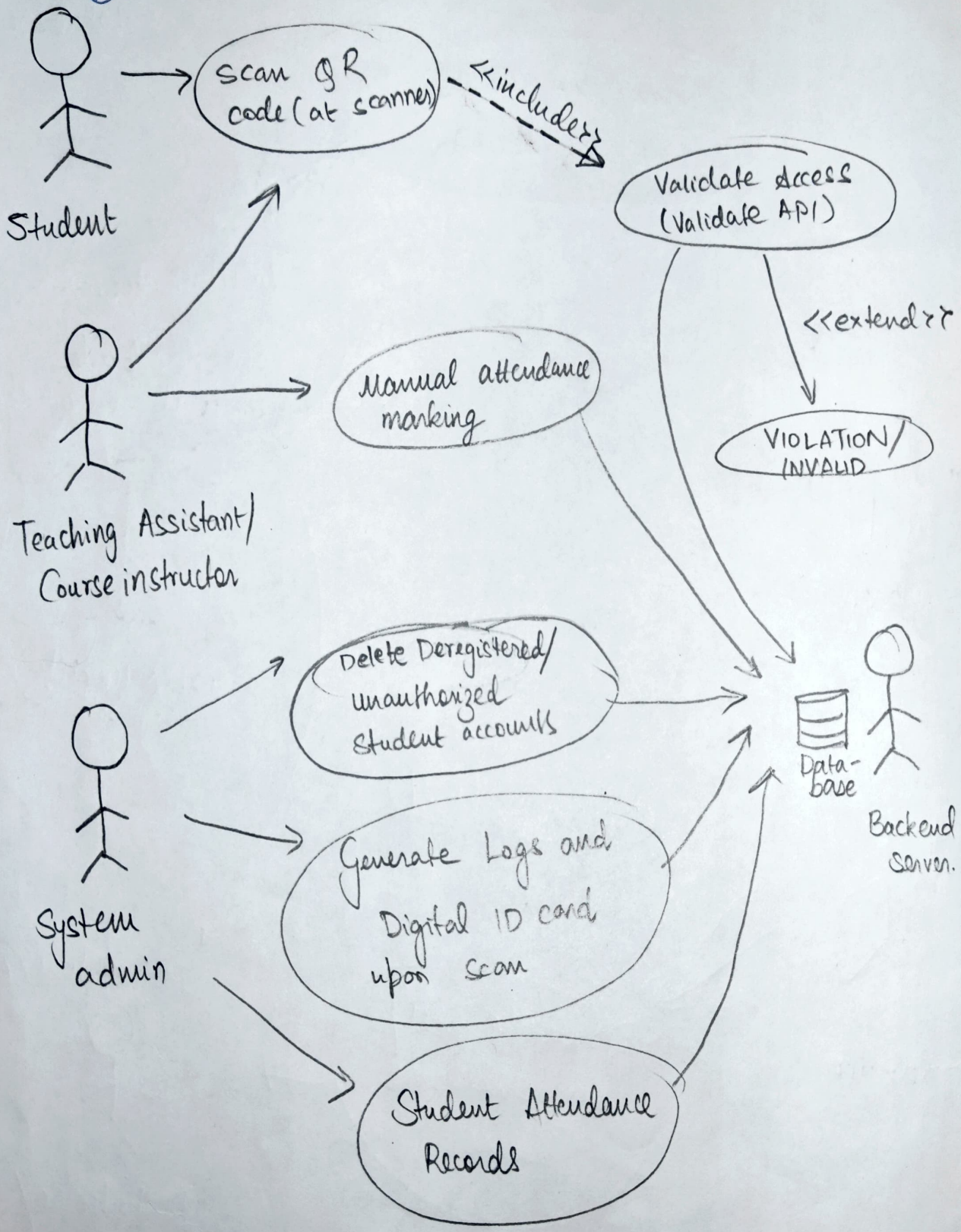
USE - CASE DIAGRAM

Actors: student, security guard, sysadmin, backend server/database

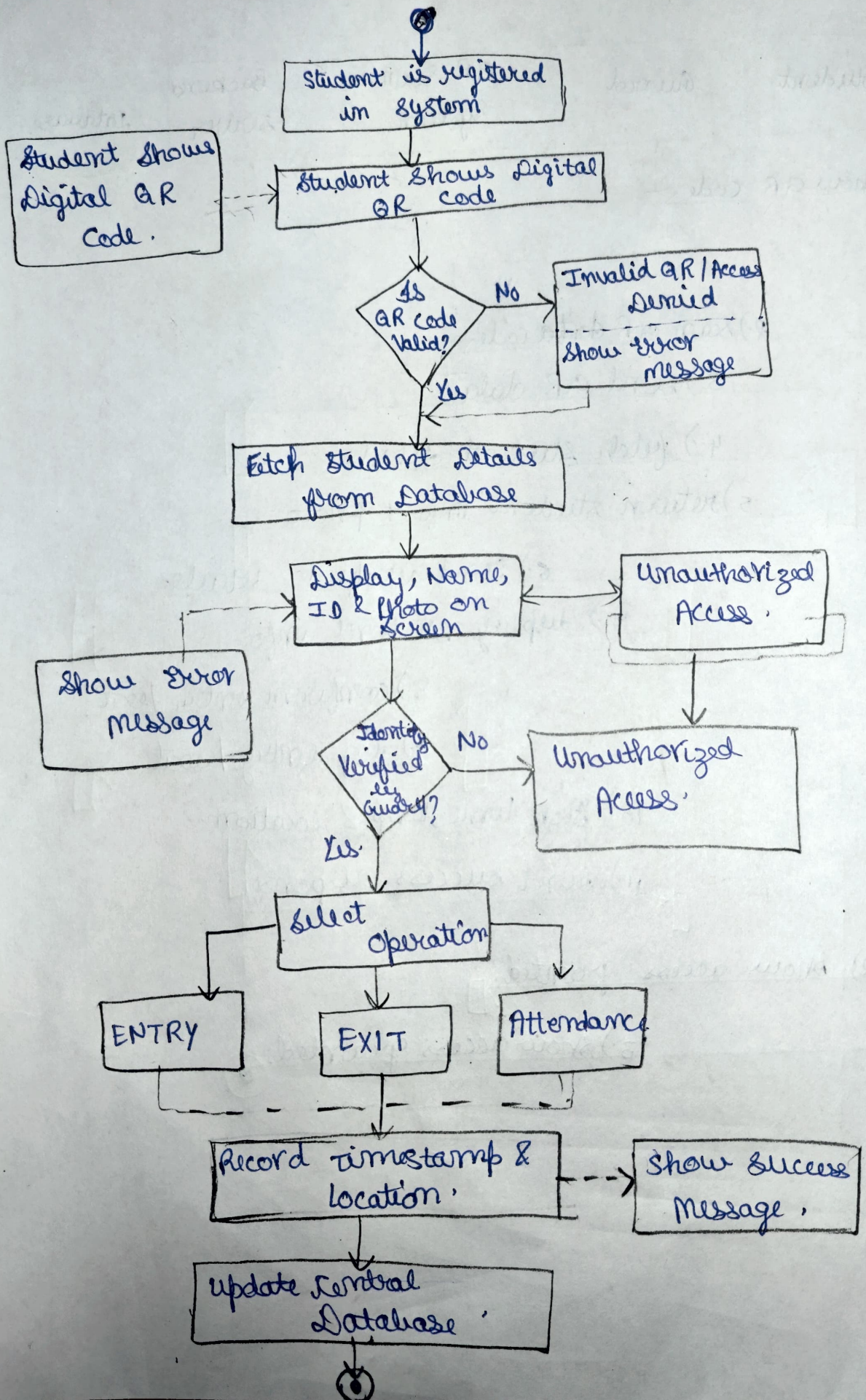


USE- CASE DIAGRAM (FOR ATTENDANCE SYSTEM)

Actors: Student, Teaching Assistant/ Course instructor, System admin, Backend Server.

