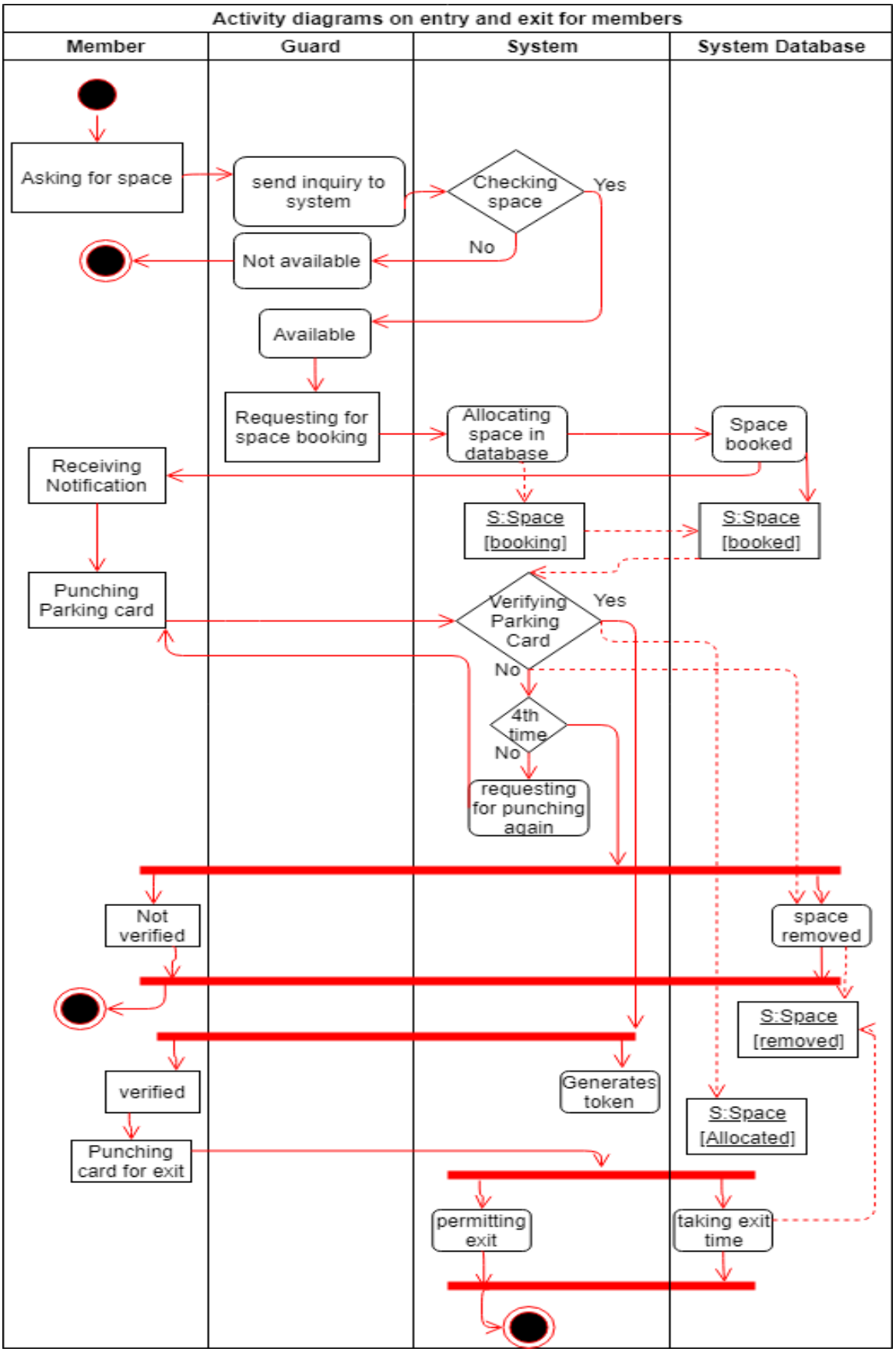
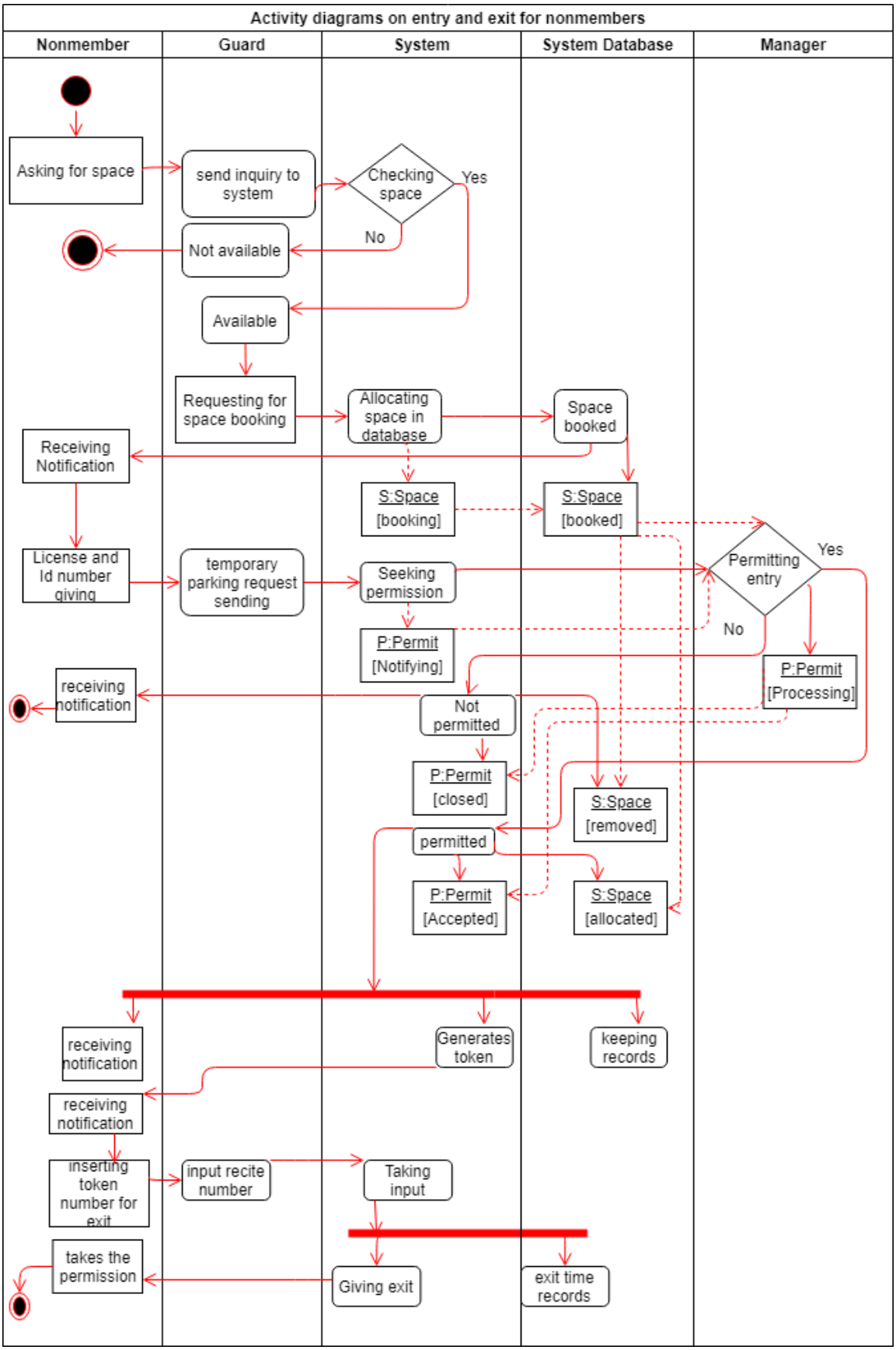
Activity Diagram case study on entry and exit in the parking for the members .

