

BRUNO SENNA'S NEWS



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Executive Summary

Senna's News is a spreadsheet collector of web news about a prominent Brazilian race driver, Bruno Senna, acting for him as a market agent.

Bruno Senna is nephew of a race driver legend, Ayrton Senna, considered by the specialized press as the best Formula 1 race driver of all times. When Bruno was 9 years old, Ayrton said in an interview: "if you think I am fast, wait to see my nephew" (talking about Bruno, 9 years old in that time, when they race together with karts). After Ayrton's death in a race accident in 1994, Brazil had lost one of its top tree sport idols in the history. However, this year, the Senna name is back to Formula 1 and Ayrton's nephew will compete in the main world category of the auto sport. Bruno will use a medium power car in a team, Williams F1, that had several championships in the past, but now, has a medium performance car, financial power and has struggling to reach the times of glory again. Bruno's team companion, occupying the other Williams car is the race driver from Venezuela, Pastor Maldonado. Each team has a chief operational engineering, and their opinions published in the press act like a thermometer of the driver's image in the sponsorship market.

To race in Formula 1, as a beginner, you need to have a good resume and take many sponsors for your team. So, to acquire sponsors, the driver's image is very important, and media vehicles should be monitored all the time. The specialized press is working every day, bringing to their websites. The driver's companion news are also important to be analyzed, because the relationship and performance (one against other with the same car, same conditions) affects the race driver image too.

So, the spreadsheet will collect info from the main sports websites, searching for Senna's, companion's, chief's and team's news and join all info (website name, news) in a user form. The query will provide also quick links to open personal websites like Twitter and Facebook and the websites where the news are more detailed. In addition, we will access the Championship ranking of the 8th best drivers and the Calendar of the races (date and country) of the current year. Finally, the system has a log system using text files to inform the user minor details about his/her actions in the system, helping the user to have a historic data and identify possible issues, showing until where the system was working correctly. It will monitor companion news and his last tweets as well as Senna's last tweets too. The spreadsheet will also record log entries in a text file.

Functionalities Description

The solution was made thinking of a way to bring together the major news websites that are relevant to the career of a racing driver.

In the beginning, the user opens the worksheet "Main" where he/her can change the team, the companion or the name of the chief engineer (**Figure 1**). This option is important because it is possible that the companion or the chief engineer be replaced during the season, or even more rare, but possible, that the pilot sign contract to another team during the season (in this case, the driver can't compete for more than one team at the same season. However, it is desirable to search news about the new team, possible new companion and chief engineer).

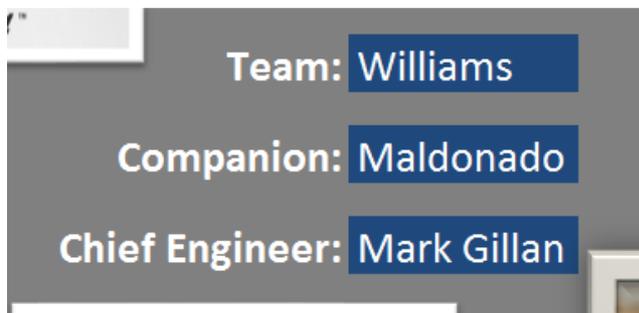


Figure 1 – worksheet options

After determine the search items, the user clicks on the search button (**Figure 2**) to get in the main form and do the complete task there. Excel now will be used only to help downloading info in temporary worksheets and helping to filter all info



Figure 2 – Worksheet button

The first information available is the driver's ranking of Formula 1 with the first 8 top drivers who most scored points in the current season, position and number of points scored (**Figure 3**). Not only the ranking, but also the calendar is available with the races of the year.

