**Traceability:**

Traceability is a technique that provides a relationship between different levels of requirements and the use-cases in the system. It means that not only all the functionalities expressed by the use-cases have been implemented but also we have traceability information from the requirements to the use-cases and to the test cases.

**Use-Case Index:**

|  |  |
| --- | --- |
| UC – 1.1 | Purchase |
| UC – 2.1 | Account |
| UC – 3.1 | Daily Report |

**Use-Case Description**

**UC - 1.1:**

**1.1  Name**

*Purchase*

**1.2  Goal**

*This use-case satisfies all of the goals of purchasing an item from a customer. The purchase would include the items chosen by customer (coffee, dessert), pre-ordered items and the checkout process.*

**1.3  Use-Case Team Leader/Members**

*Tony Potter, Murali Raju, Omar Ramos, Chandra Sapkota*

**1.4  Precondition**

*Item has been chosen or pre-ordered by customer and brought to checkout.*

**1.5  Postcondition**

*Item has been purchased and VIP points earned*

**1.6  Constraints/Issues/Risks**

*The total might not include the reduced price for coffee (half or for free)*

**1.7  Trigger Event(s)**

*Customer pre-ordering or choosing one in cart to purchase*

**1.8  Primary Actor**

*Customer*

**1.9  Secondary Actor(s)**

*Salesman*

**UC – 2.1:**

**2.1  Name**

*Account*

**2.2  Goal**

*This use-case satisfies all of the goals of registering a new customer, editing the information of an existing customer or deleting the information all together.*

**2.3  Use-Case Team Leader/Members**

*Tony Potter, Murali Raju, Omar Ramos, Chandra Sapkota*

**2.4  Precondition**

*The cart manager has logged onto the system to retrieve the information of the customer*

**2.5  Postcondition**

*The information such as name, phone number, birthdate and VIP card number of a customer is either registered, edited or deleted.*

**2.6  Constraints/Issues/Risks**

*The system may not be able to update the information right away.*

**2.7  Trigger Event(s)**

*Customer desiring to register, edit information or delete his/her information.*

**2.8  Primary Actor**

*Manager*

**2.9  Secondary Actor(s)**

*System*

**UC – 3.1:**

**3.1  Name**

*Daily Report*

**3.2  Goal**

*This use-case satisfies all of the goals of generating a daily report of purchased items, pre-ordered items, best sellers dessert of the day and the number of customers registered as a VIP member.*

**3.3  Use-Case Team Leader/Members**

*Tony Potter, Murali Raju, Omar Ramos, Chandra Sapkota*

**3.4  Precondition**

*Pre-orders and sales have been made in the day. Desserts have been sold and new members have been signed.*

**3.5  Postcondition**

*Reports has been generated*

**3.6  Constraints/Issues/Risks**

*Reports turned out faulty showing inaccurate data.*

**3.7  Trigger Event(s)**

*All events dealing with sales and customers registered in the day.*

**3.8  Primary Actor**

*System*

**3.9  Secondary Actor(s)**

*Manager*

**Requirements Index:**

A requirement ID has been given to all the requirements as shown below:

|  |  |
| --- | --- |
| Req – 1 | Enter customers information in the system to be a VIP member |
| Req – 2 | Add additional VIP members to the system |
| Req – 3 | Remove customers from the system |
| Req – 4 | Edit customer’s information |
| Req – 5 | Calculate items purchased by the customer in 30 days |
| Req – 6 | Calculate points earned by VIP customer in 30 days |
| Req – 7 | Calculate total points earned by the customer in lifetime |
| Req – 8 | VIP customers be able to pre-order desserts in advance |
| Req – 9 | VIP customer upgraded to gold level |
| Req – 10 | VIP customer permanently upgraded to god level |
| Req – 11 | Gold level customer receive free coffee refill |
| Req – 12 | VIP customer receive coffee refill for half price |
| Req – 13 | VIP customers get free dessert for every 200 points |
| Req – 14 | Owner generates report of items purchased in a day |
| Req – 15 | Owner generates report of items pre-ordered in a day |
| Req – 16 | Owner generates report showing best seller of the day |
| Req – 17 | Owner generated report showing all the VIP customers signed up in a day |

