

# Assignment for Week 6 - K-Means and Hierarchical Clustering

## Exerise:

### KMeans and Hierarchial Clustering

Collect data from twitter using your choice of hashtag (at least 1000 tweets). To gather your Twitter data, I would recommend using the python library tweepy.

Feel free to adapt the code from : <https://www.geeksforgeeks.org/extracting-tweets-containing-a-particular-hashtag-using-python/> Note: Reddit data can be used instead of Twitter data for this assignment.

- You will use both K-Means and HCA to cluster the collected data
- Draw a dendrogram
- Identify number of optimum clusters, and justify how do you pick number of clusters
- List the top 10 most frequent words
- Visualize using wordclouds
- Summarize your findings

## Deliverables:

Upload your notebook's .ipynb file and pdf printouts.

**Important:** Make sure you provide complete and thorough explanations for all of your analysis. You need to defend your thought processes and reasoning.

Loading required packages for tweets scraping, text analytics, and clustering.

```
In [42]: import pandas as pd
import numpy as np
import tweepy
from sklearn.cluster import KMeans
import re
import nltk
from nltk import FreqDist
from nltk.corpus import stopwords
from nltk.stem import WordNetLemmatizer
from nltk.stem import SnowballStemmer
from sklearn.feature_extraction.text import CountVecorizer
from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import TfidfVectorizer, TfidfTransformer
from sklearn.metrics import confusion_matrix , accuracy_score , classification_report
from sklearn import metrics

from wordcloud import WordCloud, STOPWORDS, ImageColorGenerator
from PIL import Image
import string

import matplotlib.pyplot as plt
```

Downloading stopword files if necessary

```
In [2]: nltk.download('stopwords')
nltk.download('wordnet')
```

```
[nltk_data] Downloading package stopwords to
[nltk_data] C:\Users\Ahmad\AppData\Roaming\nltk data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package wordnet to
[nltk_data] C:\Users\Ahmad\AppData\Roaming\nltk data...
[nltk_data] Package wordnet is already up-to-date!
```

```
Out[2]: True
```

The function below is to print scraped tweets

```
In [3]: # Function to display data of each tweet
def printtweetdata(n, ith_tweet):
    print(i)
    print(f"Tweet (n):")
    print(f"Username:{ith_tweet[0]}")
    print(f"Description:{ith_tweet[1]}")
    print(f"Location:{ith_tweet[2]}")
    print(f"Following Count:{ith_tweet[3]}")
    print(f"Followers Count:{ith_tweet[4]}")
    print(f"Total Tweets:{ith_tweet[5]}")
    print(f"Retweet Count:{ith_tweet[6]}")
    print(f"Tweet Text:{ith_tweet[7]}")
    print(f"Hashtags Used:{ith_tweet[8]}")
```

This function scrapes tweets, and save them into a CSV file

```
In [4]: # Function to perform data extraction
def scrape(words, date_since, numtweet):

    # Creating DataFrame using pandas
    db = pd.DataFrame(columns=['username', 'description', 'location', 'following',
                               'followers', 'totaltweets', 'retweetcount', 'text', 'hashtags'])

    # We are using .Cursor() to search through twitter for the required tweets.
    # The number of tweets can be restricted using .items(number of tweets)
    tweets = tweepy.Cursor(api.search_tweets, q=words, lang="en",
                            since=date_since, tweet_mode="extended").items(numtweet)

    # .Cursor() returns an iterable object. Each item in
    # the iterator has various attributes that you can access to
    # get information about each tweet
    list_tweets = [tweet for tweet in tweets]

    # Counter to maintain Tweet Count
    i = 1

    # We will iterate over each tweet in the list for extracting information about each tweet
    for tweet in list_tweets:
        username = tweet.user.screen_name
        description = tweet.user.description
        location = tweet.user.location
        following = tweet.user.friends_count
        followers = tweet.user.followers_count
        totaltweets = tweet.user.statuses_count
        retweetcount = tweet.retweet_count
        hashtags = tweet.entities['hashtags']

        # Retweets can be distinguished by a retweeted_status attribute,
        # in case it is an invalid reference, except block will be executed
        try:
            text = tweet.retweeted_status.full_text
        except AttributeError:
            text = tweet.full_text
        for j in range(0, len(hashtags)):
            hashtag.append(hashtags[j]['text'])

    # Here we are appending all the extracted information in the DataFrame
    ith_tweet = [username, description, location, following,
                 followers, totaltweets, retweetcount, text, hashtag]
    db.loc[len(db)] = ith_tweet

    # Function call to print tweet data on screen
    i = i+1
    printtweetdata(i, ith_tweet)
    # we will save our database as a CSV file.
    db.to_csv(filename)
```

