American International University-Bangladesh (AIUB)

Department of Computer Science and Engineering

Faculty of Science &Technology (FST)

Fall 20-21

CSC 00191- Object Oriented Analysis And Design (OOAD)

Section: H

Project Title: PARKING SPACE MANAGEMENT SYSTEM of AIUB.

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PROBLEM DEFINITION:

American International University-Bangladesh (AIUB) is a renowned private university in Bangladesh. They have a lot of students, faculty members, staff members and guests commuting to AIUB by their own car/ motorbike/ cycle and also by using rickshaw. As the Kuratoli road is narrow and AIUB parking slot has limited parking space. So, they decided to maintain the parking space through a system to get rid of difficulties and to park the vehicles properly.

The System will reduce traffic jam and also improve the parking system.

Use case description:

PARKING SPACE MANAGEMENT SYSTEM of AIUB

In a parking system of AIUB user starts placing a ride or choosing parking slot by log in in at the system. System database checks 3times if the ID is valid or not. To have a ride, user check the availability of car. Driver of battery operated transports update the car availability with the car number and keep cars for charging in parking space if needed. In case of car availability user can select ride otherwise they place request for another car. Then any number of the drivers can accept the request and update the car availability with the possible available time he can be reached. User can select his desired one. User has to make ID available for payment by refilling cash. They can also pay by punching ID or logging in to the machine provided in both parking space of secondary gate and inside AIUB. However, the way is the system checks if provided ID has sufficient balance or not when user selects a ride. When system finds sufficient balance, it deducts money from ID and driver gets verification at the same time. To start the ride driver selects a parking slot if available or can request for one during ride. The user can also park his car in the secondary gate maintaining the same process. Parking space information is updated by the gateman.

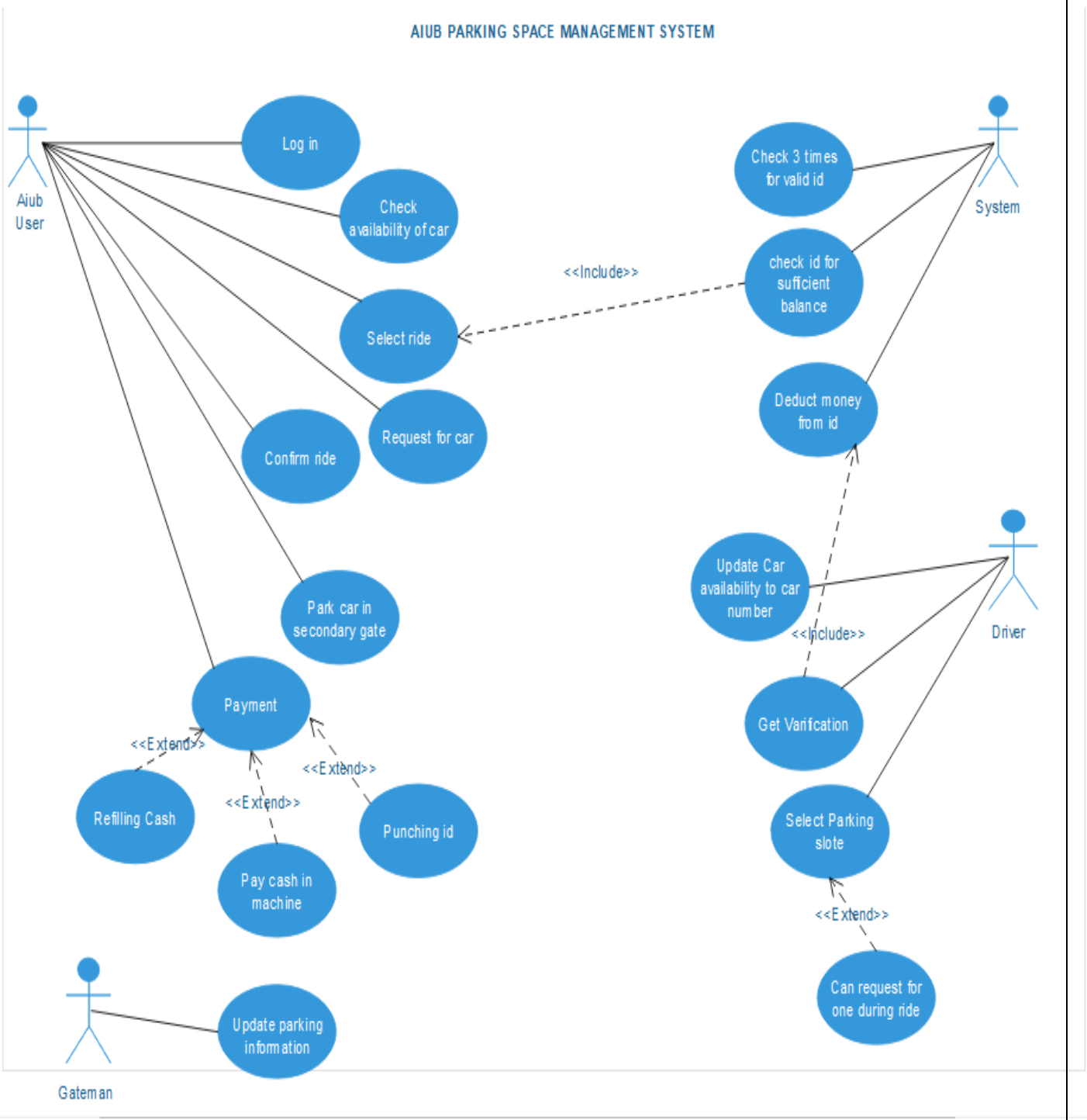
User Group:

