

Getting Data from the Internet



Getting Data



HTTP



httr

R package



HTTP
Hypertest Transfer
Protocol

Allows messages to be sent on the Internet!



httr
R package

Enables YOU to work with these data in R!

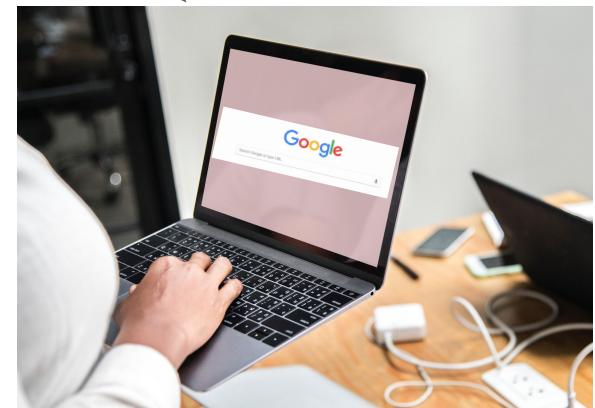


2. request goes
to the website



Photo by [rawpixel](#) on [Unsplash](#)

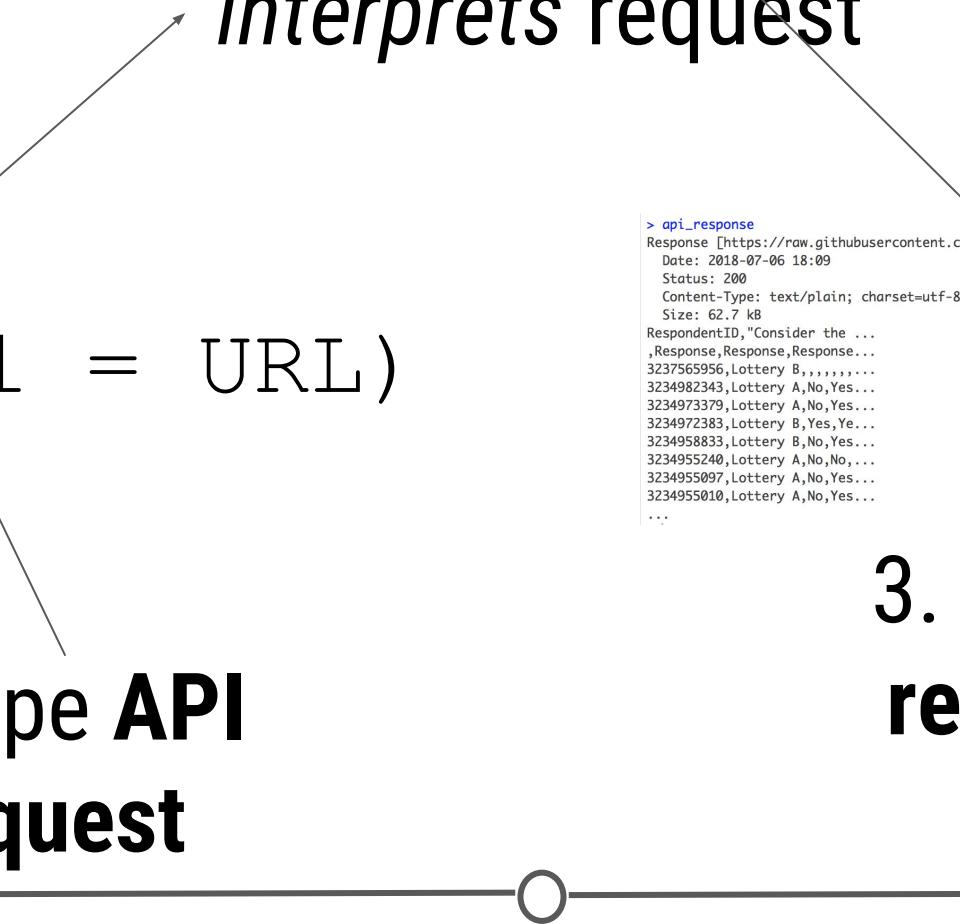
1. type URL



3. website is
displayed

Photo by [rawpixel](#) on [Unsplash](#)

2. API endpoint *interprets request*



```
graph TD; A[1. type API request] --> B[2. API endpoint  
interprets request]; B --> C[3. Get API response]
```

