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**Assessment Cover Sheet**

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| |  |  | | --- | --- | | **Lecturer Assignment Receipt**(To be filled in by student and retained by Lecturer upon return of assignment) | | | **Subject:** | **Assessment Title:** | | **Student Name:** | **Student Number:** | | **Due Date:** | **Date Submitted:** | | **Signature of Student:** | | |

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# Functional Requirements

# System

## Register staff (admin only)

|  |  |
| --- | --- |
| **Tested Requirement** | Register staff – Positive Case |
| **Quick Description** | This test case checks if the system is able to register staff |
| **Prerequisite** | The user is logged in as admin |
| **Input** | Name: “Yasir Khan”  Date of Birth: “2/10/1998”  Nationality: “Pakistani”  Emirates ID # : “2020-986754-8”  Contact No.: “050-1234567” |
| **Expected Output** | Staff registered successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Register staff – Negative Case |
| **Quick Description** | This test case checks if the system is able to register staff who already exists in the system |
| **Prerequisite** | The user is logged in as admin |
| **Input** | Name: “Yasir Khan”  Date of Birth: “2/10/1998”  Nationality: “Pakistani”  Emirates ID # : “2020-986754-8”  Contact No.: “050-1234567” |
| **Expected Output** | Error! already exists-The staff being registered already exists |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Generate Tag number

|  |  |
| --- | --- |
| **Tested Requirement** | Generate Tag number – Positive Case |
| **Quick Description** | This test case checks if the system is able to Generate a tag number |
| **Prerequisite** | The user is logged in as staff |
| **Input** | End User information |
| **Expected Output** | Tag number generated successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Generate Tag number – Negative Case |
| **Quick Description** | This test case checks if the system is trying to generate an already existing tag number |
| **Prerequisite** | The user is logged in as staff |
| **Input** | End user information |
| **Expected Output** | Error! Existing Tag number- The tag number already exists |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Register a new card

|  |  |
| --- | --- |
| **Tested Requirement** | Register a new card – Positive Case |
| **Quick Description** | This test case checks if the system is able to Register a new card |
| **Prerequisite** | The user is logged in as staff |
| **Input** | User information  Name: “Zahra Mohammad”  Tag Number: ”009909880” |
| **Expected Output** | New Card generated successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Register a new card – Negative Case |
| **Quick Description** | This test case checks if the system is able to Register a new card when a card already exists |
| **Prerequisite** | The user is logged in as staff |
| **Input** | User information  Name: “Zahra Mohammad”  Tag Number: ”009909880” |
| **Expected Output** | Error! Card exists- The previous card has to be deactivated to issue a new card |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Login

|  |  |
| --- | --- |
| **Tested Requirement** | Login – Positive Case |
| **Quick Description** | This test case checks if the system is able to login the user |
| **Prerequisite** | The user has to be registered in the system |
| **Input** | User information  Name: “Zahra Mohammad” or Tag-number  Password:”060asaimhv ” |
| **Expected Output** | Logged in successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Login – Negative Case 1 |
| **Quick Description** | This test case checks if the system is able to login the user |
| **Prerequisite** | The user has to be registered in the system |
| **Input** | User information  Name: “Zahra Mohammad” or Tagnumber  Password:” ” |
| **Expected Output** | Error! Password Field empty: Please enter a password |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Login – Negative Case 2 |
| **Quick Description** | This test case checks if the system is able to login the user |
| **Prerequisite** | The user has to be registered in the system |
| **Input** | User information  Name: “Zahra Mohammad” or Tagnumber  Password:”060asaimhv” |
| **Expected Output** | Error! User does not exist : Please register or try again |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Log out

|  |  |
| --- | --- |
| **Tested Requirement** | Logout – Positive Case |
| **Quick Description** | This test case checks if the system is able to Logout the user |
| **Prerequisite** | The user has to be logged in. |
| **Input** | Click Logout |
| **Expected Output** | Logged out successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Logout – Negative Case |
| **Quick Description** | This test case checks if the system is able to Logout the user |
| **Prerequisite** | The user has to be logged in. |
| **Input** | Click Logout |
| **Expected Output** | Error! Logout unsuccessful – Please try again |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Read card