Making connection to twitter API

```
In [5]: # Enter your own credentials obtained
# from your developer account
consumer_key = "juhhf0w6t5vlp139u6VBW8mg"
consumer_secret = "tsh8fyznd8b3vuhfSpOAdA5Tja8fJG2rr2uKv5w4aoU2vFgos"
access_key = "298039777-9fJ347njg8lW0z48BncrFegQkzwk9uKV3rx44lK"
access_secret = "uut643YFRKw0dow037mWd2d3vPWd3oW1w1eR334E8B6d"
auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_key, access_secret)
api = tweepy.API(auth)
```

This code is calling scrape function with date, hashtag, and number of tweets. Here I scraped tweets associated with #SaudiArabianGP, which is F1 Grand Prix held in Jeddah, Saudi Arabia and it's one of the most trending hashtags globally

```
In [6]: words = '#SaudiArabianGP'
date_since = '2021-11-20'

# number of tweets you want to extract in one run
numtweet = 1000
scrape(words, date_since, numtweet)
```



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[illegible]



[illegible]



[illegible]



[illegible]



[illegible]



Conta nova, antiga suspensa pq chamei a Rafa K\*11\*an de 1lmy Neutron

Following Count:228  
Total Tweets:1078  
Retweet Count:1533  
Tweet Text:ONE RACE TO GO, ZERO POINTS IN IT.  
HashTags Used:[]  
Who Wins?[]

#SaudiArabianGP SA F1 https://t.co/6RfnNMut87  
HashTags Used:['SaudiArabianGP', 'F1']

Tweet 384:  
Username:MalKJugg  
Description:Runny Positive guy. Proud Father of a 4 year old! Pro Wrestler & Huge Sports Fan. Love to make peop  
le laugh, little smartass, too! Football Nerd!!  
Location:London, England  
Following Count:1898  
Follow Count:374  
Total Tweets:1304  
Retweet Count:116  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu  
lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me  
Driver Of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SkV8083ebd  
HashTags Used:[]

Tweet 385:  
Username:JensDySve  
Description:leaser jura på Aarhus universitet  
Location:Domos10, Magyarország  
Following Count:324  
Follow Count:1212  
Total Tweets:1271  
Retweet Count:17  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu  
lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me  
Driver Of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SkV8083ebd  
HashTags Used:[]

Tweet 386:  
Username:Spardoz124  
Description:Random F1 fan and Twitter user. Payday 2, R6, and Apex Legends streamer.  
Location:London, England  
Following Count:248  
Follow Count:18  
Total Tweets:1875  
Retweet Count:428  
Tweet Text:Botas on the podium 🏆🏆  
#SaudiArabianGP #WTF1 https://t.co/gd7YH8Srq  
HashTags Used:['SaudiArabianGP', 'WTF1']

Tweet 387:  
Username:JensDySve  
Description:leaser jura på Aarhus universitet  
Location:Domos10, Magyarország  
Following Count:324  
Follow Count:1212  
Total Tweets:1271  
Retweet Count:17  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu  
lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me  
Driver Of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SkV8083ebd  
HashTags Used:[]

Tweet 388:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:POV: you watched the Saudi Arabian GP  
#SaudiArabianGP #F1 #WTF1 https://t.co/YURkllgmHC  
HashTags Used:['SaudiArabianGP', 'F1', 'WTF1']

Tweet 389:  
Username:clarendod4  
Description:100% F1 fanSupport @RistoClity#RRC +F1/ Football/FormulaE/IndyCar/MotoGP/WSeries/General News+Polls/  
Horoscopes #211 #LH #FTF97 #YNWA - @SteveStevens5 Other Acc  
Location:London, England  
Following Count:1572  
Follow Count:70  
Total Tweets:4657  
Retweet Count:1306  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 390:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

