Assignment 9

(Define and use objects in JavaScript)

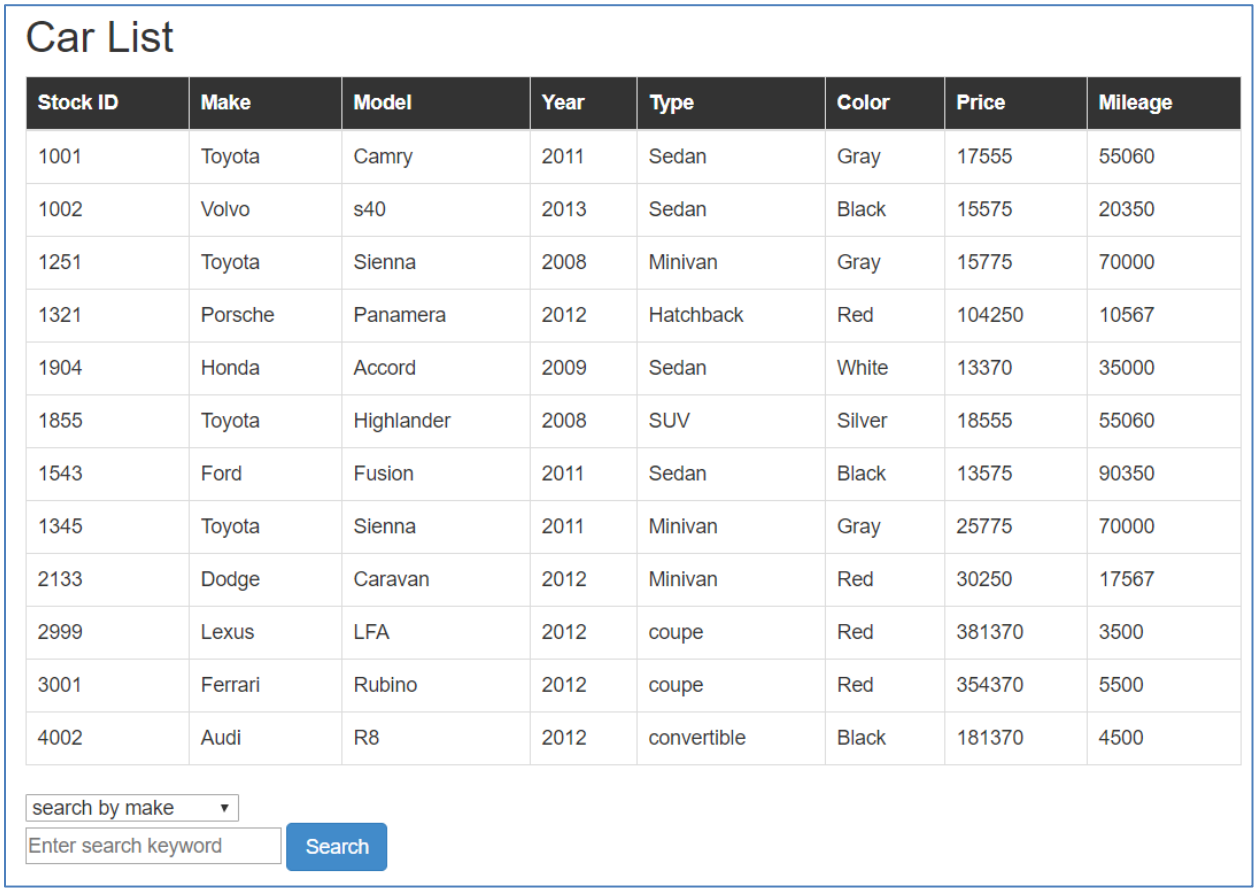
(Total: 100 points)

Learning Objectives

- Hands-on practice on how to define user/programmer defined objects in JavaScript.
- Hands-on practice on how to create and use user-defined object in JavaScript.
- Hands-on practice on how to use square notation to access properties.

Complete your assignment

Download the zip file named "**CS381_A9.zip**" and then unzip the zip file. In the unzipped folder (by default with name "CS381_A9"), you will find two files: **autoshop.html**, **autoshop.js**.



