COGNITIVE ANALYZER DOCUMENTATION

Getting started and using the tool

OVERVIEW

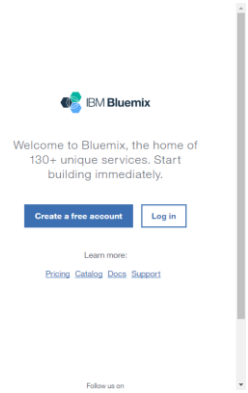
To use Cognitive Analyzer, you will need to have an active account with IBM Bluemix. Bluemix is a hosted platform which enables you to access hundreds of web services via its APIs as well as building entire environments with pre-installed libraries and tools. We are going to use a very powerful service – Watson Natural Language Understanding. With it you can understand the written language, extract meaning and keywords, assess sentiment, parse phrases into grammatical components and more. First, we will show you how to set up an account with Bluemix and then get you on your way to use the Cognitive Analyzer.

1. SETTING UP A BLUEMIX ACCOUNT

> *If you already have a bluemix account, make sure you have provisioned Watson Natural Language Understanding and know your credentials (API URL, Username and Password). The following instruction will guide you step by step*

You can set up a free account with IBM Bluemix. This gives you several thousand free API calls to Watson Natural Language Understanding which is more than enough for most starter projects. You may want to pay for a subscription or add a payment method so that you can do this analysis on a recurring basis.

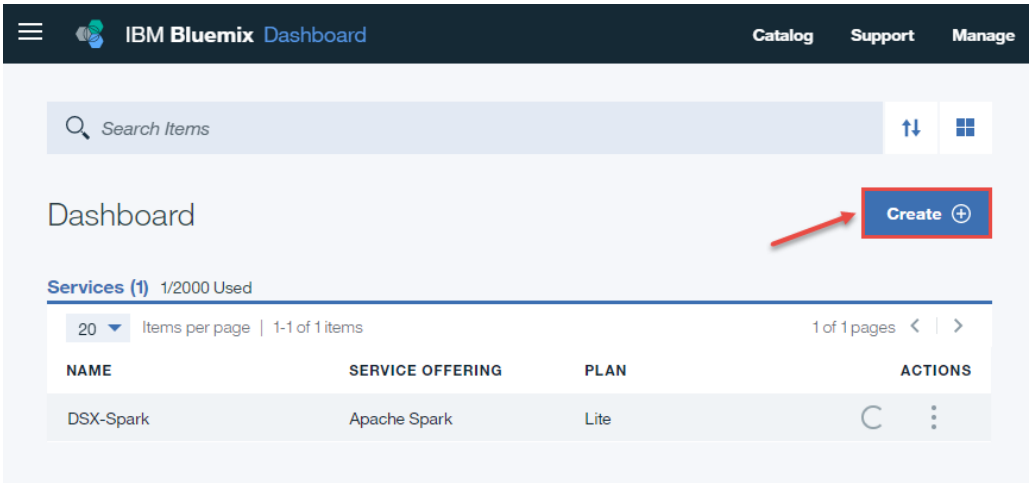
Start by going to https://console.bluemix.net and set up an account



