MINI PROJECT
(2020-21)

Build and Deploy a Twitter Bot.

MID-TERM REPORT

Institute of Engineering & Technology

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Contents

Abstract

In this we will build a Twitter Bot using a python library called “Tweepy” to access twitter’s API. This twitter bot will reply the user whenever it will be mentioned with the latest COVID-19 stats depending on what hashtag has been provided by the user. As this bot can provide covid stats either worldwide or country-wide. If the user ends the tweet with a “#covid19” or “#covid_19” or “#coronavirus” (case insensitive) then the bot will reply with worldwide stats and if the user ends the tweet with a “#india” or “#brazil” or “#china” (any country name again case insensitive) then the bot will reply with the covid stats of that specific country. It doesn’t only reply to the tweet it likes and retweets that particular tweet as well.

The bot takes the data that it replies to the user from “https://www.worldometers.info/coronavirus/” . It does this using some python web scraping libraries.

Introduction

1.1 General Introduction to the topic:-

To build a Twitter Bot using a python library called “Tweepy” to access twitter’s API and some python web scraping libraries then deploy it to a web server for hosting.

About Tweepy: -

Tweepy is an open source Python package that gives you a very convenient way to access the Twitter API with Python. Tweepy includes a set of classes and methods that represent Twitter’s models and API endpoints, and it transparently handles various implementation details, such as:

- Data encoding and decoding
- HTTP requests
- Results pagination
- OAuth authentication
- Rate limits
- Streams

If you weren't using Tweepy, then you would have to deal with low-level details having to do with HTTP requests, data serialization, authentication, and rate limits. This could be time consuming and prone to error. Instead, thanks to Tweepy, you can focus on the functionality you want to build.

The python web scraping libraries that I have used here are :-

- **Requests:**
  This is a simple and easy to use HTTP library for python which allows the user to efficiently send a request and connect to any website that you want after which you can request it for it's content and so on.

- **Lxml:**
  LXML is a pythonic, mature binding for the libxml2 and libxslt libraries . It provides safe and convenient access to these libraries using the ElementTree API .

Area of Computer Science

The reason i decided to this because at the moment as we all know india is currently at the second place worldwide in terms of covid cases so I thought why not make something that can help us understand that why wearing a mask is so important . As twitter is a very popular social media platform and it has almost 40 million+ daily active users so it always helps the society as a whole to keep a tab on all the lives we have lost so far so we can keep remembering ourselves to wear a mask and keep fighting and to keep a tab on lives recovered so far as well so we can admire our exceptional health care workers and doctors.

This according to me is the best use of this bot that I created and all of this is just one tweet away.

1.3 Hardware Requirements

- Memory [4GB RAM (or higher)]
- Intel core i3 64-bit Processor (or higher)

1.3 Software requirements

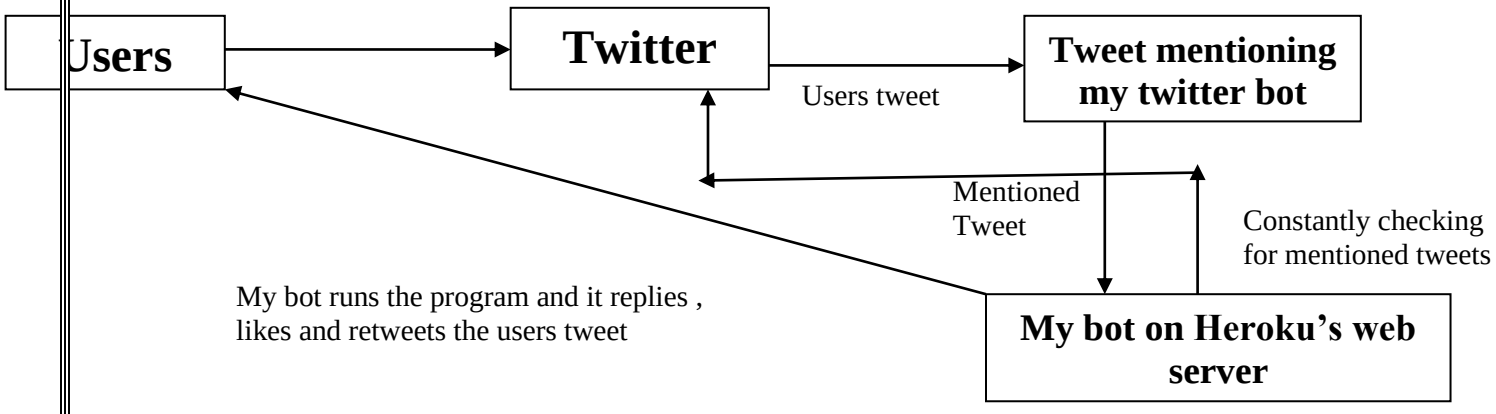
- Twitter Developer Account
- Any OS
- Any web browser
- Python
- A web server(to host the bot)

Objective

The main objectives of this bot is to reply, retweet and like all the tweets that contain the twitter handle @project_tweepy with a hashtag that is either #covid19 , #covid_19 , #coronavirus or #<any country name>.The reply that the bot sends to the user contains in case of #covid19 , #covid_19 , #coronavirus is Total Cases,Active Cases,Non Active Cases,Recovered and total Deaths and in case of #<any country name> it is total cases, recovered cases and total deaths.

All of this to educate the user to please wear a mask and stay safe.

