

| ID | Name | Requirement Type | Associated Roles | Event/ use case # | Description | Rationale | Source | Fit Criterion | Customer Satisfaction | Customer Dissatisfaction | Dependencies | Conflicts | Supporting Materials | Priority | Estimation | Status | User Story |
|----|--------------------------|------------------|------------------|-------------------|---|---|---|---|-----------------------|--------------------------|---|-----------|----------------------|----------|------------|--------|--|
| 1 | Registration | Functional | Customer | Register | Customers need to register to get personal information, payment method etc. | Customers must register to use the E-Scooter rental service | Steffen Hanzlik, Marco Peluso, Kendra Birringer | Fits if the customer can register successfully | 5 | 5 | Registration success | None | | High | 8 | Done | As a new customer, if I want to use the service, I must be able to register and create a new account. |
| 2 | Log-in | Functional | Customer | Manage Account | Customers must log-in if they want to rent an E-Scooter | Customers must log-in to use the E-Scooter rental service | Steffen Hanzlik, Marco Peluso, Kendra Birringer | Fits if the customer can log-in | 4 | 4 | Register | None | | High | 5 | Done | As a customer, if I want to use an E-Scooter, I must be able to log-in into my account. |
| 3 | Log-out | Functional | Customer | Manage Account | Customers must have the possibility to log-out | Customers should be able to log-out from our service | Steffen Hanzlik, Marco Peluso, Kendra Birringer | Fits if the customer can log out | 3 | 3 | Register, Log-in | None | | High | 2 | Done | As a customer, if I finished the ride and do not need the E-Scooter anymore, I must be able to log-out of my account. |
| 4 | Change Account Details | Functional | Customer | Manage Account | Change personal information or payment | Customers should be able to change their personal information | Steffen Hanzlik, Marco Peluso, Kendra Birringer | Fits if the customer can change account details successfully | 3 | 5 | Register, Log-in | None | | Medium | 3 | Done | As a customer I would like to be able to change my account information if something has changed, like personal information or payment method. |
| 5 | Delete Account | Functional | Customer, Admin | Manage Account | Customers and Admins can delete a customer's account | Customers should be able to delete their account if they do not want to use the E-Scooter Service any further. Also, if the customer is not following the Terms and Conditions, the Admins also should be able to remove the customer's account | Svetozar Stojanovic | Fits if the customer's account no longer exists | 3 | 3 | Register, Log-in | None | | Medium | 2 | Done | As a customer, I want to be able to delete my account if I do not want to use the service anymore. / As an Admin I want to be able to delete a customer's account, if she/ he violates the Terms and Conditions. |
| 6 | Choose Subscription Plan | Functional | Customer | Manage Account | Three membership types: Gold, Silver and Bronze. Customers without a membership get their prices calculated per km or min/ h while the customers with a membership pay more affordable prices on a monthly/ yearly basis. | Customers should be able to choose to pay on a monthly or yearly basis | Nader Cacace, Svetozar Stojanovic | Fits if the customer has applied to a membership successfully | 3 | 3 | Register, Log-in, Device supporting GPS | None | | Low | 3 | Done | As a customer, I want to be able to choose the Subscription plan which fits my needs. |
| 7 | Change Subscription Plan | Functional | Customer | Manage Account | Customers can change their membership type whenever they want | To give Customers the possibility to adapt to their needs as soon and flowed as possible | Nader Cacace | Fits if the customer can change the membership type easily and without any disruption | 5 | 4 | Choose Membership | None | | Low | 1 | Done | As a customer I would like to change my membership type according to my needs. |

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| 8 | Cancel Subscription | Functional | Customer | Manage Account | Customers can cancel the membership type without deleting their whole account | If a Customer knows she/ he will not use the service for a certain period of time, she/ he can cancel the membership without deleting the whole account. | Nader Cacace | Fits if the Customer can cancel her/ his membership when the service is not needed for this customer but nevertheless could keep the account | 3 | 4 | Choose Membership | None | | Low | 2 | Done | As a customer I like to cancel my subscription plan to save money if I know that I will not use this service in the next time. |
