

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.

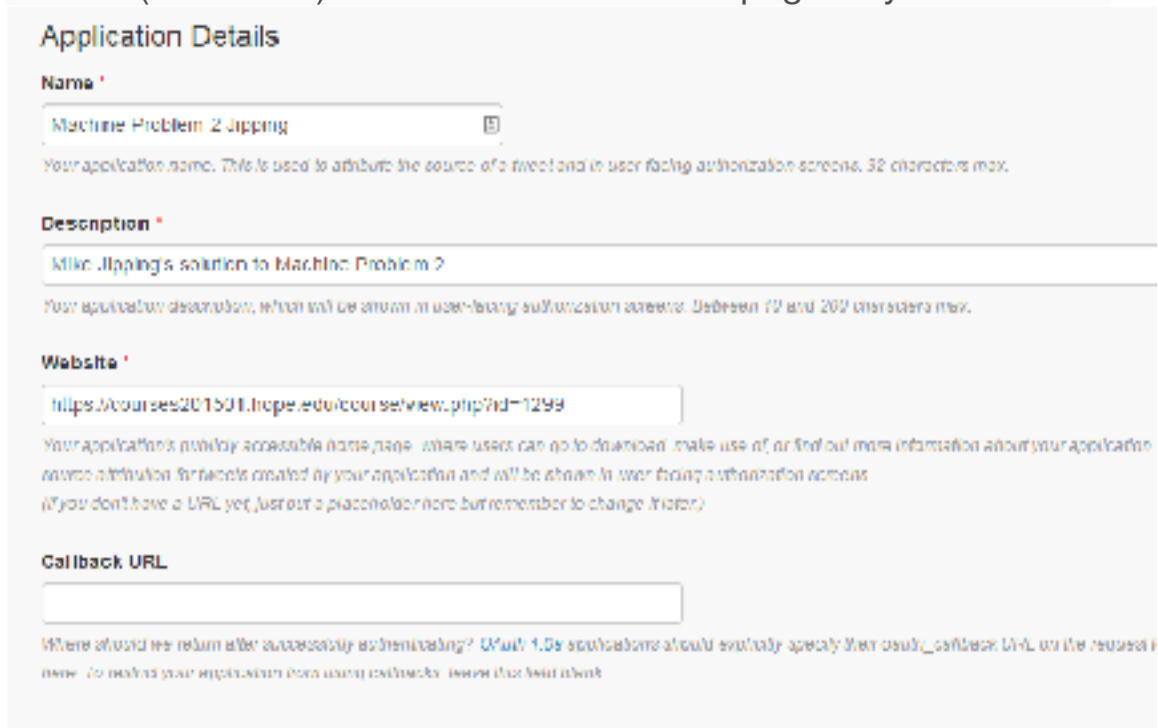
## 0. The Basics

To do this assignment, you need start by getting yourself a Twitter username. Go to [twitter.com](https://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](https://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.



The screenshot shows the 'Application Details' form on the Twitter developer portal. It contains four main sections: 'Name', 'Description', 'Website', and 'Callback URL'. Each section has a text input field and a small explanatory note below it. The 'Name' field contains 'Machine Problem 2 Jipping'. The 'Description' field contains 'Mike Jipping's solution to Machine Problem 2'. The 'Website' field contains 'https://courses201501.hope.edu/courseview.php?id=1299'. The 'Callback URL' field is empty. There are also checkboxes for 'OAuth 1.0a authentication' and 'OAuth 2.0 authentication'.

**Application Details**

**Name \***

Machine Problem 2 Jipping

Your application name. This is used to attribute the source of a tweet and in user-facing authorization screens. 32 characters max.

**Description \***

Mike Jipping's solution to Machine Problem 2

Your application description, which will be shown in user-facing authorization screens. Between 10 and 200 characters max.

**Website \***

https://courses201501.hope.edu/courseview.php?id=1299

Your application's publicly accessible home page, where users can go to download, make use of, or find out more information about your application. Source attribution links created by your application and will be shown in user-facing authorization screens (if you don't have a URL yet, just put a placeholder here but remember to change it later)

**Callback URL**

Where should we return after successfully authenticating? OAuth 1.0a applications should explicitly specify their oauth\_callback URL on the request. For OAuth 2.0 applications, this is optional. (Learn more about OAuth 2.0)

- 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:

2	43	Twitter twitter = new	83	
		TwitterFactory().getInstance();		
1	44	twitter.setOAuthConsumer(KEY, SECRET);		
	45			
3	46	try {		
	47	// get request token.		
2	48	// this will throw		
		IllegalStateException if access token		
4		is already available		
	49	RequestToken requestToken =		
3		twitter.getOAuthRequestToken();		
	50	AccessToken accessToken = null;		
5	51			
	52	BufferedReader br = new		
4		BufferedReader(new		
		InputStreamReader(System.in));		
6	53	while (null == accessToken) {		
	54	System.out.println("Open the		
5		following URL and grant access to your		
		account:");		
7	55			
		System.out.println(requestToken.getAuth		
6		orizationURL());		
	56	System.out.print("Enter the		
8		PIN(if available) and hit enter after		
		you granted access.[PIN]:");		
7	57	Desktop.getDesktop().browse(new		
		URI(requestToken.getAuthorizationURL())		
9		);		
	58	String pin = br.readLine();		
8	59	try {		
	60	if (pin.length() > 0) {		
1	61	accessToken =		
0		twitter.getOAuthAccessToken(requestToke		
		n, pin);		
9	62	} else {		
	63	accessToken =		
1		twitter.getOAuthAccessToken(requestToke		
1		n);		
	64	}		
1	65	} catch (TwitterException te) {		
0	66	if (401 ==		
		te.getStatusCode()) {		
1	67			
2		System.out.println("Unable to get the		
		access token.");		

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

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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.