Implementation Details



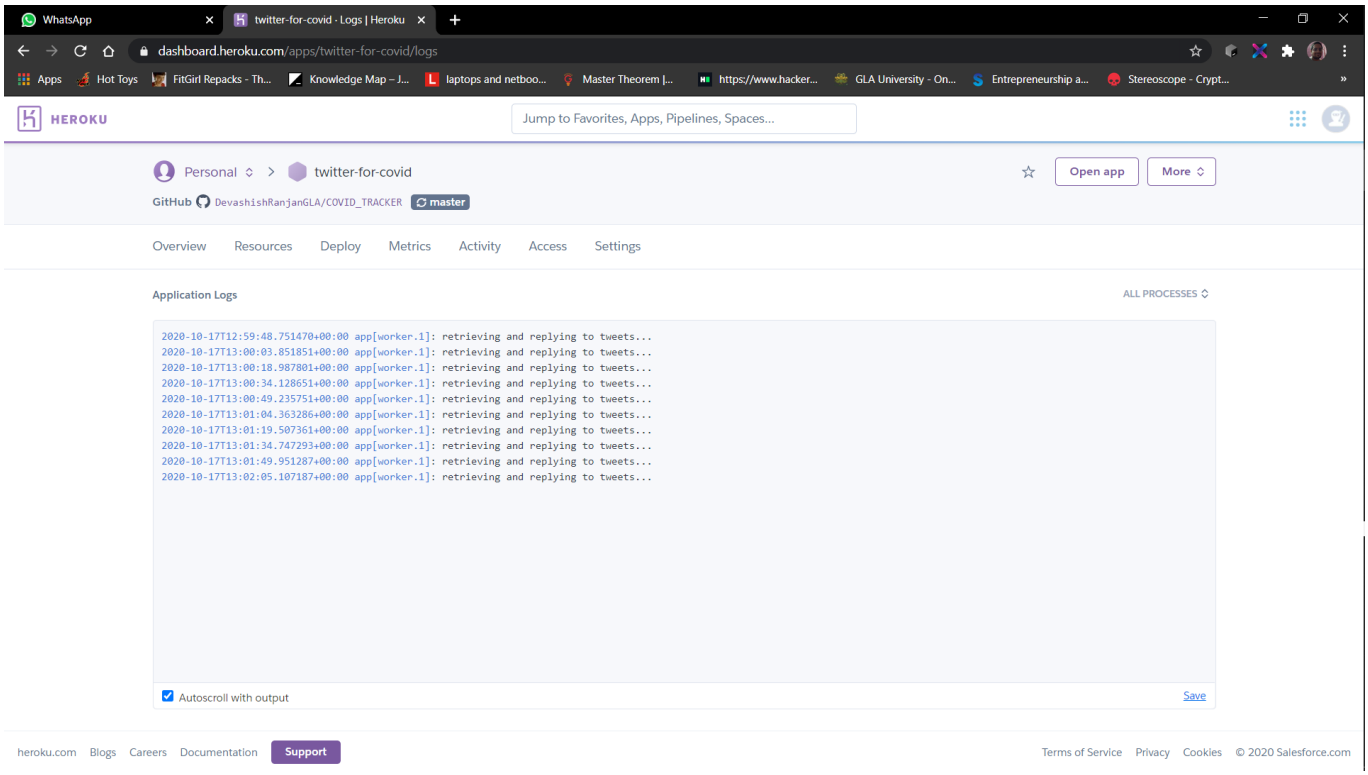
Part1: To build a Twitter Bot that replies with covid stats and likes, retweets that tweet using python's library "Tweepy" and some python web scraping libraries.

With the use of Tweepy i have created a bot that replies , likes & retweets every single tweet in which it is mentioned.

Now in my case the bot has to reply with covid stats so using some python web scraping libraries such as requests and lxml my bot will scrape the latest covid stats from "https://www.worldometers.info/coronavirus/" then it will format the data in a readable form and then it will send it to the user .

Part 2: Deploying the bot.

Now the bot is to be deployed to a web server which will host it so that it could 24x7. For that you can choose from a variety of free and paid hosting services . The one that i went with to host my bot in this project is Heroku.



Progress

1.) Part 1 is completed

To build a Twitter Bot that replies with covid stats and likes, retweets that tweet using python's library "Tweepy" and some python web scraping libraries.

- Create the basic structure of the bot
  Which involves:-
  i. Importing Tweepy
  ii. Defining API keys(used for authentication purposes. These are provided when you make a twitter developer account.)
  iii. Creating and initializing a authentication token (so that the API can authenticate you and provide you a stable connection with the twitter server)
- Process for scraping the data
  i. Send a request to "https://www.worldometers.info/coronavirus/" to get a status code
  ii. Initialize that status code to a variable
  iii. Access the data of that webpage using the variable and format it into a XML tree(done using a method of requests library "html.fromstring(<variable with status code>.content)")
  iv. Move through that tree using a method of lxml library called Xpath to get your desired content

2.) Part 2 is completed

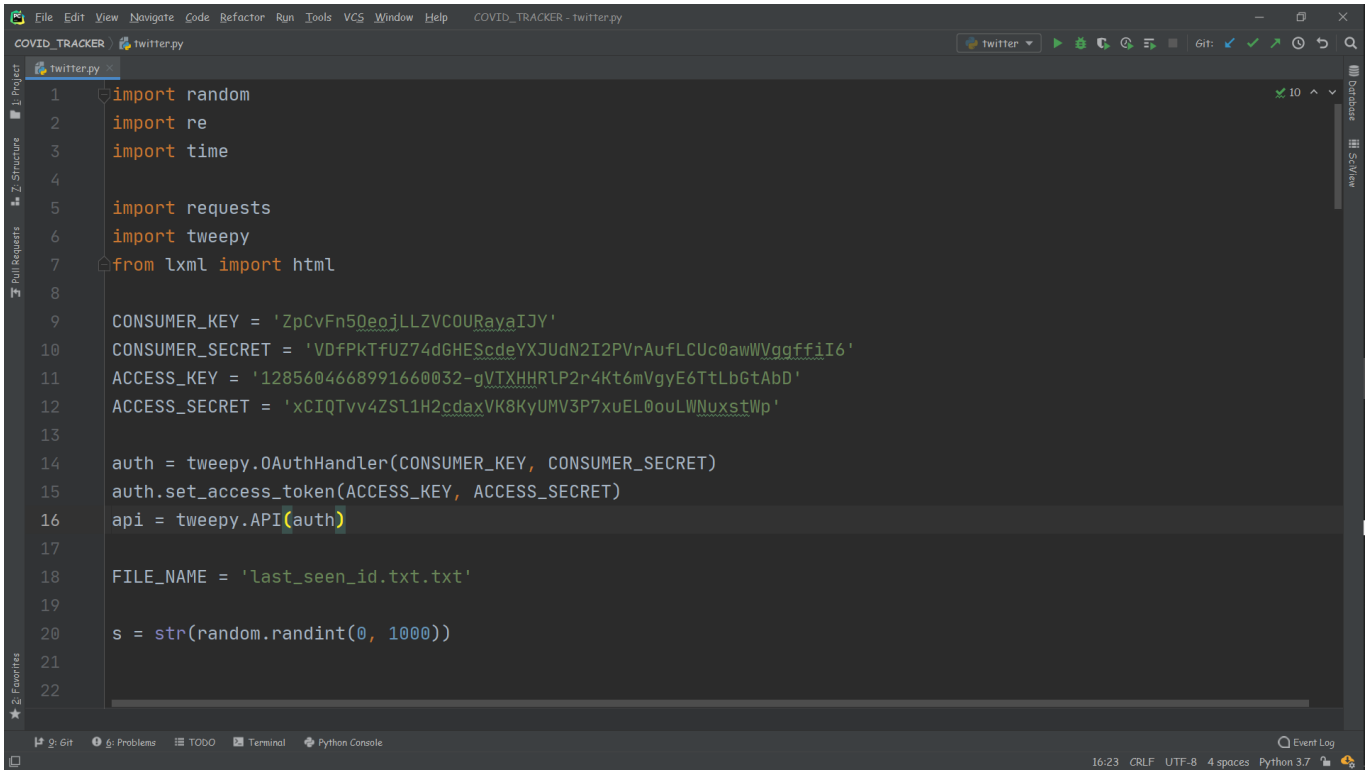
Deploying the bot

- Choose a hosting service of your choice (I chose Heroku)

