## JSON data Andrew Ba Tran

## Contents

This is from the second chapter of learn.r-journalism.com.

JSON stands for JavaScript Object Notation and is the data structure behind many website features like maps.

Let's say theoretically you were interested in compiling a list of all Sinclair Broadcast TV stations and their locations.

You'd first visit their web site.



And then you might find they have a map!





Look at the developer tools in your browser and click over to **Network** you could sort by size and see there's a **json** file being called by the map.

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Name	Status	Туре	Initiator	Size 🔻	Tim
MetaverseStationData.json?1528949109958	200	xhr	jquery.js?ver=1.11.2:4	625 KB	
ViewportInfoService.GetViewportInfo?1m6&1m2&1d-17000000&	200	script	js?key=AlzaSyD3glRAM0emVyd	5.5 KB	
QuotaService.RecordEvent?1shttp%3A%2F%2Fsbgi.net%2&7s	200	script	js?key=AlzaSyD3glRAM0emVyd	413 B	
AuthenticationService.Authenticate?1shttp%3A%2F%2F9iwh6m	200	script	js?key=AlzaSyD3glRAM0emVyd	412 B	
o pin.png	304	png	util.js:121	373 B	
s cl5.png	304	png	Other	373 B	
▲ cl7.png	304	png	Other	373 B	
cl2.png	304	png	Other	373 B	
cl4.png	304	nna	Other	359 B	

If you click into the JSON link you'll see this data structure that includes affiliation, call letters, and latitude and longitude.

	Developer Tools - http://sbgi.net/tv-stations/					
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Name	× Headers Preview Response Timing					
MetaverseStationData.json?1     ViewportInfoService.GetView     QuotaService.RecordEvent?1     AuthenticationService.Authen     pin.png     cl5.png     cl7.png     cl2.png     cl4.png     cl3.png	<pre>\[{Call_Letter: "KAAS", Logo_List: "", Logo_Map: "", Web_1st_URL: "http://www.foxkansas.com",},] \[\vee[0 99] \vee[0 99] \vee[Call_Letter: "KAAS", Logo_List: "", Logo_Map: "", Web_1st_URL: "http://www.foxkansas.com",} Actual_RF_Channel: "17" Affiliation: "FOX" Call_Letter: "KAAS" Channel: "Primary" DMA: "Wichita - Hutchinson, KS" DMA_Code: "678" DMA_Short: "Wichita_KS" Location: "Point (-97.388134 37.68888)"</pre>					
cl1.png analytics.js stats.js tmapctrl_hdpi.png sv9.png	Logo_Map: "" News_Schedule_Saturday: "" News_Schedule_Weekday: "" Station: "KAAS" Station_Address: "316 North West Street, Wichita, KS 67203"					
mapcnt6.png     google_white5_hdpi.png 115 requests   634 KB transferred	Station_City: "Wichita" Station_Fax_Number: "316-942-8927" Station_Logo: "sbg_noimage" Station_Phone_Number: "316-942-2424"					

Here's a close up.

It looks like it could be transformed into rectangular data frame so we can analyze it.

```
I
     {
           "Call_Letter": "KAAS",
"Logo_List": "",
"Logo_Map": "",
"Web_lst_URL": "http://www.foxkansas.com",
"Web_Address": "http://www.foxkansas.com",
           "Station": "KAAS",
"Channel": "Primary"
           "Affiliation": "FOX"
           "DMA": "Wichita - Hutchinson, KS",
           "DMA_Code": "678",
           "DMA_Short": "Wichita_KS",
           "DMA Rank": 67,
           "Station_Status": "O&O",
           "Station_Address": "316 North West Street, Wichita, KS 67203",
           "Station_City": "Wichita",
           "Station_State": "KS",
           "Station_Zip": 67203,
           "Station_Logo": "sbg_noimage",
"Station_URL": "http://www.foxkansas.com, http://www.foxkansas.com",
           "Station Phone Number": "316-942-2424",
           "Station_Fax_Number": "316-942-8927",
"Actual_RF_Channel": "17",
           "News_Schedule_Weekday": ""
           "News_Schedule_Saturday": "
"News_Schedule_Sunday": "",
           "Location": "Point (-97.388134 37.68888)"
     },
```

We're going to use the **jsonlite** 

First, install and load the package.

```
#install.packages("jsonlite")
library(jsonlite)
```

Then point to where the JSON file is. You can use the URL or the local path to it if you've downloaded it. I recommend downloading it as a backup in case the website is restructured.

