

Twitter, and Processing

Byungkyu (Jay) Kang
penguinkang.com / bkang@umail.ucsb.edu
FourEyes Lab

Why Twitter?

- News, Gossips, Conversations, Movements, Ads and Spams..
- Public Access
- Rich Metadata

API?

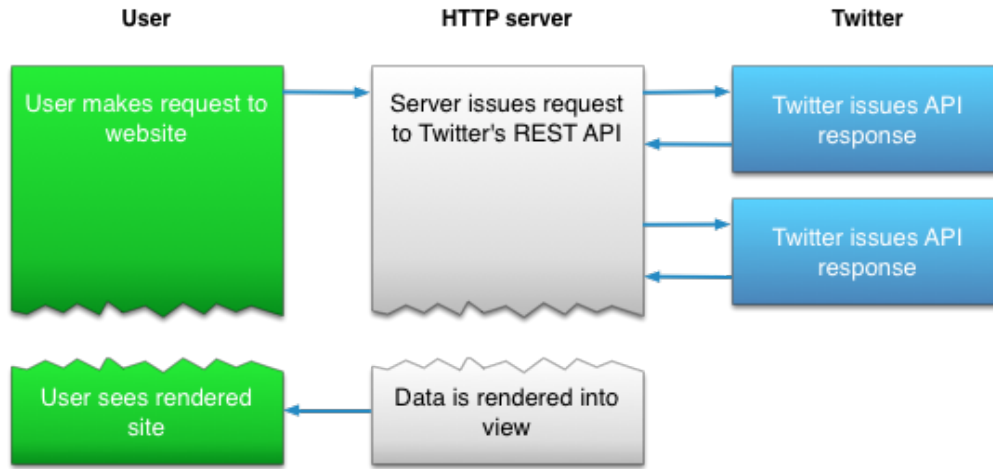
- Application Programming Interface

specifies how some software components should interact with each other

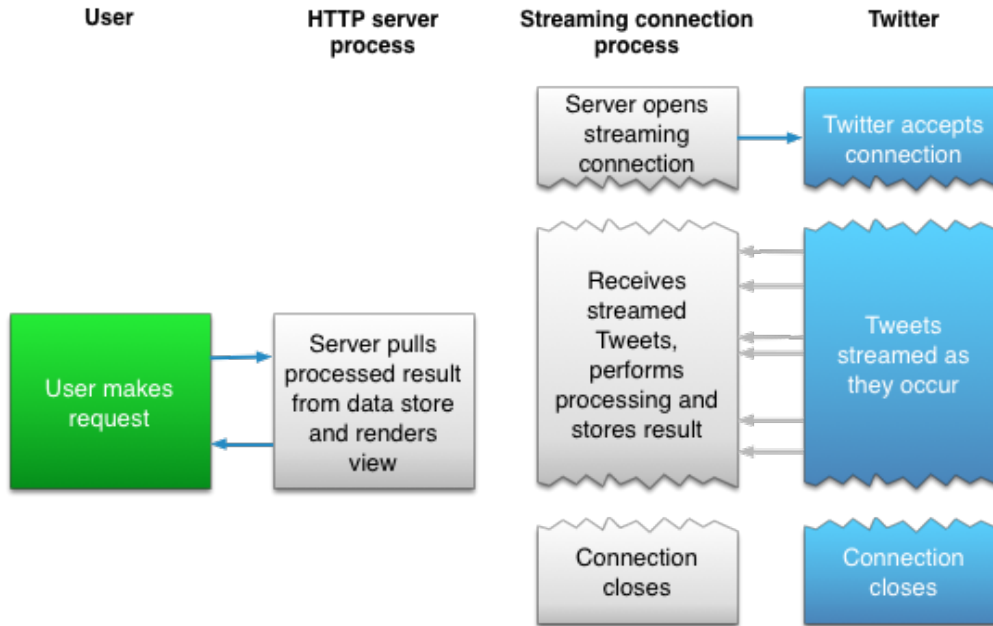
Twitter API - REST / Streaming

- REST v.s. Streaming

REST



Streaming



Then, how to get those tweets on
your Processing project?

Work flow

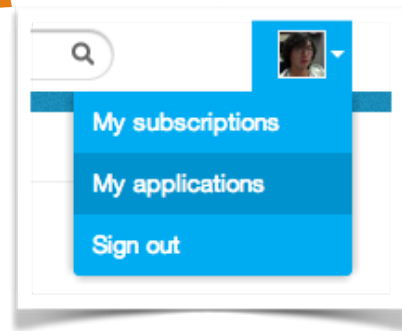
1. Create your **account**, and get the auth **keys / tokens**
2. Download Java library “**twitter4j**”
3. Open a **new sketchbook**
4. **Copy jar** files under `__your_project__`/code folder
5. Code!

