AlchemyAPI in Node-RED

Hands-On Lab

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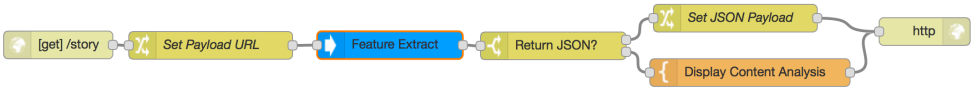
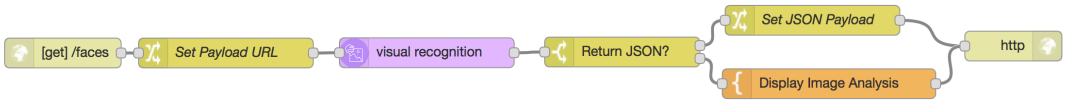
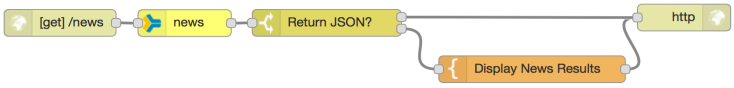


Extract keywords, entities, concepts, sentiment and more from a news article
(see *Analyze a News Article in Node-RED*)



Extract gender, name, categories, and age-range of faces in an image
(see *Analyzing Faces in an Image*)



Search for news articles
(see *Search for News with AlchemyData News*)

A digital copy of this lab and code snippets can be found at:
`http://ibm.biz/node-red-alchemyapi`

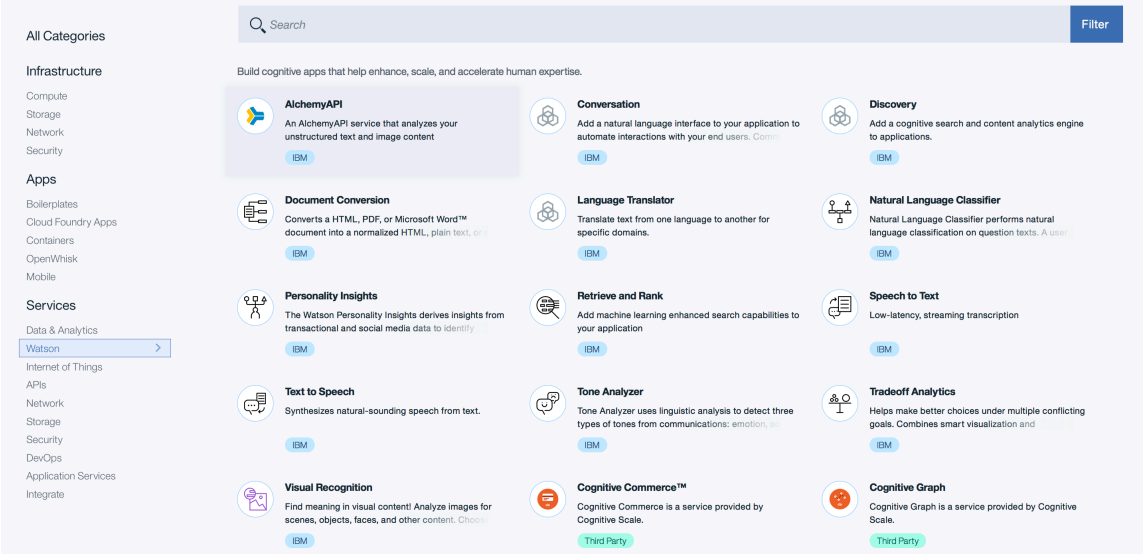
Add Alchemy API Service in IBM Bluemix

The AlchemyAPI (alchemy.ai) offers two services: Language and Data news. In this tutorial, we'll use the Language API to analyze content from a webpage URL. The Language API returns keyword, entities, and concepts, sentiment, and other information about the content being analyzed. We'll also use the DataNews service to search for news articles. This tutorial uses the Node-RED boilerplate in IBM Bluemix with the AlchemyAPI service.

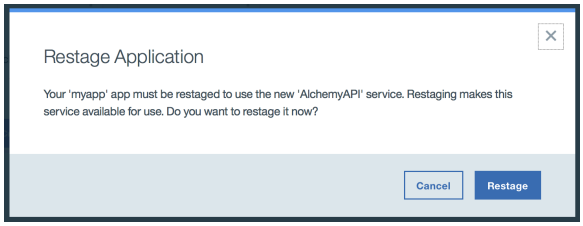
To get started using the Alchemy API, you'll need to create an AlchemyAPI service to get an API key.

