

SDA



# Requirements

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|  | Requirements | Use case | Actor |
|  | The System shall ask the user to scan the code in the store’s system and will shut down on its own once the user is away from the store’s vicinity. | Validate customer login |  |
|  | System shall connect the customer with the store system if the user bank account is not active and will automatically take minimal currency from the bank account to check the authenticity of the bank account. | Validate customer login |  |
|  | System shall decline the entry of the user if the transaction is not successful or not validated from the bank. | Payment verification |  |
|  | System shall not allow entry if the number of people in the store has reached its capacity otherwise it will allow the entry of the user. | Validate customer login |  |
|  | System shall record the data of the user using the sensors and camera placed in the store. | load/update database |  |
|  | System shall track the movement of the user and store it in its database. | load/update database |  |
|  | System shall store the record of the user likes and dislike through sensors. | load/update database |  |
|  | System shall store the information of the user in its database and give recommendation to user based on that data. | load/update database |  |
|  | System shall track the movement of the user in the store. | load/update database |  |
|  | System can sell the collected data to suppliers and manufacturers to let them know about the demands | load/update database |  |
|  | System shall track all the products picked up by the user in the store. | Manage cart |  |
|  | System shall allow the user to view the cart through the app. | Manage Cart |  |
|  | System shall delete and remove all the product from the cart that the user has put back on the shelf. | Manage Cart |  |
|  | System shall update the product status and notify the services provider if there is a need for restocking and refilling of shelves. | Manage product status |  |
|  | System shall provide all the coupons the user has on his/her mobile phone. | Manage coupons |  |
|  | System shall allow the service provider to add all the coupons for the user. | Manage coupons |  |
|  | System shall reward loyal customers with personalized coupons. | Manage coupons |  |
|  | System shall send notification to user if any coupon is nearing its expiring date. | User notification |  |
|  | System shall give recommendation to user history of purchase. | View recommendations |  |
|  | System shall notify the user if there are any sale or offer that the user might like. | View recommendations |  |
|  | The system shall contact authorities if a serious violation of regulatory rules is made | User notification |  |
|  | System shall implement profile-based learning so it can give a unique experience to each user | Manage customer profiles |  |
|  | System shall allow multiple entries on one profile | Manage customer profiles |  |
|  | System can learn the user preferences | Manage customer profiles |  |
|  | System shall bill the products in cart as the user leaves the vicinity of the store. | Billing |  |
|  | System shall provide the user with the option to view their purchase history on the app. | View history |  |
|  | System shall process the cart and validate purchase once the user leaves the vicinity of the store | Make purchase |  |
|  | System shall verify the validity of a coupon once a user tries to redeem it | Coupon verification |  |
|  | System shall update the availability of a product for the user to view, once it runs out of stock | Manage product availability |  |

## Use case model by 20F-0281

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| Use case name | Profiling of user |
| Primary Actor | Customer |
| Stakeholders & interest | Store Management: Provide new coupons to the user according to their likes and dislike. |
| Precondition | Validation of the user |
| Post condition | Recommendation and coupons of products are created for the user |
| Main success scenario | |  |  | | --- | --- | | Step no. | Action | | 1 | The use case starts after the user is validated and registered into the system. | | 2 | Each time the user adds and discard a product the data of the user is stored into the system. | | 3 | The preference of the user will be tracked through the sensors and updated into the system. | | 4 | The likes and dislikes of the user on basis of which shelves and sections of product they go to are collected of each user individually. | |

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| Use case name | Update the product status |
| Primary Actor | Customer |
| Stakeholders & interest | Store Management system: The staff is notified in case of shortage of a product |
| Precondition | The product has either been picked or placed back on the shelf by the user |
| Post condition | The number of products in the database will be updated  Notification will be issued to Store management if there is no specified product left |
| Main success scenario | |  |  | | --- | --- | | Step no. | Action | | 1 | The use case starts after the user is validated and registered into the system. | | 2 | As product is being picked by the user or placed back on the shelve again the number of total products on shelf will increase or decrease accordingly. | |

## Use case model by 20F-0326

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| Use case name | Manage product in cart |
| Primary Actor | Customer |
| Stakeholders & interest | Bill: All the items included into the cart are calculated |
| Precondition | The user is validated at the entrance  The user shall pick items from the shelves |
| Post condition | The bill is calculated on the app  The bill is accessible to the customer through the app |
| Main success scenario | |  |  | | --- | --- | | Step no. | Action | | 1 | The user is validated or registered into the app by the system. | | 2 | Every item is automatically updated into the cart as customer take item off the shelves. | | 3 | Items placed back on the shelves will be removed from the cart | |
| Extensions | The user is not authenticated, the system will notify the store employee and no bill will be calculated |

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| Use case name | Validate payment method |
| Primary Actor | Customer |
| Stakeholders & interest | Bank: The bank will validate the transaction of the customer |
| Precondition | The system will match the use info with the account created for shopping and allow customer to make transaction |
| Post condition | The customer will be able to enter the shop and do shopping |
| Main success scenario | |  |  | | --- | --- | | Step no. | Action | | 1 | The system will transact $1 to check the account’s activity | | 2 | If the account is active and transaction is successful, then the user will be considered as valid | | 3 | Valid customer will be allowed to do shopping | |
| Extensions | If he system is unable to transact money then the customer will be considered invalid and will not be allowed to enter the shop or do shopping |

## Use case model by 20F-0197

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| Use case name | Validate customer login |
| Primary Actor | Customer |
| Stakeholders & interest | System |
| Precondition | The system will match the use info with the account created for shopping and count the entered customers |
| Post condition | Only limited number of customers can enter the shop |
| Main success scenario | |  |  | | --- | --- | | Step no. | Action | | 1 | When a person will enter the system will read his information | | 2 | The system will match the customer information with the created account | | 3 | If the information is valid then the customer will be allowed to shopping | | 4 | the system will also count the entered customers | |
| Extensions | If the system does not count the people and people entering the shote rises above the store’s capacity then the system might get overloaded. Thus , then the store  will not allow further entries. |

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| Use case name | Manage coupon |
| Primary Actor | Customer |
| Stakeholders & interest | System: it will validate the coupons for use of the user |
| Precondition | The cart is updated  Product that coupon is valid for is added into the cart |
| Post condition | The coupon is validated for its authenticity |
| Main success scenario | |  |  | | --- | --- | | Step no. | Action | | 1 | The user is validated | | 2 | The user adds product into the cart | | 3 | The user can claim the coupon by going into coupon and vouchers on the app | |
| Extensions | The coupon is expired, in that case the coupon cannot be claimed and used. |

## Use case Diagram

Diagram

Description automatically generated