1 Public JSON data

This section lists some examples of public HTTP API's that publish data in JSON format. These are great to get a sense of the complex structures that are encountered in real world JSON data. All services are free, but some require registration/authentication.

Each example returns lots of data, therefore output is omitted in this document. The reader is encouraged to run the examples in R and inspect the output manually.

1.1 No authentication required

Github

Github is an online code repository and has API's to get live data on almost all activity. Below some examples from a well known R package and author:

```
hadley_orgs <- fromJSON("https://api.github.com/users/hadley/orgs")
hadley_repos <- fromJSON("https://api.github.com/users/hadley/repos")
gg_issues <- fromJSON("https://api.github.com/repos/hadley/ggplot2/issues")
gg_commits <- fromJSON("https://api.github.com/repos/hadley/ggplot2/commits")
```

CitiBike NYC

A single public API that shows location, status and current availability for all stations in the New York City bike sharing imitative.

```
citibike <- fromJSON("http://citibikenyc.com/stations/json")
```

AngelList

AngelList is a job listing directory for startups:

```
res <- fromJSON("http://api.angel.co/1/tags/59/startups")
res$startups
```

Ergast

The Ergast Developer API is an experimental web service which provides a historical record of motor racing data for non-commercial purposes.

```
races <- fromJSON('http://ergast.com/api/f1/2012/1/results.json')
races$MRData$RaceTable$Races$Results[[1]]$Driver
```

1.2 Free registration required

The following `API`'s require (free) registration of a key/token. In each case, registration is easy and a key will be emailed. This key has to be appended to the requests to query the `API`'s. The code below includes some example keys for illustration purposes.

New York Times

The New York Times has several free `API`'s that are part of the NYT developer network. These interface to data from various departments, such as news articles, book reviews, real estate, etc.

```
#Register keys at http://developer.nytimes.com/docs/reference/keys

#search for articles
article_key = "&api-key=c2fede7bd9aea57c898f538e5ec0a1ee:6:68700045"
url = "http://api.nytimes.com/svc/search/v2/articlesearch.json?q=obamacare+socialism"
articles <- fromJSON(paste0(url, article_key))

#search for best sellers
bestseller_key = "&api-key=5e260a86a6301f55546c83a47d139b0d:3:68700045"
url = "http://api.nytimes.com/svc/books/v2/lists/overview.json?published_date=2013-01-01"
bestsellers <- fromJSON(paste0(url, bestseller_key))

#movie reviews
movie_key = "&api-key=5a3daaeee6bbc6b9df16284bc575e5ba:0:68700045"
url = "http://api.nytimes.com/svc/movies/v2/reviews/dvd-picks.json?order=by-date"
reviews <- fromJSON(paste0(url, movie_key))
```

CrunchBase

CrunchBase is the free database of technology companies, people, and investors that anyone can edit.

```
key <- "f6dv6cas5vw7arn5b9d7mdm3"
res <- fromJSON(paste0("http://api.crunchbase.com/v/1/search.js?query=R&api_key=", key))
str(res$results)
```

Sunlight Foundation

The Sunlight Foundation is a non-profit that helps to make government transparent and accountable through data, tools, policy and journalism.

```
#register key at http://sunlightfoundation.com/api/accounts/register/
key <- "&apikey=39c83d5a4acc42be993ee637e2e4ba3d"

#some queries
drones <- fromJSON(paste0("http://openstates.org/api/v1/bills/?q=drone", key))
word <- fromJSON(paste0("http://capitolwords.org/api/1/dates.json?phrase=obamacare", key))
legislators <- fromJSON(paste0("http://congress.api.sunlightfoundation.com/",
  "legislators/locate?latitude=42.96&longitude=-108.09", key))
```

1.3 OAuth2 authentication

Twitter

The twitter `API` requires `OAuth2` authentication. Some example code:

```
#Create your own appication key at https://dev.twitter.com/apps
consumer_key = "EZRy5JzOH2QQmVAe9B4j2w";
consumer_secret = "OIDC4MdfZJ82nbwpZfoUO4WOLTYjoRhpHRAWj6JMec";

#Use basic auth
library(httr)
secret <- RCurl::base64(paste(consumer_key, consumer_secret, sep=":"));
req <- POST("https://api.twitter.com/oauth2/token",
  config(httpheader = c(
    "Authorization" = paste("Basic", secret),
    "Content-Type" = "application/x-www-form-urlencoded;charset=UTF-8"
  )),
  body = "grant_type=client_credentials",
  multipart = FALSE
);

#Extract the access token
token <- paste("Bearer", content(req)$access_token);

#Actual API call
url = "https://api.twitter.com/1.1/statuses/user_timeline.json?count=10&screen_name=UCLA"
call1 <- GET(url, config(httpheader = c("Authorization" = token)))
obj1 <- fromJSON(rawToChar(call1$content))
print(obj1$text)
```