1. Go to the Connections tab under the application overview for your Node-RED application in the IBM Bluemix dashboard and click on **Connect New**.

2. Click the **AlchemyAPI** tile under the Watson section. Click on **Create**.



3. IBM Bluemix will prompt to restage the application. Click on **Restage**. The application will restart and include the new service credentials in the environment.



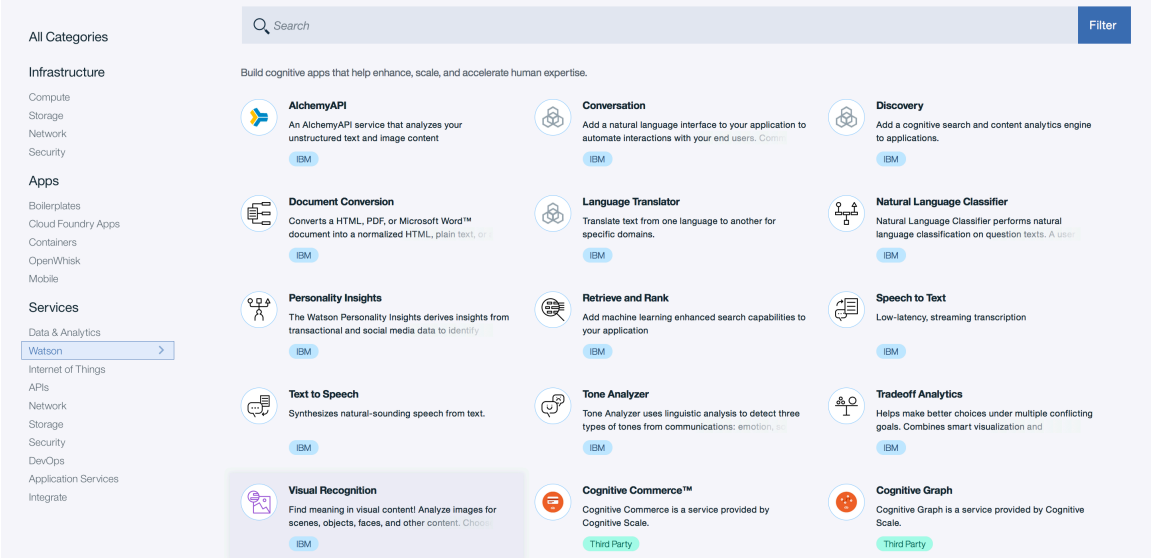
4. When the application has finished restaging, open the Node-RED Flow Editor. If you already have Node-RED open, refresh the page.

Add Visual Recognition Service in IBM Bluemix

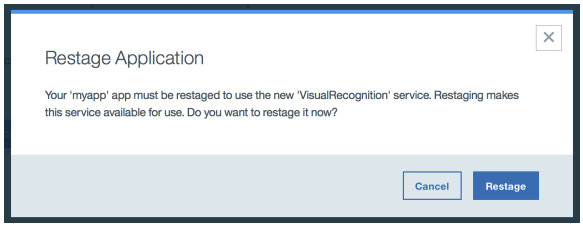
Formerly known as the AlchemyVision API, the capabilities of this API were merged into the Watson Visual Recognition service. We'll also use the Visual Recognition API to locate faces and attributes about people in an image. To get started using the Watson Visual Recognition service, you'll need to create a Visual Recognition service to get service credentials.

1. Go to the Connections tab under the application overview for your Node-RED application in the IBM Bluemix dashboard and click on **Connect New**.

2. Click the **Visual Recognition** tile under the Watson section. Click on **Create**.



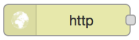
3. IBM Bluemix will prompt to restage the application. Click on **Restage**. The application will restart and include the new service credentials in the environment.



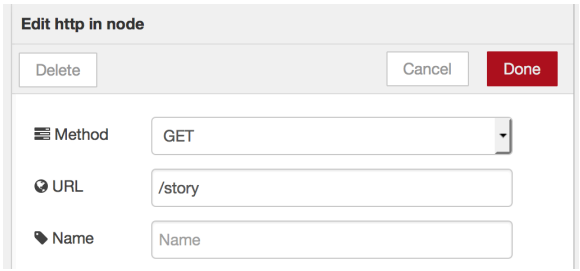
4. When the application has finished restaging, open the Node-RED Flow Editor. If you already have Node-RED open, refresh the page.

