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Scenario identifying

Here are listed some different scenarios of our system to be usage.

Scenario 1

Ted is running late for a job interview since the bus engine failed, so he opens the PowerEnJoy mobile application and searches for an available car around his current position within a radius of 700 meters. He finds that the nearest car is just 250 meters away, so he clicks the icon on the map corresponding to the chosen car and looks through the details screen; the car has 30% battery left but his destination is not far and from the estimation provided in the details he thinks he can make it, so he hits the “reserve” button, PayPal assures he can pay so the reservation is confirmed, he drops off the bus and starts walking towards the car guided by the GPS. Arrived to the car, Ted clicks the “Open Car” button and enters the vehicle. Once inside the system asks Ted to scan the QR code on the car screen with the QR scanner featured in the PowerEnJoy application. Once recognized, Ted is free to power up the car and start his ride. When Ted arrives to his destination he powers down the car and gets an on screen notification saying that he drove more than 2 kilometers, the car has less than the 20% of battery left and there’s a charging station within 3 kilometers from his position, therefore he can take the car to the charging station and get a fine discount or can leave there the vehicle but this will cost him an increased fine. Ted has no time to take the car to the station so he decides to pay the penalty, he exits the car and the system takes care of locking it. The ride is successfully completed and Ted is charged for the right amount of money on his PayPal account.

Scenario 2

Gwen has invited some friends over for dinner, while eating they decide to go out for a beer later, so Gwen decides to book a car with the PowerEnJoy application, John and Paula, her two friends, are not registered to the service yet; since Gwen wants to save money by taking two registered users with her, she asks them to download the application on their smartphone and proceed with the registration. Once opened the application they’re asked if they want to login or to register, they choose the second and therefore insert valid credentials and receive their password via e-mail. Finished the dinner they go out, unfortunately Gwen forgets her driving license at home so they have to go back to get it and by the time they’re back the reservation time expires and Gwen is charged with a fine for not having picked up the car in time. They proceed to book the same

car again, since no other did it in the meantime, to get to it and step inside. Now the three scan the QR code with their smartphones and the system notifies Gwen that a discount will be applied on the cost of the trip. Once at destination they drop off the car and the system sends a notification warning that she left the car in a non safe area and therefore she has to keep paying with a reduced fare and must get back to the car in at most two hours. They are ok with that and walk inside the pub, again they loose track of time until Gwen's phone rings as she gets notified that two hours passed and she's getting to pay for them plus another fine for improper use of the service.

Scenario 3

Tony is preparing to go to his friend Matt, he's going to ride there with Matt's bike which he borrowed a week ago so he can give it back to him, after that they have to go to the shopping center at the boundaries of the city, so Tony decides to book a PowerEnJoy car with the mobile application. He inserts Matt's house address into the system, specifies the radius for the research and books the most convenient car. Once at Matt's place the two go to pick the car up, once they are inside and the check in is done, they decide to select the "money saving option", after inserting their destination the system provides them with a suitable charging station to leave the car at. Luckily for them the charging station is inside the shopping center area so, once parked, they power the car down and get out, once outside they insert the plug in the specific socket and leave. The system notifies Tony with the payment details including the applied discount.

Scenario 4

Melanie is working at the terminal, monitoring the cars in her assigned area through the interface provided by the PowerEnJoy system. She is checking through flagged cars which have low battery level. The first she overviews has been recently used and is in a central part of the city so she decides to remove the flag since it's likely it will be used anyway. The second one is in a remote part of the city and hasn't been picked up or booked since the previous day, so she decides to send maintenance personal to recharge it. To do so she enters the "assistance request" screen and start to type in the request details. While doing so she gets a push notification that warns her about the urgent need of maintenance for a vehicle. Thanks to the maintenance system integration she's able to quickly forward the request to the specific facility which will take charge of it and therefore she can go back to the request she was previously working on. After successfully sending on the request she goes back to the analysis of the flagged cars, until she gets another notification, this time the notification reports that a user improperly left a car for more than two hours outside a safe parking area, she looks over the details and finds out that the car is in the suburb of the town and so she decides to send over an operator to have it picked and moved

inside of a safe area, again through the integrated system she's able to have a maintenance operator to handle the request.

Scenario 5

Bob, an operator of PowerEnJoy, was assigned to update the system terms regarding to a new company policy. First of all he modifies the cost per minute for using the service from 26 cents/minute to 28 cents/minute. The price raise is balanced with a proper increase in discounts, so, still through the provided interface, Bob can increase the discount, for leaving the car plugged in a charging station, from 25% to 30% on the full price of the ride. In the end Bob has to insert two new safe areas and to remove one; the interface allows Bob to select the proper utility and he can easily select, from the list of safe areas, the one to delete. Now he inserts the first new area just by specifying the chosen address and the radius around it, which in this case is of 2.6 km. Since the second area has a more complicated shape he selects the drawing tool and easily draws the polygon defining the selected area, then the system commutates the area drew on the map into proper coordinates to identify it. After this process Bob checks out the update, the system generates a proper notification for the new terms and conditions containing also the details of the update; this will be eventually endorsed by the company's legal office, and therefore sent over to the users along with the mentioned update.