

ST 558 Project 2

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Libraries

```
library(tidyverse)
```

```
-- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
v dplyr      1.1.4      v readr      2.1.5
v forcats    1.0.0      v stringr    1.5.1
v ggplot2     3.5.2     v tibble     3.2.1
v lubridate  1.9.4      v tidyr      1.3.1
v purrr       1.0.4

-- Conflicts ----- tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()     masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become
```

Accessing the API

```
query_function <- function(subject, set.name = "", pokemon.name = "", sort.by = "number", se
  if(set.name == ""){
    data_url = paste0("https://api.pokemontcg.io/v2/", subject, "?q=name:", pokemon.name, "&")
  } else {
    data_url = paste0("https://api.pokemontcg.io/v2/", subject, "?q=set.name:", set.name, "%20n
info <- httr::GET(url=data_url)
parsed = jsonlite::fromJSON(rawToChar(info$content))
queried_data = as.tibble(parsed$data)
return(queried_data)
}
```

Example using the function

This will return all Mew cards from the Celebrations set, sorted by card number

```
query_function(subject = "cards", set.name = "celebrations", pokemon.name = "mew", sort.by =
```

Warning: `as.tibble()` was deprecated in tibble 2.0.0.

i Please use `as_tibble()` instead.

i The signature and semantics have changed, see `?as_tibble`.

```
# A tibble: 3 x 24
  id      name  supertype subtypes hp   types abilities attacks weaknesses
<chr>   <chr>  <chr>     <list>  <chr> <lis> <list>   <list>  <list>
1 cel25-11  Mew    Pokémon  <chr>    60   <chr> <df>     <df>    <df>
2 cel25-25  Mew    Pokémon  <chr>    60   <chr> <df>     <df>    <df>
3 cel25c-88_A Mew ex Pokémon  <chr>    90   <chr> <df>     <df>    <df>
# i 15 more variables: resistances <list>, retreatCost <list>,
#   convertedRetreatCost <int>, set <df[,10]>, number <chr>, artist <chr>,
#   rarity <chr>, flavorText <chr>, nationalPokedexNumbers <list>,
#   legalities <df[,3]>, regulationMark <chr>, images <df[,2]>,
#   tcgplayer <df[,3]>, cardmarket <df[,3]>, rules <list>
```

another type of data able to be accessed

This will return all the different types of cards, sorted by name

```
query_function(subject = "types", sort.by = "name")
```

```
# A tibble: 11 x 1
  value
<chr>
1 Colorless
2 Darkness
3 Dragon
4 Fairy
5 Fighting
6 Fire
7 Grass
8 Lightning
9 Metal
10 Psychic
11 Water
```

Using select

This will return all Pikachu cards in the Base set, specifically calling for the inclusion of the column of card rarity.

```
raritycall = query_function("cards", set.name = "Base", pokemon.name = "Pikachu", select = c  
#calling the selected column to show  
raritycall$rarity
```

```
[1] "Common" "Common" "Common"
```

Know How to Summarize the Data

This is a summary of the Yveltal cards in the set XY based on artist

```
contingency_data = query_function("cards", set.name = "XY", pokemon.name = "Yveltal")  
cont_table = table(contingency_data$name, contingency_data$artist)  
cont_table
```

	5ban Graphics	Eske Yoshinob	Hasuno	Masakazu	Fukuda
Yveltal	2	0	0		1
Yveltal-EX	3	1	1		0

Based on this table, we can see that 5ban Graphics did most of the artwork for this set's Yveltal cards, doing 5 out of 8.

Doing another table, we can see the breakdown of what type of card this artwork was used on

```
cont_table2 = table(contingency_data$name, contingency_data$set$name)  
cont_table2
```

	XY	XY Black	Star Promos
Yveltal	1		2
Yveltal-EX	2		3

Looks like the 5ban Graphics artwork was used on the promotional cards for this set, while the other 3 cards were used in the main set itself.

#Let's look at one more contingency table for something different looking at the fast attack for each Yveltal card in every set

```
# first break down the attacks column to only include the first attack
contingency_attacks = sapply(contingency_data$attacks, function(x) {
  if (!is.null(x)) { x$name[1] } else { NA }
}) # use sapply so that just the first row is taken from each row in the attacks data frame
cont_table = table(contingency_data$name, contingency_attacks)
cont_table
```

	contingency_attacks			
	Air Crash	Evil Ball	Oblivion	Wing
Yveltal	1	0		2
Yveltal-EX	0	5		0