



University of Windsor  
Master of Applied Computing  
Advanced Database Topics  
COMP – 8157

Project on  
Sentiment Analysis of Twitter Data

**Guide and Instructor:**  
Prof. Kalyani Selvarajah

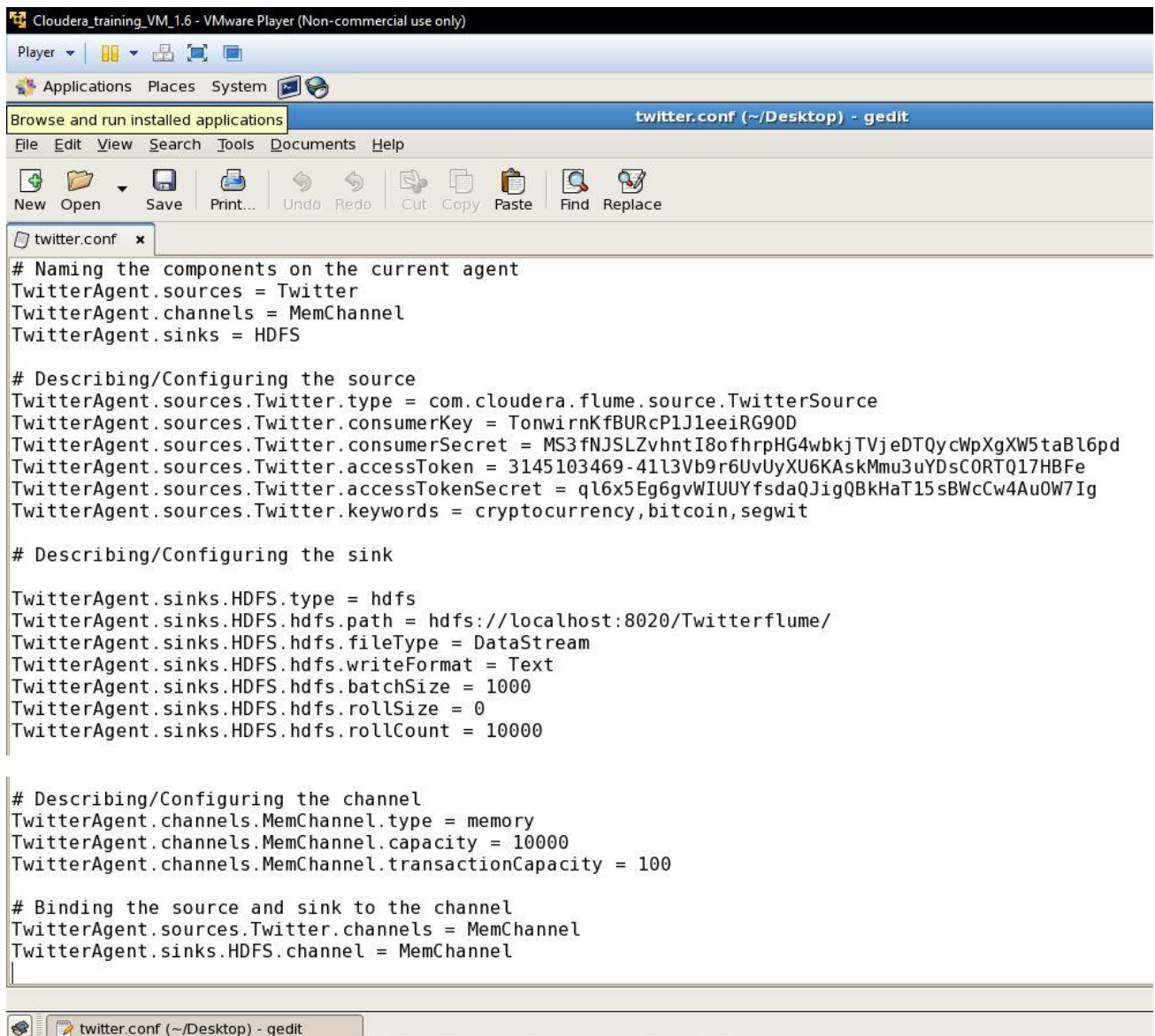
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Bhavin Vaghasiya(110015301)  
Karan Aggarwal (110015913)  
Param Kewale (110021969)  
Ravi Kanani(110013139)  
Yug Bhadreshkumar Rawal(110009769)