Work flow

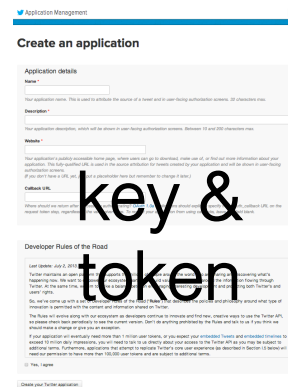
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oAuth: Authentication for Twitter API

dev.twitter.com



Create New App



```
OAuthConsumerKey = "HaYORkp*****sZZYgKg";  
OAuthConsumerSecret = "5FC08pVZBV7*****fu6cp0vYWt2ncJts";  
AccessToken = "3621*****_*****7eSU3YGa7d4AKSqGFkRDF76o";  
AccessTokenSecret = "H71vKFPBwN*****1UaAM60w9t2hY";
```

Work flow

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English | Japanese | Korean

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- Versions
- Development
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TWITTER4J

<http://twitter4j.org/>

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Introduction

Twitter4J is an unofficial Java library for the [Twitter API](#).
With Twitter4J, you can easily integrate your Java application with the Twitter service. Twitter4J is an unofficial library.

Twitter4J is featuring:

- ✓ 100% Pure Java - works on any Java Platform version 5 or later
- ✓ Android platform and [Google App Engine](#) ready
- ✓ Zero dependency : No additional jars required
- ✓ Built-in OAuth support
- ✓ Out-of-the-box gzip support
- ✓ 100% Twitter API 1.1 compatible

System Requirements

OS: Windows or any flavor of Unix that supports Java.
JVM: Java 5 or later

How To Use

Just add `twitter4j-core-3.0.5.jar` to your application classpath.
If you are familiar with Java language, looking into the [JavaDoc](#) should be the shortest way for you to get started.
`twitter4j.Twitter` interface is the one you may want to look at first.

Download

· Latest stable version



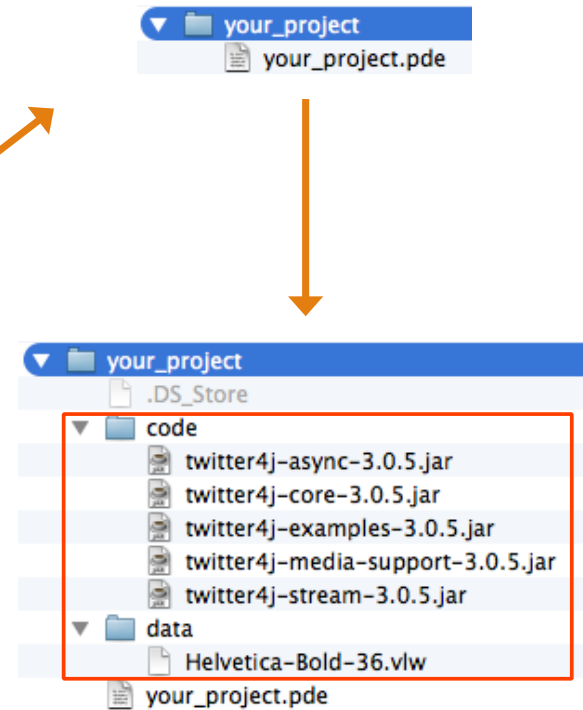
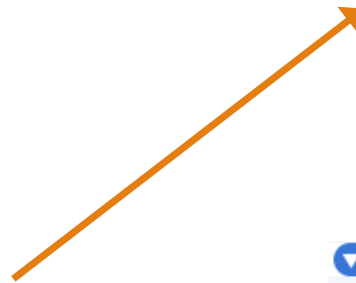
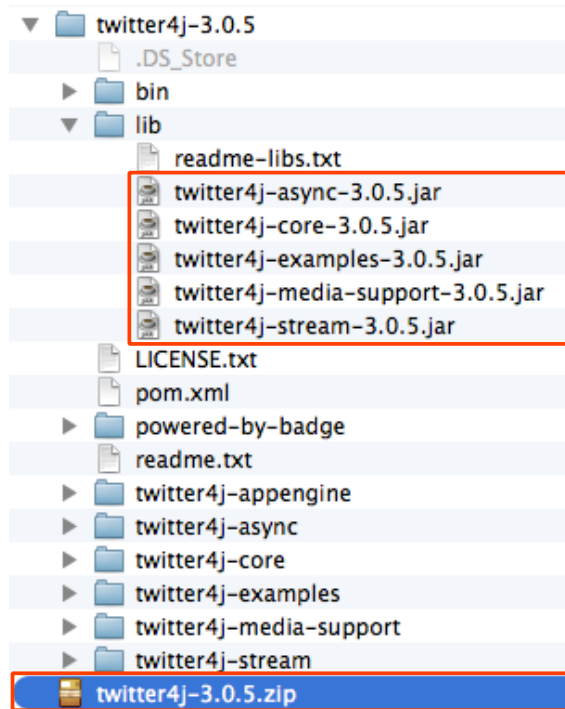
[twitter4j-3.0.5.zip](#) (JavaDoc / [Migration guide from 2.1.x to 2.2.x](#))

~~[twitter4j-android-3.0.5.zip](#)~~ (Regular version got slimmed down from version 3.0.3. Thus build for Android platform was retired. Use regular version instead.)

