Use Case: Termination of a bike rental

Primary actor:

Customer, either subscriber or occasional.

Stakeholders and goals:

Customer: would like to return one or several bikes previously rented and inform about potential malfunctions.

Technician: would like to ask the system for malfunction reports notified by the customers or about bikes that require maintenance.

Central system: Must be able to obtain information about the customer rental termination, charge the customer for delays using the payment system, update the list of customers with frequent delays for returning the bikes and store potential compensations for the customers due to bike malfunctions (to be checked by the technician).

Pre-conditions:

- There must be empty slots in the station so that the bike or bikes can be returned.
- The customer must have a bike rental in curse.
- The customer should have been logged in successfully using his/her mobile number and his/her password in case of a subscriber, or the code sent to his/her mobile phone, in the case of an occasional customer.

Post-conditions:

- The bikes are placed in the slots located at the station. The state of the bikes and the hours of usage are updated and the system has informed about potential malfunctions and about bikes that require maintenance. The rental is over. The customer is charged for potential delays. Potential compensations for the customer due to bike malfunctions are stored.

Main success scenario:

1 – The customer chooses the option of bike rental termination.
2 – The customer is asked for potential malfunctions during the rental.
3 – The customer says that there have been no malfunctions.
4 – The slots where to place the bikes become unlocked and shown to the customer.
5 – The customer places the bike or bikes on the unlocked slots and they get locked.
6 – If the customer is a subscriber the number of rentals is increased by one.
7 – The customer is notified about potential delays and if so he or she is charged for that. If the customer is a subscriber his or her subscription is canceled and the central system is informed about the delay.
8 – The renting is set over and the system informs the user about that.
9 – The system updates the usage hours of the bikes.
10 – If the bikes require maintenance, the central system is informed about that and the state of the bikes is updated.

Extensions:

3a – The customer informs about bike malfunctions.
3a.1 – The customer is asked to select a malfunction from a predefined list and to introduce the ID of the bike.
3a.2 – The system registers a report of bike malfunctions and stores a potential compensation for the customer should the technician confirm the malfunction.
3a.3 – The system updates the state of the returned bikes as “to be checked”.

Special Requirements:

- The malfunction report must contain information about the bike and the station where it is placed.
- Some type of data connection is required between the central system, the station and the payment system.
- Quick responses, below 0.1 second.
- It should be possible to return the rented bikes in any stations satisfying the pre-conditions.

Variations:

- Cash payment of delayed returns.
- Multi-language display.
- Compensation notification sent to the customers via SMS.

Frequency:

- Medium: a few bike returns per stations per day.

Open issues:

- What happens if the customer does not place the bike in the unlocked slot after a few minutes?
- What happens if the system that locks and un-locks the slots is broken? Can that be notified?
- What about performing a survey to the customer after the rental is over?