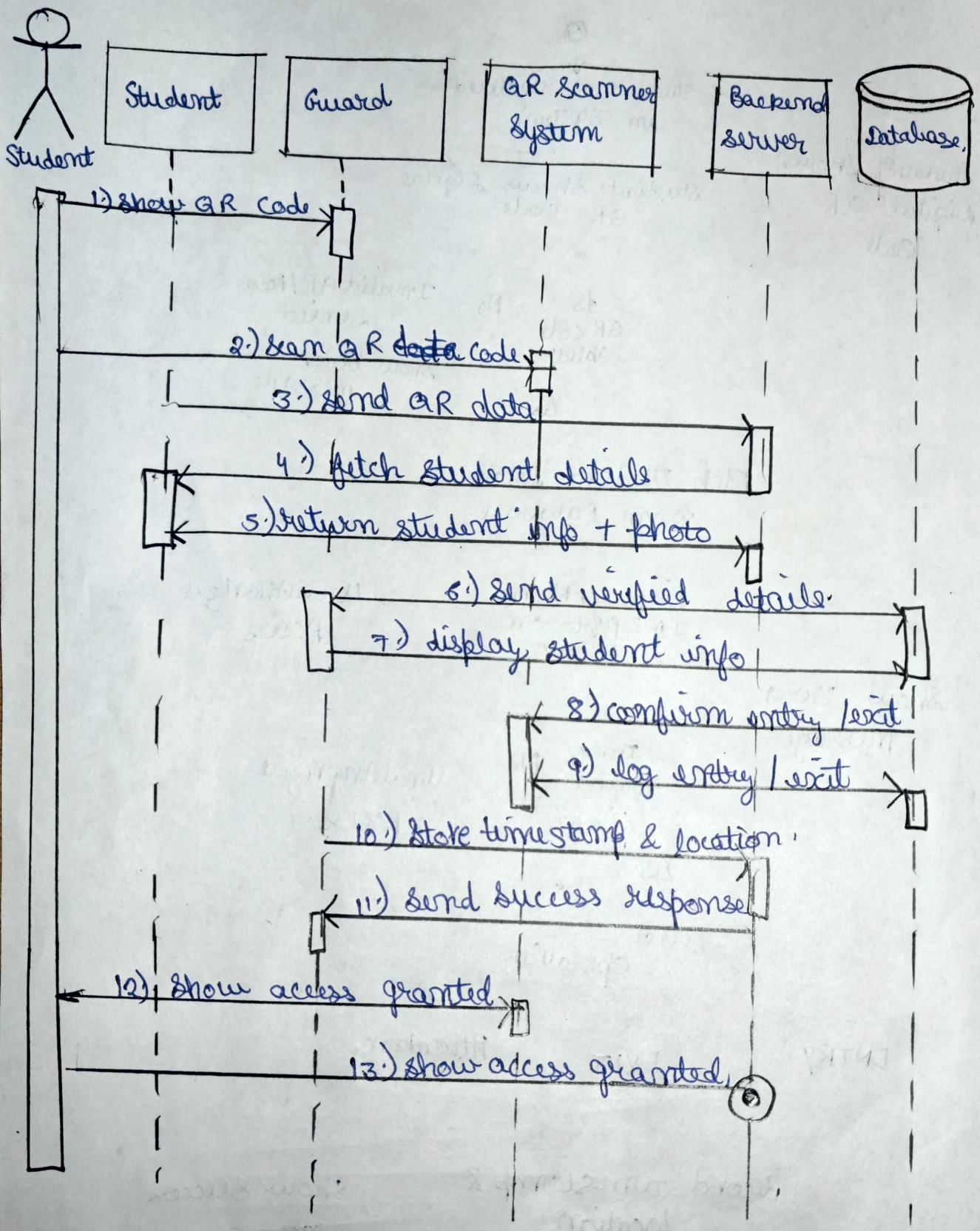


Activity UML Diagram

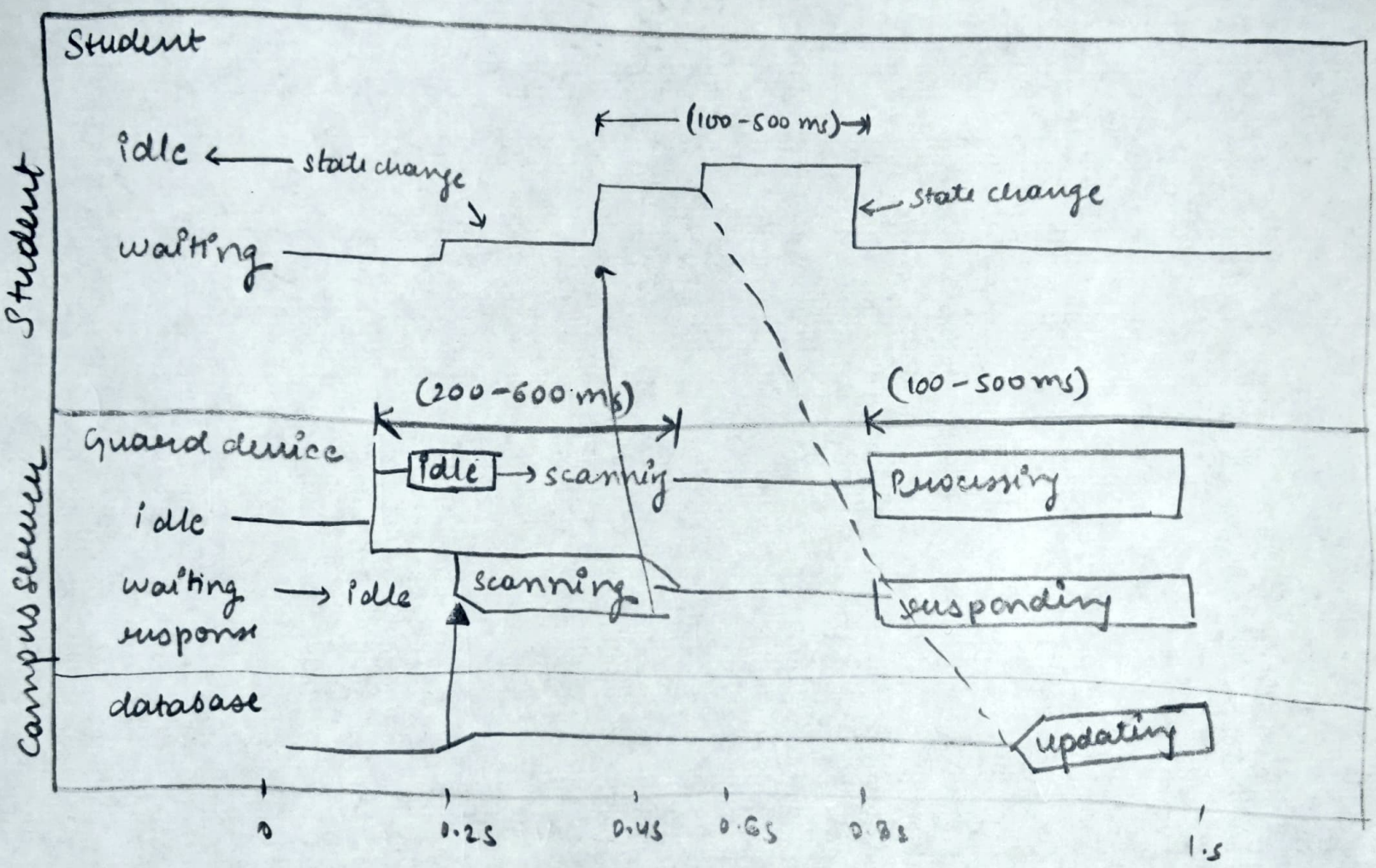


UML Sequence Diagram

QR Code-Based campus Entry & System



Timing UML diagram



Explains →

How entry/exit or attendance making happens within a short time window. Sequence of state changes of guard, student, server, and database after QR is scanned.

Deployment UML diagram