Stock ID	Make	Model	Year	Type	Color	Price	Mileage
1001	Toyota	Camry	2011	Sedan	Gray	17555	55060
1002	Volvo	s40	2013	Sedan	Black	15575	20350
1251	Toyota	Sienna	2008	Minivan	Gray	15775	70000
1321	Porsche	Panamera	2012	Hatchback	Red	104250	10567
1904	Honda	Accord	2009	Sedan	White	13370	35000
1855	Toyota	Highlander	2008	SUV	Silver	18555	55060
1543	Ford	Fusion	2011	Sedan	Black	13575	90350
1345	Toyota	Sienna	2011	Minivan	Gray	25775	70000
2133	Dodge	Caravan	2012	Minivan	Red	30250	17567
2999	Lexus	LFA	2012	coupe	Red	381370	3500
3001	Ferrari	Rubino	2012	coupe	Red	354370	5500
4002	Audi	R8	2012	convertible	Black	181370	4500

Add JavaScript code in the "**autoshop.js**" to complete the following steps (Use the sample code and hands on practices code in Lecture6.1 as reference):

Step-1: [10pts] complete the definition of constructor function named ***Car***, which will be used to create individual car object. In ***Car*** function:

- Add parameter list in the parenthesis in the function header.
- Complete definition of all properties by assigning values to those properties.

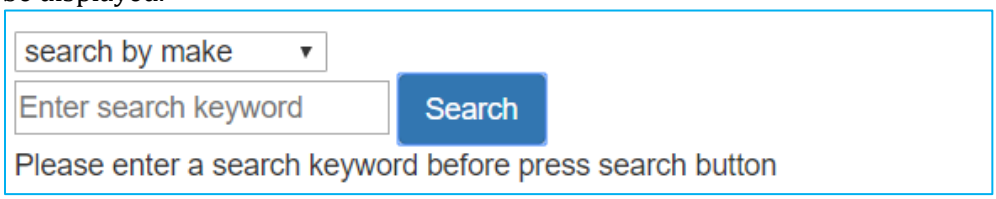
Step-2: [30pts] Define a *for* loop, in which car information from each table row of car-list table on the web page is grabbed, and then used to create new car object by calling ***Car*** constructor function. Add each new

car object to ***car_list*** array. [Hint: number of table rows in the table body of car-list table tells how many cars in the table]

Step-3: [10pts] Select the search button on the web page, and then add event listerner to register searchList as event handler to the click event of the search button on the web page so that when search button is clicked, based on the category that user selects and search keyword that user enters in the search bar, the matched car info will be listed in the table below the search bar.

Step-4: [30pts] Complete **searchList** function, which is used as event handler. In that function:
(1) Add js code to get the search option that user selects from the drop down menu on the web page and assign it to variable **cat**. Add js code to get the search keyword that user enters in the search bar on the web page and assign it to variable **keyword**.
(2) In the *for* loop, add js code to check each car object in the **car_list** array to find car object(s) that matches the search keyword based on the search option that user selects among make, stock id, model, type, year, color. If user selects "search by max price" option, then to find car object(s) which has price no more than the price that user enters in the search bar.
(3) In the *for* loop, when each time find a matched car object, update variable **count,** Use **display** method of car object to get car information as a string, add <tr> tags to that string and then add that string to **resultList** variable. So after the **for** loop, **resultList** will hold all matched car info as a string of table rows and table cells.
[Hint: use square bracket notation and variable **cat** to access different properties of car object.] Note: You may develop js code to define searchList function in your own way, as long as the function works the same for displaying proper message and search results in the search result table.

For example, if user selected "search by make", but did not enter search keyword before pressing the search button. Then a message "Please enter a search keyword before press the button" will be displayed on the web page. If user enters "Toyota" as search keyword and then press the search button. Then a message "Find 4 matched cars." will be displayed on the web page, and a table with four matched cars will be displayed.



