Prepare My Tweet

Programming Foundations with Python final project

Problem idea / definition

Problem to solve

- Twitter limitation: Only 140 characters. Message + hashtags + URLs + … Very few lines and people want to say a lot of things!
- We want to post a message whatever its length (because it worths it)

Project Scope

- Write a program that takes a text message and creates an image containing the message.
- The program will NOT post the result on Twitter.

User Story Definition (Project definition)

As a Twitter user **I want to** convert a text message longer than 140 characters to an image message **so that** I can share it on Twitter as an image attachment.

Acceptance Test

- The output of the program will be:
    - The original text message if input text is shorter or equal than 140 characters.
    - A short text message and an image if input text is longer than 140 characters.
- Only text messages larger than 140 characters will be converted to an image.
- The generated image format will be supported by Twitter (see https://support.twitter.com/groups/51-me/topics/210-photos-media/articles/20156423-posting-photos-on-twitter), that is to say, GIF, JPEG or PNG files.
- The image file will be generated in a directory specified by the user.
- The input text message will be obtained as a program parameter or read from a text file.
- All hashtags and URLs from the original message will be included in the output message (as we want Twitter to categorize our message).

Solution Design

Solution definition

In order to solve the above-mentioned problem, the following steps will be followed:

1. Read input message from program parameters.
    a. By default the program will expect a string as a parameter
    b. If a filename is included as a parameter, the program will retrieve the input text message from that file.
2. Check the length of the input message:
    a. If input message <= 140 characters, the program will return it as output and will exit.
    b. If input message > 140 characters, step 3 will be executed.
3. An image containing the input message will be generated and stored in the location specified by a parameter.
4. If the input text contains any hashtags and/or URLs, they will be included in the output text message.

Class diagrams

The following diagram shows the organization of the code. The main program will obtain user parameters and it will call an instance of a class Text2Image to generate the output image. The output image format will be PNG, as it is supported by Twitter.

Moreover, the class Text2Image will use two objects of a class hierarchy called Extractors, URLExtractor and HashtagExtractor to get the URLs and the hashtags from the original text message.