|  |  |
| --- | --- |
| **Tested Requirement** | Read card – Positive Case |
| **Quick Description** | This test case checks if the system is able read the card |
| **Prerequisite** | The card and user must be pre-registered in the system |
| **Input** | Scan / insert card |
| **Expected Output** | Card read successfully and Account is displayed |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Read card – Negative Case |
| **Quick Description** | This test case checks if the system is able read the card |
| **Prerequisite** | The card and user must be pre-registered in the system |
| **Input** | Scan / insert card |
| **Expected Output** | Error! unknown card detected – Please try again |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Top up Card balance

|  |  |
| --- | --- |
| **Tested Requirement** | Top up card balance – Positive Case |
| **Quick Description** | This test case checks if the system is able to detect and top up the card. |
| **Prerequisite** | The card and user must be pre-registered in the system |
| **Input** | Scan / insert card |
| **Expected Output** | Top up Successful |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Top up card balance – Negative Case |
| **Quick Description** | This test case checks if the system is able to detect and top up the card. |
| **Prerequisite** | The card and user must be pre-registered in the system |
| **Input** | Scan / insert card |
| **Expected Output** | Error! Card not registered - Unknown or expired card please try again |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Check card balance

|  |  |
| --- | --- |
| **Tested Requirement** | Check card balance – Positive Case |
| **Quick Description** | This test case checks if the system is able to check card balance |
| **Prerequisite** | The card and user must be pre-registered in the system |
| **Input** | Scan / insert card |
| **Expected Output** | Card balance is displayed |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check card balance – Negative Case |
| **Quick Description** | This test case checks if the system is able to check card balance |
| **Prerequisite** | The card and user must be pre-registered in the system |
| **Input** | Scan / insert card |
| **Expected Output** | Error! Unknown card detected- Please register or try again |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Calculate fare amount

|  |  |
| --- | --- |
| **Tested Requirement** | Calculate fare amount – Positive Case |
| **Quick Description** | This test case checks if the system is able to calculate the fare amount from one station to another |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Scan the card |
| **Expected Output** | “Check out successful  Charged amount AED 3  Purse balance AED 20” |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Calculate fare amount – Negative Case |
| **Quick Description** | This test case checks if the system is able to calculate the fare amount from one station to another, but in this case it calculated for the wrong stations |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Scan the card |
| **Expected Output** | “Check out successful  Charged amount AED 7.5  Purse balance AED 12.5” |
| **Observed Output** |  |

## Deduct fare amount

|  |  |
| --- | --- |
| **Tested Requirement** | Deduct fare amount – Positive Case |
| **Quick Description** | This test case checks if the system is able to deduct the appropriate fare amount |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Scan the card |
| **Expected Output** | “Check out successful  Charged amount AED 3  Purse balance AED 20” |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Deduct fare amount – Negative Case |
| **Quick Description** | This test case checks if the system is able to deduct, but in this case it deducted the wrong amount |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Scan the card |
| **Expected Output** | “Check out successful  Charged amount AED 7.5  Purse balance AED 12.5” |
| **Observed Output** |  |

## Check minimum/sufficient balance

|  |  |
| --- | --- |
| **Tested Requirement** | Check minimum/sufficient balance– Positive Case |
| **Quick Description** | This test case checks if the system is able to check the minimum balance required to travel |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Insert the card in the machine |
| **Expected Output** | “Balance sufficient” |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check minimum/sufficient balance– Negative Case |
| **Quick Description** | This test case checks if the system is able to check the minimum balance required to travel but in this case the user does not have enough balance |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Insert the card in the machine |
| **Expected Output** | “Balance insufficient  Please recharge your card” |
| **Observed Output** |  |