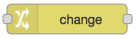
Analyze a News Article in Node-RED

The AlchemyLanguage API analyzes unstructured text and provides a handful of attributes including keywords, entities, concepts, taxonomy, document sentiment, author, publication date, title and more. You can either provide a URL where the content resides, or a body of text to analyze. In this section, we will analyze a news article accessible via an URL. Please refer to the **Add Alchemy API Service in IBM Bluemix** section to create and bind the AlchemyAPI service to your application.

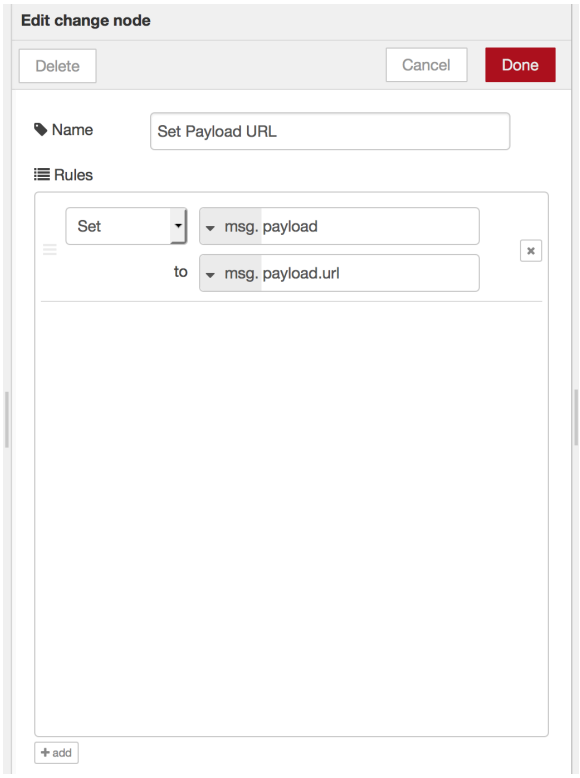
1. Add a 

node as shown below.



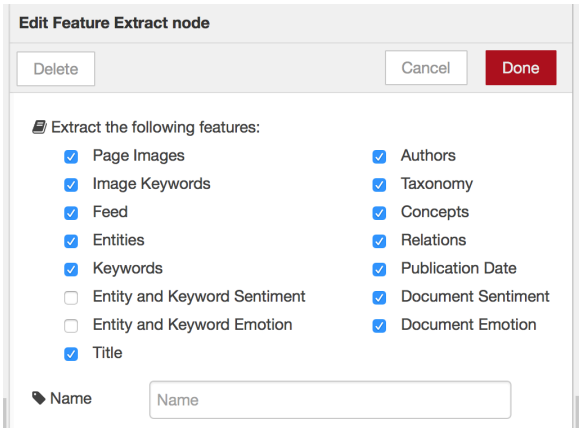
2. Add a 

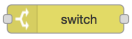
node as shown below. This will take the *url* query parameter and place it in the message *payload* to be passed to the Feature Extract node.



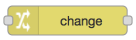
3. Add a 

node. Check the options that you want to be included in the response.

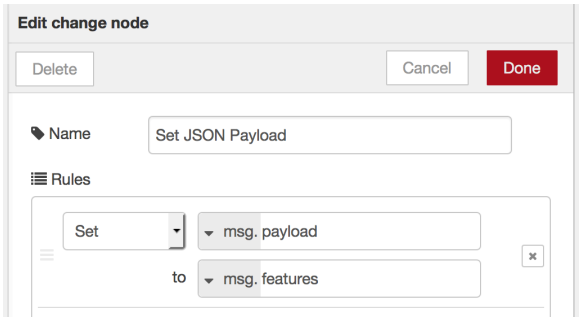


4. To make this application versatile, we'll split the flow so our application will return the results in two formats. The first option will be where the results are returned in JSON format, great for use in applications that can call the web endpoint and consume the JSON. The second option will be a webpage showing the data in a human readable report. Add a 

node as shown below.

