CS4141 Introduction to Programming Assignment

Part 2 Specification

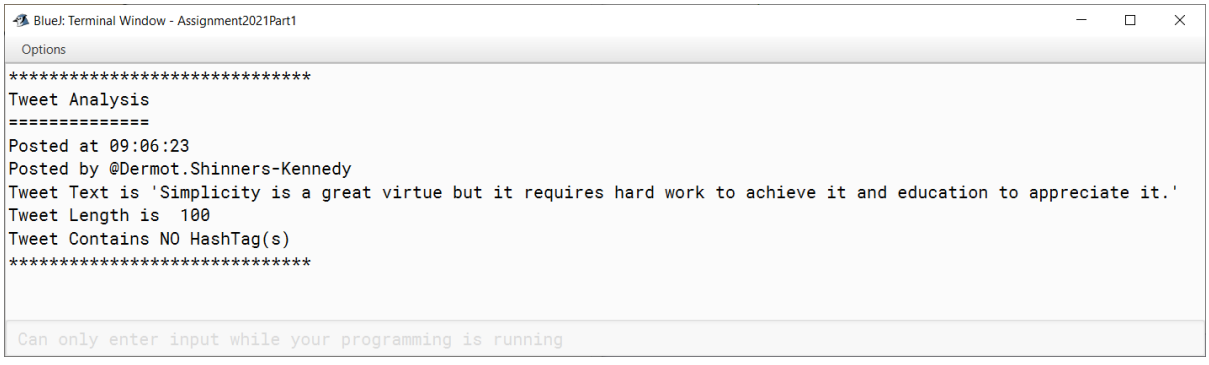
We want to add some code to our Tweet handling system that will provide us with more information about a Tweet. In addition, we want to change the way we display a Tweet on the screen.

Currently, our Tweet handling system only tells us whether the Tweet contains a hashtag or not. We want to improve this so that the system actually counts the number of hashtags (i.e. the number of '#' symbols in the Tweet). In addition, we want to count the number of username references (i.e. the number of '@' symbols) that are "tagged" in the Tweet. It is important to remember that a Tweet may have no hashtags or usernames in the Tweet text.

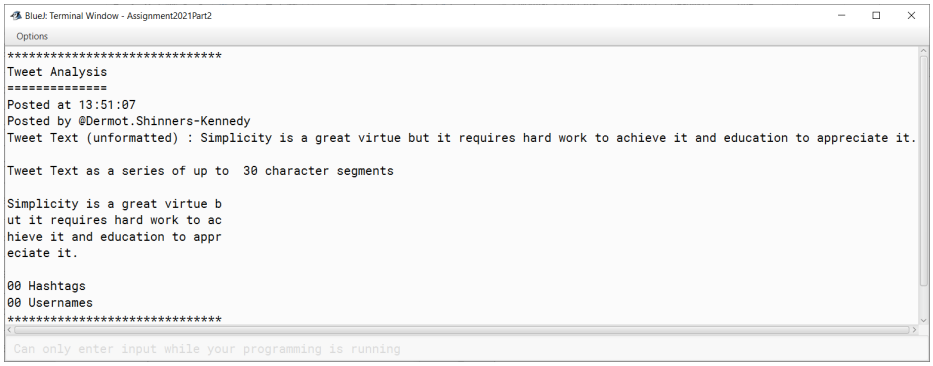
At present, the system simply displays the Tweet as a single piece of text regardless of how long it is. We want to introduce some layout formatting that allows us to control the display on the screen, especially on smaller screens like the kind used in mobile phones. We want to improve the Tweet display by partitioning it into 30 character segments and displaying each segment on a different line. The text displayed on each display should be left-aligned.

NOTE: In the future, we may change the width of a segment from 30 to some other number so it would be useful if it was easy to alter the display width in the code.