# STEP BY STEP PROCESS

**Step 1:** Tweets are collected in real time from twitter using Apache Flume

Flume uses three components Source, Channel and Sink in order to fetch and store the data in the centralized stores.

The Screenshot below shows how Source, Sink and Channel are configured and then how Source and Sink are connected to the Channel



```
# Naming the components on the current agent
TwitterAgent.sources = Twitter
TwitterAgent.channels = MemChannel
TwitterAgent.sinks = HDFS

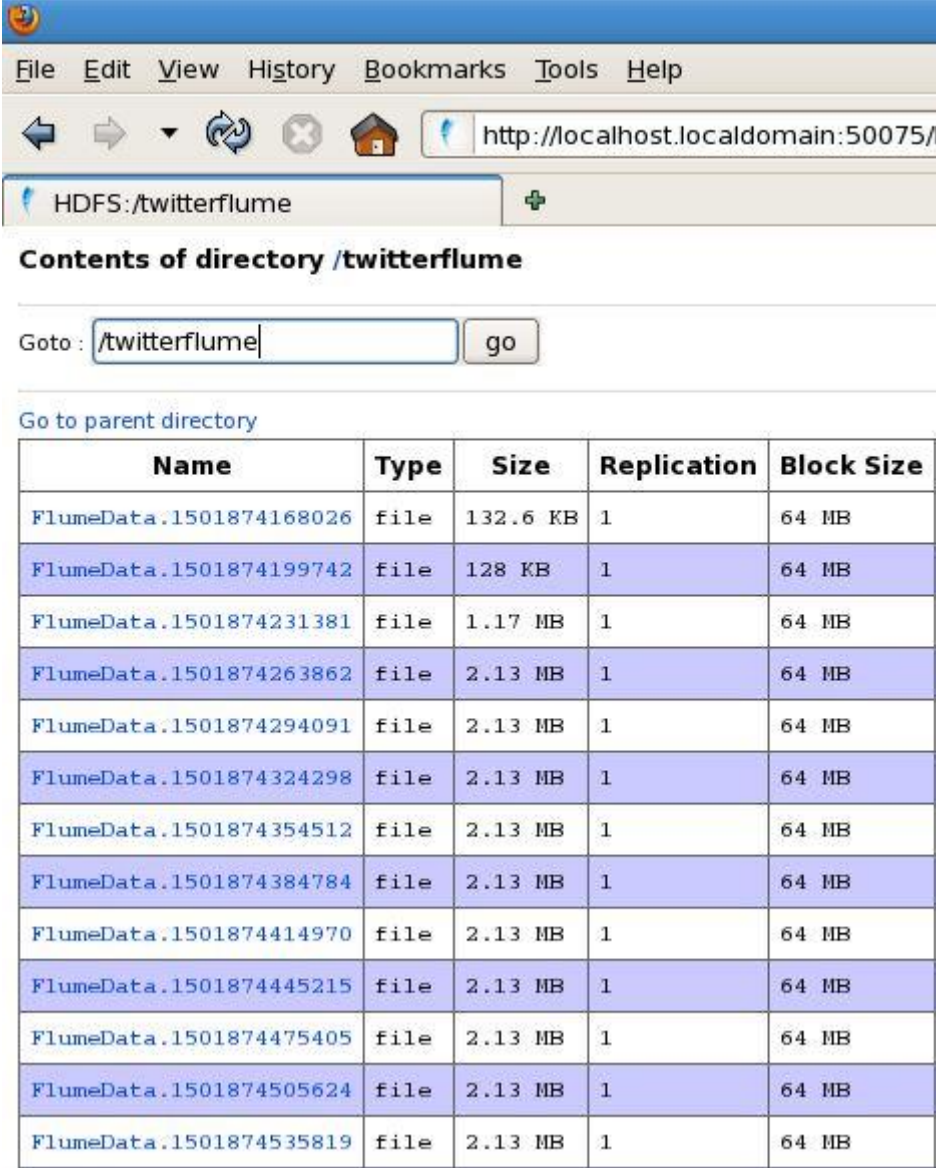
# Describing/Configuring the source
TwitterAgent.sources.Twitter.type = com.cloudera.flume.source.TwitterSource
TwitterAgent.sources.Twitter.consumerKey = TonwlrnKfBURcPlJleeiRG90D
TwitterAgent.sources.Twitter.consumerSecret = MS3fNJSJLZvhntI8ofhrpHG4wbkjTVjeDTQycWpXgXW5taBl6pd
TwitterAgent.sources.Twitter.accessToken = 3145103469-41l3Vb9r6UvUyXU6KAskMmu3uYDsCORTQ17HBFe
TwitterAgent.sources.Twitter.accessTokenSecret = ql6x5Eg6gvWIUUYfsdaQJigQBkHaT15sBWcCw4Au0W7Ig
TwitterAgent.sources.Twitter.keywords = cryptocurrency,bitcoin,segwit

# Describing/Configuring the sink
TwitterAgent.sinks.HDFS.type = hdfs
TwitterAgent.sinks.HDFS.hdfs.path = hdfs://localhost:8020/Twitterflume/
TwitterAgent.sinks.HDFS.hdfs.fileType = DataStream
TwitterAgent.sinks.HDFS.hdfs.writeFormat = Text
TwitterAgent.sinks.HDFS.hdfs.batchSize = 1000
TwitterAgent.sinks.HDFS.hdfs.rollSize = 0
TwitterAgent.sinks.HDFS.hdfs.rollCount = 10000

# Describing/Configuring the channel
TwitterAgent.channels.MemChannel.type = memory
TwitterAgent.channels.MemChannel.capacity = 10000
TwitterAgent.channels.MemChannel.transactionCapacity = 100

# Binding the source and sink to the channel
TwitterAgent.sources.Twitter.channels = MemChannel
TwitterAgent.sinks.HDFS.channel = MemChannel
```