## Apply discounts for people of determination, senior citizens and students

|  |  |
| --- | --- |
| **Tested Requirement** | Apply discounts for people of determination, senior citizens and students– Positive Case |
| **Quick Description** | This test case checks if the system is able to apply discounts to people of determination, senior citizens and students |
| **Prerequisite** | The user should be student and person with age of above 60 |
| **Input** | Scan the card |
| **Expected Output** | Discount will be applied |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Apply discounts for people of determination, senior citizens and students– Negative Case |
| **Quick Description** | This test case checks if the system is able to apply discounts to people of determination, senior citizens and students, this case the user does come under th requirements |
| **Prerequisite** | The user should be student and person with age of above 60 |
| **Input** | Scan the card |
| **Expected Output** | Discount will not be applied |
| **Observed Output** |  |

## Check card validity

|  |  |
| --- | --- |
| **Tested Requirement** | Check card validity– Positive Case |
| **Quick Description** | This test case checks if the system is able to determine if the card is valid or not |
| **Prerequisite** | The user should be registered and have a valid card |
| **Input** | Scan the card |
| **Expected Output** | “check in successful” |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check card validity– Negative Case |
| **Quick Description** | This test case checks if the system is able to determine if the card is valid or not |
| **Prerequisite** | The user should be registered and have a card |
| **Input** | Scan the card |
| **Expected Output** | “check in unsuccessful  Card not valid” |
| **Observed Output** |  |

## Check Type

|  |  |
| --- | --- |
| **Tested Requirement** | Check card type– Positive Case |
| **Quick Description** | This test case checks if the system is able to check the card type |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Insert the card in the machine |
| **Expected Output** | “Card type : Silver” |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check card type– Negative Case |
| **Quick Description** | This test case checks if the system is able to check the card type, this case the user has an invalid card |
| **Prerequisite** | The user is registered and has a card |
| **Input** | Insert the card in the machine |
| **Expected Output** | “Card type : unknown” |
| **Observed Output** |  |

## Check if not counterfeit

|  |  |
| --- | --- |
| **Tested Requirement** | Check if not counterfeit– Positive Case |
| **Quick Description** | This test case checks if the system is able to determine if the card is real or fake |
| **Prerequisite** | The user has a fake card |
| **Input** | Tag the card |
| **Expected Output** | The card will not be tagged as it is fake |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check if not counterfeit– Negative Case |
| **Quick Description** | This test case checks if the system is able to determine if the card is real or fake, in this case the fake card gets tagged |
| **Prerequisite** | The user has a fake card |
| **Input** | Tag the card |
| **Expected Output** | “Check-in successful” |
| **Observed Output** |  |

## Provide refund for lost / stolen card

|  |  |
| --- | --- |
| **Tested Requirement** | Provide refund for lost/stolen card– Positive Case |
| **Quick Description** | This test case checks if the system is able to offer a refund for lost or stolen cards using a form |
| **Prerequisite** | The user is logged in as admin |
| **Input** | Name: ”Uzair Naeem”  Card id:”454435”  Reason: ”Misplaced” |
| **Expected Output** | A refund will be issued |
| **Observed Output** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Provide refund for lost/stolen card– Negative Case |
| **Quick Description** | This test case checks if the system is able to offer a refund for lost or stolen cards using a form, in this case there are incomplete fields |
| **Prerequisite** | The user is logged in as admin |
| **Input** | Name:” Uzair Naeem”  Card id:””  Reason: “Misplaced” |
| **Expected Output** | “Error please enter the required field” |
| **Observed Output** |  |

## Check Trip History

|  |  |
| --- | --- |
| **Tested Requirement** | Check Trip History – Positive Case |
| **Quick Description** | This test case checks if the system is able to check the customers Trip history by scanning their cards and then clicking “Check trip history” button. |
| **Prerequisite** | User has to be logged in as Staff/Admin and customer must be registered in Database. Card/NFC reader must also be functional. |
| **Input** | Scan card against Card reader  Click “Check trip history” button |
| **Expected Output** | Customers Trip history is shown on screen |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check Trip History – Negative Case |
| **Quick Description** | This test case checks if the system is able to check the customers Trip history by scanning their cards and then clicking “Check trip history” button.  In this case the User is not a valid user and is not registered in DB, and the person using the system has the highest privileges which is (admin) |
| **Prerequisite** | User has to be logged in as Staff/Admin and customer must be registered in Database. Card/NFC reader must also be functional. |
| **Input** | Scan card against Card reader  Click “Check trip history” button |
| **Expected Output** | Error: Customer/user is not registered |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Register biometrics and back-up pin