GET(url = URL)

1. type API
request

```
> api_response
Response [https://raw.githubusercontent.com/fivethirtyeight/data/master/steak-survey/steak-risk-survey.csv]
Date: 2018-07-06 18:09
Status: 200
Content-Type: text/plain; charset=utf-8
Size: 62.7 kB
RespondentID,"Consider the ...
,Response,Response,Response...
3237565956,Lottery B,,,...,...
3234982343,Lottery A,No,Yes...
3234973379,Lottery A,No,Yes...
3234972383,Lottery B,Yes,Ye...
3234958833,Lottery B,No,Yes...
3234955240,Lottery A,No,No,...
3234955097,Lottery A,No,Yes...
3234955010,Lottery A,No,Yes...
...
```

3. Get API
response

REST API v3

[Reference](#) [Guides](#) [Libraries](#)

Overview

This describes the resources that make up the official GitHub REST API v3. If you have any problems or requests please contact [GitHub support](#).

- i. [Current version](#)
- ii. [Schema](#)
- iii. [Authentication](#)
- iv. [Parameters](#)
- v. [Root endpoint](#)
- vi. [GraphQL global node IDs](#)
- vii. [Client errors](#)
- viii. [HTTP redirects](#)
- ix. [HTTP verbs](#)
- x. [Hypermedia](#)
- xi. [Pagination](#)
- xii. [Rate limiting](#)
- xiii. [User agent required](#)
- xiv. [Conditional requests](#)

▼ Overview

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```
#> ## load package
library(httr)
library(dplyr)

## Save GitHub username as variable
username <- 'janeeverydaydoe'                                API endpoint

## Save base endpoint as variable
url_git <- 'https://api.github.com/'                           API request

## Construct API request
api_response <- GET(url = paste0(url_git,
'users/', username, '/repos'))
```



```
# See variables in response  
names(api_response)
```

```
> names(api_response)  
[1] "url"          "status_code"   "headers"      "all_headers"  "cookies"      "content"  
[7] "date"         "times"        "request"     "handle"
```

What API request from
httr returns

```
## Check Status Code of request  
api_response$status_code  
  
## Extract content from API response  
repo_content <- content(api_response)
```

```
> api_response$status_code  
[1] 200
```

'200' means request was successful!

```
> repo_content <- content(api_response)
```

content () extracts contents from API request

```
## function to get name and URL for each repo
lapply(repo_content, function(x) {
  df <- data_frame(repo = x$name,
                    address = x$html_url)) %>%
bind_rows()
```

```
> lapply(repo_content, function(x) {
+   df <- data_frame(repo = x$name,
+                     address = x$html_url)}) %>%
+   bind_rows()
# A tibble: 6 x 2
  repo                  address
  <chr>                <chr>
1 first_project        https://github.com/JaneEverydayDoe/first_project
2 hello-world           https://github.com/JaneEverydayDoe/hello-world
3 janeeverydaydoe.github.com https://github.com/JaneEverydayDoe/janeeverydaydoe.g...
4 my_first_project      https://github.com/JaneEverydayDoe/my_first_project
5 newproject             https://github.com/JaneEverydayDoe/newproject
6 Temporary_add_to_version_control https://github.com/JaneEverydayDoe/Temporary_add_to_...
```



Our Data

We're sharing the data and code behind some of our articles and graphics.
We hope you'll use it to check our work and to create stories and
visualizations of your own.

• UPDATING

DATA SET

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Code

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data / steak-survey /

Create new file

Upload files

Find file

History



dmil update READMEs

Latest commit 9e6c424 on Feb 9

..



README.md

update READMEs

5 months ago



steak-risk-survey.csv

Rename steak-risk-survey to steak-risk-survey.csv

4 years ago



README.md

Steak Survey

This folder contains data behind the stories:

- [How Americans Like Their Steak.](#)
- [How Americans Order Their Steak](#)

```
> ## Make API request  
> api_response <- GET(url = "https://raw.githubusercontent.com/fivethirtyeight/data/master/steak-survey/steak-risk-survey.csv")
```

```
>  
> ## Extract content from API response  
> df_steak <- content(api_response, type="text/csv")
```

No encoding supplied: defaulting to UTF-8.

Parsed with column specification:

```
cols(
```

```
  RespondentID = col_double(),
```

`Consider the following hypothetical situations:
In Lottery A, you have a 50% chance of success, with a payout of \$100.
In Lottery B, you have a 90% chance of success, with a pay out of \$20.

Assuming you have \$10 to bet, would you play Lottery A or Lottery B?` = col_character(),

```
  `Do you ever smoke cigarettes?` = col_character(),
```

```
  `Do you ever drink alcohol?` = col_character(),
```

```
  `Do you ever gamble?` = col_character(),
```

```
  `Have you ever been skydiving?` = col_character(),
```

```
  `Do you ever drive above the speed limit?` = col_character(),
```

```
  `Have you ever cheated on your significant other?` = col_character(),
```

```
  `Do you eat steak?` = col_character(),
```

```
  `How do you like your steak prepared?` = col_character(),
```

```
  Gender = col_character(),
```

```
  Age = col_character(),
```

```
  `Household Income` = col_character(),
```

```
  Education = col_character(),
```

```
  `Location (Census Region)` = col_character()
```

```
)
```

GET () makes API request

content () extracts information

```
myapp = oauth_app("twitter",
                     key = "yourConsumerKeyHere",
                     secret = "yourConsumerSecretHere")
sig = sign_oauth1.0(myapp,
                     token = "yourTokenHere",
                     token_secret = "yourTokenSecretHere")
homeTL =
GET("https://api.twitter.com/1.1/statuses/home_timeline.json", sig)
```







<https://github.com/hadley/rvest>

Chromebook Data Science Curriculum

There are currently 12 courses that are offered in the Chromebook Data Science Curriculum.

Class	Course Description	Leanpub Link
Introduction to Chromebook Data Science	This is the first class in the Chromebook Data Science series. Data science is one of the most exciting and fastest growing careers in the world. The goal of this series is to help people with no background and limited resources transition into data science. The only pre-requisites are a computer with a web browser and the ability to type and follow instructions. We guide you through the rest.	Course 0
How to Use A Chromebook	This course will introduce you to using a Chromebook. The Introduction and Setup course might sound simple, but it will set up the infrastructure for success with the later, more challenging courses.	Course 1
Google and the Cloud	The Google and the Cloud course introduces using Google's in-built apps, which form the fundamental backbone of a Chromebook. We'll go step by step through the process to integrating these apps together to form your productivity workflow.	Course 2
Organizing Data Science	Projects are central to the role of any data scientist. These lessons will	Course 3

Different parts of the webpage have different HTML tags

tags

tags



SelectorGadget

offered by selectorgadget.com

★★★★★ (68)

[Developer Tools](#)

78,479 users

+ ADD TO CHROME



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.title~ .title a

Clear (30)

Toggle Position

XPath

?

X



Compatible with your device

Easy, powerful CSS Selector generation.

Selector Gadget is an open source Chrome Extension that makes CSS selector generation and discovery on complicated sites a breeze.

After having installed the extension, go to any page and launch it. A box will open in the bottom right of the website. Click on a page element that you would like your selector to match (it will turn green). SelectorGadget will then generate a minimal CSS selector for that element, and will highlight *and* *only* everything that is matched.

[Website](#)

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Additional Information

Version: 1.1

Updated: March 20, 2015

Size: 79.7KIB

Language: English



Add "SelectorGadget"?



It can:

Read and change all your data on the websites you visit

Cancel

Add extension





X



SelectorGadget has been added to
Chrome

Use this extension by clicking on this icon.

Manage your extensions by clicking Extensions in
the Window menu.



Chromebook Data Science Curriculum

! [SelectorGadget icon] (images/03_internet_03_data_internet-20.png) There are currently 12 courses that are offered in the Chromebook Data Science Curriculum.

Class	Course Description	Leanpub Link
Introduction to Chromebook Data Science	This is the first class in the Chromebook Data Science series. Data science is one of the most exciting and fastest growing careers in the world. The goal of this series is to help people with no background and limited resources transition into data science. The only pre-requisites are a computer with a web browser and the ability to type and follow instructions. We guide you through the rest.	Course 0
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Google and the Cloud	The Google and the Cloud course introduces using Google's in-built apps, which form the fundamental backbone of a Chromebook. We'll go step by step through the process to integrating these apps together to form your productivity workflow.	Course 2
Organizing Data Science Projects	Projects are central to the role of any data scientist. These lessons will discuss how to organize projects and how to use them effectively.	Course 3

No valid path found.

Clear

Toggle Position

XPath

?

X

Chromebook Data Science Curriculum

There are currently 12 courses that are offered in the Chromebook Data Science Curriculum.

Class	Course Description	Leanpub Link
Introduction to Chromebook Data Science td strong	This is the first class in the Chromebook Data Science series. Data science is one of the most exciting and fastest growing careers in the world. The goal of this series is to help people with no background and limited resources transition into data science. The only pre-requisites are a computer with a web browser and the ability to type and follow instructions. We guide you through the rest.	Course 0
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Organizing Data Science Projects	Projects are central to the role of any data scientist. These lessons will discuss how to strong	Course 3 Clear (12) Toggle Position XPath ? X

Text you'll use to specify which part of the webpage you'd like to scrape