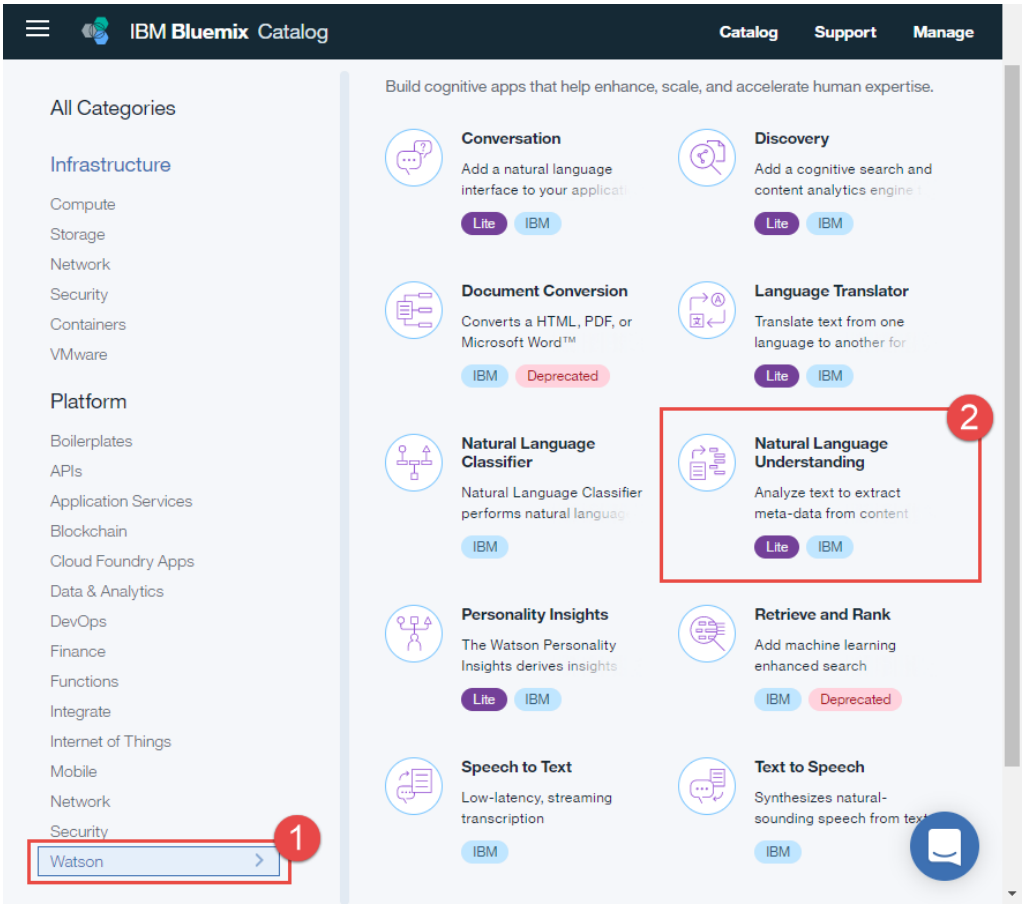
2. PROVISION THE WATSON SERVICES

You will be adding the service "Natural Language Understanding" to your account. To do this, click on the Catalogue button in the main dashboard:

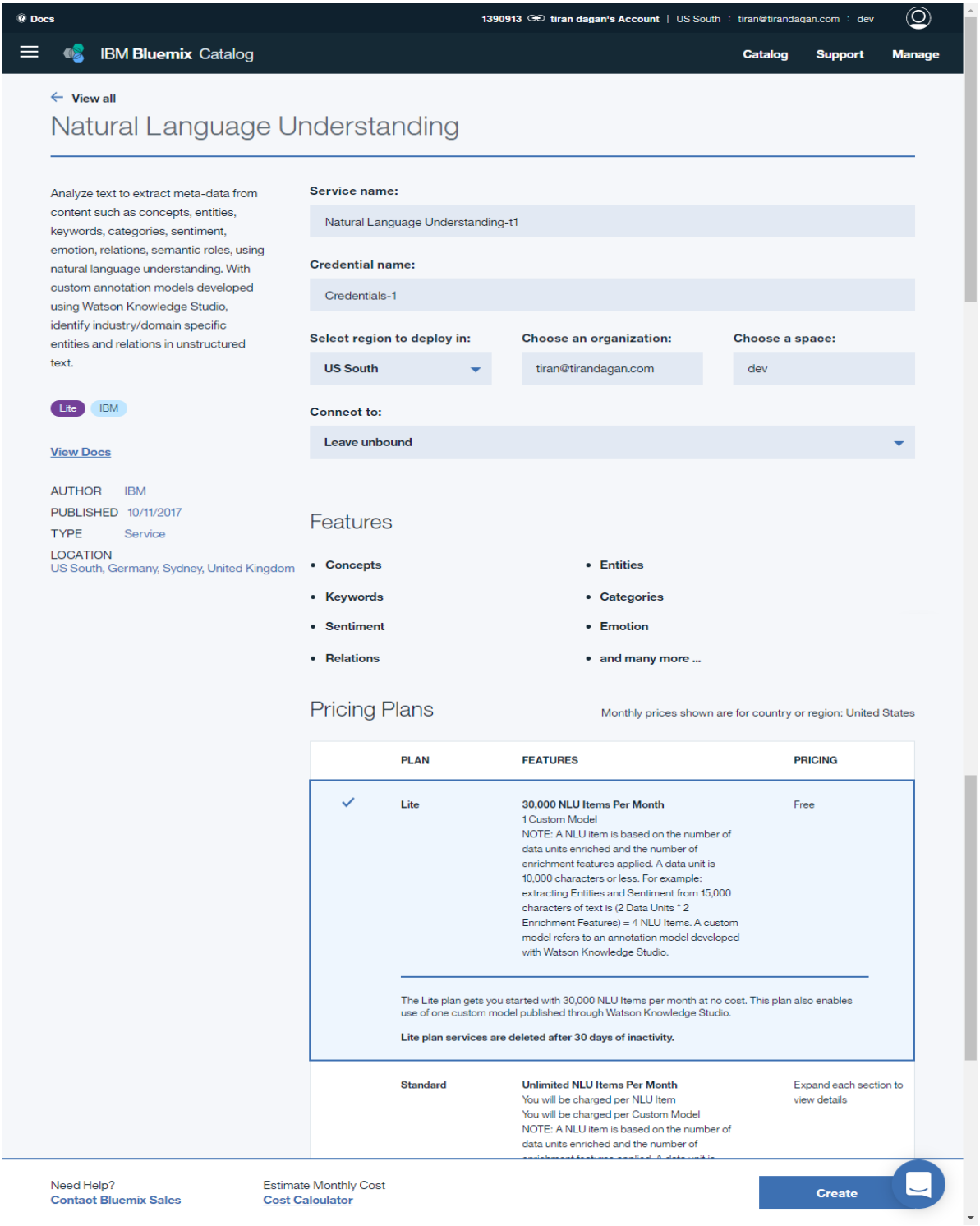
Or if you already have an account with Watson, just click the Create button to add the service



Find the Watson Natural Language Understanding service in the catalogue and select the lite version:

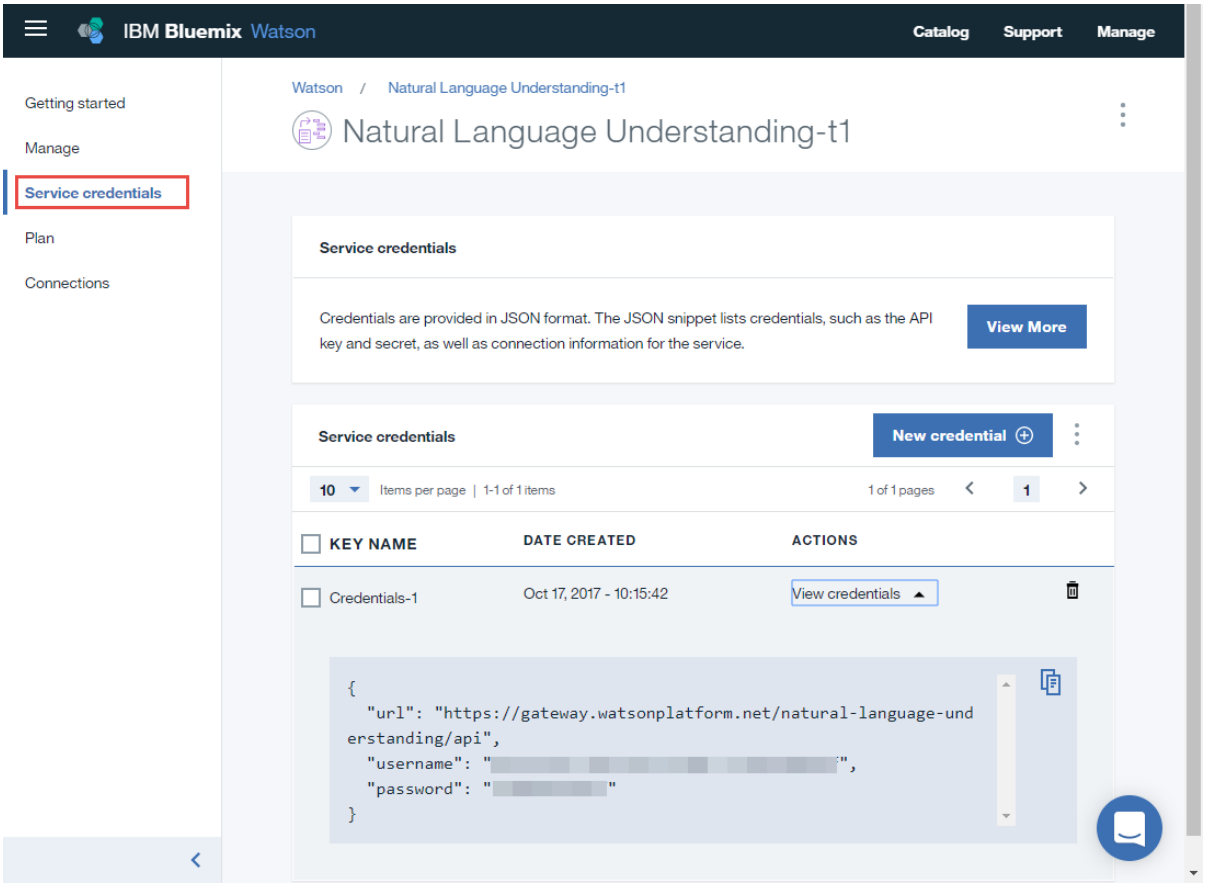


At the time of this writing, the Lite version will allow you to call Watson API up to 30,000 times per month at no cost. So if you are scraping Glassdoor and sending 3 fields (pros, cons and Advice to Management) as this spreadsheet does - you can analyze 10,000 employee feedbacks a month for free. Below is a screenshot that will resemble what you see. Leave all values as they are and click on the Create button at the bottom of the screen.



3. SERVICE CREDENTIALS

You will need to make a record of your service credentials. Click on Service credentials link on the left and click on "View credentials" under the key name as per the screenshot below. You can always return to this view by clicking on the service from your main dashboard page.

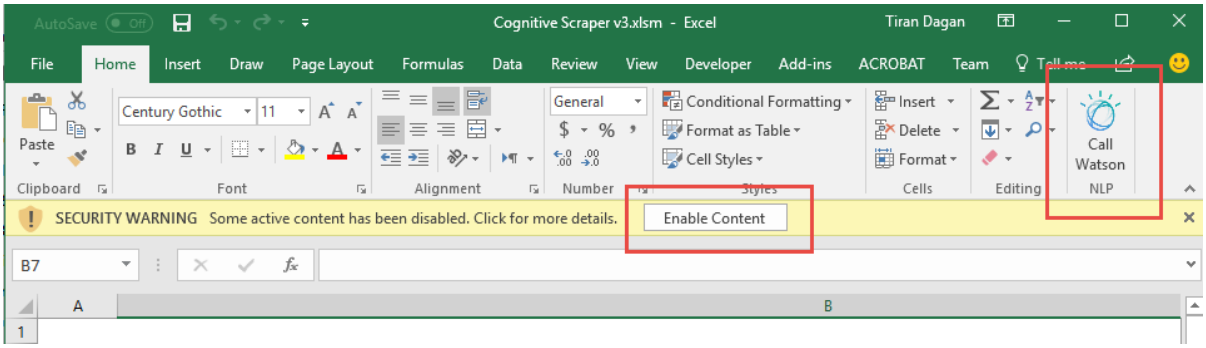


You are now ready to try the tool which will analyze hundreds or thousands of employee feedback statements for you automatically!

