

Q1:

Spark and Smartphone/Watch Application

**Implement a smart application with big data analytics related to your project Showing the collaboration between Spark and Smart Apps. Implement Twitter Streaming and perform word count on it and publish the results and showcase it in your SmartPhone/Watch Application**

Collected the popular hash tags with several award categories for every minute and took the count of the tags. Sent these twitter streaming data to the android phone using socket connection.

Filtered using "politics".

```
#RAISE (25 tweets)#BERLIN (25 tweets)#politics (2
tweets)#INNERS (1 tweets)#INLegis (1 tweets)#UN
(1 tweets)#ResetD.C (1 tweets)#GOP (1
tweets)#TPP (1 tweets)
Popular hashtags are 11):#Trump2016 (1
tweets)#Donbas. (1 tweets)#UN: (1
tweets)#GOPDebate (1 tweets)#ableg (1
tweets)#Kyiv (1 tweets)#Mariupol (1 tweets)#... (1
tweets)#skpoli (1 tweets)#wiright (1 tweets)
Popular topics in last 30 seconds with Object
keyword (37 total):#PARIS (25 tweets)#RAISE (25
tweets)#BERLIN (25 tweets)#politics (2
tweets)#INNERS (1 tweets)#INLegis (1
tweets)#DonaldTrump! (1 tweets)#UN (1
tweets)#ResetD.C (1 tweets)#GOP (1 tweets)
Popular hashtags are 4):#DonaldTrump! (1
tweets)#Trump2016 (1 tweets)#GOPDebate (1
tweets)#wiright (1 tweets)
Popular topics in last 30 seconds with Object
keyword (41 total):#PARIS (25 tweets)#RAISE (25
tweets)#BERLIN (25 tweets)#politics (2
tweets)#INNERS (1 tweets)#INLegis (1
tweets)#DonaldTrump! (1 tweets)#UN (1
tweets)#maturity (1 tweets)#ResetD.C (1 tweets)
Popular hashtags are 6):#DonaldTrump! (1
tweets)#maturity (1 tweets)#tpp (1 tweets)#wiright
(1 tweets)#Cruz (1 tweets)#notwithher (1 tweets)
Popular topics in last 30 seconds with Object
keyword (42 total):#PARIS (25 tweets)#RAISE (25
```



## Q2: Spark ML Lib Application

Perform a machine learning algorithm with the Twitter Streaming data to categorize each Tweet.

1) Training datasets: Collect different categories of Tweets related to your project. (Categories can be based on Hash Tags /Subjects etc.)

2) Test data: the upcoming twitter stream

Collected the heart streaming data related to our project that is heart rate. Gave the corresponding training data and test data. Got the result as heart data as shown below.

```
// Set the system properties so that Twitter4j library used by twitter stream
// can use them to generate OAuth credentials
System.setProperty("twitter4j.oauth.consumerKey", "D9K9CXZbZKRZqIX77Th35Yx5q")
System.setProperty("twitter4j.oauth.consumerSecret", "e24PT6VP96xjG1th2FSK5oyuLbnnvLPPpF1w0tpeEWysFgeDLE")
System.setProperty("twitter4j.oauth.accessToken", "4671769920-81JQw0uZPfrgltKCaCNRWahGzTVbLEvYHGLFj")
System.setProperty("twitter4j.oauth.accessTokenSecret", "96leeRnuUz3gAGURTygBjFOX5SA1GhltgNDKdGUPakSv0")

//Create a spark configuration with a custom name and master
// For more master configuration see https://spark.apache.org/docs/1.2.0/submitting-applications.html#master-urls
val sparkConf = new SparkConf().setAppName("TweetsApp").setMaster("local[*]")
//Create a Streaming Context with 2 second window
val ssc = new StreamingContext(sparkConf, Seconds(2))
val sc = ssc.sparkContext

//Loop from here to ENDTRAINING, with different keywords each time
for(keyword <- trainingKeywords) {
```

Run TwitterStreaming

```
16/03/03 21:08:53 INFO SparkEnv: Registering OutputCommitCoordinator
16/03/03 21:08:54 INFO Utils: Successfully started service 'SparkUI' on port 4040.
16/03/03 21:08:54 INFO SparkUI: Started SparkUI at http://192.168.52.1:4040
16/03/03 21:08:54 INFO Executor: Starting executor ID driver on host localhost
16/03/03 21:08:54 INFO Utils: Successfully started service 'org.apache.spark.network.netty.NettyBlockTransferService' on port 54557.
16/03/03 21:08:54 INFO NettyBlockTransferService: Server created on 54557
16/03/03 21:08:54 INFO BlockManagerMaster: Trying to register BlockManager
16/03/03 21:08:54 INFO BlockManagerMasterEndpoint: Registering block manager localhost:54557 with 1127.3 MB RAM, BlockManagerId(driver, localhost, 54557)
16/03/03 21:08:54 INFO BlockManagerMaster: Registered BlockManager
HeartRate
HeartRate
HeartRate
HeartRate
```