Car Mastery DB and Web API

The application we would like you to create models a simplified version of a car dealership's website and sales support system. Like many car dealership sites, this application provides a public-facing area which allows users to browse the inventory of new and used vehicles, view current specials, and contact the dealership. Additionally, for sales personnel, there is an area for logging customer information for a purchase and an administrative area for user management, application management, inventory management, and reporting.

You will complete and submit a working full-stack application. There are two parts to turn in for this assessment: a database build script and the web api code.

This first assignment will cover the Database and the Web API to access some features of the database. These will be used in the completed site to give a responsive search feature to the end users.

Part 1 – Database Build Script

You must provide a series of SQL scripts to build the car dealership's database schema and supporting objects.

1. A database.sql file should contain the scripts to drop and create the database, which should be named GuildCars.
2. A tables.sql file should contain the scripts to drop and create the tables for the database as well as configure their foreign key relationships.
3. Upon completing these scripts you should submit a code review request. A staff member will review your tables and relationships to ensure:
a. The necessary fields for the web application are present with appropriate types and nullable settings.
b. Tables are in at minimum second normal form (2NF).

Note that in this code review we do not promise to catch all errors and omissions. The purpose of the initial code review is to ensure that your relational database structure will reasonably address the requirements of the application and demonstrates competency in relational database architecture. You ~~may~~ **will** need to make minor changes to your data model when building the application.

Database access should be done via Stored Procedures which should have create and drop scripts in a "sprocs.sql" file. The exception to this is search queries, which may be written with in-line SQL.

The search queries should be exposed through a web API. This project will be used as the framework to build the full MVC site in a follow up assignment, but for this segment you will be writing the inventory search portions.

The API should support searching for all available vehicles, searching for new vehicles, searching for used vehicles and allow filtering by Make, Model or Year and a range of Price and Years.

See the search wireframes for examples of the type of searches that will be performed.

This submission should include the Database scripts, the project for the Web API, and be prepared to demo your calls using either a basic html page that uses jQuery Ajax calls or Postman calls to your page.

Inventory/New

This allows users to search the new vehicle inventory of the site.

1. No search results should be shown by default
2. Searches should be dynamic, such that if a filter is not provided (ex: choosing "No Min" on price) then minimum price should not be a factor in the search.
3. The "make, model, or year" textbox, when filled in, should perform a LIKE query that searches all 3 columns in the database. (ex: 'fo' should match all 'Ford' makes as well as a Subaru 'Forrester')
4. The search should utilize an AJAX call via jQuery.
5. Only the first 20 matches should be returned.
6. Leaving the filters blank and hitting search should return the 20 vehicles with the highest MSRP.
7. Only vehicles with a type of 'New' should be returned in this search.

http://guildcars.com/Inventory/New

Home | New Inventory | Used Inventory | Specials | Contact

New Vehicles

Quick Search

Enter make, model, or year   Price [No Min ▼] [No Max ▼]   Year [No Min ▼] [No Max ▼]

[Search]

Search Results

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** New	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	[Details]

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** New	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	[Details]

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** New	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	[Details]

Inventory/Used

Use the same rules and logic from the Inventory/New page excepting that this search should only return vehicles with a type of 'Used'.

A Web Page

http://guildcars.com/Inventory/Used

Home I New Inventory I Used Inventory I Specials I Contact

Used Vehicles

Quick Search

Enter make, model, or year   Price No Min ▼ No Max ▼   Year No Min ▼ No Max ▼

Search

Search Results

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 35,000	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Details

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 35,000	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Details

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 17,500	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Details

Sales/Index

This page should only be accessible to users in the "Sales" role.

1. This search should behave the same as the New and Used inventory searches with two exceptions:
   a. It searches both New and Used inventory simultaneously.
   b. A purchase button is listed on each result.
   c. Vehicles that have already been purchased should not show up in search results.
2. The search should utilize a jQuery AJAX call.

http://guildcars.com/sales/index

Home | New Inventory | Used Inventory | Specials | Contact | Sales

Sales

Quick Search

Enter make, model, or year   Price [No Min ▼] [No Max ▼]   Year [No Min ▼] [No Max ▼]

Search

Search Results

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 35,000	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Purchase

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 35,000	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Purchase

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 17,500	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Purchase

Admin/Vehicles

This page allows admin to edit inventory.

1. It should only be accessible to users in the "Admin" role.
2. It should only show inventory that is available for purchase.
3. The search should utilize a jQuery AJAX call.

A Web Page

http://guildcars.com/admin/vehicles

Home | New Inventory | Used Inventory | Specials | Contact | Sales | Admin

Admin
Add a new Vehicle

Quick Search

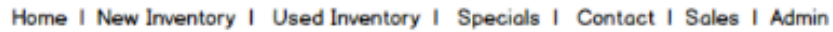| Enter make, model, or year | Price | No Min ▼ | No Max ▼ | Year | No Min ▼ | No Max ▼ |

Search

Search Results

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 35,000	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Edit

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 35,000	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Edit

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** 17,500	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	Edit

Consider the following edit screens for vehicle, sale record, make, model and contact when building the tables for those items.

http://guildcars.com/admin/editvehicle/1

Home | New Inventory | Used Inventory | Specials | Contact | Sales | Admin

Edit Vehicle

Make

Audi ▾

Model

A4 ▾

Type

New ▾

Body Style

Car ▾

Year

2017

Transmission

Automatic ▾

Color

Black ▾

Interior

Black ▾

Mileage

0

VIN #

13ADKF28371KJDAF

MSRP

35000

Sale Price

33000

Description

Small and sporty, with a hint of luxury. This car is loaded with features including A/C, cruise control, backup cameras and more!

Replace Picture

[   ] Upload

☐ **Feature this vehicle**

Delete **Save**

http://guildcars.com/sales/index

Purchase Vehicle

2016 Make Model

Body Style: SUV	**Interior:** Black	**Sale Price:** $12,875
Trans: Automatic	**Mileage:** New	**MSRP:** $14,875
Color: Silver	**VIN #:** 2DS820192D78S123	

Description: Lorem ipsum dolor sit amet, non eros tempor et, faucibus convallis nam sapien consequat, sem sit dolor metus lorem. Sapien justo magnis quis, cras nullam purus dolor id, vehicula netus feugiat risus

Sales Information

Name

Phone

Email

Street 1

Street 2

City

State

AK ▼

Zipcode

Purchase Price

Purchase Type

Dealer Finance ▼

Save

http://guildcars.com/home/specials

Home | New Inventory | Used Inventory | Specials | Contact

Contact Us

Name

Email

Phone

Message

Submit

111 W Main St
Kent, OH 44444

Sales: 111-111-1111
Service: 111-111-1112

http://guildcars.com/sales/index

Home | New Inventory | Used Inventory | Specials | Contact | Sales | Admin

Makes

New Make [   ]   [Save]

Make	Date Added	User
Audi	1/1/2016	ewise@guildcars.com
Fiat	1/1/2016	ewise@guildcars.com
Ford	1/1/2016	ewise@guildcars.com

http://guildcars.com/sales/index

Home | New Inventory | Used Inventory | Specials | Contact | Sales | Admin

Models

New Model [   ]   Make [Audi   ▼]   [Save]

Make	Model	Date Added	User
Audi	A4	1/1/2016	ewise@guildcars.com
Audi	A6	1/1/2016	ewise@guildcars.com
Audi	A8	1/1/2016	ewise@guildcars.com
Fiat	Spider	1/1/2016	ewise@guildcars.com
Ford	F-150	1/1/2016	ewise@guildcars.com