AIUB parking space has a feature in the entry of the vehicle in secondary gate on kuratoli. When the vehicle comes to the secondary gate and if he asks for parking then the security guard checks that if there is any space for parking in the parking space to the system. If the system shows that there is a space for parking. Then security guard enters the information and one space will be allocated in the system database for that vehicle. Then the vehicle enters the secondary gate. After that, when the vehicle reaches the main parking gate then the user will punch the parking card. Then the system verifies the parking card. For verifying the card, the system search in the database. When the system matched the card number then the system generates the token on which the placement number is written. At the same time, the token will be printed and the place will be booked in the database. The vehicle has to be placed in that numbered place. If the number is not verified then the system tells to repeat it for 3 times. In the 4^{th} time, the system does not give the entry and delete the space allocated in the database for that vehicle. In the time of exit, the user has to punch the parking card again so that the system takes input of the exit time to the database.


Activity diagrams on entry and exit for members
Member
Guard
System
System Database
Asking for space
send inquiry to system
Checking space
Yes
No
Not available
Available
Requesting for space booking
Allocating space in database
Space booked
Receiving Notification
S:Space [booking]
S:Space [booked]
Punching Parking card
Verifying Parking Card
Yes
No
4th time
No
requesting for punching again
Not verified
space removed
S:Space [removed]
verified
Generates token
S:Space [Allocated]
Punching card for exit
permitting exit
taking exit time

Activity Diagram case study on entry and exit in the parking for non-member.

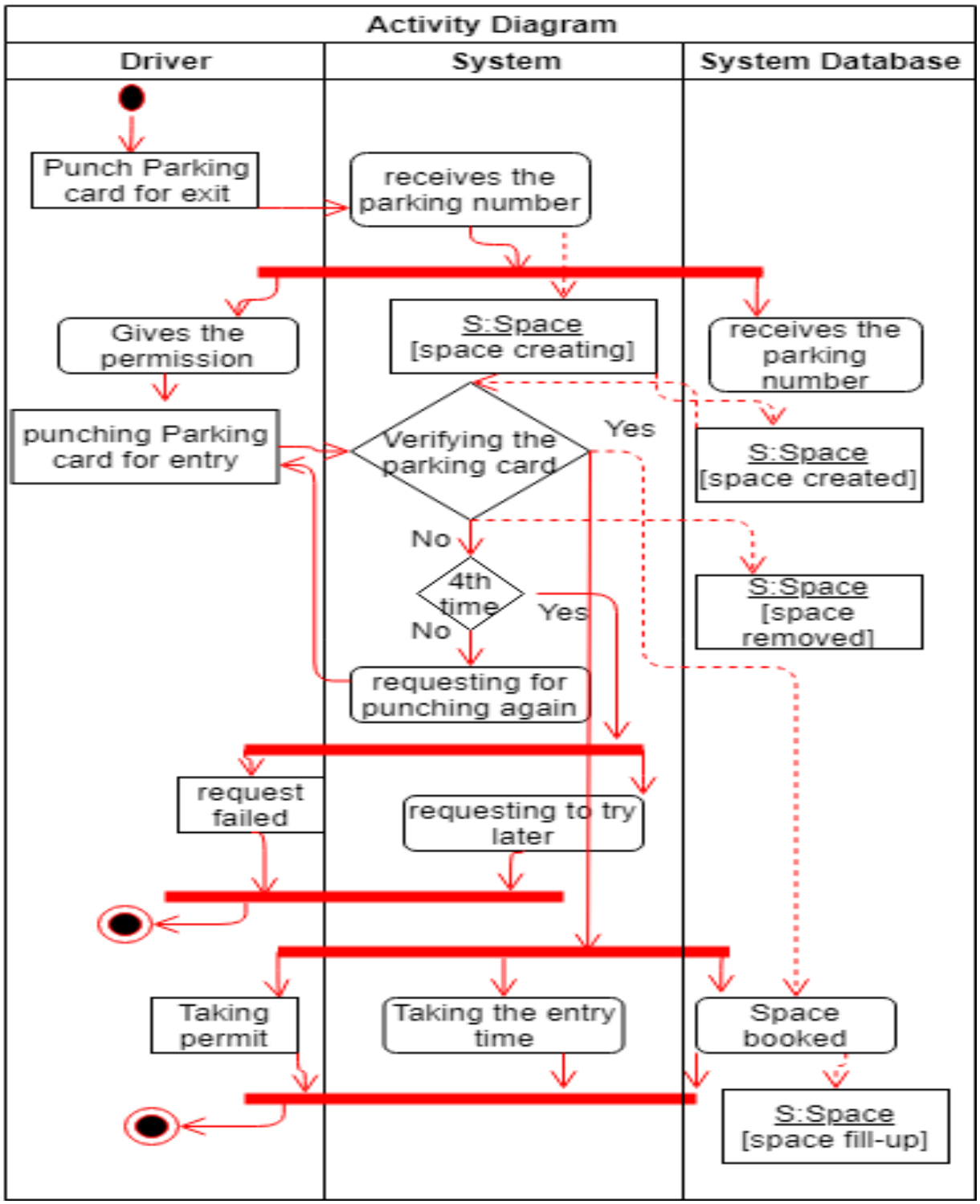
For those who are not member of AIUB but want to park, they temporarily can park. For these they have to check whether there is space in the secondary gate. If there is space then the user can park and one space will be allocated otherwise not. When the user comes to main gate, then he sends request to the system through parking guard. When the system receives the request and sends the notification to give the license number. When the parking guard inputs the numbers then the system sends a notification to the parking manager to permit the entry temporarily. If manager does not permit then the system gives the notification and close the request. If the manager gives the permission then the system gives the notification and at the same time it prints a temporary recite with entry time. It also keeps record to the system database. In the exit time the user gives the temporary recite to the parking guard then he inputs the exit time of the vehicle and at the same time the system keep record in the database.