This last info has the round number, date and country where the races will take place (Figure 4). All these information were extracted from the autosport.com website.



| Pos | Driver | Pts |
|-----|------------------|-----|
| 1 | Fernando Alonso | 35 |
| 2 | Lewis Hamilton | 30 |
| 3 | Jenson Button | 25 |
| 4 | Mark Webber | 24 |
| 5 | Sergio Pérez | 22 |
| 6 | Sebastian Vettel | 18 |
| 7 | Kimi Räikkönen | 16 |
| 8 | Bruno Senna | 8 |

Figure 3 – Ranking



| Rnd | Date | Race |
|-----|------------|---------------|
| 1 | 3/18/2012 | Australia |
| 2 | 3/25/2012 | Malaysia |
| 3 | 4/15/2012 | China |
| 4 | 4/22/2012 | Bahrain |
| 5 | 5/13/2012 | Spain |
| 6 | 5/27/2012 | Monaco |
| 7 | 6/10/2012 | Canada |
| 8 | 6/24/2012 | Europe |
| 9 | 7/8/2012 | Great Britain |
| 10 | 7/22/2012 | Germany |
| 11 | 7/29/2012 | Hungary |
| 12 | 9/2/2012 | Belgium |
| 13 | 9/9/2012 | Italy |
| 14 | 9/23/2012 | Singapore |
| 15 | 10/7/2012 | Japan |
| 16 | 10/14/2012 | Korea |
| 17 | 10/28/2012 | India |

Figure 4 – Formula 1 Calendar

After that, the user should use the bar containing four checkboxes to define the criteria used for searching. Remember, the user can choose to search news about the driver Bruno Senna, his companion, his chief engineer and/or his team. These options are shown in Figure 5. After defining the criteria, the user should press the button Check News! (Figure 6).



Figure 5 – Formula 1 Calendar



Figure 6 – Botao Check News!

Immediately a message box (Figure 7) appears informing the user the following message: "Please wait a minute. Application will download relevant news from 5 websites. The window will be hided and showed again when the search is done. ". This message appears to alert the User that the search will last for many seconds (almost a minute) and the window will be hidden because instabilities of excel. Those instabilities could force the user need to click again on the worksheet to the return of the window, after the end of the search, which is not a desired procedure.

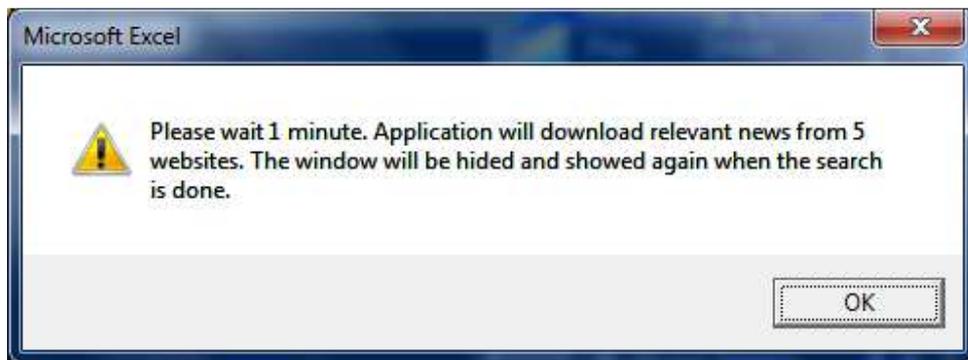


Figure 7 – Message Box

Now the system will access the following websites to download all info in a temporary excel worksheet to filter the relevant info according to the chosen criteria and insert in the list box News. The searched websites are: www.autosport.com, www.gpupdate.net, www.onestopstrategy.com, www.corridadeformula1.com and www.estadao.com.br. The last two are websites from Brazil, as Bruno Senna is a Brazilian driver and depends on a good image in Brazil to attract sponsors. Those websites are also available in a bar bellow the tree list boxes of the window. Below this bar, we have another one where the user can access personal websites, such as www.facebook.com, www.twitter.com and Bruno Senna's official site, www.brunosenna.com.br/en (Figure 8). The purpose of those links is to allow the user to check the complete news searched before or even access a personal site. For example, a tweet can be appropriate according to some rumor or news in some website.