- Faculty Members
- Students
- Visitor
- Office Staff

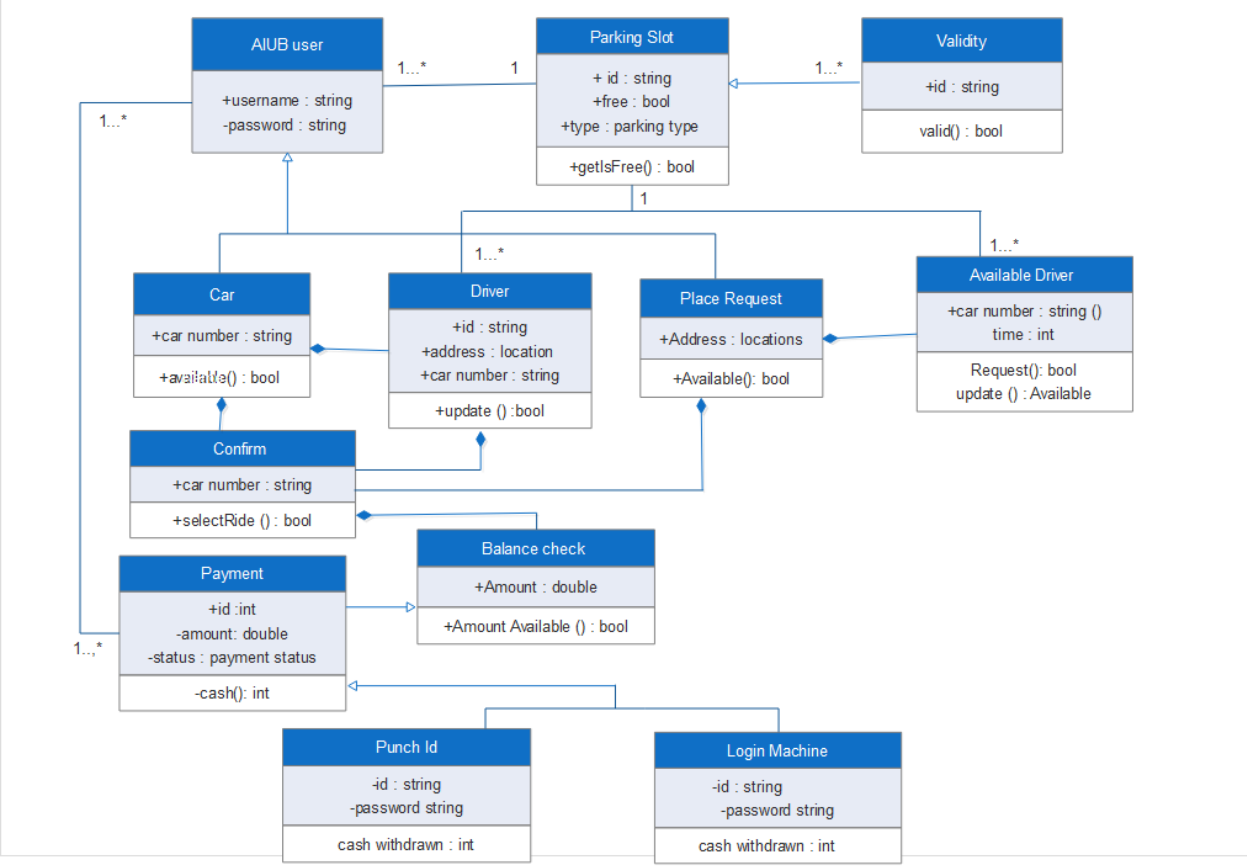
Justification:

- The traffic that is created in the street congestion for many vehicles that will be reduced.
- Car parking can be done in a disciplined manner, which will take up less space.
- If there is a car parking in the university, there will be no worry about the safety of the car.
- When there is an entry and exit of the time arrangement, the car owner will know when the car entered and went out.

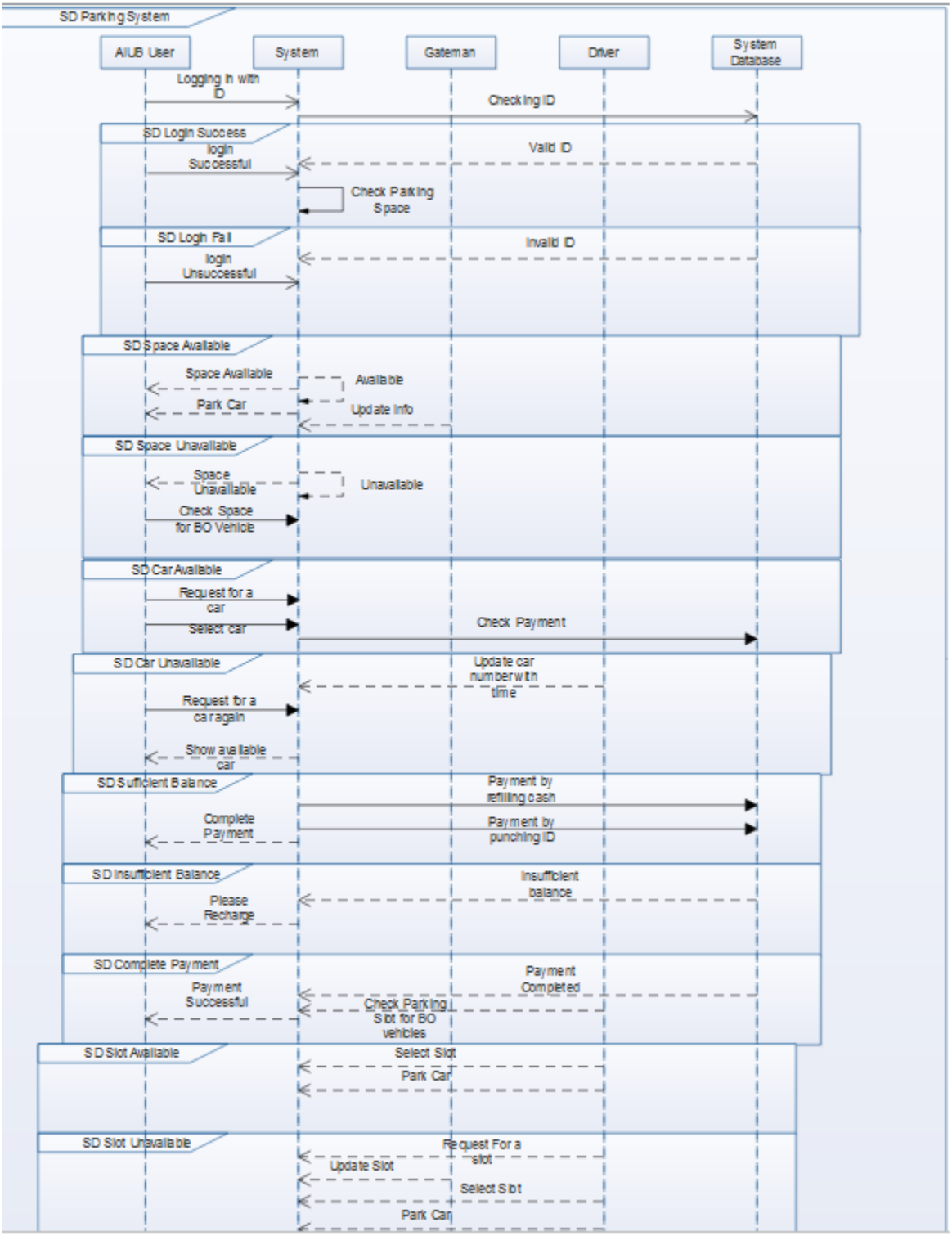
Use Case:


AIUB PARKING SPACE MANAGEMENT SYSTEM
Aiub User
Log in
Check availability of car
Select ride
Request for car
Confirm ride
Park car in secondary gate
Payment
<<Extend>>
Refilling Cash
<<Extend>>
Pay cash in machine
<<Extend>>
Punching id
Gateman
Update parking information
<<Include>>
Check 3 times for valid id
check id for sufficient balance
Deduct money from id
System
Update Car availability to car number
<<Include>>
Get Varification
Select Parking slote
<<Extend>>
Can request for one during ride
Driver

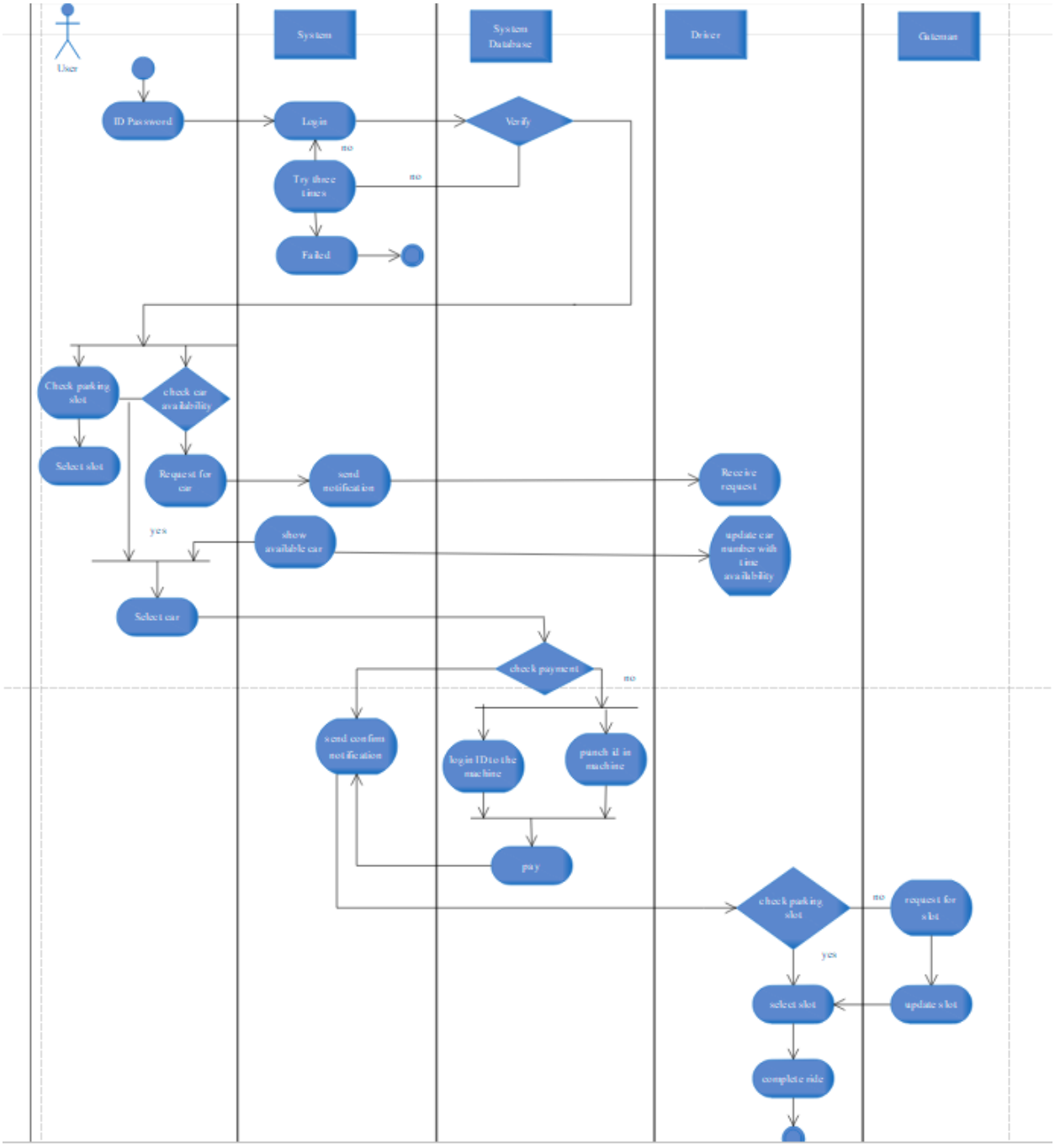
Class diagram:



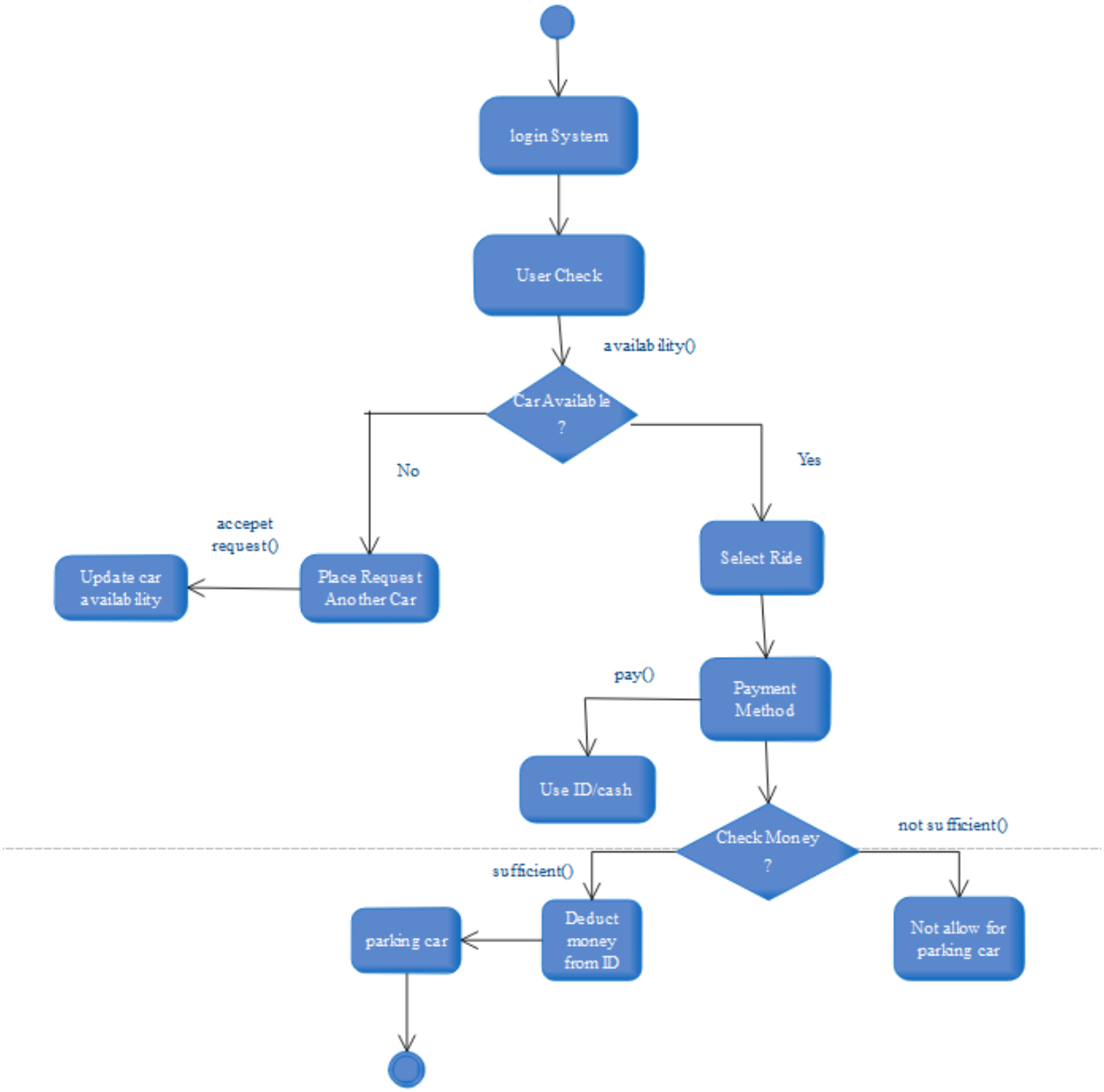
Sequence Diagram:



Activity Diagram:



Statechart Diagram:



Conclusion:

By using this software, we can minimalize the traffic outside the campus and the vehicle users can have a organized parking experience. But we can not minimize the problems with vehicles such as rickshaw, as the system only focuses on engine driven vehicles.