| 9 | Check statistics (customer) | Functional | Customer | Manage Account | Customers can check their own statistics | The customer can see the total price for all rides or only for a specific ride or check the total distance covered etc. | Nader Cacace | Fits if the customer gets a nice and easy to understand overview of all rides he/she ever done with the service | 3 | 2 | Register, Login | None | | Low | 5 | Done | As a customer I would like to see my own statistics, like how much money spent, distance covered etc., so I can possibly adjust my subscription plan. |
| 10 | Day Pass System | Functional | Customer | Manage Account | Customers can pay for a daily pass | If a Customer knows, she/ he will use our Service extensively throughout a day | Svetozar Stojanovic, Nader Cacace, Marco Peluso | Fits if the customer can purchase a Day Pass in the app | 2 | 1 | Register, Login | None | | Low | 3 | Done | As a customer, if I know I need an E-Scooter most of the day, I would like to purchase a Day Pass. |
| 11 | Purchase Gift Cards | Functional | Customer | Manage Account | Customers can purchase gift cards and send them to other people via E-Mail | If the Customer wants to recommend the service to other potential customers and pay for them, they can do that through gift cards | Svetozar Stojanovic, Nader Cacace, Marco Peluso | Fits if the customer is able to purchase gift cards and send them to other people via E-Mail | 3 | 1 | Register, Login | None | | Low | 8 | Done | As a customer I would like to purchase gift cards and be able to send them to other people. |
| 12 | Redeem Promo Codes, Gift Cards | Functional | Customer | Manage Account | Customers can redeem promo codes/ vouchers/ gift cards in the app | Promo Codes and vouchers should attract new customers to our system | Svetozar Stojanovic, Nader Cacace, Marco Peluso | Fits if the customer can redeem promo codes/ vouchers/ gift cards in the app | 5 | 5 | Register, Login | None | | High | 5 | Done | As a customer, if I have a promo code/ voucher/ gift card, I would like to be able to redeem it in the App. |
| 13 | Check-out E-Scooter | Functional | Customer | Check-out | Check-out represents the state in which the customer can clip off the E-Scooter from the station to ride on it | Customers should be able to rent an available E-Scooter whenever they need | Steffen Hanzlik, Marco Peluso, Kendra Birringer | Fits if the E-Scooter checks-out and the customer can ride it | 5 | 5 | Register, Login, valid payment | None | | High | 5 | Done | As a customer, if I want to ride an E-Scooter, I clip it off the station and begin the ride. |
| 14 | Reserve an E-Scooter | Functional | Customer | Check-out | Customers should have the possibility to pre-book an E-Scooter for later or for another day | To make sure that customers can take an E-Scooter from a specific place at a specific time | Nader Cacace | Fits if the customer can reserve an E-Scooter and so she/ he can be sure that it is ready and charged at the given place and time | 3 | 3 | Register, Login | None | | Medium | 13 | Done | As a customer, I would like to be able to reserve a Scooter so that I can take the ride at a specific time and I want to be sure, that the Scooter is ready at the given place and time. |

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| 15 | Show allowed use area for E-Scooter | Functional | Customer | Check-out | Shows a map of the area where customers are allowed to ride the E-Scooters | To prevent that the customer does not drive too far away from the "legal area". To give customers a better experience, the E-Scooter should not slow down if they leave the "legal area" so that they are possible to check-in the E-Scooter | Nader Cacace | Fits if the customer can see a map with the exact area where the E-Scooter can be driven and checked in after the ride | 2 | 5 | Check-out E-Scooter | None | | Medium | 5 | Done | As a customer I need to know the area in which I am allowed to ride and return the Scooter. |
| 16 | Check-in E-Scooter | Functional | Customer | Check-in | Check-in represents the state where the customer can clip on the E-Scooter to bring it back and finish the usage | Customers should be able to finish the E-Scooter usage to pay just for what she/ he needs | Steffen Hanzlik, Marco Peluso, Kendra Birringer | Fits if the E-Scooter checks-in and the amount of costs are fixed | 5 | 5 | Register, Log-in, valid payment | None | | High | 5 | Done | As a customer, when I finished the ride and do not need the E-Scooter anymore, I want to bring it back and check it in. |
| 17 | Cancel E-Scooter reservation | Functional | Customer | Check-in | Customers should have the chance to cancel a reserved E-Scooter if they do not need it anymore | To bring this E-Scooter back to the "available" mode so that other customers could rent this E-Scooter | Nader Cacace | Fits if the reserved E-Scooter is available after cancellation | 5 | 5 | Reserve E-Scooter | None | | Medium | 1 | Done | As a customer I like to cancel my E-Scooter reservation if I do not need the Scooter anymore. |