Figure 8 – Web links

All searched news have the source of the search. The final window is the following (Figure 9):

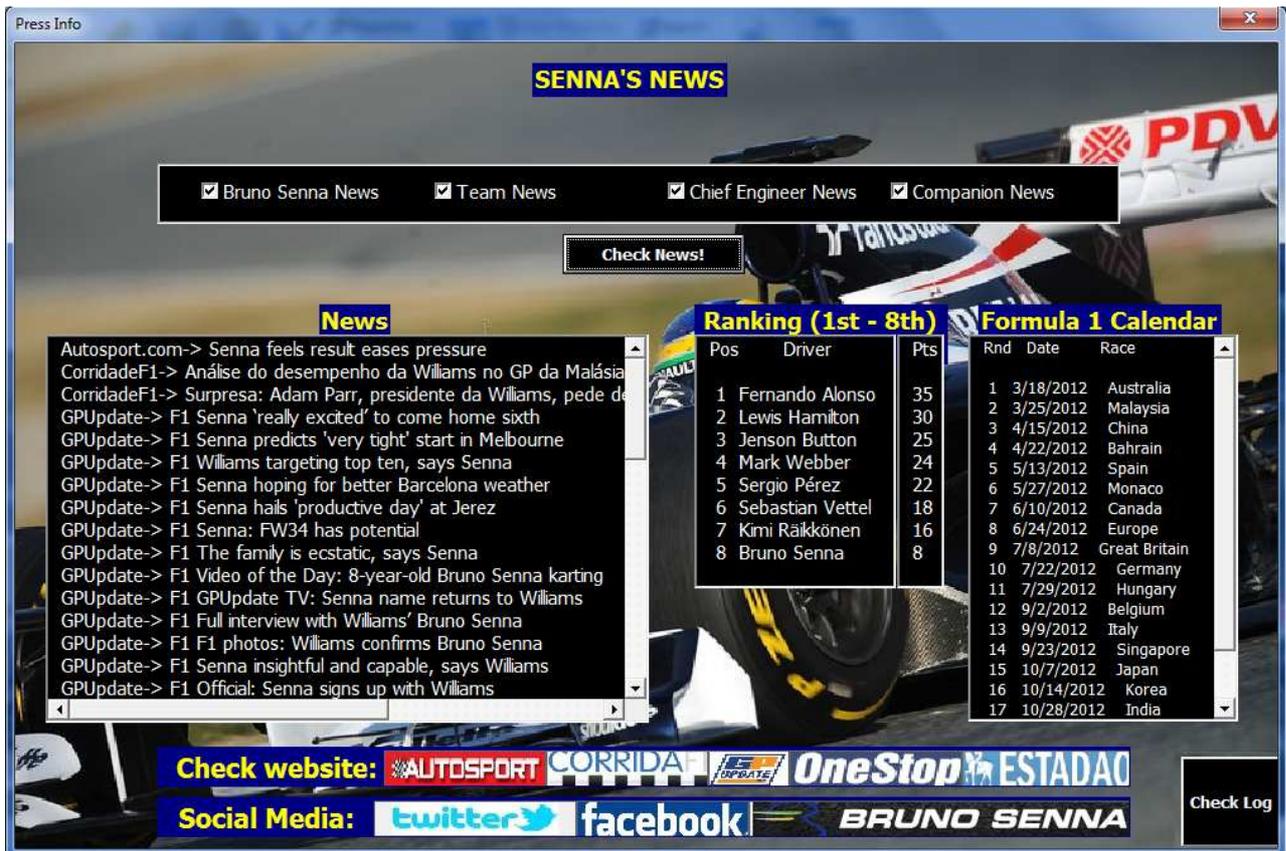


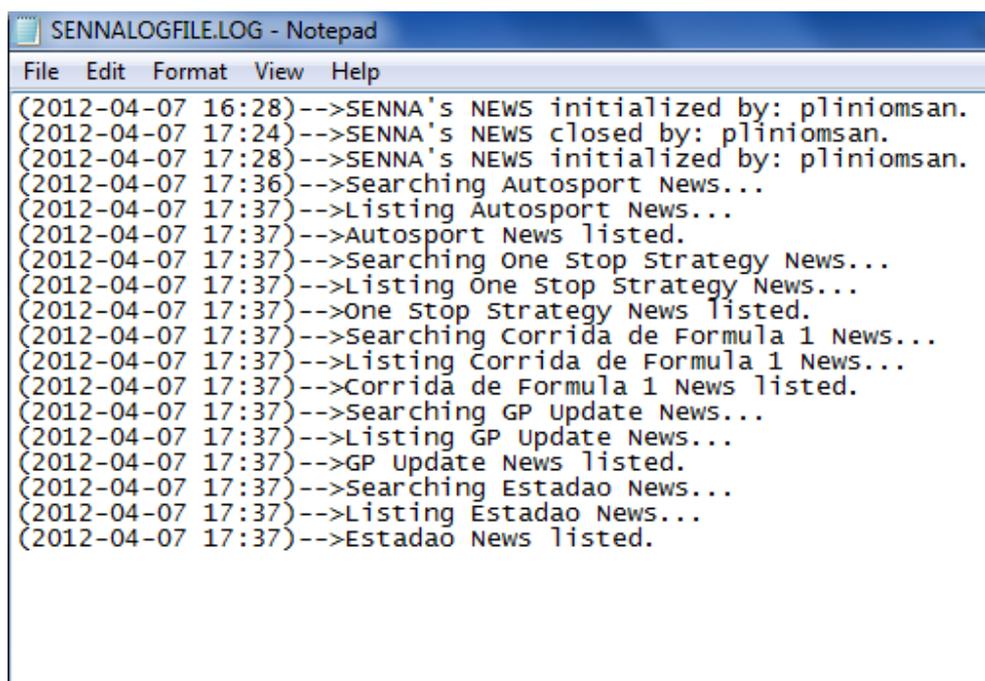
Figure 9 – Main window

Note that at the bottom, on the right, we have a button called Check Log. This button will open a log file that is written in all moments of the systems' actions. The log file is called SENNALOGFILE.log and it is written at the same directory where the excel file is, therefore, the user must be allowed to write in the directory where the file is, otherwise it will generate a running error.

The system has a mechanism of error handling, in fact, it is an error advisor. If some error happens during the execution of the system, a message box will warn the user with the

following message: "Error number 33. Check log file for more details". The number 33 is the error number that generated the warning.

An example of a written log file is in **Figure 10**. With this file, the user can have historic data and can find the last part where the system worked correctly, increasing the changes to find the point of execution on the code where the some issue can happen.



```
SENNALOGFILE.LOG - Notepad
File Edit Format View Help
(2012-04-07 16:28)-->SENNA's NEWS initialized by: pliniomsan.
(2012-04-07 17:24)-->SENNA's NEWS closed by: pliniomsan.
(2012-04-07 17:28)-->SENNA's NEWS initialized by: pliniomsan.