Use the fromJSON() function.

json\_url <-"http://sbgi.net/resources/assets/sbgi/MetaverseStationData.json"</pre>

## If the url above doesn't exist anymore uncomment the line below and run it
# json\_url <- "data/MetaverseStationData.json"</pre>

```
stations <- fromJSON(json_url)</pre>
```

Let's look at the structure of what we've imported.

```
str(stations)
```

##	'da	ata.frame': 611 obs.		of 20	6 variables:
##	\$	Call_Letter	:	chr	"KAAS" "KAAS-2" "KAAS-3" "KAAS-LD"
##	\$	Logo_List	:	chr	"" "/resources/assets/sbgi/Logo_List-DEFAULT.jpg" "/resources/assets
##	\$	Logo_Map	:	chr	"" "/resources/assets/sbgi/Logo_Map-DEFAULT.jpg" "/resources/assets/
##	\$	Web_1st_URL	:	chr	"http://www.foxkansas.com" "http://sbgi.net" "http://www.comettv.com
##	\$	Web_Address	:	chr	"http://www.foxkansas.com" "http://sbgi.net" "http://www.comettv.com
##	\$	Station	:	chr	"KAAS" "KAAS" "KAAS" "KAAS-LD"
##	\$	Channel	:	chr	"Primary" "Secondary" "Tertiary" "Primary"
##	\$	Affiliation	:	chr	"FOX" "TBD" "Comet" "FOX"
##	\$	DMA	:	chr	"Wichita - Hutchinson, KS" "Wichita - Hutchinson, KS" "Wichita - Hut
##	\$	DMA_Code	:	chr	"678" "0" "0" "678"
##	\$	DMA_Short	:	chr	"Wichita_KS" "Wichita_KS" "Wichita_KS" "Wichita_KS"
##	\$	DMA_Rank	:	int	67 67 67 67 67 67 31 31 31 195
##	\$	Station_Status	:	chr	"0&0" "0&0" "0&0"
##	\$	Station_Address	:	chr	"316 North West Street, Wichita, KS 67203" "316 North West Street, W
##	\$	Station_City	:	chr	"Wichita" "Wichita" "Wichita"
##	\$	Station_State	:	chr	"KS" "KS" "KS" "KS"
##	\$	Station_Zip	:	int	67203 67203 67203 67203 67203 67203 78229 78229 78229 NA
##	\$	Station_Logo	:	chr	"sbg_noimage" "antenna" "comet" "sbg_noimage"
##	\$	Station_URL	:	chr	"http://www.foxkansas.com, http://www.foxkansas.com" "http://sbgi.ne
##	\$	Station_Phone_Number	:	chr	"316-942-2424" "316-942-2424" "316-942-2424" "316-942-2424"
##	\$	Station_Fax_Number	:	chr	"316-942-8927" "316-942-8927" "316-942-8927" "316-942-8927"
##	\$	Actual_RF_Channel	:	chr	"17" "17" "17" "31"
##	\$	News_Schedule_Weekday	:	chr	"" "" ""
##	\$	News_Schedule_Saturday	7:	chr	"" "" ""
##	\$	News_Schedule_Sunday	:	chr	"" "" ""
##	\$	Location	:	chr	"Point (-97.388134 37.68888)" "" "" "Point (-97.388134 37.68888)"

And how's it now look as a data frame?

View(stations)

$\langle \neg$	之   🔊   🍞 Fi	ilter	Q	
-	Call_Letter 🗦	Logo_List  \$\\$	Logo_Map	Web_1st_UR
1	KAAS			http://www
2	KAAS-2	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://sbgi.
3	KAAS-3	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://www
4	KAAS-LD			http://www
5	KAAS-LD-2	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://sbgi.
6	KAAS-LD-3	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://www
7	KABB	kabb_fox.jpg	kabb_fox_map.jpg	http://www
8	KABB-2	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://www
9	KABB-3	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://sbgi.
10	KAEF	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://sbgi.
11	KAEF-2	/resources/assets/sbgi/Logo_List-DEFAULT.jpg	/resources/assets/sbgi/Logo_Map-DEFAULT.jpg	http://sbgi.

Alright, this is a great start.

We can proceed to analyzing it and maybe visualizing it ourselves on a map.

But we'll get to that in later chapters.

Also, it should be noted that JSON is rarely ever this clean.

I forget where this metaphor came from but consider your computer's folder structure right now. How would you communicate the structure of your folders in a spreadsheet?

Tough, right? But possible when necessary.

So JSON is usually nested and messy. But there are ways of dealing with that.