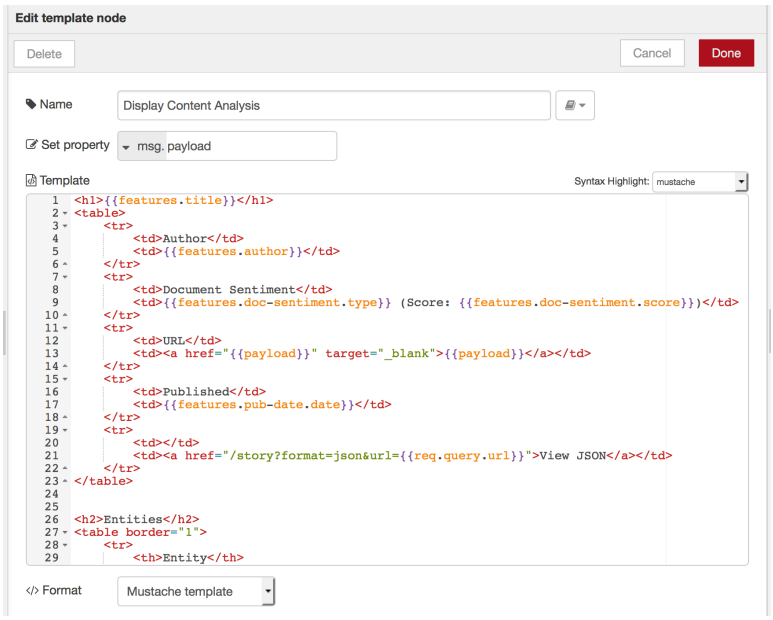
5. For the flow where the JSON should be returned, we can simply return the contents of *msg.features*. Add a 

node as shown below. This will move the results from the *features* property to the message *payload*.

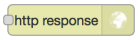


6. For the flow where a webpage should be returned, add a 

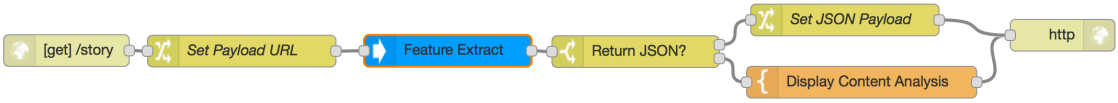
node with the HTML in the file named 1-display-content-analysis.html.



Get the code:
`ibm.biz/Bd48EZ`

7. Add a 

node. Connect the nodes together as shown below.



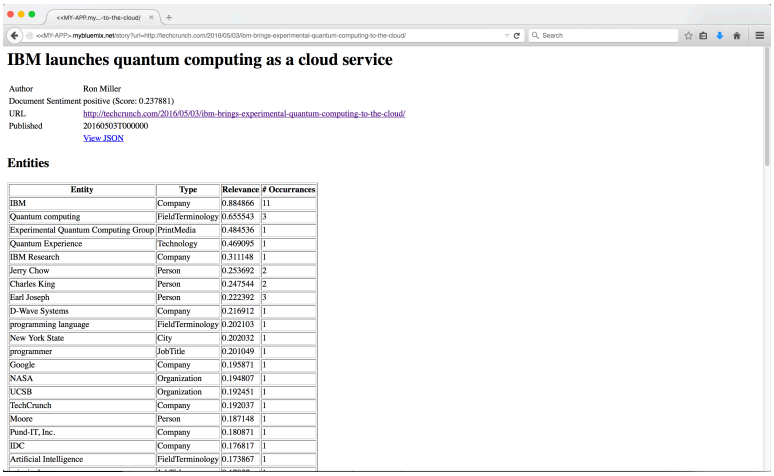
8. Click on the red 

button in the upper-right corner of the screen to save and deploy your changes.
9. Visit a news website and copy the URL of a publicly accessible news article. Make sure the content isn't behind an authentication wall where you have to sign in to access the content.
10. Open a browser tab and visit your application's endpoint, passing in the URL to the content:

```
http://<<MY-APP>>.mybluemix.net/story?url=<<URL-TO-STORY>>
```

- Replace <<MY-APP>> with the host of the Node-RED application you chose.
- Replace <<URL-TO-STORY>> with the URL of the content.

11. Depending on the content located at the URL, you may see a list of attributes including keywords, entities, concepts, taxonomy, document sentiment, author, publication date, title and more mentioned within the text.



IBM launches quantum computing as a cloud service

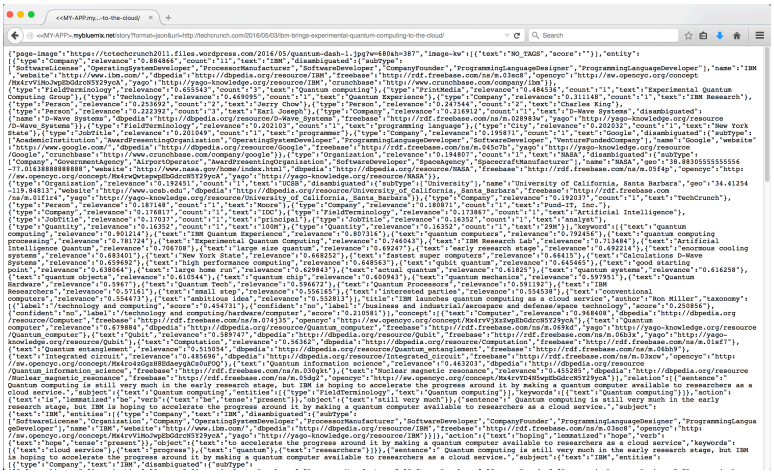
Author	Ron Miller
Document Sentiment	positive (Score: 0.237881)
URL	http://techcrunch.com/2016/05/03/ibm-brings-experimental-quantum-computing-to-the-cloud/
Published	20160503T000000
	View JSON