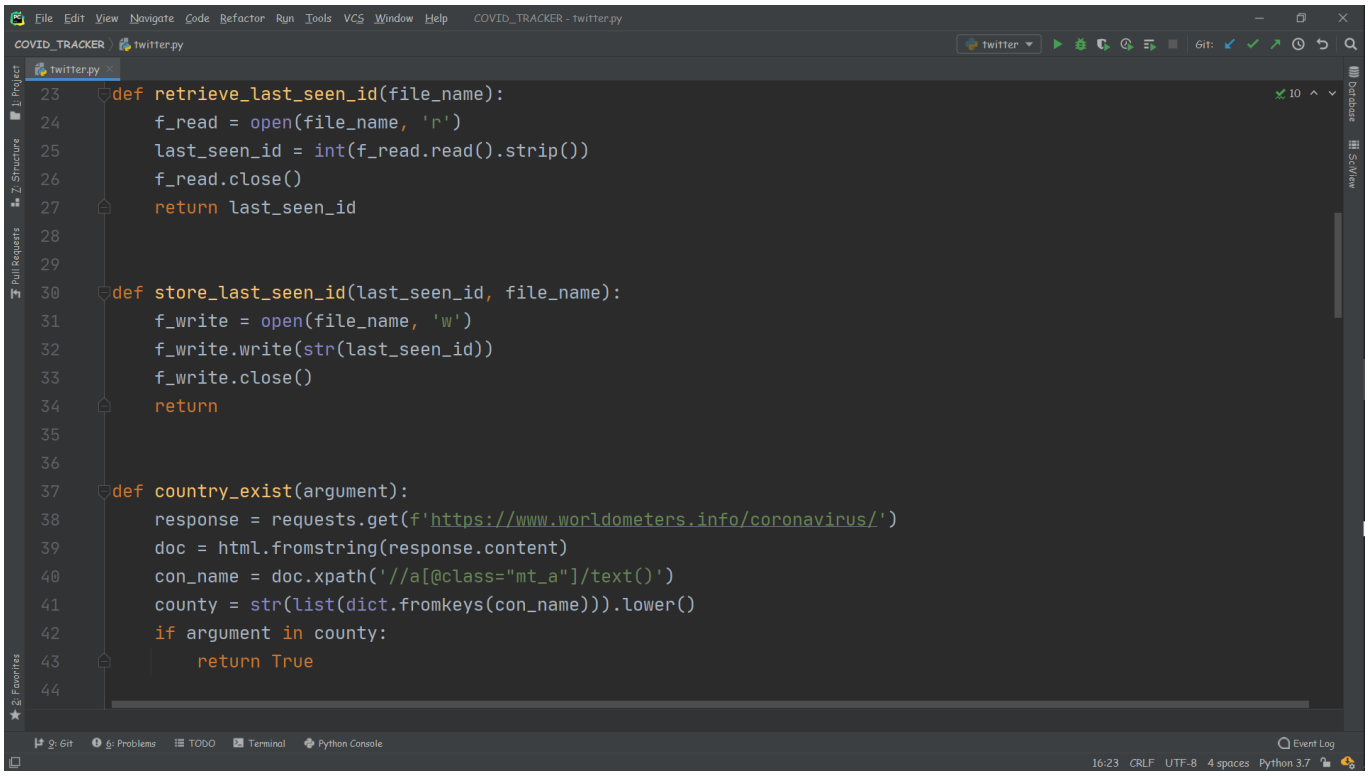
As here i have chosen Heroku as my hosting service so the process for deployment on Heroku is as follows :-

- Create a account on Heroku
- Create a new app
- Upload your code on Heroku's server (this can be achieved through one of three ways available on heroku)
    1. One of those ways is to upload your code to a github repository and then link your Heroku account to that repo
- Deploy your app

