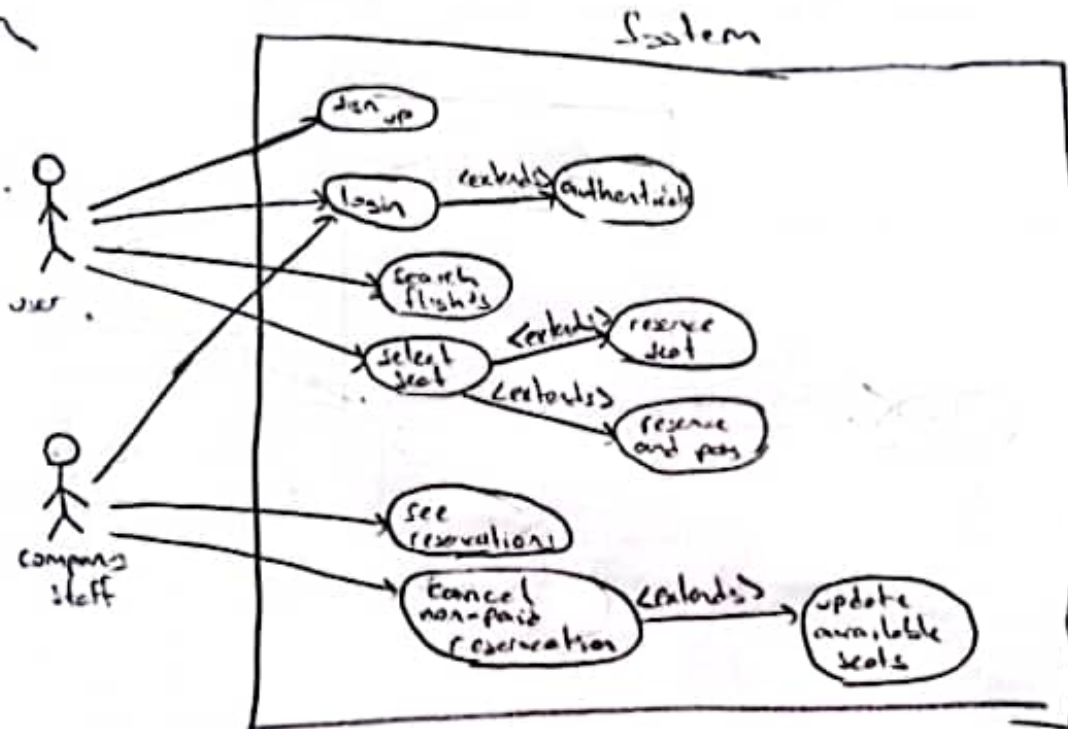


1) a- Use case diagram for functional requirements



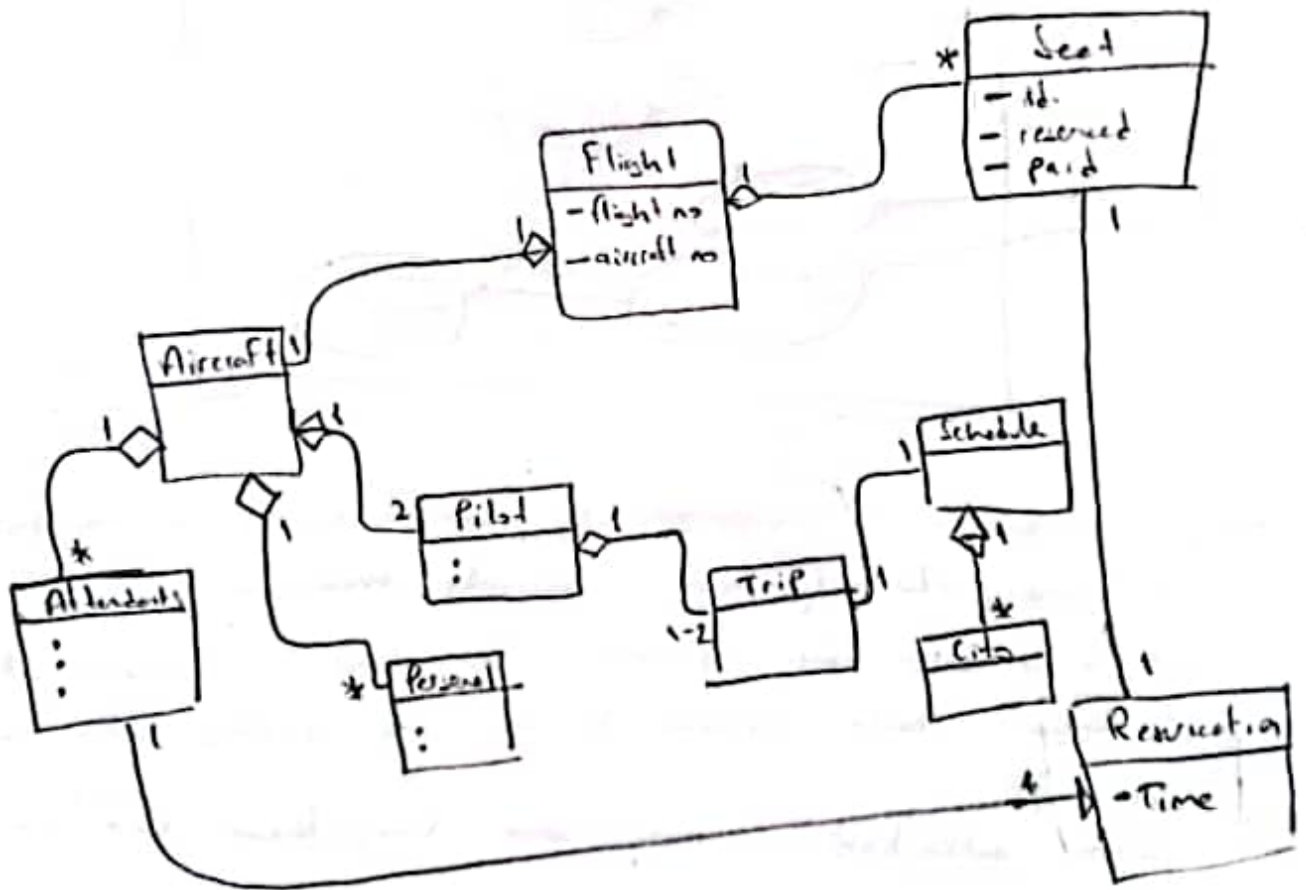
b- First non-functional requirement is about security of the system staff and customers must authenticate themselves.