Entities

Entity	Type	Relevance	# Occurrances
IBM	Company	0.884866	11
Quantum computing	FieldTerminology	0.655543	3
Experimental Quantum Computing Group	PrintMedia	0.484536	1
Quantum Experience	Technology	0.469095	1
IBM Research	Company	0.311148	1
Jerry Chow	Person	0.253692	2
Charles King	Person	0.247544	2
Earl Joseph	Person	0.222392	3
D-Wave Systems	Company	0.216912	1
programming language	FieldTerminology	0.202103	1
New York State	City	0.202032	1
programmer	JobTitle	0.201049	1
Google	Company	0.195871	1
NASA	Organization	0.194807	1
UCSB	Organization	0.192451	1
TechCrunch	Company	0.192037	1
Moore	Person	0.187148	1
Pund-IT, Inc.	Company	0.180871	1
IDC	Company	0.176817	1
Artificial Intelligence	FieldTerminology	0.173867	1

12. To see the JSON representation of the content insert *format=json* in the URL query string:

```
http://<<MY-APP>>.mybluemix.net/story?format=json&url=<<URL-TO-STORY>>
```

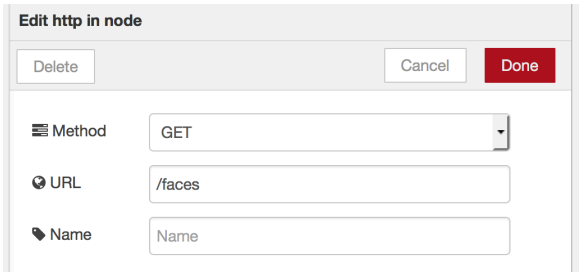


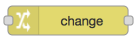
Analyzing Faces in an Image

The Visual Recognition API analyzes images and provides a handful of attributes including gender, age-range, and if known, the name and type, of each person in the given image. You can either provide a URL or the binary data of the image to analyze. In this section, we will locate faces in an image, provide an age-range, gender, and if known, the name and type of the person. Please refer to the **Add Visual Recognition Service in IBM Bluemix** section to create and bind the Watson Visual Recognition service to your application.

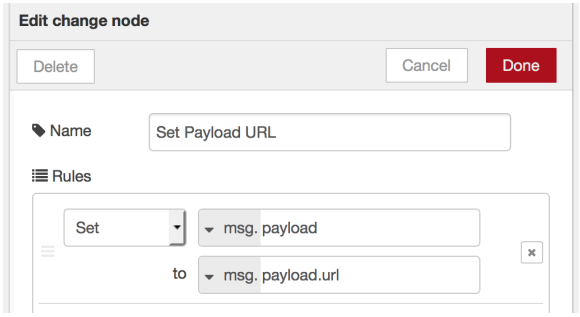
1. Add a 

node as shown below.



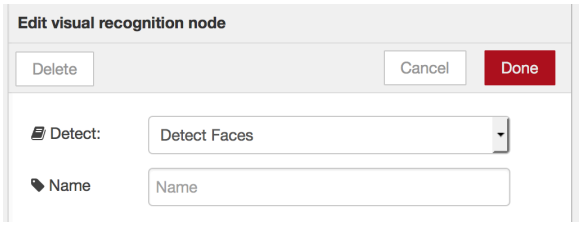
2. Add a 

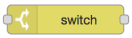
node as shown below. This will take the *url* query parameter and place it in the message *payload* to be passed to the Image Analysis node.



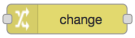
3. Add a 

node. Select **Detect Faces** from the Detect menu as shown below.