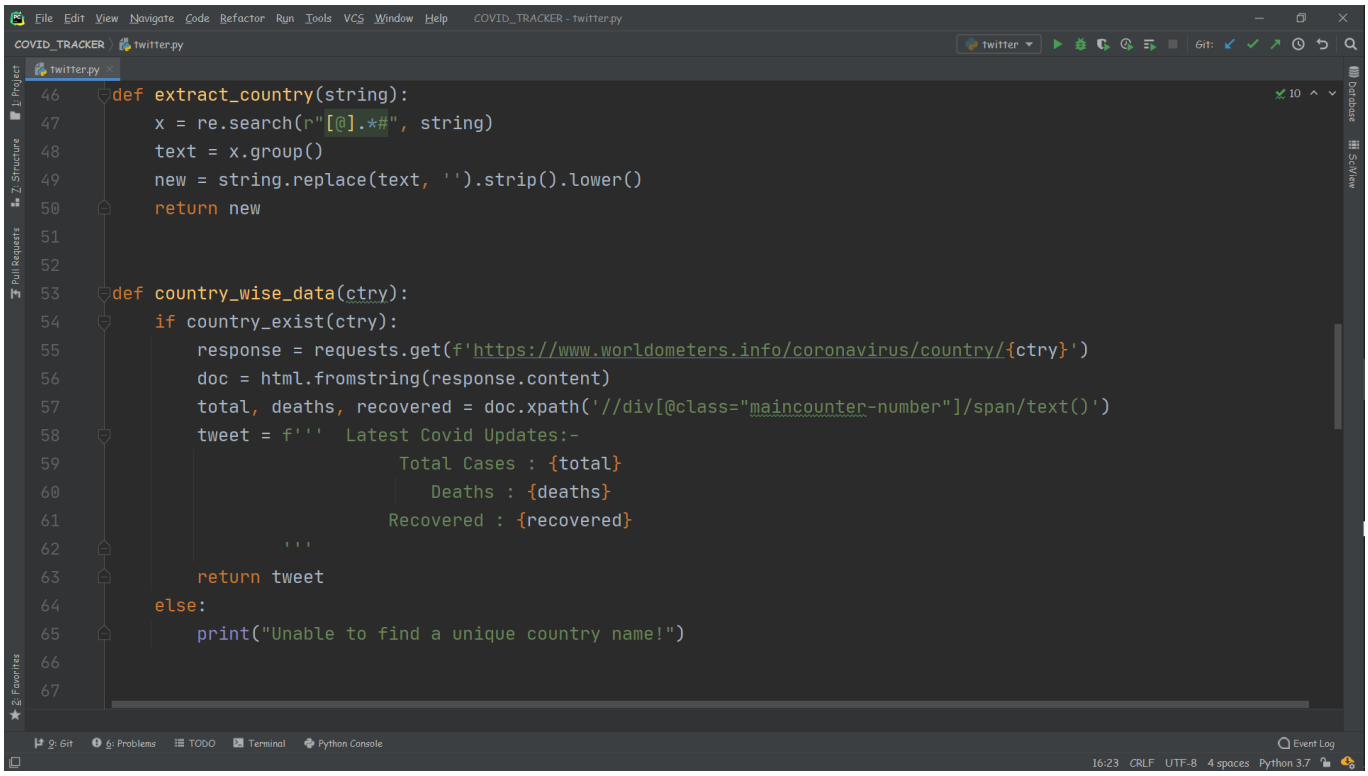
SCREENSHOTS



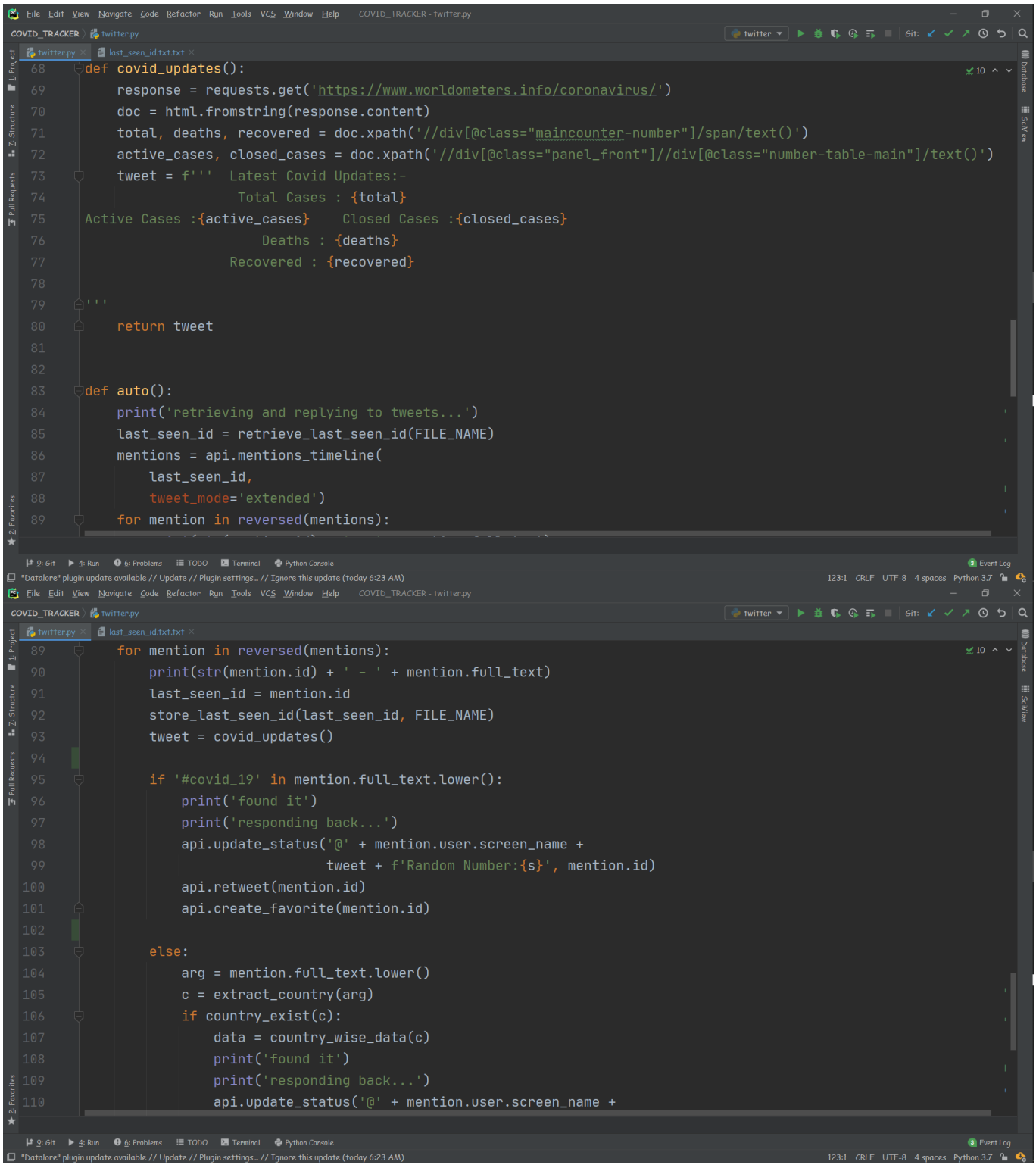

```python
import random
import re
import time

import requests
import tweepy
from lxml import html

CONSUMER_KEY = 'ZpCvFn5OeojLLZVCOURayaIJY'
CONSUMER_SECRET = 'VDfPkTfUZ74dGHEScdeYXJUdN2I2PVrAufLCUc0awWVggffiI6'
ACCESS_KEY = '1285604668991660032-gVTXHHRlP2r4Kt6mVgyE6TtLbGtAbD'
ACCESS_SECRET = 'xCIQTvv4ZSl1H2cdaxVK8KyUMV3P7xuEL0ouLWNuxstWp'

auth = tweepy.OAuthHandler(CONSUMER_KEY, CONSUMER_SECRET)
auth.set_access_token(ACCESS_KEY, ACCESS_SECRET)
api = tweepy.API(auth)

FILE_NAME = 'last_seen_id.txt.txt'

s = str(random.randint(0, 1000))
```

