**User**

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Data Type** | **Nullable** |
| **Username** | String | Not |
| **Password** | String | Not |
| **First\_name** | String | Not |
| **Last\_name** | String | Not |
| **User\_type** | String | Not |

**Vehicle**

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Data Type** | **Nullable** |
| **VIN** | Integer | Not |
| **Vehicle\_type** | String | Not |
| **Manufacturer** | String | Not |
| **Model** | String | Not |
| **Model\_year** | Integer | Not |
| **Color** | String | Not |
| **Mileage** | Decimal | Not |
| **Sales\_price** | Decimal | Not |
| **Status** | String | Not |
| **Description** | String | Null |

**Business Logic Constraints:**

**Assumptions:**

The *User\_name* on user table is unique.

The *User\_type* on the User table could only be one of “*Inventory\_clerk*”, “*Salespeople*”, “*Manager*” and “*Owner*”.

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

**Task Decomposition and Abstract Code**

**public search**

Task Decomp

Lock Types: Read-only to Vehicle Table.

Number of Locks: Single

Enabling Conditions: None

Frequency: About 100 vehicle search requires per day

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

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

**Abstract Code:**

* Show total number of cars;
* Show drop-down menus of Vehicle type, manufacturer, model year and color;
* Show blank field for Keyword input;
* Show “**Search**” button and “**Employee Login**” button;
* Users enter Vehicle type, manufacturer, model year and color or keyword;
* When **Search** button is clicked:
* If all the input fields are empty, show warning message;
* If there are vehicles that match items on Vehicle table, show results only including Vehicle.Status != “pending” or “in progress”, sorted by VIN;
* If no vehicles meet the search criteria, show error message “Sorry, it looks like we don’t have that in stock!”
* Users can click other columns to change the sort method;
* When user select an individual result: Open a detail page that shows all the attributes on Vehicle table;
* When Employee Login button is clicked: Go to login page.

**Login**

Task Decomp

**Lock Types**: Read-only to User Table

**Number of Locks**: Single

**Enabling Conditions**: Enabled by clicking on “Employee Login”

**Frequency**: About 20 logins per day

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

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

**Abstract Code:**

* Show ***“Login”*** and ***“Cancel”*** button.
* User enters *Username*, *Password*
* When Login button is clicked:
* If the Username or Password input field is empty, show warning message;
* If User.Username is not found on User table or User.Password is incorrect, clear the input field, show error message;
* If User.Username and User.Password are both correct and match each other, go to user page;
* When Cancel button is clicked, go to public search page.

**VIN search**

Task Decomp

Lock Types: Read and Write to the Vehicle Table

Number of Locks: Single

Enabling Conditions: Enabled by successful login.

Frequency: About 100 vehicle search requires per day.

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

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

**Abstract Code:**

* If User.User\_type == “Inventory\_clerk”:
* Show all the results including Vehicle.status == “pending” or “in progress”
* When selecting a result:
* Show all attributes including original purchase price and the total of repair costs;
* If User.User\_type == “salesman”:
* Show the results as the same as the public;
* When selecting a result:
* Have a button to sell the car;
* If User.User\_type == “manager”:
* Show all the results including Vehicle.status == “pending” or “in progress”
* Have additional filter by sold vehicles, unsold vehicles, or all vehicles;
* When selecting a result:
* Have a button to sell the car;
* Show seller’s information
* Show inventory clerk that purchased car;
* Show all attributes including original purchase price and the total of repair costs;
* If User.User\_type == “owner”:
* Show all the results including Vehicle.status == “pending” or “in progress”
* Have additional filter by sold vehicles, unsold vehicles, or all vehicles;
* When selecting a result:
* Have a button to sell the car;
* Show seller’s information;
* Show inventory clerk that purchased car;
* Show all attributes including original purchase price and the total of repair costs;