Second non-functional requirement is about performance of s. em. System should respond to the user quickly with small delay.

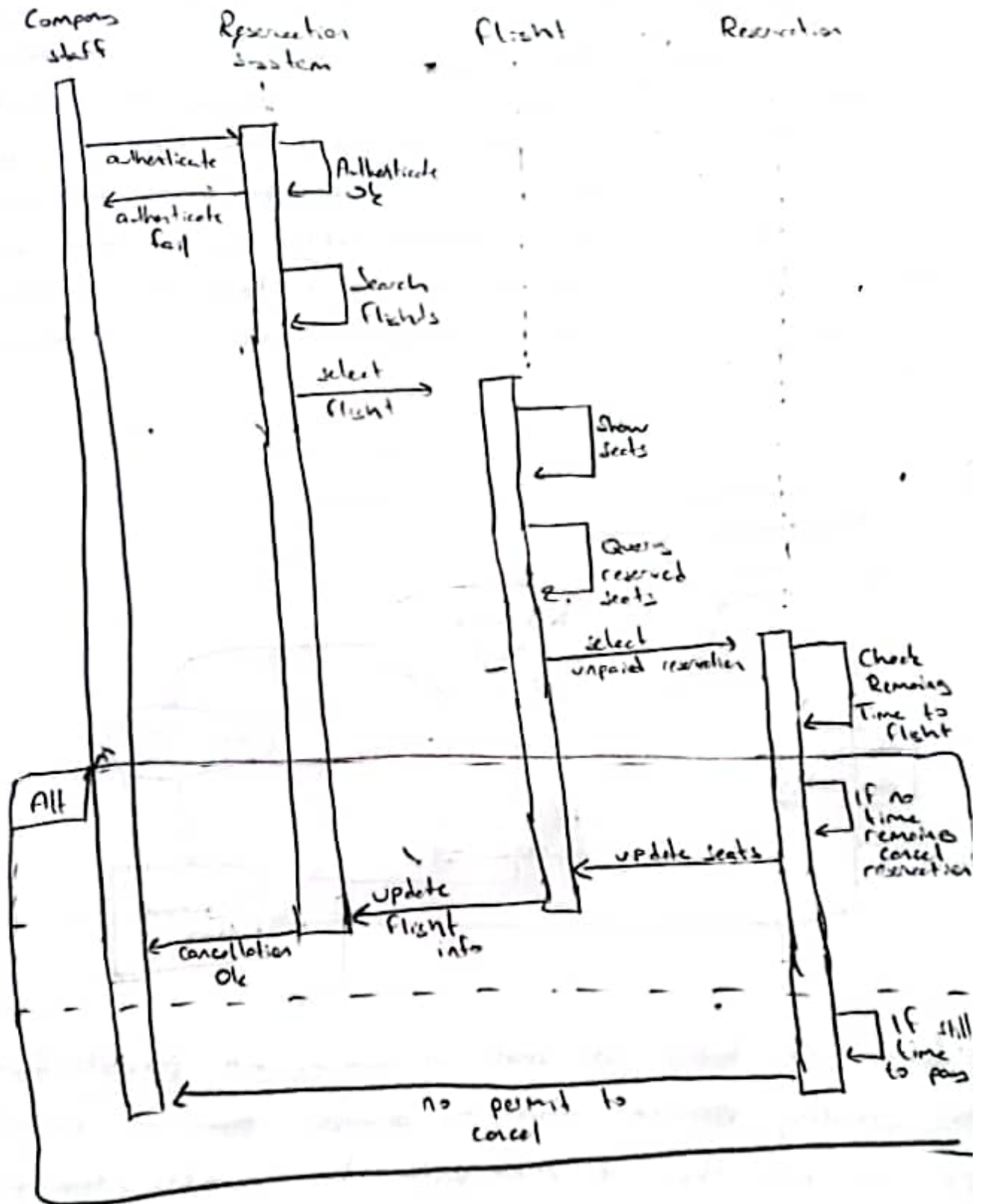
Since authentication takes some time, these two can conflict.