Work flow

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Open a new sketch



Caveat!

Track examples:

Parameter value	Will match...	Will not match...
Twitter	TWITTER twitter "Twitter" twitter. #twitter @twitter http://twitter.com	TwitterTracker #newtwitter
Twitter's	I like Twitter's new design	Someday I'd like to visit @Twitter's office
twitter api,twitter streaming	The Twitter API is awesome The twitter streaming service is fast Twitter has a streaming API	I'm new to Twitter
example.com	Someday I will visit example.com	There is no example.com/foobarbaz
example.com/foobarbaz	example.com/foobarbaz www.example.com/foobarbaz	example.com
www.example.com/foobarbaz		www.example.com/foobarbaz
example com	example.com www.example.com foo.example.com foo.example.com/bar I hope my startup isn't merely another example of a dot com boom!	

Check out the doc

- <https://dev.twitter.com/docs/streaming-apis/parameters#delimited>

Good Tutorials

- Popular (deprecated)
 - <http://blog.blprnt.com/blog/blprnt/updated-quick-tutorial-processing-twitter>
- Recent one:
 - <http://codasign.com/tutorials/processing-and-twitter-searching-twitter-for-tweets/>

REST API

```
Twitter twitter;
String searchString = "valentines";
List<Status> tweets; // message container
int pointer;        // pointer (index)

void setup(){
    // canvas setup
    size(width, height);

    // authentication
    ConfigurationBuilder cb = new ConfigurationBuilder();
    cb.setOAuthConsumerKey("___your_key___");
    cb.setOAuthConsumerSecret("___your_secret___");
    cb.setOAuthAccessToken("****_****");
    cb.setOAuthAccessTokenSecret("*****");

    TwitterFactory tf = new TwitterFactory(cb.build());
    twitter = tf.getInstance();
    getNewTweets();
    thread("refreshTweets"); // refresh container
    pointer = 0;
}
```

```
void draw(){
    pointer += 1;
    if (pointer >= tweets.size()){
        pointer = 0; // back to the first message (pointer reset)
    }

    Status status = tweets.get(pointer);
    fill(200); // txt color
    text(status.getText(), random(width), random(height), 300, 200);
}

void getNewTweets(){
    Query query = new Query(searchString);
    QueryResult result = twitter.search(query);
    tweets = result.getTweets();
}

void refreshTweets(){
    while (true){
        getNewTweets();
        delay(30000); // every thirty second
    }
}
```

Streaming API

```
// OAuth Tokens and keys
static String OAuthConsumerKey = "*****";
static String OAuthConsumerSecret = "*****";
static String AccessToken = "*****_*****";
static String AccessTokenSecret = "*****";

String keywords[] = { "__keyword__" };
ArrayList twArray = new ArrayList(); // Tweet Bucket
int w = width; // width
int h = height; // height

////////////////////// TWITTER API BEGIN ////////////////////////
// Create Twitter instance
TwitterStream twitter = new TwitterStreamFactory().getInstance();

void connectTwitter() {
    twitter.setOAuthConsumer(OAuthConsumerKey, OAuthConsumerSecret);
    AccessToken accessToken = loadAccessToken();
    twitter.setOAuthAccessToken(accessToken);
}

private static AccessToken loadAccessToken() {
    return new AccessToken(AccessToken, AccessTokenSecret);
}
```

```
StatusListener listener = new StatusListener() {
    public void onStatus(Status status) {
        __FUNCTION__(status);
    }

    public void onDeletionNotice(StatusDeletionNotice statusDeletionNotice) { }
    public void onTrackLimitationNotice(int numberOfLimitedStatuses) { }
    public void onScrubGeo(long userId, long upToStatusId) { }

    public void onException(Exception ex) {
        ex.printStackTrace();
    }
};

void setup() {
    // initialize Twitter Stream session
    connectTwitter();
    twitter.addListener(listener); // start another thread

    if (keywords.length==0) twitter.sample(); // no keyword
    else twitter.filter(new FilterQuery().track(keywords)); // keyword given
}

void __FUNCTION__ (Status s)
{
    ... YOUR CODE ...

    twArray.add(new Tweet( X, Y, Z, ... )); // ==> MAKE Tweet CLASS
}

void draw() {
    LOAD DATA FROM twArray
}
```