**Traceability Matrix from Requirements to Use-case:**

This traceability matrix will help correlate and trace requirements to their use-cases.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | UC – 1.1 | UC – 2.1 | UC – 3.1 |
|  | Total | 7 | 6 | 7 |
| Req - 1 | 1 |  | X |  |
| Req – 2 | 1 |  | X |  |
| Req – 3 | 1 |  | X |  |
| Req – 4 | 1 |  | X |  |
| Req – 5 | 2 | X |  | X |
| Req – 6 | 2 | X |  | X |
| Req – 7 | 2 | X |  | X |
| Req – 8 | 1 | X |  |  |
| Req – 9 | 1 |  | X |  |
| Req – 10 | 1 |  | X |  |
| Req – 11 | 1 | X |  |  |
| Req – 12 | 1 | X |  |  |
| Req – 13 | 1 | X |  |  |
| Req – 14 | 1 |  |  | X |
| Req – 15 | 1 |  |  | X |
| Req – 16 | 1 |  |  | X |
| Req - 17 | 1 |  |  | X |

**Test cases index**:

A Test-case ID has been given to all the test cases as shown below:

|  |  |
| --- | --- |
| TC - 1 | Account setup - Enter with all fields (First Name, Last Name, Phone Number) set |
| TC - 2 | Account setup - Enter with all fields set, text for phone number |
| TC - 3 | Account setup - Enter with only name fields set |
| TC - 4 | Account setup - Enter with only one name field set (test once with first name, once with second name.) |
| TC - 5 | Account setup - Enter with only one name field set (test once with first name, once with second name.) |
| TC - 6 | Data Entry - Change Information |
| TC - 7 | Data Entry - Change any two of three fields (test once for each group of two fields) |
| TC - 8 | Data Entry - Change all three fields |
| TC – 9 | Data Entry - Delete Entry |
| TC – 10 | Ordering Items - With no account |
| TC – 11 | Ordering Items - With forgotten account number |
| TC – 12 | Ordering Items - With Account (not yet VIP status) |
| TC – 13 | Ordering Items - With Account (currently VIP status) |
| TC – 14 | Pre Ordering Items - Non VIP Pre-Order an item |
| TC – 15 | Pre Ordering Items - VIP Pre-Order an In Stock item within one month of current date |
| TC – 16 | Pre Ordering Items - Pre-Order an item more than one month of current date |
| TC – 17 | Pre Ordering Items - Pre-Order an item for a date in the past |
| TC – 18 | Pre Ordering Items - Pre-Order an item no longer available on given date |
| TC – 19 | Pre Ordering Items - Cancel existing Pre-Order, confirmation number given |
| TC – 20 | Pre Ordering Items - Cancel existing Pre-Order, confirmation number not given, account number given |
| TC – 21 | Pre Ordering Items - Cancel non-existing Pre-Order |
| TC – 22 | Get Daily Report - Request daily report for current date |
| TC – 23 | Get Daily Report - Request daily report for past date |
| TC – 24 | Get Daily Report - Request daily report for future date (within one month.) |
| TC – 25 | Get Daily Report - Request daily report for future date (more than one month.) |
| TC – 26 | Get Daily Report - Request monthly report for given month |

**Traceability Matrix for use – case to test-cases:**

This traceability matrix will help correlate and trace use-cases to their test cases.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Use-case | UC – 1.1 | UC – 2.1 | UC – 3.1 |
| Test-case | Total | 15 | 6 | 6 |
| TC -1 | 1 |  | X |  |
| TC -2 | 1 |  | X |  |
| TC -3 | 1 |  | X |  |
| TC -4 | 1 |  | X |  |
| TC -5 | 1 |  | X |  |
| TC -6 | 1 |  | X |  |
| TC -7 | 1 | X |  |  |
| TC -8 | 1 | X |  |  |
| TC -9 | 1 | X |  |  |
| TC -10 | 1 | X |  |  |
| TC -11 | 1 | X |  |  |
| TC -12 | 1 | X |  |  |
| TC -13 | 1 | X |  |  |
| TC -14 | 1 | X |  |  |
| TC -15 | 1 | X |  |  |
| TC -16 | 1 | X |  |  |
| TC -17 | 1 | X |  |  |
| TC -18 | 1 | X |  |  |
| TC -19 | 1 | X |  |  |
| TC -20 | 1 | X |  |  |
| TC -21 | 1 | X |  | X |
| TC -22 | 1 |  |  | X |
| TC -23 | 1 |  |  | X |
| TC -24 | 1 |  |  | X |
| TC -25 | 1 |  |  | X |
| TC -26 | 1 |  |  | X |