```
## load package  
library(rvest)  
  
## provide URL  
courses <-  
read_html("http://jhudatascience.org/chromebook  
datascience/curriculum.html")  
  
## Get Courses  
courses %>%  
  html_nodes("strong") %>%  
  html_text()
```

Text from
SelectorGadget

```
> courses %>%  
+     html_nodes("strong") %>%  
+     html_text()  
[1] "Introduction to Chromebook Data Science"  
[2] "How to Use A Chromebook"  
[3] "Google and the Cloud"  
[4] "Organizing Data Science Projects"  
[5] "Version Control"  
[6] "Introduction to R"  
[7] "Data: Tidying"  
[8] "Data Visualization"  
[9] "Getting Data"  
[10] "Basics of Data Analysis"  
[11] "Written and Oral Communication in DS"  
[12] "Getting a job in data science"
```



SelectorGadget: point and click CSS selectors



The screenshot shows a video player interface for a 'SelectorGadget Screencast' from Andrew Cantino. The video is 1:36 long and is currently at the beginning. The title bar says 'SelectorGadget Screencast from Andrew Cantino'. The video content displays a list of news items from Hacker News, with the 17th item highlighted in yellow. The 17th item is: 'Stanford grad's site nets Southwest 'cease and desist'' (paloaltoonline.com). The video player includes standard controls like play/pause, volume, and a progress bar. Below the video, the URL 'news.ycombinator.com/item?id=4689308' and the source 'E-BOOKS and Others (wired.com)' are visible.

1. ▾ AnandTech, Microsoft Surface Review (anandtech.com)
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2 hours ago
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20. ▾ Digging Into Apple's Fusion Drive Details (macobserver.com)
16 points by barista 2 hours ago | 17 comments

[SelectorGadget Screencast](#) from Andrew Cantino on [Vimeo](#).

JSON: key-value pairs

```
{"Name": "Isabela"}
```

key

pair

```
library(jsonlite)

## generate a JSON object
json <-
'[
  {"Name" : "Woody", "Age" : 40, "Occupation" :
"Sherriff"},  

  {"Name" : "Buzz Lightyear", "Age" : 34,  

"Occupation" : "Space Ranger"},  

  {"Name" : "Andy", "Occupation" : "Toy Owner"}  

]'

## take a look
json
```

> json

```
[{"Name": "Woody", "Age": 40, "Occupation": "Sherriff"}, {"Name": "Buzz Lightyear", "Age": 34, "Occupation": "Space Ranger"}, {"Name": "Andy", "Occupation": "Toy Owner"}]
```

```
## take JSON object and convert to a  
data frame  
mydf <- fromJSON(json)
```

```
## take a look
```

```
mydf > mydf
```

	Name	Age	Occupation
1	Woody	40	Sherriff
2	Buzz Lightyear	34	Space Ranger
3	Andy	NA	Toy Owner

```
## take JSON object and convert to a  
data frame  
json <- toJSON(mydf)
```

```
> json  
[{"Name": "Woody", "Age": 40, "Occupation": "Sherriff"}, {"Name": "Buzz Lightyear", "Age": 34, "Occupati  
on": "Space Ranger"}, {"Name": "Andy", "Occupation": "Toy Owner"}]
```



Photo by [rawpixel](#) on [Unsplash](#)