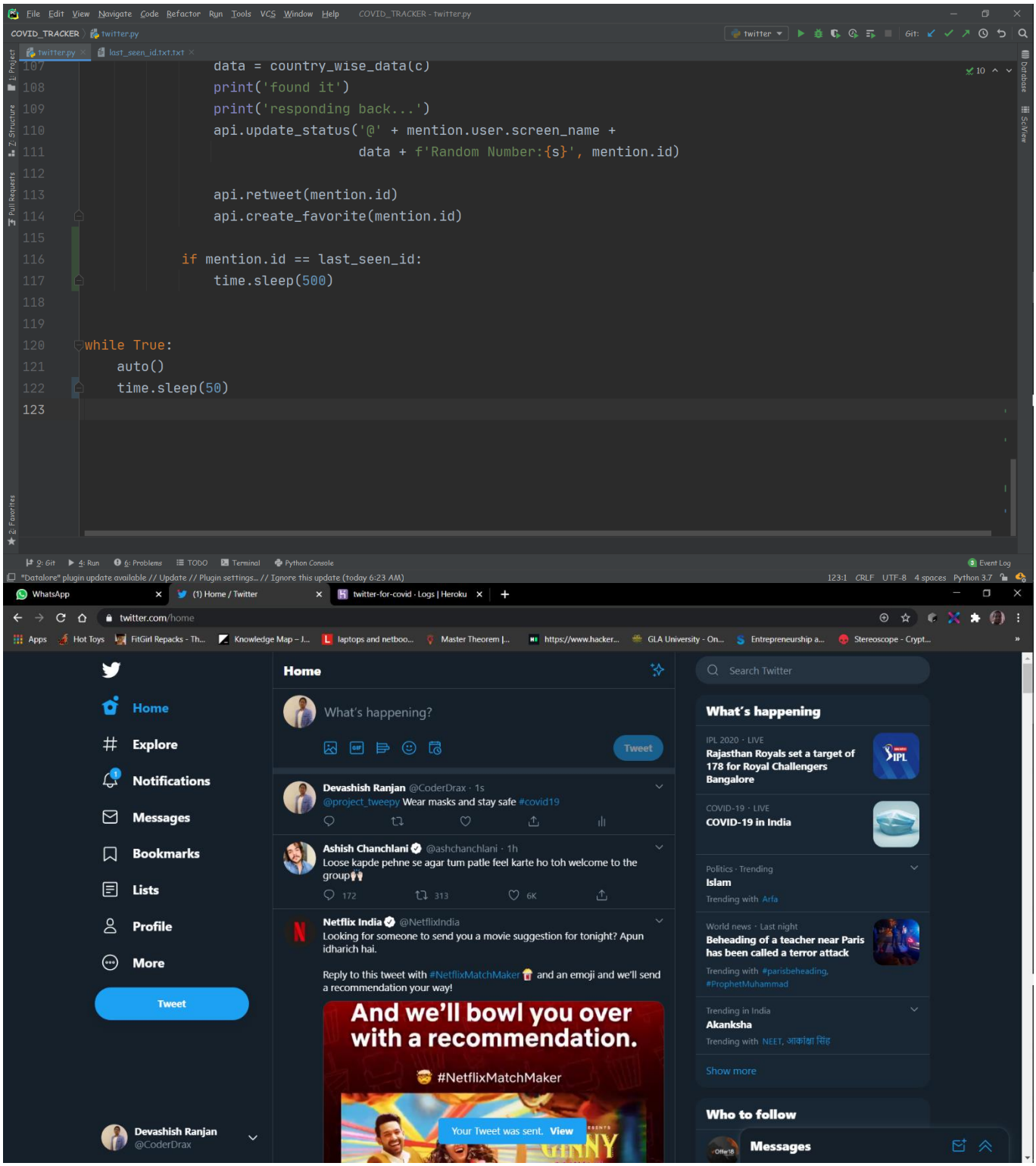


```python
def retrieve_last_seen_id(file_name):
    f_read = open(file_name, 'r')
    last_seen_id = int(f_read.read().strip())
    f_read.close()
    return last_seen_id


def store_last_seen_id(last_seen_id, file_name):
    f_write = open(file_name, 'w')
    f_write.write(str(last_seen_id))
    f_write.close()
    return


def country_exist(argument):
    response = requests.get(f'https://www.worldometers.info/coronavirus/')
    doc = html.fromstring(response.content)
    con_name = doc.xpath('//a[@class="mt_a"]/text()')
    county = str(list(dict.fromkeys(con_name))).lower()
    if argument in county:
        return True
```



```python
def extract_country(string):
    x = re.search(r"[@].*#", string)
    text = x.group()
    new = string.replace(text, '').strip().lower()
    return new


def country_wise_data(ctry):
    if country_exist(ctry):
        response = requests.get(f'https://www.worldometers.info/coronavirus/country/{ctry}')
        doc = html.fromstring(response.content)
        total, deaths, recovered = doc.xpath('//div[@class="maincounter-number"]/span/text()')
        tweet = f'''  Latest Covid Updates:-
                        Total Cases : {total}
                            Deaths : {deaths}
                        Recovered : {recovered}
                '''
        return tweet
    else:
        print("Unable to find a unique country name!")
```


