Foodle_s : A tweet retrieving Twitter Bot based on a date

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Abstract

A clear and well documented documentation of the design and implementation of the Twitter bot named *foodle_s* is presented which retrieves the tweet posted by a particular user on a desired date as requested.

1. Introduction

Twitter is one of the most popularly used social media platforms across the globe. This application also lets developers create a *social robot* which interacts with users automatically. These social bots are rare and come in handy whenever required. This paper will talk about the design and implementation of one such bot named '***Foodle_s***'. This bot activates when a user tweet's mentioning it.

2. Functionality

The functionality of this bot is that it retrieves the tweets posted on a particular date by the author of the tweet to which the mentioned tweet was replied . It first checks whether the mentioned tweet is a reply tweet on not, if not it replies accordingly, if yes it checks whether that particular mentioned tweet has any hashtags or not, if not it right away informs the user to follow instructions provided on the bio of the account. Once after getting the hashtag which should be structured in a certain way that first three letters should be for the corresponding month and next two digits should be for the corresponding date and the next four digits should be for the corresponding year.

Ex . November 14, 2018 should be represented as #Nov142018

3. Implementation

For simple understanding this section is divided into several small parts in which the social bot was implemented. Every small section does little work and they all are interconnected which makes things simpler.

3.1 The Root

As the name suggests this is the root to implementation. All the steps in this section will be shown structerdly for better understanding.

1. Retrieves *five* recent tweets which are mentioning/tagging the bot.

2. As they are chronologically arrange, list will be reversed so that recent will be at last, so that first come will be first served
3. Then we would be iterating i.e going from one tweet to another and performs following steps: [loop starts]
4. Date which was mentioned in the hashtag will be retrieved using a custom made function alongside the screen_name/author i.e user id of the tweet to which mentioned tweet was replied
5. If there are any errors in the above step, it terminates this tweet immediately and goes for the next, else it passes these arguments i.e screen_name/author and date to ***section 3.2*** which gives us the tweet we need.
6. Once after getting the desired tweet, the url of the tweet will be taken and this url will be provided to the mentioned user in the form of a reply over the mentioned tweet.
   [loop ends and goes to step 3 again for next tweet]

3.2 Tweet Set Finder

This retrieves the desired tweet by the bot and will be called in ***section 3.1***, at step 5 to be precise. Just like the above section we will be following a sequential order of steps for better understanding. *[Note: if date-1 is greater than date-2 it means that date-1 is recent and date-2 is older one and vice versa]*

1. Here in this step we will be retrieving the first recent two hundred tweets of the user.
2. As they are in chronological order, we will be checking the date of the latest tweet in this group i.e the first one in the list, and checks whether it is less than or equal to desired date
3. If it's less than the desired date we would terminate the process and move back to ***section 3.1*** and conclude as there are no tweets on this date, else we will move to next step
4. In this step we check whether the most recent tweet i.e the first one is greater than or equal to the desired date and simultaneously we also check whether the oldest tweet in this set i.e the last one is less than or equal to the desired tweet. If yes this will be the only set where we might find our desired tweet and move onto the next one. Else we would move back to ***step-1*** and retrieve the next two hundred tweets.
5. In this step we will send these two hundred tweets which have our desired tweet to the next section i.e ***section 3.3*** along with our desired date
6. If we find our desired tweet from ***section 3.3*** we would be sending that tweet to ***section 3.1*** else it concludes that there are no tweets from that user on that date.

3.3 Tweet Finder

By the time we reach this section, from finding our desired tweet in thousands of tweets we would be reducing it to just two hundred tweets. In this section to find our tweet which was on our desired date we use a searching algorithm called '***Binary Search Algorithm'*** as all the tweets

are in chronological order. The reason behind using this algorithm is that it has a time complexity of *log(n)* i.e it takes lesser computational power hence lesser time.

4. Literature Review

As of now or up to my knowledge there are no specific techniques or ways to retrieve a tweet of a user, based on the date. But there is a similar way, which is a feature in twitter itself where we can give user id and start date and end date info in the search bar with certain rules so that it retrieves tweets of that user in that particular time frame, but ***foodle_s*** just takes a date, also additionally the response from ***foodle_s*** will be a reply where all other users can also see and use.

5. Methodology

For this project the popular computer programming language ***'Python 3'*** is used alongside the python library named ***'Tweepy'*** which was implemented to work with Twitter API and ***'Twitter'.***

6. Results

We've implemented a working twitter bot which can retrieve tweets on a particular date which was requested by the user, using various resources.

URL** of **foodle_s : https://twitter.com/foodle_s

7. Acknowledgement

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8. References

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