

# Lab 1 : Application Programming Interfaces

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## Question 1

The first step is to create a token with `create_token()`.

```
create_token(  
  app           = app_name,  
  consumer_key  = consumer_key,  
  consumer_secret = consumer_secret,  
  access_token  = access_token,  
  access_secret = access_token_secret  
)
```

## Question 2

Using `get_timelines()` to obtain the most recent 250 tweets from @espn.

```
espn_tweets <- get_timelines(c("espn"), n = 250)  
head(espn_tweets$text, n=10)
```

```
## [1] "Kobe Bryant, who grew up in Italy, was a football and AC Milan fan.\n\nThe club paid tribute t  
## [2] "He painted a portrait of Kobe while only using a basketball hoop. \n\nIncredible. (via bouboud  
## [3] "The NBA remembers Kobe Bryant.\n\n(via @NBA)\nhttps://t.co/m1vzbB9kMr"  
## [4] "All 13,733 of Kobe Bryant's career made field goals. \n\nLegend. (via @kirkgoldsberr  
## [5] "Truly an unforgettable career. https://t.co/yerAFm7NaL"  
## [6] "\"When I needed some advice and some support, he was there for me.\" \n\n@DjokerNole rem  
## [7] "In WNBA players, Gigi Bryant saw what she hoped to be. \n\nIn her, the players saw who they on  
## [8] "\"A one-man news cycle, almost anything Bryant shared became a story. He never seemed to grow  
## [9] "Candles have been lit at the Kobe and Gianna Bryant tributes outside Staples Center.\n\nL.A. i  
## [10] "\"I would have 5 more girls if I could. I'm a girl dad.\" \n\n@elleduncanESPN's story about how
```

The recent tweets are about Kobe Bryant which is in line with the events around his death. These tweets are about his life events or his daughter who was also involved in the accident.

## Question 3

Obtain top favorites of Patrick Mahomes using `get_favorites()`.

```
patrick_favorites<-get_favorites("PatrickMahomes", n=1000)  
head(patrick_favorites$text, n=10)
```

```
## [1] "https://t.co/G14ZXJrZNG"  
## [2] "Game day!!!! Let's go fireballs! https://t.co/2tbUHUWMKk"  
## [3] "Cutest #15 i know and i know @PatrickMahomes will agree!!! https://t.co/KI9EvQf4hc"
```

```
## [4] "Congratulations to @nevin_lawson for signing a one year extension with the @Raiders ! https://t.co/6dYHuDkEq2"
## [5] "@PatrickMahomes @cheetah 3 minutes 57 seconds of JV basketball"
## [6] "@PatrickMahomes Trying to win a Super Bowl!! LETS GOOOO"
## [7] "@PatrickMahomes https://t.co/6dYHuDkEq2"
## [8] "I need answers. Who is the 1 voter? https://t.co/hiyvH09Yk0"
## [9] "@PatrickMahomes @LaTroyHawkins32 <U+0001F602><U+0001F602> best shortstop you'll ever see"
## [10] "Congrats broski @PatrickMahomes https://t.co/DlWnPLD019"
```

## Question 4

Getting the retweets and retweeters for Patrick's tweet (status ID: 857944539029483520)

```
patrick_retweets<-get_retweets("857944539029483520", n=100)
```

```
patrick_retweeters<-get_retweeters("857944539029483520", n=100)
```

```
## [1] "Following are the status IDs of the most recent retweets of the given status."
```

```
## [1] "1222266884856459264" "122224095204585472" "1222200222048292864"
## [4] "1222030742319968262" "1221975338747670530" "1221882700543426560"
## [7] "1221784815084634115" "1221673634177130496" "1221632164011421702"
## [10] "1221607968774316033"
```

```
## [1] "Following are the user IDs of users who retweeted a given status"
```

```
##           user_id
## 1  951479575871094784
## 2      29808265
## 3 116968870777122309
## 4 1207013129684684803
## 5  994227587504377857
## 6    4862132912
## 7    2273979820
## 8 1157758173207584769
## 9 1186086110293905408
## 10   2950873543
```

## Question 5

Getting Patrick's followers and friends using get\_followers and get\_friends.

```
patrick_followers<-get_followers("PatrickMahomes")
patrick_friends<-get_friends("PatrickMahomes")
```

```
## [1] "Following are 10 followers for Patrick Mahomes"
```

```
## # A tibble: 10 x 1
##   user_id
##   <chr>
```

```
## 1 1222330954246774789
## 2 1222333881992519686
## 3 1222333814526988288
## 4 803742538192404480
## 5 4622535620
## 6 1222329254861582337
## 7 1222334098657697793
## 8 1549518577
## 9 3304714044
## 10 1222334262881419265
```

```
## [1] "Following are 10 friends of Patrick Mahomes"
```

```
## # A tibble: 10 x 2
##   user          user_id
##   <chr>         <chr>
## 1 PatrickMahomes 39440317
## 2 PatrickMahomes 537186173
## 3 PatrickMahomes 757775576
## 4 PatrickMahomes 15955515
## 5 PatrickMahomes 55307193
## 6 PatrickMahomes 2640922334
## 7 PatrickMahomes 1058161946745282560
## 8 PatrickMahomes 120943272
## 9 PatrickMahomes 421734164
## 10 PatrickMahomes 725897344357519360
```