|  |  |
| --- | --- |
| **Tested Requirement** | Register Biometrics and Backup Pin– Positive Case |
| **Quick Description** | This test case checks if the staff/admin is able to register a user’s biometrics via Facial recognition. This is done so Biometric is linked with the card.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). |
| **Prerequisite** | User has to be logged in as Staff/Admin and customers must be registered in Database. Card/NFC reader must be functional, and Facial recognition terminal must be functional. |
| **Input** | Tag number:”123456789”  Click “Link Biometric to card”  Users Face is scanned at the Facial recognition Terminal  User is asked to enter a “Backup pin”  Backup pin:1234  Click “Link Biometric” |
| **Expected Output** | Biometric successfully linked with card.  Backup pin is 1234 |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Register Biometrics and Backup Pin – Negative Case |
| **Quick Description** | This test case checks if the staff/admin is able to register a user’s biometrics via Facial recognition. This is done so Biometric is linked with the card.  The tag number in this case is not valid and in database. |
| **Prerequisite** | User has to be logged in as Staff/Admin and customers must be registered in Database. Card/NFC reader must be functional, and Facial recognition terminal must be functional. |
| **Input** | Tag number:”123456789”  Click “Link Biometric to card” |
| **Expected Output** | Error: Tag number/ User is not valid. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Register Biometrics and Backup Pin – Negative Case 2 |
| **Quick Description** | This test case checks if the staff/admin is able to register a user’s biometrics via Facial recognition. This is done so Biometric is linked with the card.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). In this case the Pin Entered is more than 4 digits long. |
| **Prerequisite** | User has to be logged in as Staff/Admin and customers must be registered in Database. Card/NFC reader must be functional, and Facial recognition terminal must be functional. |
| **Input** | Tag number:”123456789”  Click “Link Biometric to card”  Users Face is scanned at the Facial recognition Terminal  User is asked to enter a “Backup pin”  Backup pin:9876  Click “Link Biometric” |
| **Expected Output** | Error: Pin number is greater than 4 digits. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Check Biometrics

|  |  |
| --- | --- |
| **Tested Requirement** | Check Biometrics – Positive Case |
| **Quick Description** | This test case checks if the user is able to pass through the smart gates by using the facial recognition terminal |
| **Prerequisite** | User must be registered in Database and his Biometrics must be linked to his Tag number. Card/NFC reader must be functional, and Facial recognition terminal must be functional. |
| **Input** | Users Face is scanned  If successful:  he/she can pass through the gate  Else:  Enter Backup pin:1234 |
| **Expected Output** | User tagged in successfully. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check Biometrics – Negative Case |
| **Quick Description** | This test case checks if the user is able to pass through the smart gates by using the facial recognition terminal  In this case the backup pin entered is incorrect. |
| **Prerequisite** | User must be registered in Database and his Biometrics must be linked to his Tag number. Card/NFC reader must be functional, and Facial recognition terminal must be functional. |
| **Input** | Backup pin:4657 (wrong pin) |
| **Expected Output** | Error: Backup pin entered is invalid. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Add Reward points (Admin only or Earned)

|  |  |
| --- | --- |
| **Tested Requirement** | Add Reward points– Positive Case |
| **Quick Description** | This test case checks if user who is logged in as administrator cad add reward points to the customer’s account. Usually, customers points will be added if they travel frequently using their card 1 point per travel.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). |
| **Prerequisite** | User has to be logged in as Admin and customers must be registered in Database. |
| **Input** | Tag number: 123456789  Emirates ID#:784-\*\*\*\*\*\*-\*\*\*  Points: 10  Click “Add points” |
| **Expected Output** | User points added successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Add Reward points– Negative Case |
| **Quick Description** | This test case checks if user who is logged in as administrator cad add reward points to the customer’s account. Usually, customers points will be added if they travel frequently using their card 1 point per travel.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). In this case two of the required fields have missing information. |
| **Prerequisite** | User has to be logged in as Admin and customers must be registered in Database. |
| **Input** | Tag number: “”  Emirates ID#: ””  Points: 10 |
| **Expected Output** | Error: There are missing or Invalid fields |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Deduct Reward Points