C- I would select the agile model. With the agile model, you can adapt the changing requirements easily. Also, you can interact with the stakeholders more often and understand their wishes more easily. Since agile model is incremental, you can deploy the system after a while and continue to develop, add a feature or change system. This provides faster delivery.

d- Class model of the system

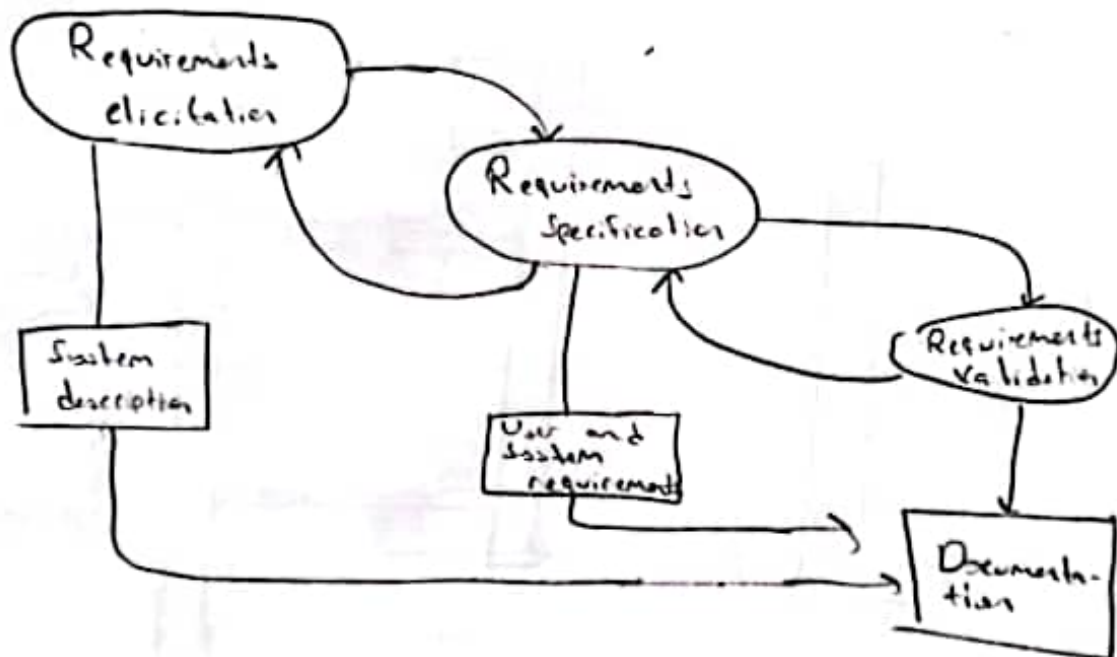


Sequence diagram for seat cancellation



f- Since, the application should be able to run on both web and android, MVC architecture can be used for user interface design. We can modify the view for both environment. Also for network needs of system, we can follow the client-server architecture. Customers need to connect from their own device to the server and perform operations on the server such as reservations. Also for data recording needs, system should have some kind of database. So we can use a three tier architecture design that comprises of user interface, process management and database management.

2)



3) Scrum is better at small or medium size projects. Scrum is generally preferred when the developer team is co-located and not more than 7 people. With large projects, large teams are needed and the communication between the team members are more difficult. More documentation is needed in large projects and it slows down the development speed in scrum methodology. As a result it is hard to scale up the scrum for large projects.