A2019 CarBuyerBot

Readme

Version 2.0

07/16/2020

Table of Contents

1.   Introduction

This document contains all essential information for users to make full use of the CarBuyerBot. This manual includes a description of the functions and capabilities as well as step-by-step procedures for the setup & configuration of the Bot.

1.1   Overview

The CarBuyerBot was created for users who are in the market for a used car for the purpose of allowing them to compare vehicle listings across model years by using a formula to determine the price per mile of the expected remaining life of a car. The output of the bot is the creation of a make/model specific csv which includes all relevant information about each matching vehicle listing.

Price Per Remaining Mile = Vehicle Asking Price/Expected Life of Car (in mi) – Current Mileage

Example:

I am interested in buying a Honda Civic within 500 miles of my zip code. I expect any car to last me 150,000 miles. I would fill those parameters into the variables of the CarBuyerBot and start the bot. The CarBuyerBot will fill in those details into CarGurus.com, pull back all vehicle listings matching my make/model/search radius criteria, and create a spreadsheet applying the formula for determining the price per remaining mile of the car's useful life.

Obviously, this doesn't account for upgrades between models (leather seats, 4 door vs 2 door, technology packages, etc) – but it gives another datapoint to support or refute a vehicle being a good deal at a given price-point/mileage.

Lets take the following listings as an example:

Car 1:

Car 1 Price Per Remaining Mile = $10,995/(150000-74690)

Car 1 Price Per Remaining Mile = $0.1459/mile

Car 2:

Car 2 Price Per Remaining Mile = $15,995/(150000-36603)

Car 2 Price Per Remaining Mile = $0.1410/mile

In our scenario, car 2 is cheaper per mile given an expected remaining life of the car. In this case car 1 happens to be an EX while Car 2 happens to be an SI, so that would have to be taken into consideration, but this bot can help quickly narrow the list of "good deals" and give data points for comparison in the form of a quickly sorted spreadsheet.