File Edit View Navigate Code Refactor Run Tools VCS Window Help COVID_TRACKER - twitter.py
COVID_TRACKER twitter.py
twitter
Git:
twitter.py
last_seen_id.txt.txt
def covid_updates():
response = requests.get('https://www.worldometers.info/coronavirus/')
doc = html.fromstring(response.content)
total, deaths, recovered = doc.xpath('//div[@class="maincounter-number"]/span/text()')
active_cases, closed_cases = doc.xpath('//div[@class="panel_front"]//div[@class="number-table-main"]/text()')
tweet = f''' Latest Covid Updates:-
Total Cases : {total}
Active Cases :{active_cases} Closed Cases :{closed_cases}
Deaths : {deaths}
Recovered : {recovered}
'''
return tweet
def auto():
print('retrieving and replying to tweets...')
last_seen_id = retrieve_last_seen_id(FILE_NAME)
mentions = api.mentions_timeline(
last_seen_id,
tweet_mode='extended')
for mention in reversed(mentions):
9: Git
4: Run
6: Problems
TODO
Terminal
Python Console
Event Log
"Datalore" plugin update available // Update // Plugin settings... // Ignore this update (today 6:23 AM)
123:1 CRLF UTF-8 4 spaces Python 3.7
for mention in reversed(mentions):
print(str(mention.id) + ' - ' + mention.full_text)
last_seen_id = mention.id
store_last_seen_id(last_seen_id, FILE_NAME)
tweet = covid_updates()
if '#covid_19' in mention.full_text.lower():
print('found it')
print('responding back...')
api.update_status('@' + mention.user.screen_name +
tweet + f'Random Number:{s}', mention.id)
api.retweet(mention.id)
api.create_favorite(mention.id)
else:
arg = mention.full_text.lower()
c = extract_country(arg)
if country_exist(c):
data = country_wise_data(c)
print('found it')
print('responding back...')
api.update_status('@' + mention.user.screen_name +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COVID_TRACKER twitter.py
twitter.py last_seen_id.txt.txt
data = country_wise_data(c)
print('found it')
print('responding back...')
api.update_status('@' + mention.user.screen_name +
data + f'Random Number:{s}', mention.id)
api.retweet(mention.id)
api.create_favorite(mention.id)