USING COGNITIVE ANALYZER

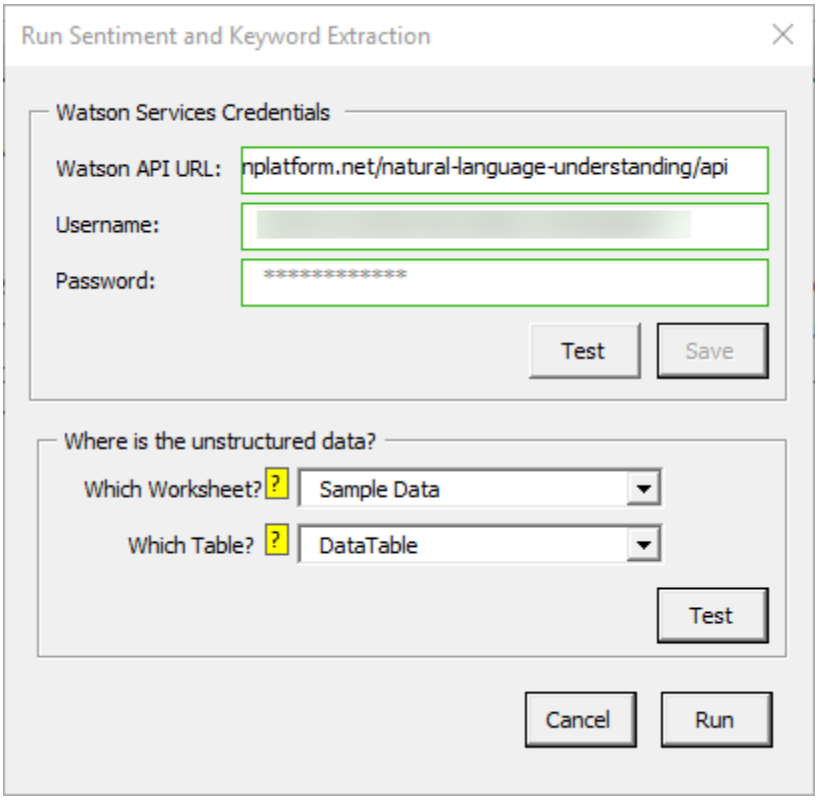
4. DID YOU ENABLE MACROS?

When you opened this spreadsheet you may have been warned about the macros built in to the workbook. If you did not enable them then do so now or close and re-open the workbook.