search by make ▾

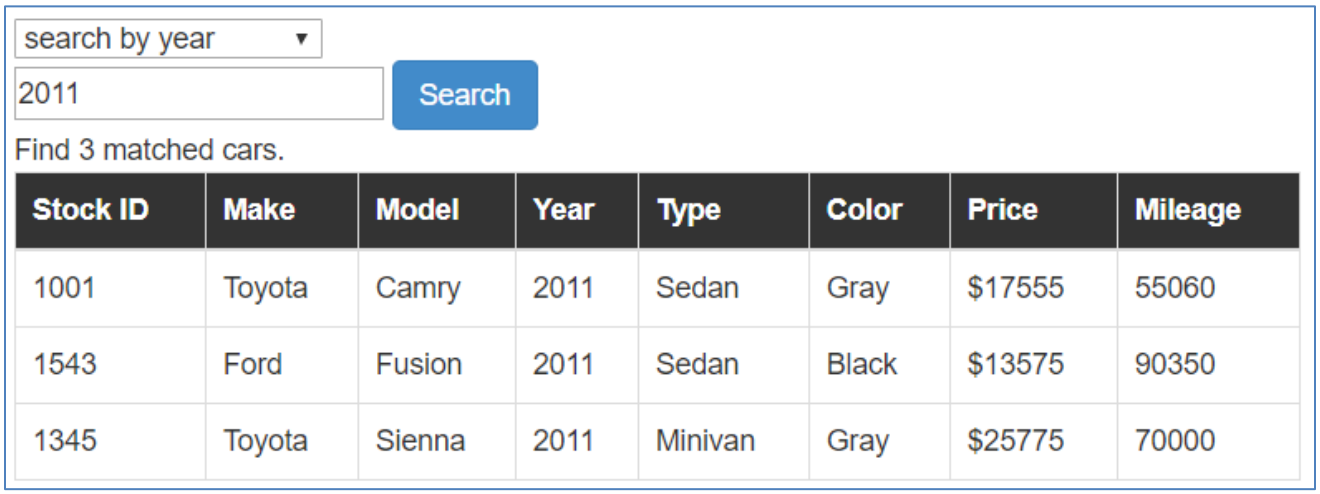
Toyota

Search

Find 4 matched cars.

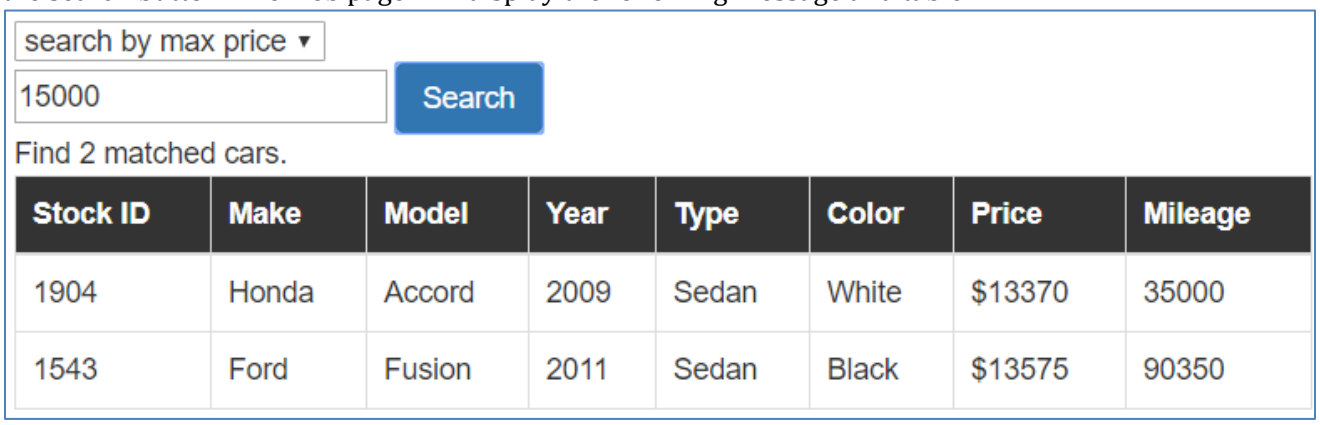
Stock ID	Make	Model	Year	Type	Color	Price	Mileage
1001	Toyota	Camry	2011	Sedan	Gray	$17555	55060
1251	Toyota	Sienna	2008	Minivan	Gray	$15775	70000
1855	Toyota	Highlander	2008	SUV	Silver	$18555	55060
1345	Toyota	Sienna	2011	Minivan	Gray	$25775	70000

For example, if user selected "search by year", and entered 2011 in the search bar, and then press the search button. The web page will display the following message and table.



Stock ID	Make	Model	Year	Type	Color	Price	Mileage
1001	Toyota	Camry	2011	Sedan	Gray	$17555	55060
1543	Ford	Fusion	2011	Sedan	Black	$13575	90350
1345	Toyota	Sienna	2011	Minivan	Gray	$25775	70000

For example, if user selected "search by max price", and entered 15000 in the search bar, and then press the search button. The web page will display the following message and table.



Stock ID	Make	Model	Year	Type	Color	Price	Mileage
1904	Honda	Accord	2009	Sedan	White	$13370	35000
1543	Ford	Fusion	2011	Sedan	Black	$13575	90350

Step-5 [15 points]: Test and debug your programs in web browser to make sure there is no syntax and logical errors, and everything works properly. If there are some errors that you cannot figure out, please write a notes in your program or leave a message in your dropbox.

Submit your assignment [5 points]

- After you complete, please **save and zip** the "CS381_A9" folder that including all the files, and then rename and submit the zipped file "**A9_yourLastNameFirstName.zip**", to the assignment drop box named **Assignment-9**.

Note: If your computer does not have the ability to "zip" (i.e., compress or uncompress) files, download and use a free zip program such as 7-Zip (http://www.7-zip.org/)