| 18 | Warn user about approaching border of allowed use area | Functional | Customer | Check-in | Send a warning to the customer if she/ he is leaving the area where the E-Scooters can be checked-in | Used to prevent the Customers having a bad experience with the check-in process because she/ he will not be able to check-in the E-Scooter at any point of the city | Nader Cacace | Fits if the customer gets a push notification before she/ he leaves the "legal area" | 2 | 5 | Check-out E-Scooter | Lost GPS could be an issue | | Medium | 8 | Done | As a customer I would like to get a warning, if I almost leave the area where I can bring back and check-in the Scooter. |
| 19 | Get GPS Location of the Customer | Functional | Customer | Find an E-Scooter on the map | Displays the customer's position on the map using GPS | Customers should be able to see their relative position to the nearby available E-Scooters | Svetozar Stojanovic | Fits if the customer can see her/his position on the map in the App | 5 | 4 | Register, Log-in, GPS enabled device | No GPS location provided | | High | 8 | Done | As a customer I would like to see my position on a map and all available Scooters nearby. |
| 20 | Get GPS Location of the E-Scooter | Functional | Customer, Maintenance man | Find an E-Scooter on the map | Displays all available E-Scooters on the map using a built-in map and GPS locator | Customers should see nearby E-Scooters on the map | Svetozar Stojanovic | Fits if the customer sees the available E-Scooters on the map in the App | 5 | 2 | Register, Log-in | None | | High | 13 | Done | As a customer, I need to see the GPS Location of an available Scooter to find it and rent it. / As a Maintenance man, I need to see the GPS Location of a Scooter to collect them and recharge them. |
| 21 | Download offline maps | Functional | Customer | Find an E-Scooter on the map | Customers can download an offline map of their area | In order to speed up the usage of the App, the map of the customer's area can be downloaded | Svetozar Stojanovic | Fits if the customer has downloaded the map for the offline use | 5 | 2 | Register, Log-in | None | | Low | 8 | Done | As a customer I would like to be able to download an offline map, to speed up the App or to save data volume and battery life of my phone. |
| 22 | Generate QR Code | Functional | Admin | Scan QR Code | QR Code is generated from an external source | For each new E-Scooter there is a need for a newly generated QR Code | Svetozar Stojanovic | Fits if the QR Code is generated as a unique code | 3 | 3 | External QR Code Generator | None | | Medium | 2 | Done | As an Admin I want that every E-Scooter has a unique QR Code. |
| 23 | Display QR Code | Functional | Admin | Scan QR Code | QR Code which is unique for each E-Scooter is being displayed on each display of the Scooter | QR Code should be displayed on each E-Scooter in order to connect the E-Scooter with the App | Svetozar Stojanovic | Fits if the QR Code is displayed correctly on the E-Scooter's display | 4 | 3 | An E-Scooter with a charged battery | E-Scooter's battery is dead | | Medium | 2 | Done | As an Admin I want that a QR Code, which is unique for each E-Scooter, is displayed on each display of the Scooter. |

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| 24 | Scan QR Code | Functional | Admin, Customer | Scan QR Code | QR Code is being scanned in order to book an E-Scooter | Customer scans the E-Scooter so the ride can start | Svetozar Stojanovic | Fits if the customer has scanned the QR Code with her/ his E-Scooter App successfully | 5 | 5 | Register, Login, Find an E-Scooter on a map | Customer's device does not have a camera, E-Scooter App does not scan the code correctly | | High | | Done | As a customer, if I would like to book an E-Scooter, I need to be able to scan the QR Code of the Scooter via the App, so that the ride can start. |
| 25 | Push Notifications | Non - Functional | Admin | Get Notifications | Send a push notification to the customer's device | Customers should be able to get notifications | Svetozar Stojanovic | Fits if the notification is sent successfully | 3 | 3 | Register, Login | None | | Medium | 5 | Done | As an Admin I would like to be able to send notifications to the customer's device via the App. |