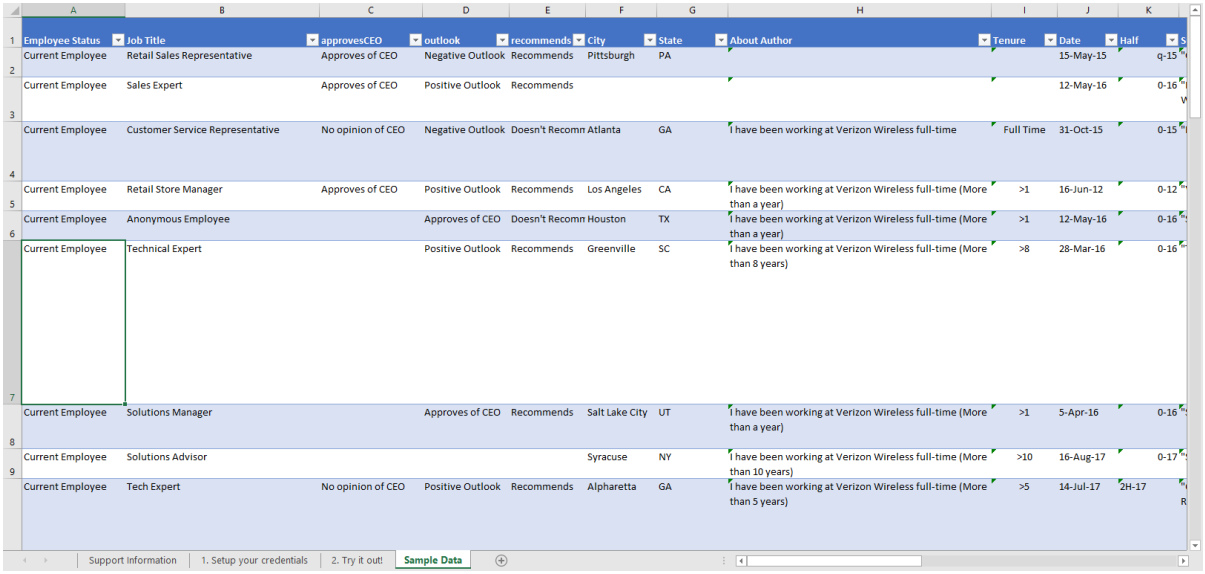
5. SET UP WATSON SERVICE CREDENTIALS

Click on the "Call Watson" button and a dialog box will open up. This is where you enter the credentials from BlueMix (Step 3) so that the tool knows how to use your account to access Watson API. No need to include a trailing "/" at the end of the WatsonAPI URL. Enter your Username and Password, and confirm the URL is correct. Do not include quotes. Hit the Test button to make sure it is working. If the 3 fields at the top are correct the test will pass and you can hit Save to store your credentials. They are saved along with this spreadsheet so you will not need to enter them again unless they change



6. GET READY TO PROCESS THE WORKSHEET DATA

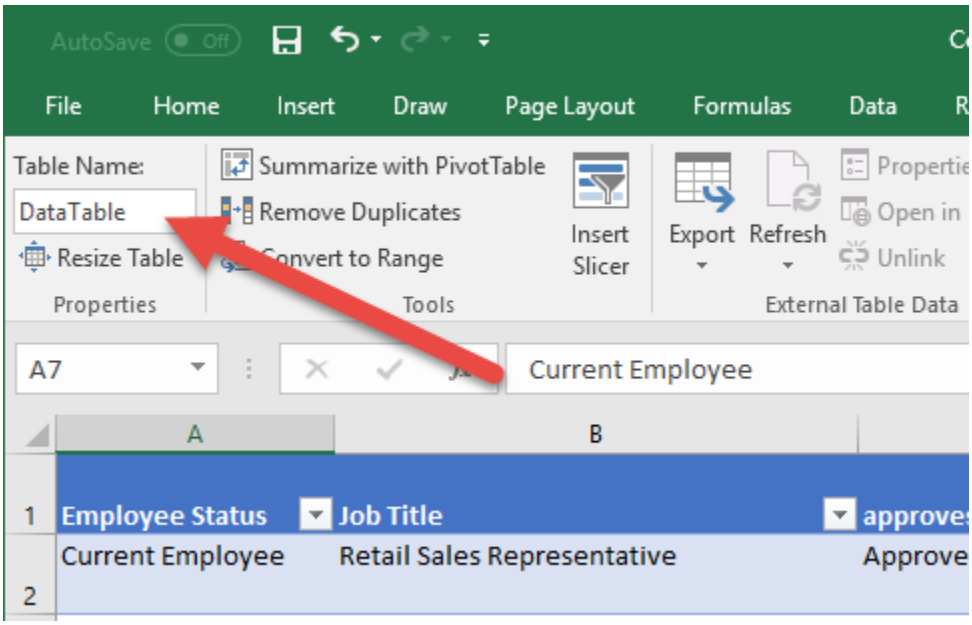
I have created a tab (worksheet) named "Sample Data" which contains 50 Glassdoor reviews for Verizon Wireless. Feel free to use this data before merging with your own data set.