Currently the output from our Tweet handling system looks like this



The modifications introduced for Part 2 should produce an output that looks like this (i.e. with a display width of 30 characters per line)



or this (i.e. with a display width of 20 characters per line)

Testing Your Code

Your submitted solution should include several test examples, with different combinations of hashtags and usernames, to show that the code works correctly. You should run the code with each example and verify that the output is correct.

The following code extract shows how we tried to make testing a little easier for ourselves. The code generates a random number in a specified range and then uses that number to pick a text for the Tweet.

> **NOTE: This code is included in the sample solution to Part 1 posted on the Sulis module page in the Assignments folder. You are under no obligation whatsoever to use this type of mechanism and you will NOT lose marks if you do not use it.**

```
//This section of the code deals with setting the Tweet text.

   //=========================================================================

// Create a variable that will store the actual text in the Tweet.

      // Initially it is set to empty.

String tweet = "";
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// For TESTING purposes we will randomly choose a sample Tweet text
// and check if the code produces the correct results. In this example
// we are randomly choosing one of 8 possibilities identified by the numbers 0..7.
// You can change the sample Tweets to your preferences. The following
// are quotes from the late, great, Edsger W. Dijkstra, with some random
     // hashtags and usernames added for Tweet testing purposes.
int randomSelection = (int) (Math.random() * 8); // 8 possibilities identified by 0..7
// randomSelection = ???; // To test a specific text include this line with the required number
if(randomSelection == 0) {
         tweet = "Simplicity is a great virtue but it requires hard work to achieve it " +
                  "and education to appreciate it.";
} else if(randomSelection == 1) {
         tweet = "The question of whether #MachinesCanThink is " +
                  "is about as relevant as the question of whether #SubmarinesCanSwim.";
} else if(randomSelection == 2) {
         tweet = "@CS4141Students @CS6371Students " +
                  "The art of programming is the art of organizing complexity, " +
                  "of mastering multitude and avoiding its bastard chaos as " +
                  "effectively as possible." ;
      } else if(randomSelection == 3) {
         tweet = "The competent programmer is fully aware of the strictly limited " +
                  "size of his own #skull; therefore he approaches the programming " +
                  "task in full #humility, and among other things he avoids clever " +
                  "tricks like the plague. @SmartProgrammers" ;
} else if(randomSelection == 4) {
         tweet = "In 1957 I married and Dutch marriage rites require you to state " +
                  "your profession and I stated that I was a #programmer. But the " +
                  "municipal authorities of the town of @Amsterdam did not accept it " +
                  "on the grounds that there was no such profession." ;
} else if(randomSelection == 5) {
         tweet = "How do we convince @people that in programming #simplicity and #clarity " +
                  "— in short: what mathematicians call \"elegance\" — are not a dispensable " +
                  "luxury, but a crucial matter that decides between success and failure?" ;
} else if(randomSelection == 6) {
         tweet = "Automatic computers have now been with us for a quarter of a century. " +
                  "They have had a great impact on our @society in their capacity of #tools, " +
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                    "but in that capacity their influence will be but a ripple on the surface " +
                     "of our culture, compared with the much more profound influence they will " +
                    "have in their capacity of #intellectual #challenge without precedent in the " +
                    "cultural history of @mankind." ;
} else if(randomSelection == 7) {
         tweet = "A picture may be worth a thousand words, but a formula is worth a thousand " +
                    "pictures.";
}
//=========================================================================
```

Submission Requirements

Your solution to Part 2 of the assignment should be submitted on Sulis on or before 16h00 Friday 5th November 2021. Submissions will be accepted up to 23h55 Friday 5th November 2021 but please note that Sulis identifies submissions that are after the deadline. For this part of the assignment, there is no penalty for submitting after the deadline.

You should submit ONE file named Assignment2021Part2.java. In the file, you should include prominent comments that contain your ID number and Name. Sulis will accept any filenames you use but it helps us if you adhere to these conventions.

This part of the assignment is worth 25% of the total of 100%.