Activity diagrams on entry and exit for nonmembers
Nonmember
Guard
System
System Database
Manager
Asking for space
send inquiry to system
Checking space
Yes
No
Not available
Available
Requesting for space booking
Allocating space in database
Space booked
Receiving Notification
S:Space [booking]
S:Space [booked]
License and Id number giving
temporary parking request sending
Seeking permission
Permitting entry
Yes
No
P:Permit [Notifying]
P:Permit [Processing]
receiving notification
Not permitted
P:Permit [closed]
S:Space [removed]
permitted
P:Permit [Accepted]
S:Space [allocated]
receiving notification
Generates token
keeping records
receiving notification
inserting token number for exit
input recite number
Taking input
takes the permission
Giving exit
exit time records

Activity Diagram case study on entry and exit in the parking for AIUB Permanent vehicles and battery-operated transport.

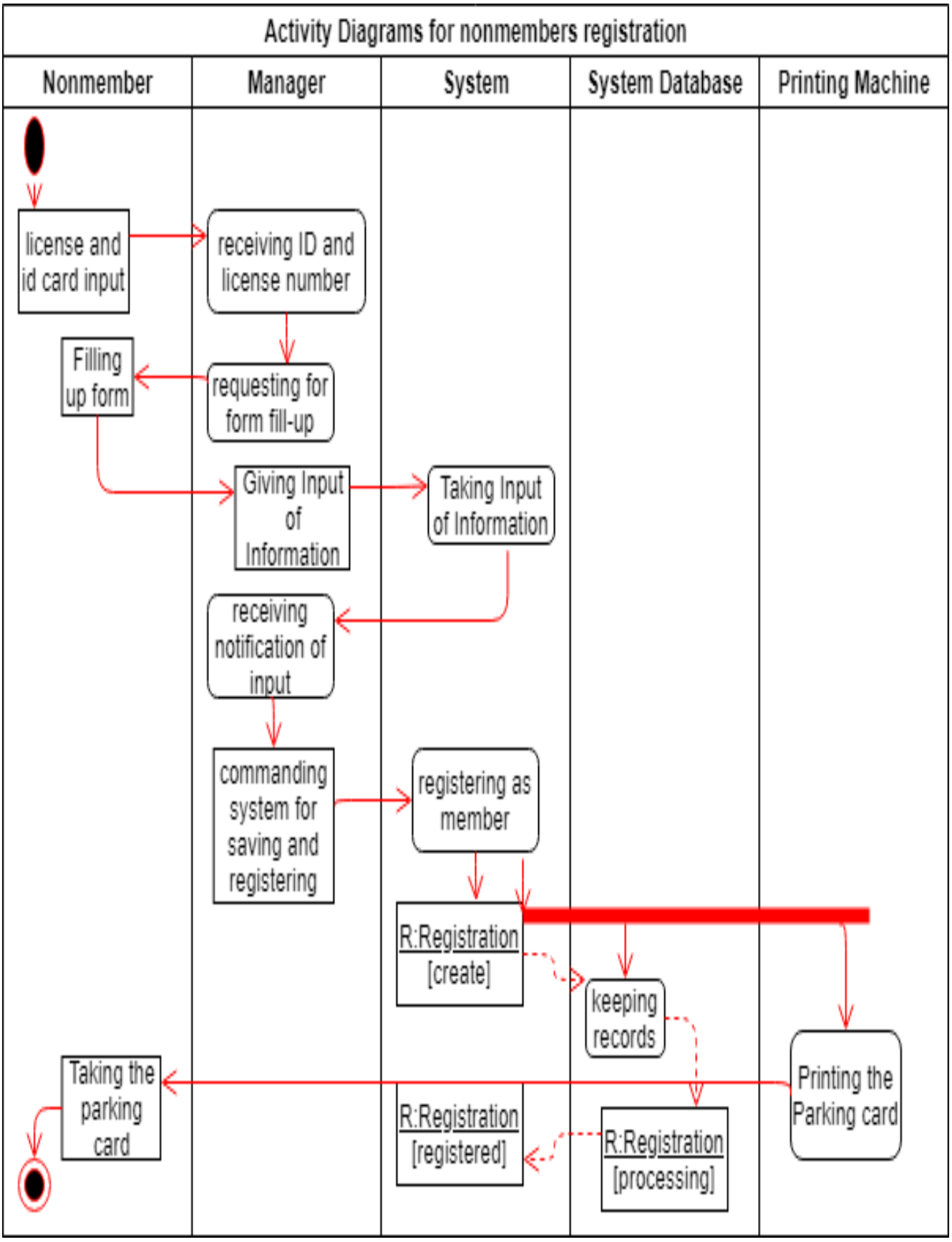
Aiub's permanent vehicles and battery-operated transports are Aiub owned vehicles. For Aiub's vehicle like the permanent vehicles of Aiub and battery-operated transport, there is no need to check spaces in the secondary gate for parking because the space is fixed for them. When the vehicles require to go outside the drivers punch the ID card. Then the system gives permission to go outside and keeps the record in the database of exit time create a space of its allocated space. When the vehicles come to the main gate, then the driver punch the Id card. Then the system verifies the id card. If the card is verified, then the system gives the permit and generates the token where the time is written. Because the place is fixed for those vehicles. If the card is not verified tells to repeat 3 times. In the 4^{th} time. It does not give the permission and tells the user to try it later.