|  |  |
| --- | --- |
| **Tested Requirement** | Deduct Reward points– Positive Case |
| **Quick Description** | This test case checks if the admin can deduct the reward points.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). |
| **Prerequisite** | User has to be logged in as Admin and customers must be registered in Database. |
| **Input** | Tag number: 123456789  Emirates ID#:784-\*\*\*\*\*\*-\*\*\*  Points: 10  Click “Remove points” |
| **Expected Output** | Points Deducted successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Deduct Reward points– Negative Case |
| **Quick Description** | This test case checks if the admin can deduct the reward points.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). In this case 2 of the required fields are missing |
| **Prerequisite** | User has to be logged in as Admin and customers must be registered in Database. |
| **Input** | Tag number: “”  Emirates ID#:””  Points: 10  Click “Remove points” |
| **Expected Output** | Error: There are missing or Invalid fields |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Delete users from Database (Admin only)

|  |  |
| --- | --- |
| **Tested Requirement** | Delete users from Database – Positive Case |
| **Quick Description** | This test case checks if the admin can remove a selected user from the database.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). |
| **Prerequisite** | User has to be logged in as Admin and customers must be registered in Database. |
| **Input** | Tag number: 123456789  Emirates ID#: 784-xxxxxx-xxx  Click “Remove User” |
| **Expected Output** | User has been removed successfully |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Delete users from Database – Negative Case |
| **Quick Description** | This test case checks if the admin can remove a selected user from the database.  All required fields are filled correctly in this case and the User is at a high enough access level (Administrator). In this case there is information missing in required fields. |
| **Prerequisite** | User has to be logged in as Admin and customers must be registered in Database. |
| **Input** | Tag number: “”  Emirates ID#:””  Points: 10  Click “Remove User” |
| **Expected Output** | Error: There are missing or Invalid fields |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Pay at Vendor

|  |  |
| --- | --- |
| **Tested Requirement** | Pay at vendor – Positive Case |
| **Quick Description** | This test case checks if user can use his earned points at a verified vendor. This function runs when the user selects this payment method. |
| **Prerequisite** | User must be registered in Database and must have sufficient points to spend. |
| **Input** | Tag number: 123456789  Vendor ID: 2345  Points: 20  Click “Accept Transaction” |
| **Expected Output** | Transaction is successful  \*Prints purchase bill\* |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Pay at vendor – Negative Case |
| **Quick Description** | This test case checks if user can use his earned points at a verified vendor. This function runs when the user selects this payment method.  In this case the a negative value is input in a field which expects a positive value. |
| **Prerequisite** | User must be registered in Database and must have sufficient points to spend. |
| **Input** | Tag number: 123456789  Vendor ID: 2345  Points: -20  Click “Accept Transaction” |
| **Expected Output** | Error: Please fill in the required fields. |
| **Observed Output** | Error: There are missing or Invalid fields |
| **Verdict** |  |
| **Comments** |  |