(2012-04-07 17:36)-->Searching Autosport News...
(2012-04-07 17:37)-->Listing Autosport News...
(2012-04-07 17:37)-->Autosport News listed.
(2012-04-07 17:37)-->Searching One Stop Strategy News...
(2012-04-07 17:37)-->Listing One Stop Strategy News...
(2012-04-07 17:37)-->One Stop Strategy News listed.
(2012-04-07 17:37)-->Searching Corrida de Formula 1 News...
(2012-04-07 17:37)-->Listing Corrida de Formula 1 News...
(2012-04-07 17:37)-->Corrida de Formula 1 News listed.
(2012-04-07 17:37)-->Searching GP Update News...
(2012-04-07 17:37)-->Listing GP Update News...
(2012-04-07 17:37)-->GP Update News listed.
(2012-04-07 17:37)-->Searching Estadao News...
(2012-04-07 17:37)-->Listing Estadao News...
(2012-04-07 17:37)-->Estadao News listed.
```

Figure 10 – Log file

VBA Concepts

The following VB concepts were used into this deliverable:

Web Query – Web queries were largely used in the work. I started searching websites to fill two list boxes as soon as the user form opens, and later we perform the whole search in several websites, bringing the info of each one to excel sheets in a different manner. In a normal functioning cycle we use web queries at least 6 times.

Recording a Macro – I used one button in the Main worksheet and other two in the user form. Each one of those buttons call macros to perform their jobs. Besides, I used macros to simulate the creations of web queries to find out the correct code used to take the desired tables from sports websites.