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Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 392:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 393:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 394:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 395:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 396:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 397:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 398:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 399:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 400:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 401:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 402:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 403:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 404:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 405:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 406:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 407:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 408:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 409:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 410:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 411:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 412:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 413:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 414:  
Username:its8lila  
Description:little horror  
Location:She/Hes  
Following Count:141  
Follow Count:77  
Total Tweets:1560  
Retweet Count:149  
Tweet Text:Max is your #F1DriverOfTheDay in Jeddah  
#SaudiArabianGP SA F1 https://t.co/Ci8ufgrRHK  
HashTags Used:['SaudiArabianGP']

Tweet 415:  
Username:its8lila  
Description:little horror







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[illegible]



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Following Count:147  
Retweet Count:149  
Total Tweets:300  
Tweet Text:A 1210k day for @LandoNorris, but he's looking on the positive side. 🤖  
One more to go. Lando. 🏎️

#SaudiArabianGP SA #F1 https://t.co/xm8shskuff  
Hashtags Used:['#SaudiArabianGP']

Tweet 775:  
Username:RidwanAzmai  
Description:A kid with dream to racing 🇲🇾  
Location:Malaysia  
Following Count:314  
Followee Count:169  
Total Tweets:592  
Retweet Count:320  
Tweet Text:So close to a second podium of the season for @oonSteban!  
#ValterBottas got him on the line 🏁

#SaudiArabianGP SA #F1 https://t.co/FyaoN8TEm  
Hashtags Used:['#SaudiArabianGP', 'F1']

Tweet 776:  
Username:Lewis Hamilton  
Description:Hate Lewis Hamilton.  
Location:  
Following Count:1302  
Followee Count:58  
Total Tweets:332  
Retweet Count:2719  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me Driver of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SKV8083e4d  
Hashtags Used:[]

Tweet 777:  
Username:tomb333  
Description:I've look down on anybody unless you're helping them up.

#HMC #FMS  
Location:South East, England  
Following Count:4799  
Followee Count:1305  
Total Tweets:1347  
Retweet Count:2413  
Tweet Text:Max is your F1DriverOffTheDay in Jeddah

#SaudiArabianGP SA #F1 https://t.co/PYmKwXvYT  
Hashtags Used:['F1DriverOffTheDay', 'SaudiArabianGP', 'F1']

Description:Formula 1 🏎️  
Location:United Kingdom  
Following Count:1285  
Followee Count:185  
Total Tweets:1527  
Retweet Count:149  
Tweet Text:Brundle has finally said it "Verstappen has to look at his driving standards". YES. Exactly! The man is a danger to others #F1 #SaudiArabianGP SA #nslagsUsed:[]

Tweet 780:  
Description:MclarenPNation  
Location:  
Following Count:1088  
Followee Count:1677  
Total Tweets:1285  
Retweet Count:32  
Tweet Text:The team did a good job and I thought I drove a good race, but the red flags changed everything." 🏎️

@LandoNorris shares his thoughts on the #SaudiArabianGP. Hear from the rest of the team too. 🗣️  
Hashtags Used:[]

Tweet 781:  
Description:🇫🇮❤️🇩🇪🇦🇺🇳63❤️  
• mclaren boys • •lmlight👉  
• Gryffindor🧡  
• Capricorn♊️  
Location:  
Following Count:82  
Followee Count:195  
Total Tweets:1527  
Retweet Count:132  
Tweet Text:A tricky day for @LandoNorris, but he's looking on the positive side. 🤖  
One more to go. Lando. 🏎️

#SaudiArabianGP SA https://t.co/xm8shskuff  
Hashtags Used:['#SaudiArabianGP']

Tweet 782:  
Username:Meraki  
Description:Istan CRAVITY 🇲🇻  
Location:  
Following Count:128  
Followee Count:21  
Total Tweets:698  
Retweet Count:121  
Tweet Text:Tracy race with a lot going on but in the end happy to bring it home in one piece in P12. Lacking a little bit of pace to challenge for anything more but happy with the race we did! 🏎️ #SaudiArabianGP #NLG http s://t.co/bmgQp2IdMg  
Hashtags Used:[]

Tweet 783:  
Username:ArtoVanAssche)  
Description:  
Location:  
Following Count:172  
Followee Count:35  
Total Tweets:10  
Retweet Count:2719  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me Driver of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SKV8083e4d  
Hashtags Used:[]