# Physical Card

## Transfer Balance between cards

|  |  |
| --- | --- |
| **Tested Requirement** | Transfer Balance between cards– Negative Case |
| **Quick Description** | This test case checks if the staff/admin is able to transfer Balance between cards. This would occur when both parties’ cards are put on scanner and the requested balance is input and “Transfer amount” button is clicked.  In this case the user who is transferring balance to the other user does not have the specified amount. |
| **Prerequisite** | User has to be logged in as Staff/Admin and customers must be registered in Database. Card/NFC reader must also be functional. |
| **Input** | Scan card against Card reader  Click “balance transfer” option  Amount: 50  To: \*Users Tag ID\*  Click “Transfer” |
| **Expected Output** | Transaction unsuccessful user does not have required balance. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Transfer Balance between cards– Negative Case 2 |
| **Quick Description** | This test case checks if the staff/admin is able to transfer Balance between cards. This would occur when both parties’ cards are put on scanner and the requested balance is input and “Transfer amount” button is clicked.  In this case the user who is transferring balance to the other user is not valid. |
| **Prerequisite** | User has to be logged in as Staff/Admin and customers must be registered in Database. Card/NFC reader must also be functional. |
| **Input** | Scan card against Card reader  Click “balance transfer” option  Amount: 50  To: \*Users Tag ID\*  Click “Transfer” |
| **Expected Output** | Transaction unsuccessful user Tag number invalid. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Tag in

|  |  |
| --- | --- |
| **Tested Requirement** | Tag in – Positive Case |
| **Quick Description** | This test case checks if the system allows the user to pass through gates and enter the mode of transportation provided user enters valid card with sufficient balance. |
| **Prerequisite** | card scanner is functional, card is valid (not expired), checked if not counterfeit and should contain minimum or sufficient balance. |
| **Input** | valid card with unique tag number 12345 placed on the card reader |
| **Expected Output** | Tag in is successful, user is allowed to access the gates to the metro / tram / other modes of transportation. Tag in time, station linked to the card number is logged into the database. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Tag in – Negative Case |
| **Quick Description** | This test case checks if the system allows the user to pass through gates and enter the mode of transportation provided user enters valid card with sufficient balance.  In this case, user provides a card with insufficient balance. |
| **Prerequisite** | card scanner is functional, card is valid (not expired), checked if not counterfeit and should contain minimum or sufficient balance. |
| **Input** | Valid card of tag number 12345 placed on card reader |
| **Expected Output** | Alarm sounds indicating  “Tag in is unsuccessful! Top up your card balance to enter. “ |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Tag Out

|  |  |
| --- | --- |
| **Tested Requirement** | Tag Out – Positive Case |
| **Quick Description** | This test case checks if the system allows the user to exit premises of transportation through gates. |
| **Prerequisite** | Card should be valid, read through the card reader, contain minimum or sufficient balance to cover cost of the trip for the gates to open. Card should be tapped once indicating entry, so the second tap indicates exit. |
| **Input** | Valid card placed on the card reader. |
| **Expected Output** | Tag out is successful, user is allowed to pass through the gates and exit from the premises of transport facilities. |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Tag Out – Negative Case |
| **Quick Description** | This test case checks if the system allows the user to exit premises of transportation through gates.  In this case, user taps card with insufficient balance |
| **Prerequisite** | Card should be valid, read through the card reader, contain minimum or sufficient balance to cover cost of the trip for the gates to open. Card should be tapped once indicating entry, so the second tap indicates exit. |
| **Input** | Valid card placed on the card reader. |
| **Expected Output** | Alarm sounds indicating  “Tag in is unsuccessful! Top up your card balance to Exit” |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

## Link card to phone

|  |  |
| --- | --- |
| **Tested Requirement** | Link card to phone – Positive Case |
| **Quick Description** | This test case checks If the system allows the user to link their travel card to their phone for carrying out transactions via ‘Pay by NFC’ |
| **Prerequisite** | User with valid card tag number, WiFi, mobile phone containing NFC features, Phone should not be already linked |
| **Input** | Login to the application.  Click on “Link card to phone”  Cell phone, automated OTP , Emirates ID number, Card tag number.- 123456789 |
| **Expected Output** | User receives an SMS notification indicating process is complete, “Card is linked to the cell phone.” |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Link card to phone – Negative Case |
| **Quick Description** | This test case checks If the system allows the user to link their travel card to their phone for carrying out transactions via ‘Pay by NFC’. In this case, User inputs the wrong OTP |
| **Prerequisite** | User with valid card tag number, WiFi, mobile phone containing NFC features, Phone should not be already linked. |
| **Input** | Login to the application.  Click on “Link card to phone”  Cell phone, automated OTP , Emirates ID number, Card tag number.- 123456789 |
| **Expected Output** | Error message is displayed, user is asked to retype the OTP sent correctly to complete the procedure.  “Incorrect OTP! Input the OTP again.” |
| **Observed Output** |  |

