We all know that President Trump is a prolific tweeter. He uses Twitter many times per day, most often as his pulpit to preach his opinions. Many other people and celebrities, including President Knapp, tweet quite a bit. You are going to write a program that will print out a person's tweets.
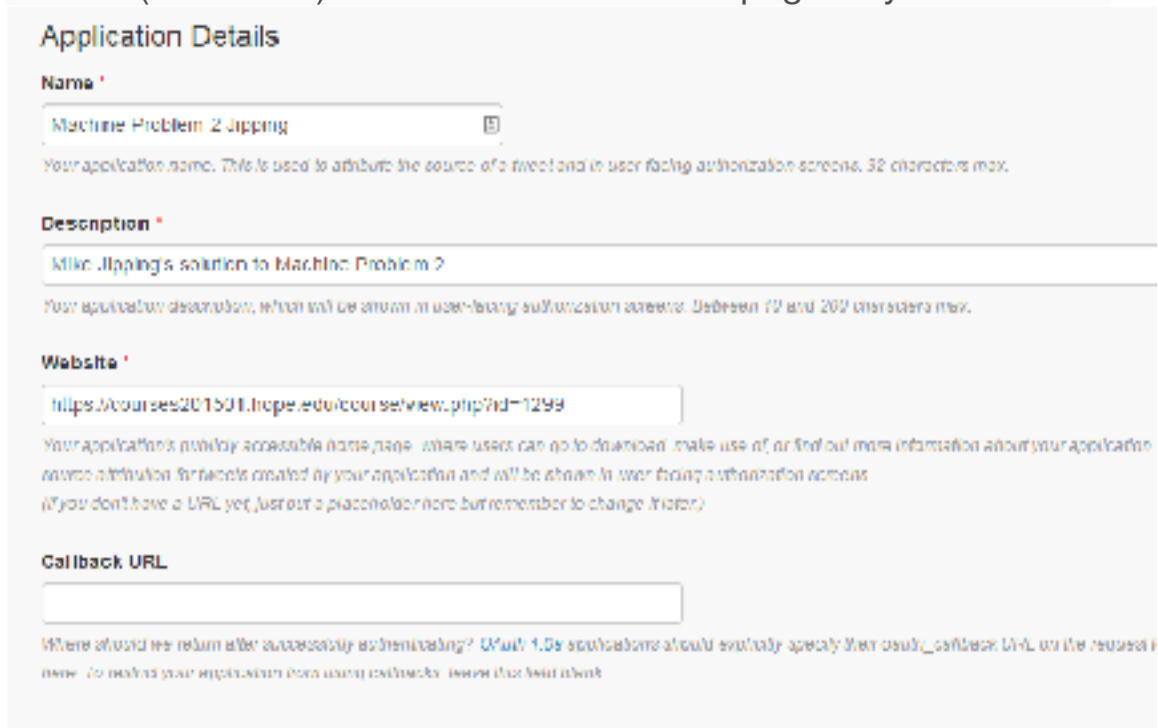
0. The Basics

To do this assignment, you need start by getting yourself a Twitter username. Go to twitter.com and set yourself up, if you have not already. In addition, we will be using a Java interface to the Twitter API called Twitter4j. Access their Web site and read through the front page to familiarize yourself with Twitter4j.

1. Register Your Application

To use Twitter's API, you have to register your application. Read through the instructions at THIS PAGE and follow the instructions below:

1   Access apps.twitter.com and sign in with your Twitter username if you have not done so.
2   Click on the "Create New App" button.
3   Fill in the required areas in the form. Make sure you uniquely identify the title (see below) and use the URL of this page as your Website.

4
5   Check the "Yes I have read and agree..." box and click the "Create your Twitter Application" button.

You will be presented with your application registration page. Here you have to do two things:

1. Click on the "Keys and Access Tokens" tab. Copy the "Consumer Key (API Key)" and the "Consumer Secret (API Secret)" fields by copying and pasting into a text editor.
2. Click on the "Permissions" tab and make sure that the "Read and Write" button is selected, as below.

Access

What type of access does your application need?

Read more about our Application Permission Model.

○ Read only

◉ Read and Write

○ Read, Write and Access direct messages

3.
4. Click on "Update Settings" to update the access to for your application.

3. Write Your Code

Using the Twitter4j API interface, you can start to write your machine problem code. Here are a couple of comments to get you started:

1. Before you can do anything with Twitter, you have to authorize yourself and retrieve an access token. This is done using OAuth protocols as we discussed in class. You can use the code below as a starting point, which was taken from the Twitter4j examples:

```java
43    Twitter twitter = new
      TwitterFactory().getInstance();
44  twitter.setOAuthConsumer(KEY, SECRET);
45
46  try {
47      // get request token.
48      // this will throw
      IllegalStateException if access token
      is already available
49      RequestToken requestToken =
      twitter.getOAuthRequestToken();
50      AccessToken accessToken = null;
51
52      BufferedReader br = new
      BufferedReader(new
      InputStreamReader(System.in));
53      while (null == accessToken) {
54          System.out.println("Open the
      following URL and grant access to your
      account:");
55
      System.out.println(requestToken.getAuth
      orizationURL());
56          System.out.print("Enter the
      PIN(if available) and hit enter after
      you granted access.[PIN]:");
57          Desktop.getDesktop().browse(new
      URI(requestToken.getAuthorizationURL())
      );
58          String pin = br.readLine();
59          try {
60              if (pin.length() > 0) {
61                  accessToken =
      twitter.getOAuthAccessToken(requestToke
      n, pin);
62              } else {
63                  accessToken =
      twitter.getOAuthAccessToken(requestToke
      n);
64              }
65          } catch (TwitterException te) {
66              if (401 ==
      te.getStatusCode()) {
67
      System.out.println("Unable to get the
      access token.");
```

83

Note that you have to put your own application's consumer key and secret in for

84 If you save the access token's key and secret, you can use them again without reauthorizing. See http://twitter4j.org/javadoc/twitter4j/auth/accesstoken.html for information on accessing the key and secret.

85 Once you have authorized yourself with Twitter, you need to check the number of tweets. You do this by sending a search query to Twitter through the Twitter4j class "Query". The best way to figure out what this query should look like is to get onto Twitter and make some queries. Examine the URL of the results page. Make sure you put "from:realDonaldTrump" in the query to avoid retweets.

86 You need to get the last 10 tweets. Do this by setting the count on the query with the "setCount()" method.

87 Print out the Twitter handle you chose followed by a list of tweets, listed with the tweet text preceded by the date and time of the tweet. Format the tweet text nicely. An example:

```
88 Tweets for @realDonaldTrump
   -----------------------------------
   Jan 13, 2017, 05:49 AM
   All of my Cabinet nominee are looking good and
   doing a great
   job. I want them to be themselves and express their
   own
   thoughts, not mine!
   Jan 12, 2017, 12:41 PM
   Congrats to the Senate for taking the first step to
   #RepealObamacare- now it's onto the House!
```

As with Machine Problem #1, you will need a library with your code. You need to download the Twitter4j library and refer to it in Eclipse or the command line. I was able to write my code with only the twitter4j-core-4.0.2.jar library.