request: A DSL for http requests

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R OpenSci

request

Github: github.com/sckott/request

& on CRAN

Philosophy

- Reduce cognitive load

- Make it easy as possible to do HTTP requests

- Get to a data.frame faster to take advantage of downstream tools: dplyr, data.table, tidyr, ggplot2, etc

- APIs are trending towards a common standard:
  - REST type
  - transport over HTTP
  - data format: JSON

- Make assumptions about what most users want to do (**GET** requests), and what data they will get back (**JSON**) -> makes things easier

- Give back data.frame (a *tibble*) if possible - if not, default to parsed content

request package API

Full and partial URLs

```
api('http://localhost:9200')
api('localhost/9200')
api(':9200')
api('9200')
api('9200/stuff')
```

Pipes

- It's easy to use pipes or not

```
'httpbin.org/get' %>% api()
http(api('httpbin.org/get'))
```

Evaluate on last pipe

- With magic from Stefan Bache
- We don't perform http request if not piped

```
# http request made
'httpbin.org/get' %>% api()
# http request NOT made
api('httpbin.org/get')
# call http explicitly
api('httpbin.org/get') %>% http()
```

Paths

- Build up URL piece by piece

```
api_path(the, red, fox)
# gives 'the/red/fox'
```

Path templating

- Use whisker to fill in a path template

```
x <- list(
  user = 'maxogden', repo =
  'screencat')
api_template(
  'repos/{{user}}/{{repo}}/issues', x
)
```

Query

- Build up URL piece by piece

```
api_query(q = ecology, wt = json)
```

NSE & SE

```
api('https://api.github.com') %>%
  api_path(repos, ropensci, rgbif)
```

```
api('https://api.github.com') %>%
  api_path_('repos', 'ropensci', 'rgbif')
```

Automatic POST w/ body

```
api('http://httpbin.org') %>%
  api_body(foo = 'bar')
```

Write to disk helper

```
api('api.github.com') %>%
  api(orgs, ropensci, events) %>%
  api_write(ff <- tempfile())
```

Features in the works
Paging

- Will be able to handle all paging scenarios, automating paging for the user

```
api('api.github.com') %>%
  api_paging(limit(size = 1000))
```

Retry

- Smart handling of retries after failures

```
api('api.github.com') %>%
  api_retry(n = 5, time = 3)
```

Rate limit

- Smart rate limit handling - choose how to handle reaching rate limits