Check Reward Points

|  |  |
| --- | --- |
| **Tested Requirement** | Check Reward Points – Positive Case |
| **Quick Description** | This test case checks if the user can track the reward points earned by travelers by making use of the public transport frequently. |
| **Prerequisite** | Card must be valid, Card reader must be functional. |
| **Input** | Place card on a card reader.  Click on “Check Reward Points” |
| **Expected Output** | Screen displays card number, cardholder name, card balance, and the total reward points earned.  Card Number : 123456789  Card Holder Name : Simran Patt (student)  Balance : Dhs 174  Reward Points : 84 |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Check Reward Points – Negative Case |
| **Quick Description** | This test case checks if the user can track the reward points earned by travelers by making use of the public transport frequently.  In this case, user taps an expired card. |
| **Prerequisite** | Card must be valid, Card reader must be functional |
| **Input** | Place valid card on the card scanner.  Click on “Check Reward Points” |
| **Expected Output** | Error message is displayed, user is asked to tap a valid card to check reward points collected.  “The card of pin 123456789 is expired. Please tap a valid card to check reward points. ” |
| **Observed Output** |  |

## Use Reward Points

|  |  |
| --- | --- |
| **Tested Requirement** | Use Reward Points – Positive Case |
| **Quick Description** | This test case checks if the user can exhaust their reward points depending on how many are collected. |
| **Prerequisite** | User should have a valid card that contains reward points. |
| **Input** | Place valid card on the card scanner.  Click “Use Reward Points” |
| **Expected Output** | Screen displays the discount availed to the users purchase at vender stores or prints a receipt allowing them to withdraw points as cash via Kiosk or Register.  “Items purchased- 3 , Total of Dhs 45,  Dhs 5 discount applied.  Total amount paid : Dhs 40” |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

|  |  |
| --- | --- |
| **Tested Requirement** | Use Reward Points – Negative Case |
| **Quick Description** | This test case checks if the user can exhaust their reward points depending on how many are collected.  In this case, the user has no travel points. |
| **Prerequisite** | User should have a valid card that contains reward points. |
| **Input** | Place valid card on the card scanner.  Click “Check Reward Points”  Input Cell phone, OTP, Emirates ID number, Card tag number - 12345679. |
| **Expected Output** | Error message is displayed,  ‘Unable to provide discounts, There are no reward points in the card with Tag Number 12345679.’ |
| **Observed Output** |  |
| **Verdict** |  |
| **Comments** |  |

# Non-Functional Requirements

## Security Requirements

|  |  |
| --- | --- |
| **Tested Requirement** | Security Requirements - 1 |
| **Quick Description** | The test case will verify if the user’s registered custom pin and face ID matches the record in the DB before granting access in and out of the travel premises. This ensures the card is not tapped by a stranger if it is lost or stolen and protects the original cardholders money from being exploited. |
| **Prerequisite** | User must register for the features of Face ID and Custom Pin features for the system to make these features available for the use of the specific card. |
| **Input** | User places valid card on the card scanner.  Scanner scans your face on the machine for 2 seconds  Input correct custom pin code |
| **Expected Output** | Authorization is complete in all 3 aspects, if all 3 match, gates are opened and user is allowed to pass through and. |
| **Observed Output** | - |
| **Verdict** | - |
| **Comments** | - |

|  |  |
| --- | --- |
| **Tested Requirement** | Security Requirements - 2 |
| **Quick Description** | The test case will verify the standard method of refunding / blocking of card use via contact with the RTA Admin in person. |
| **Prerequisite** | Card should be genuinely lost /stolen, User must have a record of his name in the DB for owning a valid card. User should be able to provide card number. |
| **Input** | User approaches the RTA Administration  Provides them with details:  User Name : Simran Patt  Card Number : 123456789 |
| **Expected Output** | The department employee views the remaining balance, blocks the card immediately and requests a refund |
| **Observed Output** | - |
| **Verdict** | - |
| **Comments** | - |