Activity diagrams on entry and exit of AIUB permanent vehicles and battery-operated transports



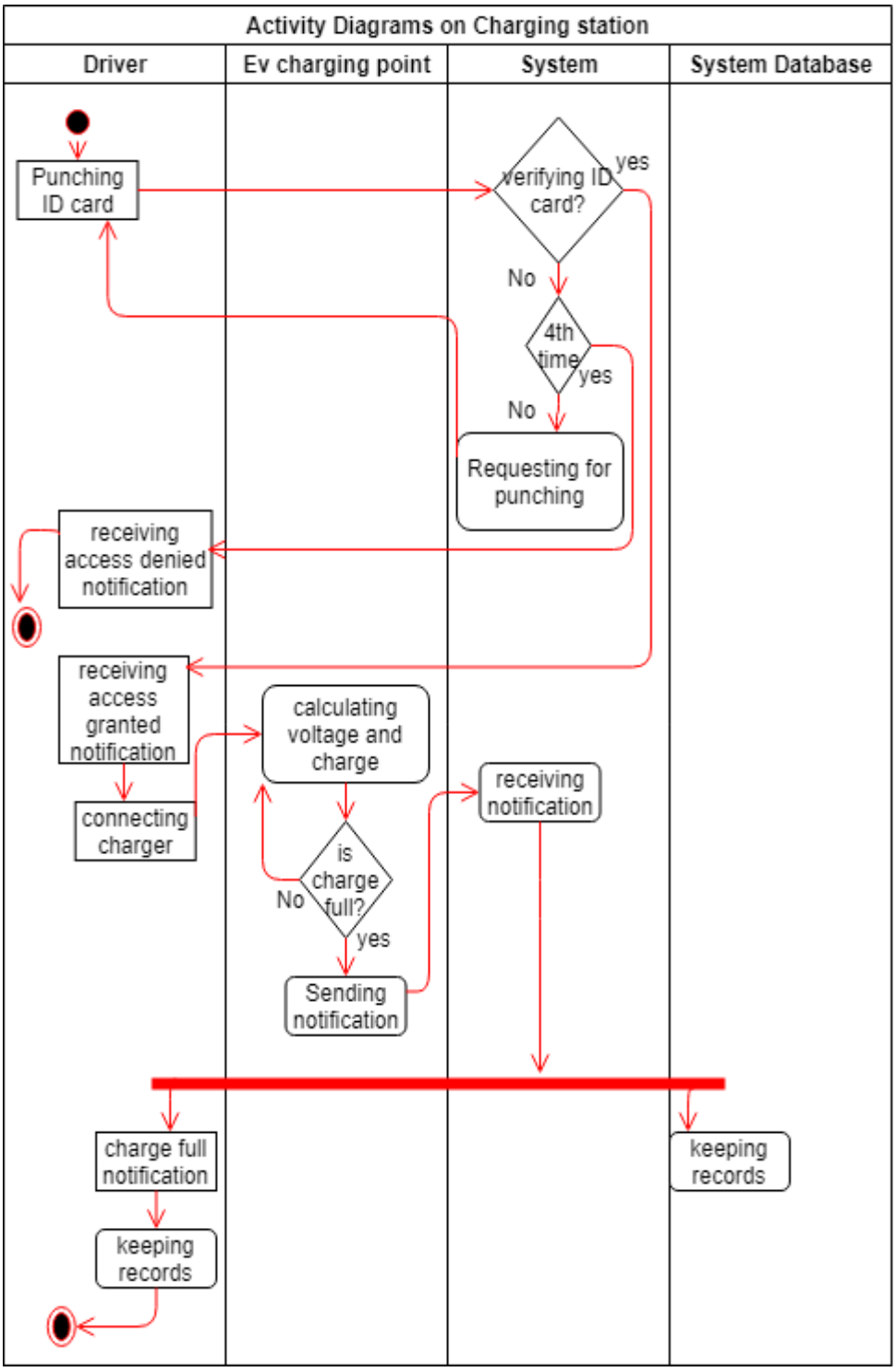
Activity diagram about registration as a member

For registering as a member, a user has to go to the manager first and request him for registration. The manager will ask him for ID card and license number. Then the user will give the National Id card or university Id card and license number (if remains) to manager. Then the manager will give him a form to fill up. The user will give the manger the filled-up form. After that manager will input the information and then will command the system to generate a parking ID. Then the system will generate a parking id and command the id card maker machine to create a card. At the same time, The system will create a registration object with the information and send it to the system database through registration object. The database will store the information and will inform the system through registration object that the information has been stored in the database. Then the system will print the details and the card maker will eject the parking card which will be given to the user.


Activity Diagrams for nonmembers registration
Nonmember
Manager
System
System Database
Printing Machine
license and id card input
receiving ID and license number
Filling up form
requesting for form fill-up
Giving Input of Information
Taking Input of Information
receiving notification of input
commanding system for saving and registering
registering as member
R:Registration [create]
keeping records
Printing the Parking card
Taking the parking card
R:Registration [registered]
R:Registration [processing]

Activity diagram case study on charging station

Activity diagram on charging station is for checking the battery charge of the battery-operated transport. Charging Station is connected with the system. There is electric vehicle charging point (EV charging point) in the station. This charging point can measure the voltage as well as the percentage of charge remaining in the vehicle. Whenever the vehicle needs charge if the driver punches the parking card. Then the system verifies and give the access for charging. The system only give access to the AIUB's battery-operated vehicles. If the card is not verified it tells the user to repeat 3 times. In the 4^{th} time the system rejects the card and tells to punch later. If verified then the driver can connect to the charging point. When the vehicle is connected to the charging point then the charging point calculates the voltage and the charging percentage of the vehicle. When the charge is full then the charging point gives the notification to the system. Then the driver or user disconnects the charger and the system keeps record of the charged vehicles. That's how the activity become finished.


Activity Diagrams on Charging station
Driver
Ev charging point
System
System Database
Punching ID card
verifying ID card?
yes
No
4th time
yes
No
Requesting for punching
receiving access denied notification
receiving access granted notification
connecting charger
calculating voltage and charge
is charge full?
No
yes
Sending notification
receiving notification
charge full notification
keeping records
keeping records