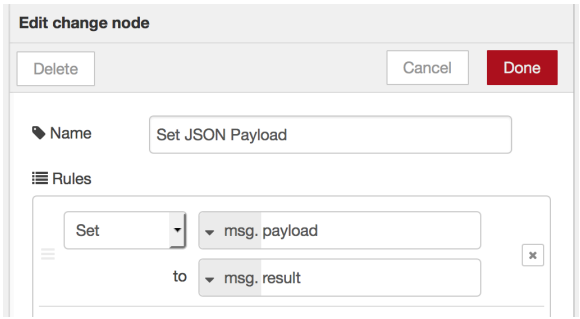


4. To make this application versatile, we'll split the flow so our application will return the results in two formats. The first option will be where the results are returned in JSON format, great for use in applications that can call the web endpoint and consume the JSON. The second option will be a webpage showing the data in a human readable report. Add a 

node as shown below.

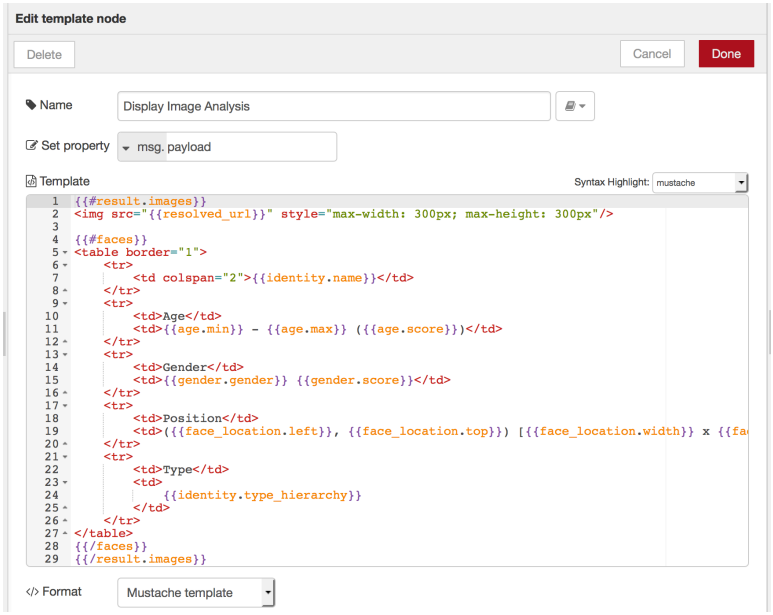
5. For the flow where JSON should be returned, we can simply return the contents of *msg.result*. Add a 

node as shown below. This will move the results from the *result* property to the message *payload*.

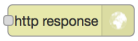


6. For the flow where a webpage should be returned, add a 

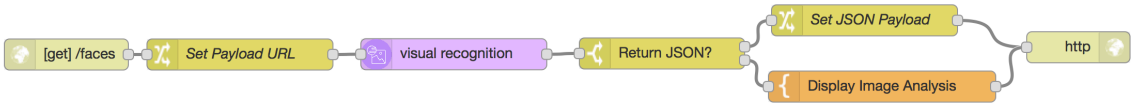
node with the HTML in the file named 2-display-image-analysis.html.



Get the code:
ibm.biz/Bd48Ey

7. Add a 

node. Connect the nodes together as shown below.



8. Click on the red 

button in the upper-right of the screen to save and deploy your changes.
9. Locate an image of at least one person and copy the URL of the image. Make sure the content isn't behind an authentication wall where you have to sign in to access the content.
10. Open a browser tab and visit your application's endpoint, passing in the URL to the image:

```
http://<<MY-APP>>.mybluemix.net/faces?url=<<URL-TO-IMAGE>>
```

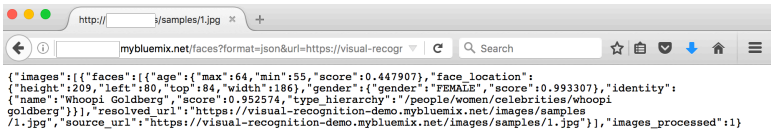
- Replace <<MY-APP>> with the hostname of the Node-RED application you chose.
- Replace <<URL-TO-IMAGE>> with the URL of the image.

11. Depending on the content located at the URL, you may see a list of attributes for each face.


http:// /samples/1.jpg
.mybluemix.net/faces?url=https://visual-recognition-demo.m
Search
Whoopi Goldberg
Age 55 - 64 (0.447907)
Gender FEMALE 0.993307
Position (80, 84) [186 x 209]
Type /people/women/celebrities/whoopi goldberg

12. To see the JSON representation of the content insert *format=json* in the URL query string:

    `http://<<MY-APP>>.mybluemix.net/faces?`**`format=json`**`&url=<<URL-TO-IMAGE>>`

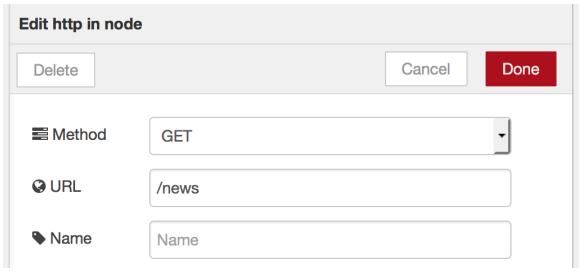


Search for News with AlchemyData News

The AlchemyData News API analyzes and categorizes over a quarter-million news articles everyday. In this section, we'll use the AlchemyData News API service to retrieve news articles on NASA's Juno mission. Please refer to the **Add Alchemy API Service in IBM Bluemix** section to create and bind the AlchemyAPI service to your application.