Tweet 784:  
Location:Real Madrid en lo bueno y en lo malo M10-B18. Sanizita y Alonsoita.  
Location:IAAA MADRID  
Following Count:769  
Followee Count:142  
Total Tweets:1527  
Retweet Count:2719  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me Driver of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SKV8083e4d  
Hashtags Used:[]

Tweet 785:  
Description:Charlesheepki  
Location:Feterborough  
Following Count:332  
Followee Count:191  
Total Tweets:7796  
Retweet Count:132  
Tweet Text:A tricky day for @LandoNorris, but he's looking on the positive side. 🤖

One more to go. Lando. 🏎️

#SaudiArabianGP SA https://t.co/xm8shskuff  
Hashtags Used:['#SaudiArabianGP']

Tweet 786:  
Username:nacnacangany?  
Description:Nic |  
Location:  
Following Count:182  
Followee Count:185  
Total Tweets:1527  
Retweet Count:85  
Tweet Text:For those of you pushing the British media's "Max left no space" bs, use your eyes please. #SaudiArabianGP #maxleftnospace  
Hashtags Used:['#SaudiArabianGP']

Tweet 787:  
Username:WMS\_Thomas  
Description:PuginBores.  
Location:  
Following Count:153  
Followee Count:16  
Total Tweets:535  
Retweet Count:136  
Tweet Text:ONE RACE TO GO. ZERO POINTS IN IT.  
Who wins?!

#SaudiArabianGP SA #F1 https://t.co/8rFnMOuH7  
Hashtags Used:['#SaudiArabianGP', 'F1']

Tweet 788:  
Username:sunknooc  
Description:  
Location:  
Following Count:549  
Followee Count:351  
Total Tweets:8750  
Retweet Count:766  
Tweet Text:LaF 43/500  
Hamilton takes the lead from Verstappen!

#SaudiArabianGP SA #F1 https://t.co/MgqMo1Spf  
Hashtags Used:['#SaudiArabianGP', 'F1']

Tweet 789:  
Username:amila\_gpl  
Description:🇫🇮❤️🇩🇪🇦🇺🇳63❤️  
• mclaren boys • •lmlight👉  
• Gryffindor🧡  
• Capricorn♊️  
Location:  
Following Count:82  
Followee Count:195  
Total Tweets:1527  
Retweet Count:132  
Tweet Text:82?"I mean did I do good job and I thought I drove a good race, but the red flags changed everything." 🏎️

@LandoNorris shares his thoughts on the #SaudiArabianGP. Hear from the rest of the team too. 🗣️  
Hashtags Used:[]

Tweet 790:  
Username:3J0R\_SUZUKA  
Description:  
Location:  
Following Count:64  
Followee Count:130  
Total Tweets:63  
Retweet Count:0  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me Driver of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SKV8083e4d  
Hashtags Used:[]

Tweet 791:  
Description:USO083 Materia estelar, hola hermanas estrellas ! cinefilia , atrapada en los 80s, turista de la vida  
Location:San Andres Cholula, Puebla  
Following Count:324  
Followee Count:184  
Total Tweets:8184  
Retweet Count:324  
Tweet Text:So, so close to a second podium of the season for @oonSteban!

#ValterBottas got him on the line 🏁

#SaudiArabianGP SA #F1 https://t.co/FyaoN8TEm  
Location:IAA SaudiArabianGP, 'F1']

Tweet 792:  
Username:sebaMendez41  
Description:Fan de la música 🇲🇽 |  
Estudiante de Marketing 📚  
Asiente del Wrestling 🥃  
Actualmente escribo articulos sobre Wrestling para 8xetoaaillo  
Location:Borio, Hidalgo  
Following Count:228  
Followee Count:351  
Total Tweets:1336  
Retweet Count:1219  
Tweet Text:Where to start? We finished 2nd, after an eventful race and a lot of things happened that I don't fu lly agree with. I went for it on track and gave it my all. Thanks to all fans, for supporting me and voting me Driver of The Day! On to Abu Dhabi #KeepPushing SA #SaudiArabianGP https://t.co/SKV8083e4d  
Hashtags Used:[]

Tweet 793:  
Username:Imanadego  
Description:De todo un poco y un poco de nada, más de lo mismo  
Location:Bs.as.  
Following Count:1400  
Followee Count:483  
Total Tweets:59107  
Retweet Count:1326  
Tweet Text:PREMA ARE THE TEAMS' CHAMPIONS! 🏆