	A	B	C	D	E	F	G	H	I	J	K
1	Year	Model	Trim	Color	Price	Mileage	PricePerMile(Rem	CarGurus/	City	State	URL
2	2011	Sienna	XLE 8-Pass	UNKNOW	9488	151815	-5.227548209	GOOD_PR	Concord	NC	https://www.cargurus.com/Cars/inve
3	2012	Sienna	XLE 8-Pass	UNKNOW	11950	120833	0.409709603	GOOD_PR	Advance	NC	https://www.cargurus.com/Cars/inve
4	2010	Sienna	XLE	UNKNOW	7517	155533	-1.358575818	GOOD_PR	Rock Hill	SC	https://www.cargurus.com/Cars/inve
5	2013	Sienna	XLE 7-Pass	BLACK	13950	94748	0.252479548	GOOD_PR	Monroe	NC	https://www.cargurus.com/Cars/inve
6	2009	Sienna	LE	SILVER	3395	213000	-0.053888889	GOOD_PR	Spartanbu	SC	https://www.cargurus.com/Cars/inve
7	2014	Sienna	LE 8-Passe	SILVER	11300	120000	0.376666667	GOOD_PR	Fort Mill	SC	https://www.cargurus.com/Cars/inve
8	2012	Sienna	7-Passeng	BLACK	9499	124114	0.366955111	GOOD_PR	Charlotte	NC	https://www.cargurus.com/Cars/inve
9	2007	Sienna	LE	UNKNOW	5990	152900	-2.065517241	GOOD_PR	Burlingtor	NC	https://www.cargurus.com/Cars/inve
10	2015	Sienna	XLE 8-Pass	SILVER	18875	72667	0.244074328	GOOD_PR	Henderso	NC	https://www.cargurus.com/Cars/inve
11	2012	Sienna	LE 8-Passe	RED	10499	105241	0.23456735	GOOD_PR	High Point	NC	https://www.cargurus.com/Cars/inve
12	2012	Sienna	XLE 8-Pass	WHITE	10300	128250	0.473563218	GOOD_PR	Fort Mill	SC	https://www.cargurus.com/Cars/inve
13	2011	Sienna	LE 8-Passe	BLACK	10395	97337	0.19738716	GOOD_PR	Lugoff	SC	https://www.cargurus.com/Cars/inve
14	2015	Sienna	XLE 8-Pass	GRAY	16999	88316	0.275581999	GOOD_PR	Greensbo	NC	https://www.cargurus.com/Cars/inve
15	2019	Sienna	XLE 8-Pass	BLACK	28954	29151	0.239588246	FAIR_PRIC	Greer	SC	https://www.cargurus.com/Cars/inve
16	2019	Sienna	XLE 8-Pass	BLACK	29474	25671	0.237064563	FAIR_PRIC	Greer	SC	https://www.cargurus.com/Cars/inve
17	2014	Sienna	SE 8-Passe	WHITE	15499	87711	0.24882403	FAIR_PRIC	Charlotte	NC	https://www.cargurus.com/Cars/inve
18	2016	Sienna	Limited Pr	WHITE	25972	61587	0.293757705	FAIR_PRIC	Charlotte	NC	https://www.cargurus.com/Cars/inve
19	2005	Sienna	XLE	GRAY	5285	168189	-0.290560229	FAIR_PRIC	Hickory	NC	https://www.cargurus.com/Cars/inve
20	2020	Sienna	XLE 8-Pass	GRAY	34750	4668	0.239107698	FAIR_PRIC	Greer	SC	https://www.cargurus.com/Cars/inve
21	2017	Sienna	XLE 8-Pass	BLACK	23995	46608	0.232077917	FAIR_PRIC	Charlotte	NC	https://www.cargurus.com/Cars/inve
22	2006	Sienna	XLE	WHITE	4000	180000	-0.133333333	FAIR_PRIC	Hickory	NC	https://www.cargurus.com/Cars/inve
23	2009	Sienna	XLE Limite	BLUE	7963	159075	-0.877465565	FAIR_PRIC	Aberdeen	NC	https://www.cargurus.com/Cars/inve
24	2010	Sienna	XLE	BLUE	6800	186207	-0.187808987	FAIR_PRIC	Greensbo	NC	https://www.cargurus.com/Cars/inve
25	2019	Sienna	XLE 8-Pass	GRAY	30332	35508	0.264926807	FAIR_PRIC	Spartanbu	SC	https://www.cargurus.com/Cars/inve
26	2009	Sienna	LE	SILVER	8390	91500	0.143418803	FAIR_PRIC	Graham	NC	https://www.cargurus.com/Cars/inve
27	2011	Sienna	XLE 8-Pass	GRAY	11900	116860	0.35908268	FAIR_PRIC	Greensbo	NC	https://www.cargurus.com/Cars/inve
28	2012	Sienna	XLE 8-Pass	SILVER	13995	99248	0.27575268	FAIR_PRIC	Monroe	NC	https://www.cargurus.com/Cars/inve
29	2015	Sienna	XLE 8-Pass	RED	17488	90898	0.295895232	FAIR_PRIC	Statesville	NC	https://www.cargurus.com/Cars/inve
30	2019	Sienna	XLE 8-Pass	BLACK	30106	43109	0.281651402	FAIR_PRIC	Spartanbu	SC	https://www.cargurus.com/Cars/inve
31	2010	Sienna	XLE Limite	BROWN	9998	118725	0.319680256	FAIR_PRIC	Aberdeen	NC	https://www.cargurus.com/Cars/inve
32	2017	Sienna	SE 8-Passe	GRAY	23995	52249	0.245470635	FAIR_PRIC	Charlotte	NC	https://www.cargurus.com/Cars/inve
33	2008	Sienna	XLE	BLUE	7200	172000	-0.327272727	FAIR_PRIC	Greenville	SC	https://www.cargurus.com/Cars/inve
34	2015	Sienna	L 7-Passer	WHITE	13744	125723	0.566132553	FAIR_PRIC	Travelers	SC	https://www.cargurus.com/Cars/inve

1.2   Common Use cases

The CarBuyerBot can be used to search for any make and model combination supported by CarGurus.com – it also supports all "search within distance" criteria that CarGurus.com supports – from 10mi to Nationwide.

This is especially useful because available tools for identifying a "good deal" aren't terribly accurate. Take a look at the result below comparing 2 cars in the same geographic area of the same model year. CarGuru's analysis of the car on line 18 was that this is a "Fair Deal". Compare that to the car from line 45, which CarGuru's analysis says is a Good deal. The listing on line 45 has over twice the mileage as the car from row 18 and is only $800 less expensive – assuming the $800 difference wasn't an absolute deal breaker, it would make the most sense to buy the listing on row 18 all other things held equal.

1	Year	Model	Price	Mileage	PricePerMile	CarGurusAnalysis	City	State
16	2016	Toyota Prius	17494	29404	0.145062854	GOOD DEAL	Charlotte	NC
17	2016	Toyota Prius	19598	17601	0.148022266	FAIR DEAL	Statesville	NC
18	2016	Toyota Prius	18998	22178	0.148628562	FAIR DEAL	Gastonia	NC
33	2016	Toyota Prius	20959	20736	0.162141045	HIGH PRICE	Los Angel	CA
34	2016	Toyota Prius	19299	31723	0.163167818	HIGH PRICE	Los Angel	CA
36	2016	Toyota Prius	22300	16128	0.166577029	HIGH PRICE	Chicago	IL
40	2016	Toyota Prius	22300	18778	0.169941016	OVERPRICED	Temple Hi	MD
44	2016	Toyota Prius	22259	22208	0.174181482	FAIR DEAL	Stafford	TX
45	2016	Toyota Prius	18188	46571	0.1758501	GOOD DEAL	Tarboro	NC
47	2016	Toyota Prius	21000	31710	0.1775298	HIGH PRICE	Saint Loui	MO

2.   Requirements & Prerequisites

2.1   System Requirements

Windows 64-bit and 32-bit versions are supported. No specific hardware requirements outside of those requirements needed for the installation of the A2019 Bot Agent

2.2   Prerequisites

Requires Automation Anywhere A2019 Bot Agent, Google Chrome, and the installation of the Automation Anywhere Google Chrome plugin.