Employee Status	Job Title	approvesCEO	outlook	recommends	City	State	About Author	Tenure	Date	Half
Current Employee	Retail Sales Representative	Approves of CEO	Negative Outlook	Recommends	Pittsburgh	PA			15-May-15	q-15
Current Employee	Sales Expert	Approves of CEO	Positive Outlook	Recommends					12-May-16	0-16
Current Employee	Customer Service Representative	No opinion of CEO	Negative Outlook	Doesn't Recomm	Atlanta	GA	I have been working at Verizon Wireless full-time	Full Time	31-Oct-15	0-15
Current Employee	Retail Store Manager	Approves of CEO	Positive Outlook	Recommends	Los Angeles	CA	I have been working at Verizon Wireless full-time (More than a year)	>1	16-Jun-12	0-12
Current Employee	Anonymous Employee		Approves of CEO	Doesn't Recomm	Houston	TX	I have been working at Verizon Wireless full-time (More than a year)	>1	12-May-16	0-16
Current Employee	Technical Expert		Positive Outlook	Recommends	Greenville	SC	I have been working at Verizon Wireless full-time (More than 8 years)	>8	28-Mar-16	0-16
Current Employee	Solutions Manager		Approves of CEO	Recommends	Salt Lake City	UT	I have been working at Verizon Wireless full-time (More than a year)	>1	5-Apr-16	0-16
Current Employee	Solutions Advisor				Syracuse	NY	I have been working at Verizon Wireless full-time (More than 10 years)	>10	16-Aug-17	0-17
Current Employee	Tech Expert	No opinion of CEO	Positive Outlook	Recommends	Alpharetta	GA	I have been working at Verizon Wireless full-time (More than 5 years)	>5	14-Jul-17	2H-17

Support Information | 1. Setup your credentials | 2. Try it out! | Sample Data

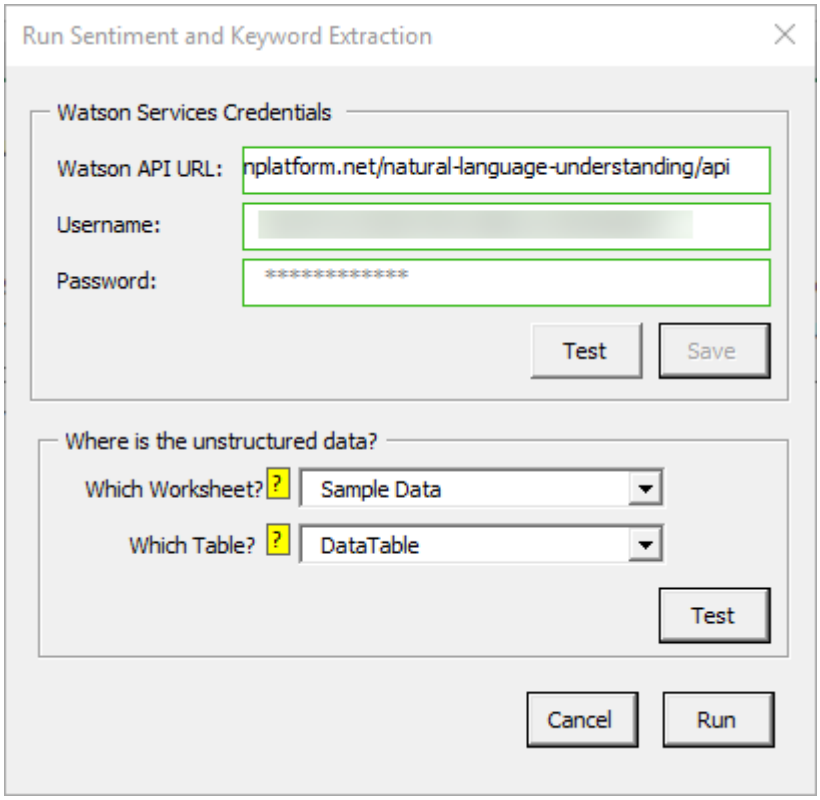
This data is organized in an Excel Table (known also as a list object). You can set the name of a table by clicking anywhere within the table and then activating the "Design" ribbon. Here is where you set the table name:



Excel allows you to have more than one table per spreadsheet so in the NLP dialog you can choose the worksheet and the table name for use by the Watson services. Once you understand how the table works you will be able to create your own worksheets, create your own tables and run the code against your own text. As long as you do this within the same workbook file you are good to go. There are some caveats which will require you to

understand VBA programming, such as the fact that the 3 Glassdoor text elements are hard coded. That means that you will be sending 3 columns whose name is Pros, Cons and Advice for analysis by Watson unless you alter the code.