String manipulation – This concept was also very used. I had to perform string manipulations to filter my searches, find the right addresses in the websites, to build the log file and other minor tasks. The operations used were mainly the search of substrings into other strings and the concatenation of pieces of strings.

Row/Column manipulation – I used 3 cells in the Main worksheet to be keys of criteria for my web research, and have to manipulate several cells for some web searches (in the temporary worksheets), as other researches were done only using Hyperlinks.

Working with Ranges – I used ranges only to refer to single cells for the jobs there I mentioned in the last item.

Objects – I used a lot of objects (of course) with diversified purposes. Hyperlink, Querytables, Debug and Strings were some of these objects. Not considering Workbook objects, Hyperlinks and Querytables were my most valuable learned objects.

Functions / Sub procedures – I didn't feel the need to use Functions, so I just used Sub procedures. Sometimes I had to use parameters, always by reference, when I tried to modularize the code and avoid global variables. I used initialize, terminate and a lot of click events to perform controls functionalities.

Control Logic / Loops – Another concept that I had to use a lot. As I mentioned, for each website I need to build a different logic to search and filter the found tables. Actually, I confess I could have a better performance with loops but the logic of code was becoming so complex that I just decided to duplicate some lines to save time, but I recognize the ideal behavior would be to think more about a better way to make the code shorter. However I'm happy with the

modularization performed, as I could use some procedures several times, avoid code duplication.

Arrays – I looked for an opportunity to use arrays but I couldn't find objects similar enough to build a collection. However I used some collections (for example, the collection of Hyperlinks) that were built by the system, so I considered have used arrays, if we see collections as an array of objects.

Error Handling – I did a simple mechanism to track errors in the code. A message box will provide an error message and the detailed description can be found in the file SENNALOGFILE.log. The error tracking begins when the user press the search button, due the high probability to have issues in the websites and filtering gathered info.

Working with Files / Folders – A manipulation of text file was inserted in the system, to track the system operation. I create a text file, open it (if it already exists) and write log entries into it. The purpose is to help the VBA programmer to track a possible issue as well as have an historic of the user's actions.

Forms / Controls – The usage of forms and controls were very important in this project. I used one form, buttons, labels, list boxes, check boxes, frames and image controls. I confess I spent a lot of time putting controls in the right positions and colors. However I'm a little disappointed with the lack of resources and controls. I'll mention that in the "Difficulties Encountered" section.

Controlling Internet Explorer from Excel – I just added open browser commands, inserting the websites addresses in the browsers to have a quick access to key websites. For example, if the user sees some interesting info from Autosport website, he/she can open directly the page where the news is for more details. The ideal situation is to have a link in the item of the list box, but as I couldn't do it (and don't know if this is possible).

Difficulties Encountered

I'm glad to have this section within this deliverable because I had some thoughts about how I could improve this project, or how could I improve it in the future. The challenges were:

- More clear code. I confess that I could have done a better job to improve the code and reduce some duplication issues. I tried to think about better ways to write the code, but the logic was so complex that I couldn't spend more time to think about this. For example, I should check the check boxes and do a different search according to each option. The search is different for each.
- Links for more detailed news. As I mentioned before, I would like to put a link for each news / item in the list boxes, as well as a different list box to download the entire text. However I didn't find an easy way to download the entire text and develop a common rule for all news.
- Day / Time. Another difficulty was to download the correct day and time which news were published in the website. One more time, the logic to access that would be different for each one, so it would take a long time to develop a method for identifying each day and time of each list box entry.
- Complete ranking. I should have done a better job searching a more adequate table to have a complete driver's ranking. The table that I'm using only has the top eight best positioned drivers of the current season.
- Detailed log file. The log file could have more details about the system's flow. I could have, for example, to expose the filtering logic procedure more accurately, with more entries.
- Social websites log in. I assume the user is already logged in his/her personal facebook or tweeter account, but a better approach would be to use the "agent" library, provided by Dr. Allen, to log in into those websites automatically.

Assistance

Google.com was my exclusive source of assistance, as I totally did the project by myself.