if mention.id == last_seen_id:
time.sleep(500)
while True:
auto()
time.sleep(50)
WhatsApp
(1) Home / Twitter
twitter-for-covid · Logs | Heroku
twitter.com/home
Home
Explore
Notifications
Messages
Bookmarks
Lists
Profile
More
Tweet
What's happening?
Devashish Ranjan @CoderDrax · 1s
@project_tweepy Wear masks and stay safe #covid19
Ashish Chanchlani @ashchanchlani · 1h
Loose kapde pehne se agar tum patle feel karte ho toh welcome to the group
Netflix India @NetflixIndia
Looking for someone to send you a movie suggestion for tonight? Apun idharich hai.
Reply to this tweet with #NetflixMatchMaker and an emoji and we'll send a recommendation your way!
And we'll bowl you over with a recommendation.
#NetflixMatchMaker
Your Tweet was sent. View
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Trending with #parisbeheading, #ProphetMuhammad
Trending in India
Akanksha
Trending with NEET, आकांक्षा सिंह
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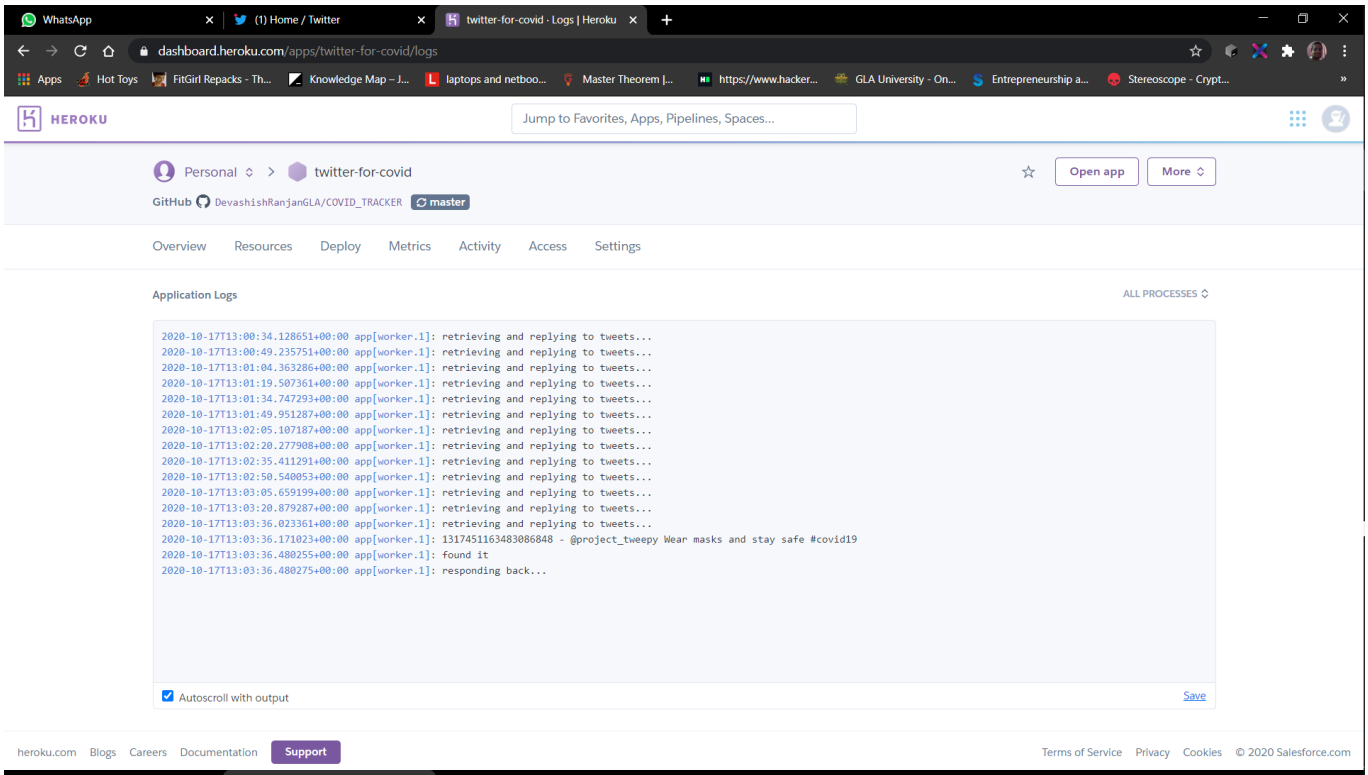
@CoderDrax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Jump to Favorites, Apps, Pipelines, Spaces...
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twitter-for-covid
Open app
More
GitHub DevashishRanjanGLA/COVID_TRACKER
master
Overview
Resources
Deploy
Metrics
Activity
Access
Settings
Application Logs
ALL PROCESSES
2020-10-17T13:00:34.128651+00:00 app[worker.1]: retrieving and replying to tweets...
2020-10-17T13:00:49.235751+00:00 app[worker.1]: retrieving and replying to tweets...
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Autoscroll with output
Save
heroku.com
Blogs
Careers
Documentation
Support
Terms of Service
Privacy
Cookies
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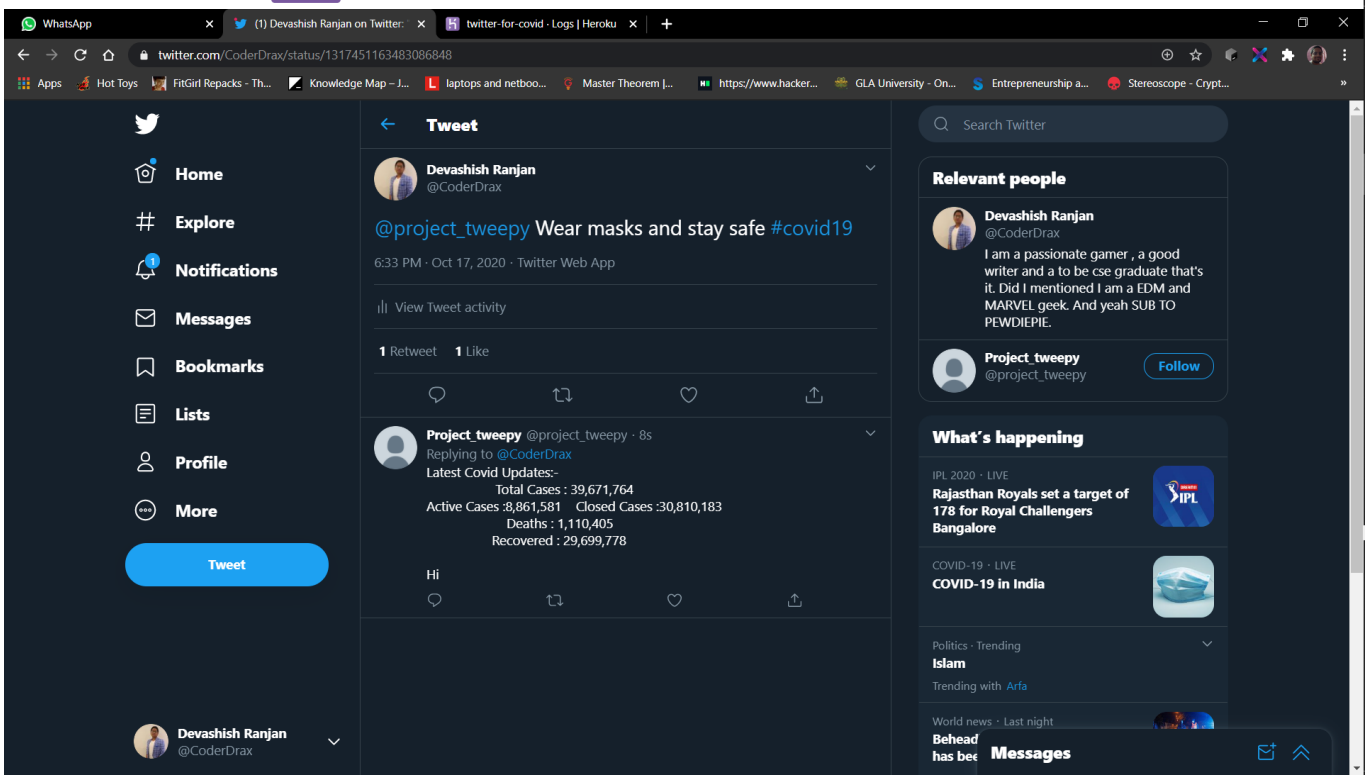
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@project_tweepy Wear masks and stay safe #covid19
6:33 PM · Oct 17, 2020 · Twitter Web App
View Tweet activity
1 Retweet 1 Like
Project_tweepy @project_tweepy · 8s
Replying to @CoderDrax
Latest Covid Updates:-