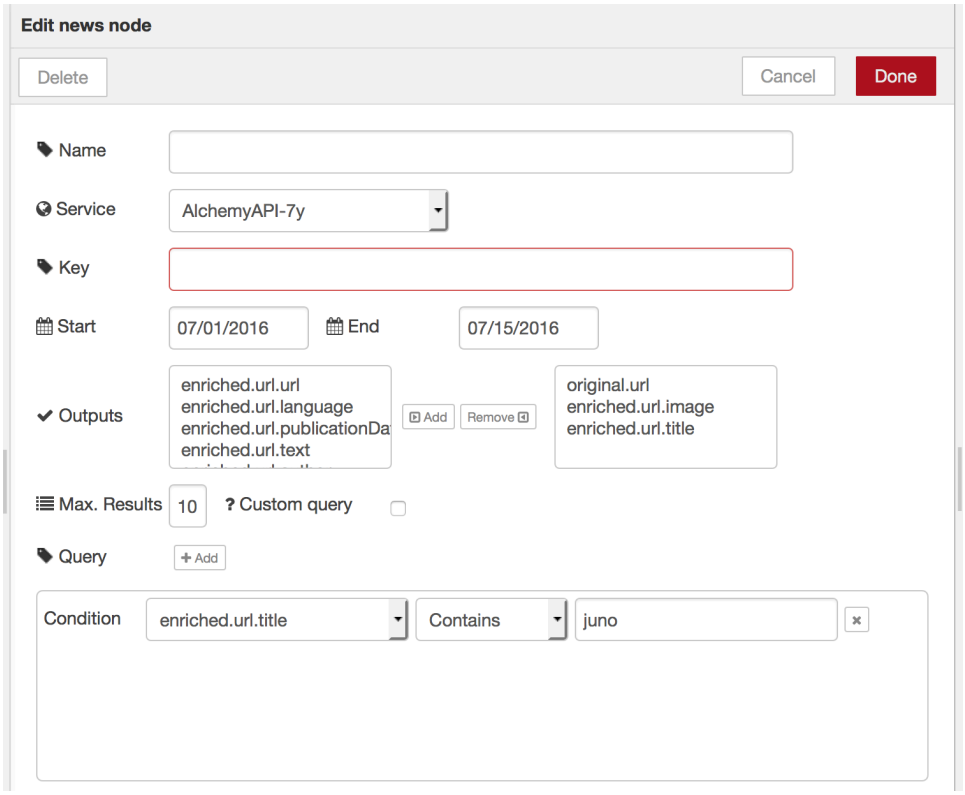
1. Add a 

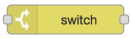
node as shown below.



2. Add a 

node as shown below.

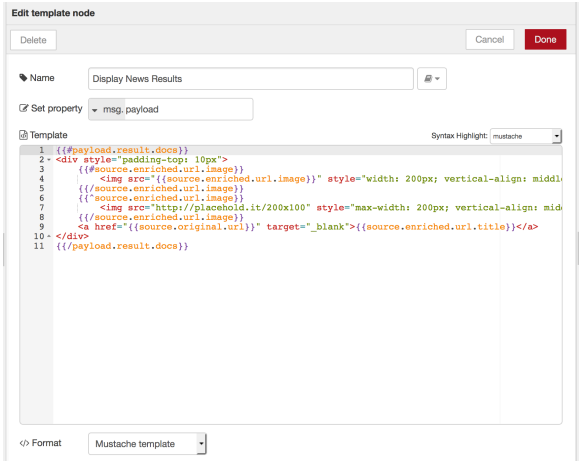


3. To make this application versatile, we'll split the flow so our application will return the results in two formats. The first option will be where the results are returned in JSON format, great for use in applications that can call the web endpoint and consume the JSON. The second option will be a webpage showing the data in a human readable report. Add a 

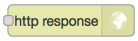
node as shown below.