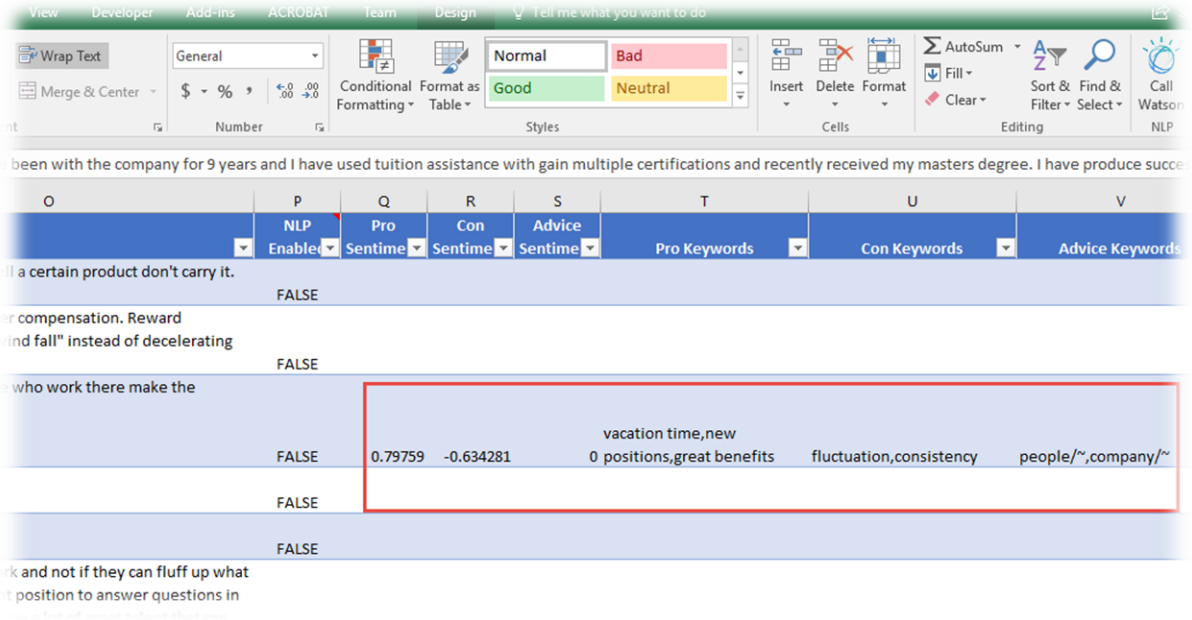
To try the provided sample data, make sure the "Sample Data" worksheet is selected and "DataTable" is the active table. The "Test" button near these two fields confirms all the fields needed to analyze and store the results exist in the table. You will be told if a field is missing and will have to try again once you added the field to the table. This app is hard wired to analyze 3 fields: Pros, Cons, Advice. These fields map to Glassdoor's free form text which users can enter to describe the pros and cons of working for the company and the advice to management.



Each row in the table has a field called "NLP Enabled" This is a flag you can set to true or false. I have set them all to False so you will need to set one or more of them to True in order to see any results! When you hit the "Run" button - any row with TRUE in the "NLP Enabled" field will be pushed to Watson. It will retrieve the sentiment score for each of the 3 review fields (I mentioned in the prior paragraph). It will also retrieve relevant keywords identified in the text for those review fields.

7. REVIEW THE RESULTS

After hitting the Run button, the results are posted into the 6 columns on the right, named "Pro Sentiment", "Con Sentiment", "Advice Sentiment", and 3 keyword columns. The sentiment score is a positive score for positive sentiment and <0 for negative sentiment. Note that the "NLP Enabled" field in that row is automatically reset to "FALSE" to prevent you from repeating the call to Watson multiple times. Here is a screenshot of the table with one record analyzed:



8. WHAT NEXT?

This is the extent that I can help you. If you want to customize the program and make it your own - you will need to know VBA programming. At the very least you can scrape your own data into a new spreadsheet and then copy/paste the correct info in the right right columns in this spreadsheet. Feel free to create a new tab and place your table there. As long as you have 3 input columns (Pros, Cons and Advice), a "NLP Enabled" field and the 6 output columns (Pro/Con/Advice Sentiment and Pro/Con/Advice Keywords) the program will work