| 26 | Show Driving Rules | Functional | Admin | Get Notifications | Driving rules are displayed to the customer's device | Before driving an E-Scooter, each newbie to driving an E-Scooter should be presented with driving rules (i.e. on which lane to drive, speed limit when driving next to pedestrians, basic traffic rules, etc.) | Svetozar Stojanovic | Fits if the brief driving rules are displayed successfully to the display of the customer before the ride | 2 | 4 | Register, Login | None | Some driving rules basic handout/ rule list | Low | 1 | Done | As an Admin, I want to show all new customers, before they ride an E-Scooter for the first time, the driving rules. This includes the allowed lanes, speed limit, basic traffic rules, etc. |
| 27 | Show Safety Risks | Functional | Admin, Customer | Get Notifications | Show safety risks from driving the E-Scooter inappropriately are displayed to the customer | Safety risks when driving under influence (drugs, alcohol, certain medications), medical conditions, etc. | Svetozar Stojanovic | Fits if all safety risks/ health hazards associated with the inappropriate usage of the E-Scooter are displayed to the customer | 2 | 4 | Register, Login | None | Some kind of basic safety risks when misused | Low | 1 | Done | As an Admin I want to show the safety risks of diving an E-Scooter to the customers. |
| 28 | Show Legal Information | Functional | Admin, Customer | Get Notifications | Legal constraints are displayed to the customer | If the Customer tries to misuse the E-Scooter, the risks should be presented to her/ his device's display | Svetozar Stojanovic | Fits if the Customer sees the legal risks when misusing the E-Scooter in the App | 3 | 3 | Register, Login | None | Some kind of a basic legal notice | Low | 1 | Done | As an Admin I want to show the legal constraints of using an E-Scooter. If a customer misuses a Scooter, she/ he will be presented with the risks on her/ his display. |
| 29 | Send E-Mail Newsletter | Functional | Customer | Get Notifications | Customer receives an E-Mail with news about the App, company or special offers etc. | Customers should be able to learn about the news | Svetozar Stojanovic | Fits if the customer has received an E-Mail containing the news about the software and company, etc. | 2 | 2 | Register, Login | None | | Low | 1 | Done | As a customer , if I agree, I would like to receive the newsletter to get the latest news about offers, promo codes, etc. |
| 30 | Wallet to manage account balance | Functional | Customer | Pay the Service | Wallet is an in-app virtual money storage system designed for the convenient use by the customer | A wallet is needed for managing the customer's money balance for the ride | Svetozar Stojanovic, Nader Cacace, Marco Peluso | Fits if the wallet functionality exists and the customer can send her/ his money to the wallet | 5 | 3 | Register, Login | None | | High | 8 | Done | As a customer, I would like to have an easy way to pay for the service with a nice overview about my account balance. |
| 31 | Refund Customer to wallet | Functional | Admin | Pay the Service | Admin refunds the ride to the in-app wallet of the customer | Admins may need to refund his ride directly to the wallet if the customer cannot drive the specific scooter | Svetozar Stojanovic, Nader Cacace, Marco Peluso | Fits if the customer has her/ his money refunded to the wallet | 5 | 5 | Register, Login | Refund to the original payment method | | High | 8 | Done | As an Admin, I would like to have the possibility to refund the price for a ride if something went wrong for the customer. |

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| 32 | Refund Customer to original payment method | Functional | Admin | Pay the Service | Service refund if the Scooter does not start. The service fee is then sent to the original payment method used for paying the fee. | Customer should get her/ his money back if the Scooter does not drive | Svetozar Stojanovic, Nader Cacace, Marco Peluso | Fits if the refund is sent to the original payment method | 4 | 1 | Register, Login, Check-out, Check-in | Refund to the Customer wallet | | High | 13 | Done | As an Admin I need to pay back the money to the customer if a Scooter does not drive. |
| 33 | Send Payment Confirmation | Functional | Payment Service | Payment | Payment confirmation is sent to the rental service's bank account notifying them that the customer has paid his service charges | Customers should be able to pay in their favorite payment service | Steffen Hanzlik, Marco Peluso, Kendra Birringer | Fits if the payment was successful | 4 | 4 | Register, Login | None | | High | 3 | Done | As Payment Service I will send a notification to the rental service's bank account, to inform that a customer has paid her/ his service charges. |