## Performance Requirements

|  |  |
| --- | --- |
| **Tested Requirement** | Performance Requirements |
| **Quick Description** | The test case will compute the response time that the system takes to process every request. |
| **Prerequisite** | The requests made must not fail (tests should be made on a working system) |
| **Input** | clicking on options such as top up balance, check reward points to calculate time taken for each request. |
| **Expected Output** | System responds to every request between 0.1 millisecond to 1 second under normal conditions. |
| **Observed Output** | - |
| **Verdict** | - |
| **Comments** | - |

## Interface Requirements

|  |  |
| --- | --- |
| **Tested Requirement** | Interface Requirements |
| **Quick Description** | The test case will ensure the system fulfills its ease to use design by including bread crumb navigation, aspects of attention, constraints, feedback, simplicity. The system will also check if the user is able to identify the use and functionalities of all buttons, items in a dropdown, etc. |
| **Prerequisite** | A clear design must at least be thought out early on to ensure success of the test case. Design must be updated and tested multiple times. |
| **Input** | writing down thoughts about the system at the first sight, exploring and clicking on different options to check the uniformity of design. |
| **Expected Output** | Each button and link takes user to the intended page, there are no errors in the design and user is able to understand and use the system quickly without confusion or guidance. |
| **Observed Output** | - |
| **Verdict** | - |
| **Comments** | - |

## Operational Requirements

|  |  |
| --- | --- |
| **Tested Requirement** | Operational Requirements |
| **Quick Description** | The test case will look into the amount of space taken up by the system. It focuses on how the application affects the other apps or the operability of the device. |
| **Prerequisite** | Device should have minimum storage and memory requirements specified for the installation to be complete on the desktop of an RTA employee. System needs to be error free, launched and verified. |
| **Input** | opening the settings of the desktop, verifying if the application can be downloaded on the lowest versions mentioned, depending on the version of the employees’ PC’s, A stable Wi-Fi connection. |
| **Expected Output** | System must install without any errors, be fully functional and occupy storage lesser than 200MB as mentioned in the requirements for the smooth operating of the system. |
| **Observed Output** | - |
| **Verdict** | - |
| **Comments** | - |

## Political and Legal Requirements

|  |  |
| --- | --- |
| **Tested Requirement** | Political and Legal Requirements |
| **Quick Description** | The test case will look into the completion of all legal and political formalities involved in the launch of the new RTA system. |
| **Prerequisite** | Formalities must be complete, system must be ready to launch. |
| **Input** | Approval from RTA Authorities, UAE Government, an approved system that satisfies UAE’s legal guidance. |
| **Expected Output** | System is launched and downloaded by people without any objections, no legal action will be taken against the project or its members. |
| **Observed Output** | - |
| **Verdict** | - |
| **Comments** | - |

# Team Work Discussion Sheet

Deliverable 02

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Student name | Student ID | Items covered | Contribution on each item | Signature |
| Saim Ali | 6482491 | Register staff member, Generate tag number, Register a new card, Login, Logout, Read Card, Top up balance, Check balance | 100% |  |
| Uzair Naeem | 6538654 | Calculate fare amount, Deduct fare amount, Check for minimum/sufficient balance for a trip, Apply discounts for people, Check validity, Check type, Check if not counterfeit, Provide refund for lost/stolen cards | 100% |  |
| Ocean Dsouza | 6628485 | Check Trip History, Transfer balance between cards, Register biometrics, Register backup pin, Check Biometrics, Add Reward Points, Deduct Reward Points, Delete user from Database, Pay at Vendor | 100% |  |
| Simran Patt | 7009690 | Tag in, Tag out, Link card to Phone, Check Reward Points. Use Reward Points, Non Functional Requirements Test Cases (Security, Interface, Performance, Operational, Legal and Political), Formatting | 100% |  |