4. For the flow where a webpage should be returned, add a 

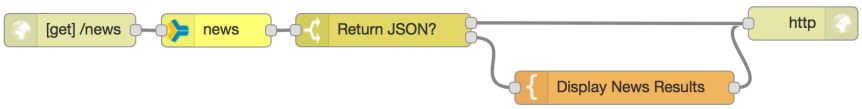
node with the HTML in the file named 3-display-news-results.html.



Get the code:
`ibm.biz/BdrDtw`

5. Add a 

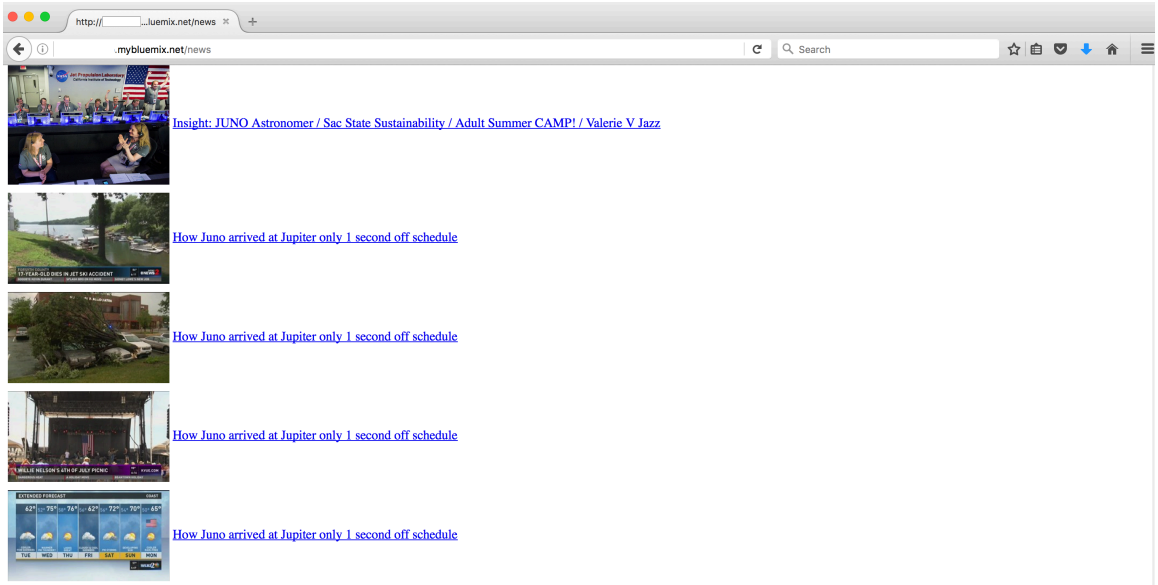
node. Connect the nodes together as shown below.



6. Click on the red  button in the upper-right of the screen to save and deploy your changes.

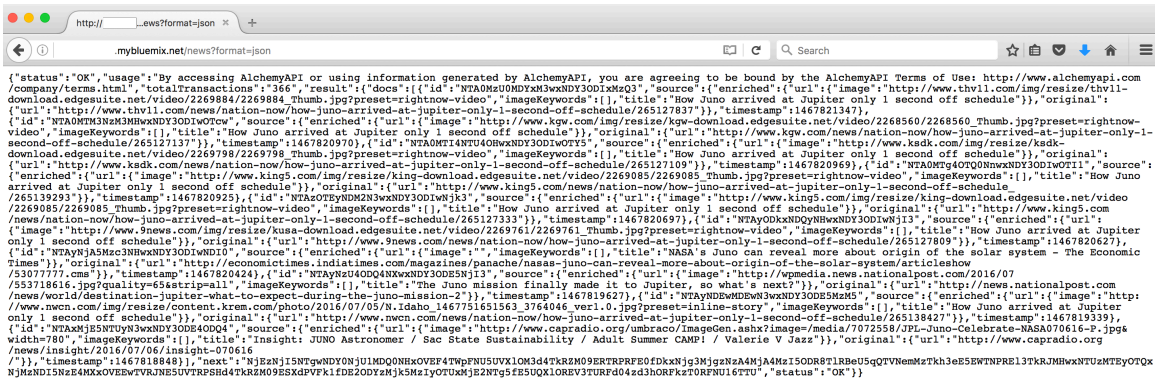
Open a browser tab and visit your application's endpoint:

```
http://<<MY-APP>>.mybluemix.net/news
```



7. To see the JSON representation of the content insert *format=json* in the URL query string:

```
http://<<MY-APP>>.mybluemix.net/news?format=json
```



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