| 34 | Ask for feedback | Functional | Admin, Customer | Give Feedback | Customer is prompted with a menu asking for a feedback in the App | Customers should be asked to give a feedback because many forget or are not bothered to give a feedback | Svetozar Stojanovic | Fits if the the UI panel with the 'Ask for a feedback' question is displayed and the customer can give an immediate feedback | 2 | 4 | Register, Login | None | | Medium | 2 | Done | As an Admin I would like to be able to ask customers to give feedback. / As a customer I would like to be able to give feedback. |
| 35 | Give feedback | Functional | Customer | Give Feedback | Customers should be able to give feedback to the company if they have suggestions to improve the service | Customers should have the possibility to give good or bad feedback to the company who provide the service | Nader Cacace | Fits if the customer is able to send feedback to the company | 4 | 4 | Register, Login | None | | Medium | 8 | Done | As a customer, I need the possibility to give feedback if I have any suggestions to share. |
| 36 | Analyze customer feedback | Functional | Admin | Analyze Customer Feedback | The company should be able to collect customer satisfaction and suggestions for improvements | The company can improve the service with the suggestions from the customers and keep their satisfaction on a high level | Nader Cacace | Fits if the Admin can see the suggestions from the customers | 5 | 5 | Register, Login | None | | High | 8 | Done | As an Admin I like to analyze the customer feedback to improve our service. |
| 37 | Check numbers of customers | Functional | Admin | Check statistics | Shows the company the number of customers | To check the amount, age, gender etc. of customers. This could help to better target the ordains for advertising | Nader Cacace | Fits if the company can check the number of customers in a given period | 3 | 3 | Register, Login | None | | Meidum | 1 | Done | As an Admin I would like to see the amount of customers, their ages, genders etc. The statistics could help to better target the ordains for advertising. |
| 38 | Check overall revenue | Functional | Admin | Check statistics | The company should be able to check the earnings per day/ month/ quarter or year | To plan future investments | Nader Cacace | Fits if the company can check their earnings | 5 | 5 | Register, Login | None | | High | 1 | Done | As an Admin I would like to see all earnings over a certain period of time. |
| 39 | Check revenue per customer | Functional | Admin | Check statistics | Shows revenue per customer in a given period or all in one | To help the company to build the right pricing model for them and the customers | Nader Cacace | Fits if the company is able to check revenue per customer. Maybe per specific ordinance or age groups | 4 | 5 | Register, Login | None | | Medium | 1 | Done | As an Admin I want to check the revenue of specific/ all customers in a given period of time or all in one. This helps the company to build the right pricing models for the customers |
| 40 | Report problems | Functional | Customer, Maintaneceman/ Admin | Report problems | Send information about specific problems from an E-Scooter or the App | To help the Maintanenceman/ Admin to find the problems of an E-Scooter faster and make it easier to fix the relevant E-Scooter or the App | Nader Cacace | Fits if the Maintanenceman/ Admin gets Information about the problem | 3 | 5 | Register, Login | None | | High | 8 | Done | As a customer, I want to be able to report a problem with an Scooter or the App if something is not working. / As a Maintanenceman/ Admin I want to get information if something is wrong with a Scooter or the App. |

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| 49 | Verify Password | Functional | None | Manage Account | The user's password of choice is compared with the current input when hitting the log in button | The user's account is password protected so the input password should be compared with the one in the app's database | Svetozar Stojanovic | Fits if the password is compared with the real user's password in the database | 5 | 1 | Register | The password is forgotten so the verification usually returns only false | | High | ??? | To do | |
| 50 | Reset Password | Functional | Customer | Manage Account | The user can reset the password | The user is able to change his password after signing in | Svetozar Stojanovic | Fits if the password is reset | 5 | 1 | Register | The old password matches the new one | | High | ??? | To do | |
| 51 | Collect E-Scooters | Non-Functional (organisational) | Maintenance | | At night the E-Scooters that are used need to be charged | The low battery E-Scooters that need to be charged need a pick-up team that collects them | Svetozar Stojanovic | Fits if the E-Scooter is picked up for maintenance/recharge | 5 | 5 | None | None | Reference to the definition of the non-functional requirements: http://www.inf.ed.ac.uk/teaching/courses/ip/CS2Ah0405-SoftwareRequirements.pdf | | ??? | To do | |