2.3   Security Measures

No specific Security Measures required as this bot utilizes a publicly available website and writes to a locally hosted csv.

2.4   Disclaimers

Any decision on buying a car should be taken seriously based on many factors…vehicle history report, budget, reputation of seller, model reliability, etc – this bot is designed to give car buyers another interesting data point to consider with evaluating vehicle listings.

3.   Getting Started

3.1   Skill Matrix

There is truly only a single bot file which is used for the processing. Fill in the required parameters on lines 3-7 of the bot and let it run. The bot will produce a .csv file which will automatically be saved to the C:\temp directory of your local machine – named after the make, model, and date that you executed the bot run.

Note that the bot uses the standard Bot Store template which is located on the Automation Anywhere GitHub page.

3.2   Installation Hierarchy

In Automation Anywhere Enterprise, the bot installs to the Bot Store parent directory into a subfolder named CarBuyerBot-Automation Anywhere. When installed in community edition, the bot installs into the Bots directory, creating a subfolder named CarBuyerBot-AutomationAnywhere with the CarBuyerBot in said folder.

3.3   Quick Start

The setup for the CarBuyerBot is very straightforward as there are only a few criteria which need to be set to enable the search to take place. Fill in the required parameters on lines 3-7 of the bot and verify that the account being used to execute the bot has permissions to write to the C:\temp directory of your local machine.

3.3.1   Setup

No external application setup required. All configurations handled through setting variables directly in the bot setup.

3.3.2   Configuration

Thie following section is a breakdown of the different variables required to be set on lines 3-7 of the bot:

Make/**Model** Can be any make/model supported by CarGurus.com. Attempt to use the site manually once to make note of how the make/model are displayed in their dropdowns.The values in Input.csv must match the CarGuru.com dropdown values exactly.

Zip Search Should be the zip code to search for. If youre searching nationwide this doesn't matter as much, but a zip code is still required.

Search Radius supports all search criteria supported by CarGurus.com. This includes the values: 10 mi, 25 mi, 50 mi, 75 mi, 100 mi, 150 mi, 200 mi, 500 mi, or Nationwide. Please make sure that the search radius value is formatted exactly as above. There should be a space between the number and the mi.

Example:

2 ▾ ☐ **Step** "Setup Values"

3   💬 **String: Assign** "Toyota" to **$sMake$**

4   💬 **String: Assign** "Sienna" to **$sModel$**

5   💬 **String: Assign** "28031" to **$sZip$**

6   💬 **Comment** "10 mi, 25 mi, 50 mi, 75 mi, 100 mi, 150 mi, 200 mi, 500 mi, or Nationwide"

7   💬 **String: Assign** "50 mi" to **$sSearchRadius$**

4.   Reports

The output created by this bot is in the c:\temp directory of your local machine, named after the make_model_zip_date.

Example:

Toyota_Sienna_28031_2020-07-16.csv

The contents of the csv include the year, model, Trim, Color, price, mileage, calculated price per mile, CarGurus.com deal analysis, city, state, and URL. These fields should allow any user to make informed decisions on comparing, sorting, and filtering on different vehicle listings.

5.   Logs

On error the bot will log to the C:\ProgramData\AutomationAnywhere\Bots\Logs\CarBuyerBot-Automation Anywhere directory. Here you can find logging for errors as well as Snapshots of the screen when the bot encountered an issue.

6.   Troubleshooting & Support

6.1   Support

Should you run into any issues with you bot executing double check the following:

1. Make sure that the values match possible options in the CarGurus.com drop downs for make/model.

    a. Additionally, make sure that each of the fields are not prefixed with spaces.

2. Should the bot not run correctly, make sure to check the error folder, logs and screenshots subfolders to see where the bot may have had an issue.

3. If the bot is run too many times back to back – CarGurus.com seems to send bad data back to the calling REST call…wait a couple hours and try running it again, or hop on to a VPN so your traffic is coming from a different IP.

6.2   FAQs

Appendix A: Record of Changes

No.	Version Number	Date of Change	Author	Notes
01	1.0	07/16/2020	Micah Smith	Initial release of the CarBuyerBot. Currently only supports CarGurus.com

Appendix B: Acronyms

No.	Acronym	Description

Appendix C: References

No.	Topic	Reference Link