**Repair Table**

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Data Type** | **Nullable** |
| **VIN** | Integer | Not |
| **Status** | String | Not |
| **Vendor\_Name** | String | Not |
| **Vendor\_Address** | String | Not |
| **Vendor\_Phone\_Number** | Integer | Not |
| **Description** | String | Not |
| **Start\_Date\_TimeStamp** | Timestamp | Not |
| **End\_Date\_TimeStamp** | Timestamp | Not |
| **Cost** | Decimal | Not |
| **Recall\_NHTSA** | String | Null |

**Recall Table**

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Data Type** | **Nullable** |
| **Recall\_NHTSA** | String | Not |
| **Description** | String | Not |
| **Manufacture** | String | Not |

Vehicle Table

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Data Type** | **Nullable** |
| **VIN** | Integer | Not |
| **Type** | String | Not |
| **Manufacturer** | String | Not |
| **Model\_Name** | String | Not |
| **Model\_Year** | Integer | Not |
| **Color** | String | Not |
| **Mileage** | Decimal | Not |
| **Description** | String | Null |

**Business Logic Constraints:**

Only Admin (The owner) and Inventory Clerk have the access to read and write the Recall/Repair and Vehicle Tables.

The *Model\_Year* in the Vehicle Table cannot exceed current year plus one and must be 4-digits form.

**Assumptions:**

The *Recall\_NHTSA* in Recall Table and Repair Table is unique and may link with multiple repairs.

The *VIN* in Vehicle Table is unique.

The *Status* in the Repair Form could only be one of “*Pending*”, “*In Progress*” and “*Complete*”.

The vehicle in the Repair Table which is under “*Pending*” or “*In Progress*” could not be presented in the public search results.

**Task Decomposition and Abstract Code**

**Add Repair Form**

Task Decomp

Lock Types: Read and Write to the Repair Table and Recall Table. Read and Write exclusives locks needed on Repair table, Read-only on Recall Table.

Number of Locks: 3

Enabling Conditions: Enabled by Users Type as “Inventory Clerk” or “Admin” by clicking “***Add Repair Form***” button in **Repair/Recall Repository**

Frequency: About 50 repairs/recalls requires in total

Consistency (ACID): Not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

**Abstract Code:**

1. Show ***Add Repair Form*** , ***Edit Repair Form*** in **Repair/Recall Repository**
2. User clicks ***Add Repair Form*** button and system displays a new repair form table with ***Submit*** and ***Cancel*** button
3. User enters *VIN, Vendor\_Name, Vendor\_Address, Vendor\_Phone\_Number, Description, Start\_Date\_TimeStamp, Cost, Recall\_NHTSA*
4. User selects one of “*Pending*”, “*In Progress*” and “*Complete*” in *Status*
5. Upon:
   * Click ***Submit*** button;

If *Recall\_NHTSA* is not Null and is not in Recall.*Recall\_NHTSA*:

Show Error Message

Else if all items except *Recall\_NHTSA* are not Null:

Write to Repair Table and go back to **Repair/Recall Repository**

Else:

Show Error Message

* + Click ***Cancel*** button - Go back to **Repair/Recall Repository**

**Edit Repair Form**

Task Decomp

Lock Types: Read and Write to the Repair Table and Recall Table. Read and Write exclusives locks needed on Repair table, Read-only on Recall Table.

Number of Locks: 3

Enabling Conditions: Enabled by Users Type as “Inventory Clerk” or “Admin” by clicking ***Edit Repair Form*** in **Repair/Recall Repository**

Frequency: About 100 repairs/recalls requires in total

Consistency (ACID): Not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

**Abstract Code:**

1. Show ***Add Repair Form***, ***Edit Repair Form*** in **Repair/Recall Repository**
2. User clicks ***Edit Repair Form*** button and show ***Submit*** and ***Cancel*** button
3. User edits Repair Form Items
4. Upon:
   * + Click ***Submit*** button;

If *Recall\_NHTSA* is not Null and is not in Recall.*Recall\_NHTSA*:

Show Error Message

Else if all items except *Recall\_NHTSA* are not Null:

Write to Recall Table and go back to **Repair/Recall Repository**

Else:

Show Error Message

* + - Click ***Cancel*** button - Go back to **Repair/Recall Repository**

**Add Vehicle Form**

Task Decomp

Lock Types: Read and Write to the Vehicle Table

Number of Locks: 2

Enabling Conditions: Enabled by Users Type as “Inventory Clerk” or “Admin” by clicking ***Add Vehicle Form*** in **Repair/Recall Repository**

Frequency: About 100 repairs/recalls requires in total

Consistency (ACID): Not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

**Abstract Code:**

1. Show ***Add Vehicle Form*** button in **Vehicle Category**
2. User clicks ***Add Vehicle Form*** button and system displays a new repair form table with ***Submit*** and ***Cancel*** button
3. User enters *VIN, Type, Manufacturer, Model\_Name, Model\_Year, Color, Mileage, Description*
4. Upon:
   * Click ***Submit*** button;

If *VIN* is in Vehicle.*VIN*:

Show Error Message

Else if all items except *Description* are not Null:

Write to Vehicle Table and go back to **Vehicle Category**

Else:

Show Error Message

* + Click ***Cancel*** button - Go back to **Vehicle Category**