Massive congratulations to @PREMA\_Team, @ScacPiastri and @SwartzmanRob 🏎️

#SaudiArabianGP SA #F2 https://t.co/vHQjPBD9  
Hashtags Used:[]

Tweet 794:  
Location:  
Following Count:60  
Followee Count:4  
Total Tweets:192  
Retweet Count:2413  
Tweet Text:Max is your F1DriverOffTheDay in Jeddah

#SaudiArabianGP SA #F1 https://t.co/PYmKwXvYT  
Hashtags Used:['F1DriverOffTheDay', 'SaudiArabianGP', 'F1']

Tweet 795:  
Username:Bend\_0  
Description:I'M Jusqu'ici tout va bien  
Location:  
Following Count:733  
Followee Count:236  
Total Tweets:17942  
Retweet Count:488  
Tweet Text:Lewis ever since that penalty in Brazil:

#SaudiArabianGP SA #F1 #WTFF https://t.co/3KlqKFtw  
Hashtags Used:['#SaudiArabianGP', 'F1', 'WTFF']

Tweet 796:  
Username:KeshyFaith  
Description:Simner saved by Grace! Digital Marketer/ Foodie  
Location:Mexico  
Following Count:1089  
Followee Count:1348  
Total Tweets:17556  
Retweet Count:428  
Tweet Text:Max on the podium 🏆🏎️

#SaudiArabianGP #WTFF https://t.co/VHqJ7YHSrg  
Hashtags Used:['#SaudiArabianGP', 'WTFF']

Tweet 797:  
Username:CallMade\_90042  
Description:2022, La Humildad Prevalece  
Location:  
Following Count:148  
Followee Count:265  
Total Tweets:38022  
Retweet Count:15136  
Tweet Text:ONE RACE TO GO. ZERO POINTS IN IT.  
Who wins?!

#SaudiArabianGP SA #F1 https://t.co/8rFnMOuH7  
Hashtags Used:['#SaudiArabianGP', 'F1']

Tweet 798:  
Description:charles Leclerc, a fast fan enthusiast. | #CL16 | #WJ3 | red bull racing & scuderia ferrari's favorite team of mine. 🇨🇭 moto gp & verstepenusiast.  
Location:Schiedamschen, 23 | CA|  
Following Count:1490  
Followee Count:128  
Total Tweets:1320  
Retweet Count:1207  
Tweet Text:🔥 Fiery words from Max Verstappen post-race 🗣️

#F1 #SaudiArabianGP SA https://t.co/GSkwMc1Spf  
Hashtags Used:['F1', 'SaudiArabianGP']

Tweet 799:  
Username:amila\_gpl  
Description:🇫🇮❤️🇩🇪🇦🇺🇳63❤️  
• mclaren boys • •lmlight👉  
• Gryffindor🧡  
• Capricorn♊️  
Location:  
Following Count:82  
Followee Count:195  
Total Tweets:1527  
Retweet Count:132  
Tweet Text:A tricky race with a lot going on but in the end happy to bring it home in one piece in P12. Lacking a little bit of pace to challenge for anything more but happy with the race we did! 🏎️ #SaudiArabianGP #NLG http s://t.co/bmgQp2IdMg  
Hashtags Used:[]

Tweet 800:  
Username:Darshini\_D096  
Description:# 25 🌟 #WSG ⚡️🏎️ \* The way I drive, the way I handle a car, is an expression of my inner fee lings. A proud #TeamM Motorsport member since 2007. 🇯🇵  
Location:India  
Following Count:2264  
Followee Count:1405  
Total Tweets:5684  
Retweet Count:488  
Tweet Text:Lewis to win this world championship now, I felt that Max Verstappen crossed the line tonight t. He's Gilles Villeneuve excitement, but not Gilles Villeneuve principles #SaudiArabianGP  
Hashtags Used:[]

Tweet 801:  
Location:Madrid  
Description:Istan CRAVITY 🇲🇻  
Location:  
Following Count:128  
Followee Count:21  
Total Tweets:698  
Retweet Count:121  
Tweet Text:All the best bits from an unforgettable evening in Jeddah 🏎️

#SaudiArabianGP SA #F1  
Hashtags Used



[illegible]



[illegible]



[illegible]