## Question 6

Using `get_trends()` to get the recent trends in Raleigh, NC.

```
Raleigh_trends<-get_trends("Raleigh")
head(Raleigh_trends$trend,10)
```

```
## [1] "Kobe"          "#girdad"        "#TheBachelor"
## [4] "#MambaMentality" "Vanessa"        "Shaq"
## [7] "Living Single"  "#Arrow"         "#CancelStudentDebt"
## [10] "Palestinians"
```

## Question 7

Search tweets using key words or hashtags: superbowl and sbliv

```
sb_tweets<-search_tweets("superbowl AND sbliv", n=5000, include_rts = FALSE)
sb_tweets$text[1:10]
```

```
## [1] "Enjoy the #SBLIV festivities and leave your drone at home! @FAADroneZone has important informa
## [2] "Enjoy the #SBLIV festivities and leave your drone at home! Learn more about the #NoDronesZone a
## [3] "Enjoy the #SBLIV festivities and leave your drone at home! Learn more about the #NoDronesZone a
## [4] "#SBLIV is a NO DRONE ZONE! \nLearn more at: https://t.co/s4ASnw8TJV @FAADroneZone #NoDroneZone
## [5] "Legendary #NFL handicapper @hammeringhankg went 3-0 on conference championship Sunday & n
```

Table 1: Trend of Superbowl retweets

time	n
2020-01-21	94
2020-01-22	59
2020-01-23	41
2020-01-24	53
2020-01-25	80
2020-01-26	80
2020-01-27	137
2020-01-28	282
2020-01-29	21

```
## [6] "Legendary #NFL handicapper @hammeringhankg is 21-6 in best bets after a 3-0 sweep on conference
## [7] "Legendary #NFL handicapper @hammeringhankg is 21-6 in best bets after a 3-0 sweep on conference
## [8] "Our Vegas insiders are revealing their top #SBLIV prop bets on SportsLine - including a pick w
## [9] "Legendary #NFL handicapper @hammeringhankg went 3-0 on conference championship Sunday & no
## [10] "#SBLIV is just days away and our experts are sharing their top 30 prop bets! Join SportsLine w
```

## Question 8

Using `stream_tweets` to stream tweets for 2 minutes for the key words: kobe or bryant.

```
sb_stream_tweets<-stream_tweets("kobe OR bryant", timeout = 120) # timeout= 120 seconds is 2 minutes
sb_stream_tweets$text[1:10]
```

```
## [1] "We're deeply sadden by the news of Kobe Bryant's death. If you or someone you know is strugglin
## [2] "\"I'd rather be right than first, but it's a game that is played out in every newsroom in Amer
## [3] "Not a fan of basketball or Kobe Bryant but this video had me crying hard. <U+0001F62D> https:/
## [4] "Oh f*** off. He's always chatting the most s*** & people think you're \"woke\" if you supp
## [5] "Is Kobe's death a coincidence, an accident or a conspiracy?\nThere are 2 predictions with pin p
## [6] "<U+0001F62D><U+0001F62D><U+0001F49C><U+0001F49B>"
## [7] "Remember their names. \n\nAlyssa, Keri + John Altobelli \nGianna + Kobe Bryant\nPayton + Sarah
## [8] "Kobe was ours...he came to us at 17 and left dropping 60 20 years later... for 20 years we kne
## [9] "If you want to honor the lives of Kobe and Gigi Bryant, support women in sports and women's sp
## [10] "Trae Young: 13/24 for 45 points\nDevin Booker: 11/24 for 36 points\nLuka Doncic: 10/24 for 29 p
```

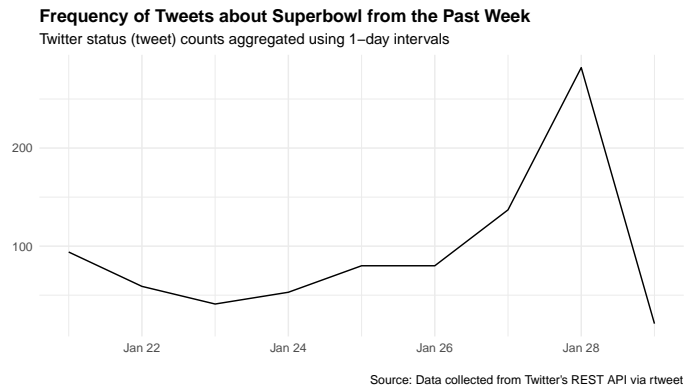
## Question 9

Using `ts_plot` and `ts_data` to determine patterns or relevancy of post

```
library(ggplot2)

#Returns data containing the frequency of tweets over a specified interval of time.
sbtweet_data<-ts_data(sb_tweets)
sbtweet_data<-as.data.frame(sbtweet_data)
kable(sbtweet_data, caption = "Trend of Superbowl retweets") %>% kable_styling(position = 'center')
```

```
# getting trend plots of the streamed tweets
ts_plot(sb_tweets, by= "days") +
  ggplot2::theme_minimal() +
  ggplot2::theme(plot.title = ggplot2::element_text(face = "bold")) +
  ggplot2::labs(
    x = NULL, y = NULL,
    title = "Frequency of Tweets about Superbowl from the Past Week",
    subtitle = "Twitter status (tweet) counts aggregated using 1-day intervals",
    caption = "\nSource: Data collected from Twitter's REST API via rtweet"
  )
```



## Question 10

plotting the geotagged tweets from Question 7

```
geocoded <- lat_lng(sb_tweets)

par(mar = c(0, 0, 0, 0))
maps::map("state", lwd = .25)
with(geocoded, points(lng, lat, pch = 20, cex = .75, col = rgb(0, .3, .7, .75)))
```