Total Cases : 39,671,764
Active Cases :8,861,581 Closed Cases :30,810,183
Deaths : 1,110,405
Recovered : 29,699,778
Hi
Search Twitter
Relevant people
Devashish Ranjan
@CoderDrax
I am a passionate gamer , a good writer and a to be cse graduate that's it. Did I mentioned I am a EDM and MARVEL geek. And yeah SUB TO PEWDIEPIE.
Project_tweepy
@project_tweepy
Follow
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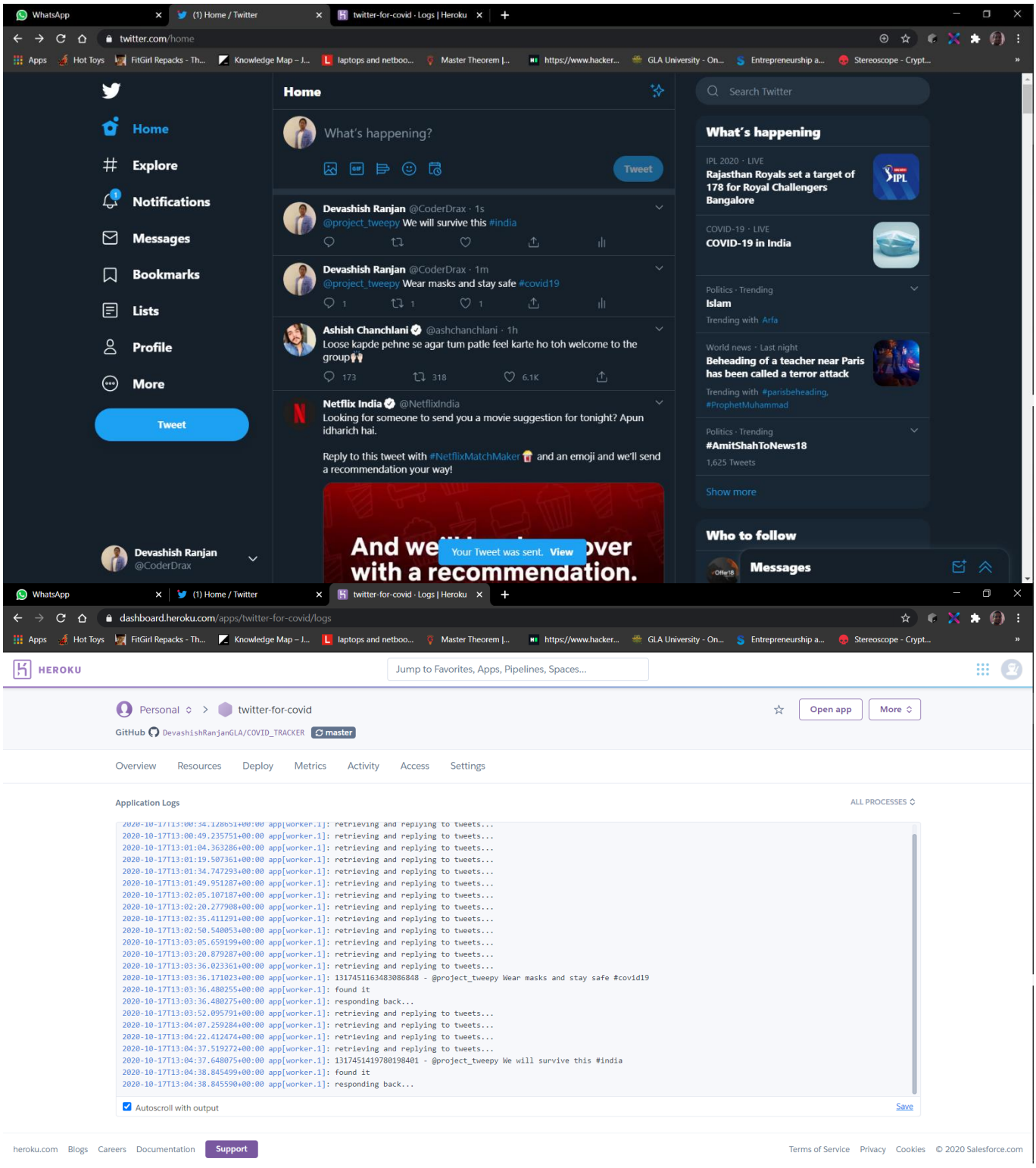
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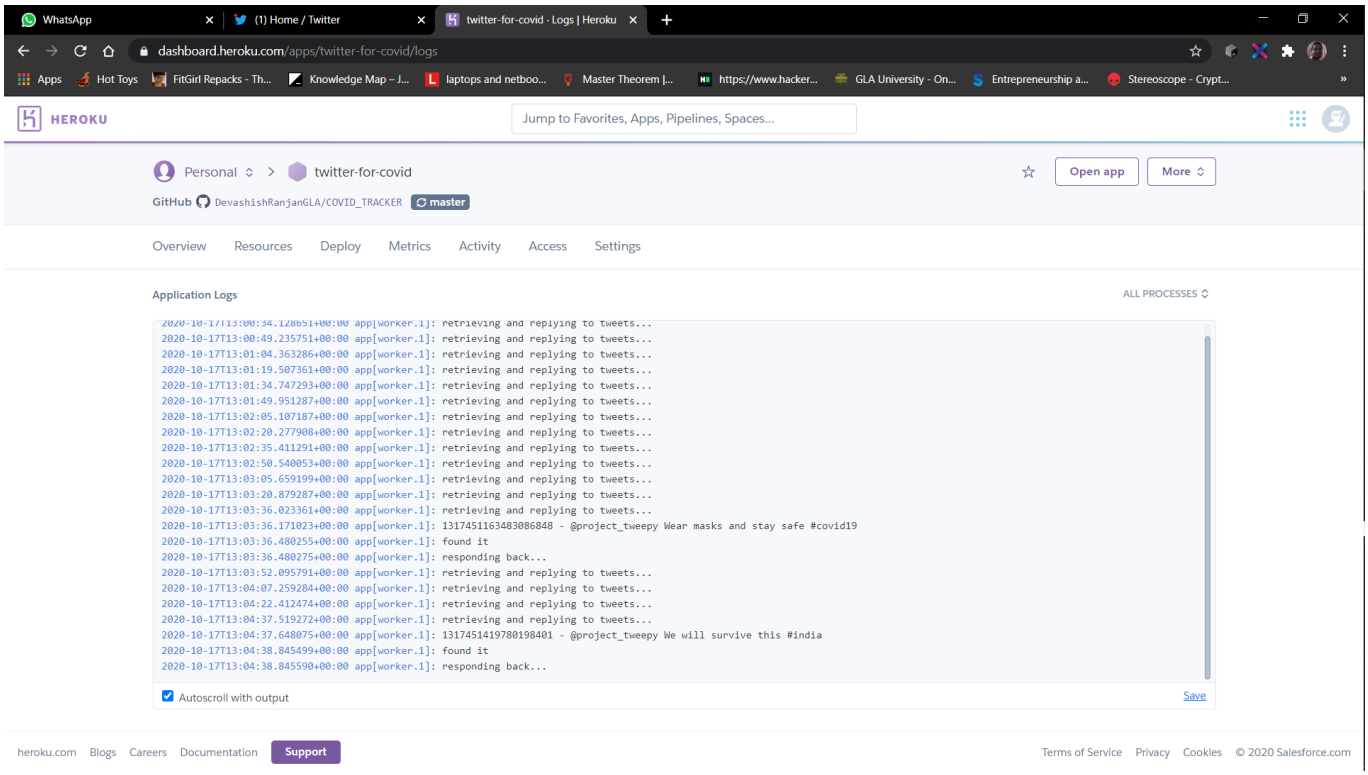
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2020-10-17T13:03:36.171023+00:00 app[worker.1]: 1317451163483086848 - @project_tweepy Wear masks and stay safe #covid19
2020-10-17T13:03:36.480255+00:00 app[worker.1]: found it
2020-10-17T13:03:36.480275+00:00 app[worker.1]: responding back...
2020-10-17T13:03:52.095791+00:00 app[worker.1]: retrieving and replying to tweets...
2020-10-17T13:04:07.259284+00:00 app[worker.1]: retrieving and replying to tweets...
2020-10-17T13:04:22.412474+00:00 app[worker.1]: retrieving and replying to tweets...
2020-10-17T13:04:37.519272+00:00 app[worker.1]: retrieving and replying to tweets...
2020-10-17T13:04:37.648075+00:00 app[worker.1]: 1317451419780198401 - @project_tweepy We will survive this #india
2020-10-17T13:04:38.845499+00:00 app[worker.1]: found it
2020-10-17T13:04:38.845590+00:00 app[worker.1]: responding back...
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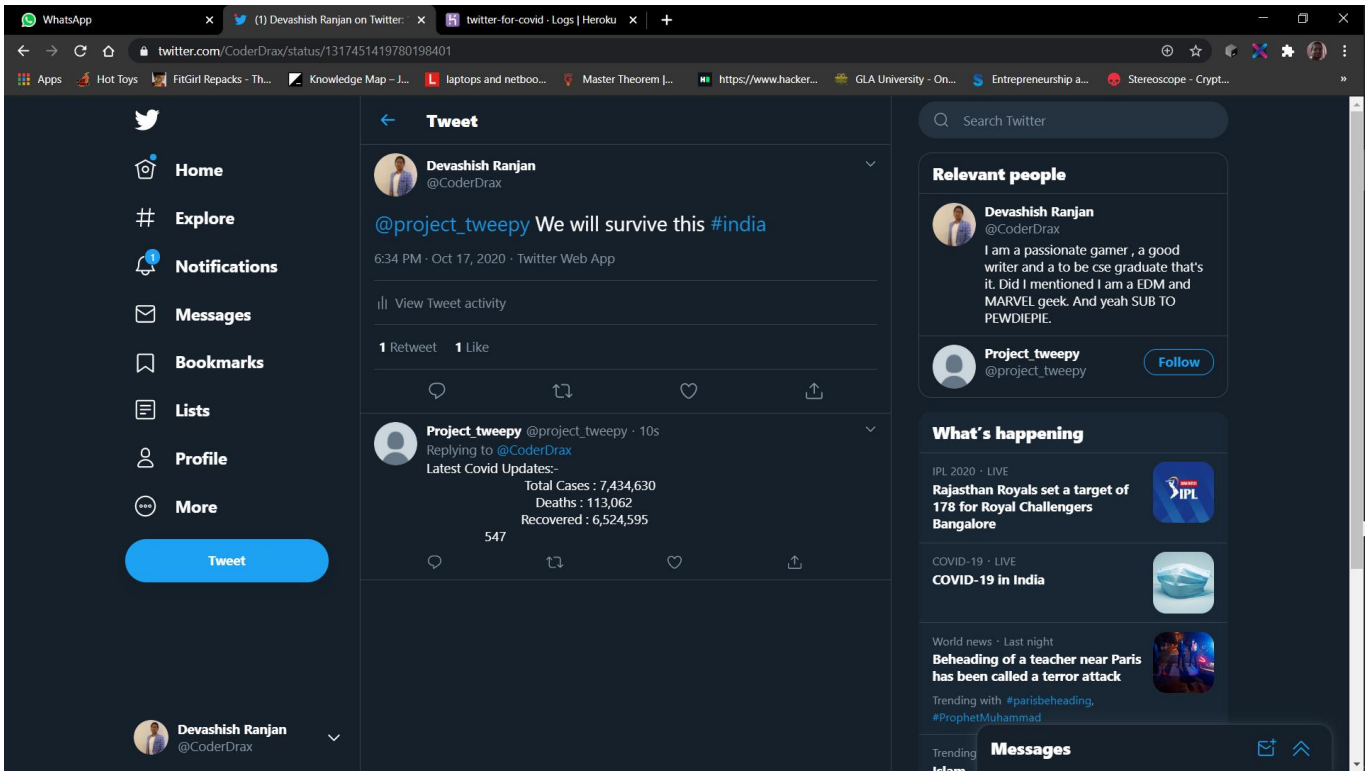
WhatsApp
(1) Devashish Ranjan on Twitter:
twitter-for-covid · Logs | Heroku
twitter.com/CoderDrax/status/1317451419780198401
Tweet
Devashish Ranjan
@CoderDrax
@project_tweepy We will survive this #india
6:34 PM · Oct 17, 2020 · Twitter Web App
View Tweet activity
1 Retweet 1 Like
Project_tweepy @project_tweepy · 10s
Replying to @CoderDrax
Latest Covid Updates:-
Total Cases : 7,434,630
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References

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