**Step 2:** The Screenshot Below shows the data obtained from Twitter using Flume in JSON format.



File Edit View History Bookmarks Tools Help

http://localhost.localdomain:50075/

HDFS:/twitterflume

**Contents of directory /twitterflume**

Goto:  go

[Go to parent directory](#)

Name	Type	Size	Replication	Block Size
FlumeData.1501874168026	file	132.6 KB	1	64 MB
FlumeData.1501874199742	file	128 KB	1	64 MB
FlumeData.1501874231381	file	1.17 MB	1	64 MB
FlumeData.1501874263862	file	2.13 MB	1	64 MB
FlumeData.1501874294091	file	2.13 MB	1	64 MB
FlumeData.1501874324298	file	2.13 MB	1	64 MB
FlumeData.1501874354512	file	2.13 MB	1	64 MB
FlumeData.1501874384784	file	2.13 MB	1	64 MB
FlumeData.1501874414970	file	2.13 MB	1	64 MB
FlumeData.1501874445215	file	2.13 MB	1	64 MB
FlumeData.1501874475405	file	2.13 MB	1	64 MB
FlumeData.1501874505624	file	2.13 MB	1	64 MB
FlumeData.1501874535819	file	2.13 MB	1	64 MB

HDFS:/twitterflume				
FlumeData.1501874535819	file	2.13 MB	1	64 MB
FlumeData.1501874566121	file	2.13 MB	1	64 MB
FlumeData.1501874596270	file	2.13 MB	1	64 MB
FlumeData.1501874626441	file	2.13 MB	1	64 MB
FlumeData.1501874656669	file	2.13 MB	1	64 MB
FlumeData.1501874686869	file	2.13 MB	1	64 MB
FlumeData.1501874717038	file	2.13 MB	1	64 MB
FlumeData.1501874747178	file	2.13 MB	1	64 MB
FlumeData.1501874777394	file	2.13 MB	1	64 MB
FlumeData.1501874807641	file	2.13 MB	1	64 MB
FlumeData.1501874837859	file	2.13 MB	1	64 MB
FlumeData.1501874868334	file	2.13 MB	1	64 MB
FlumeData.1501874898603	file	2.13 MB	1	64 MB
FlumeData.1501874928972	file	2.13 MB	1	64 MB
FlumeData.1501874959128	file	2.13 MB	1	64 MB
FlumeData.1501874989340	file	2.13 MB	1	64 MB
FlumeData.1501875019521	file	2.13 MB	1	64 MB
FlumeData.1501875049816	file	2.13 MB	1	64 MB
FlumeData.1501875080033	file	2.13 MB	1	64 MB

**Step 3:** Now this data is then transformed into text format. So that further processing can be performed. The screenshots below shows the tweets related to Bitcoin in text format.



#Bitcoin Cash Price Poised to Plummet Once Network Stabilizes <https://t.co/59iromKGOc> via @Cointelegraph

#Bitcoin Cash: la misma #oportunidad de negocios a un cuarto del precio <https://t.co/NM3SPeTqki> #Publi @OEortodoncia

#Blockchain Platform To Fight Blood Diamonds: Q & A #Everledger CEO <https://t.co/ag0752qMXM> #bitcoin <https://t.co/3XZhBk7w1>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/5tzezMp22r> via @robotics\_monkey <https://t.co/rRw9YtN1uL>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/FoVBjJqcEG> via @3dprintmonkey <https://t.co/WR9g5xByj0>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/G3wuCF907o> via @meetinnovation <https://t.co/VU9Hmc16yT>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/GOTFCUZWd> via @toysandgamesco <https://t.co/xsMa5zjVDR>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/JG5N6tEaAi> via @toproadgear <https://t.co/ixR3NgexY7>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/VJoEQAzyE0> via @survivaltopgear <https://t.co/yU31ErK4Qk>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/b3LA5yvl3a> via @kitchenhandle <https://t.co/SjPcCsVIAU>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/hswQjleq06> via @topfashionideas <https://t.co/5AKAwqW6kv>

#LedgerWallet Protects Your #Bitcoin - Top Security - #Crypto <https://t.co/nrmIrpvs30> via @topbeautyideas <https://t.co/3cQMLEs2Qg>

#Trump #bitcoin #Obamacare #ParisHilton #gossip #Scandal #Kardashian #news #summer #paparazzi Miley Cyrus wrote a s <https://t.co/CFjoZBMmGB>

#Trump #bitcoin #Obamacare #ParisHilton #gossip #Scandal #Kardashian #news #summer #paparazzi Miley Cyrus wrote a s <https://t.co/zMFkofInBd>

#Bitcoin Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/9T70dgI3Ue> <https://t.co/AYlhWTKiL>

#Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/aFvava0iH5> #cc

247 Bitcoin News BTC Bitcoins Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts - <https://t.co/U2rM44r070>

@CryptoEyelll Segshit bitcoin is trash, that's why anybody smart enough should get in again. Segshit is dead, they just don't know it yet.

@RudyHavenstein Believe it or not, John Mack is going full bore into bitcoin.

@blakenyt @zebpay this is not right , zebpay must give Bitcoin Cash to the users , no need to update exchange but aU2026 <https://t.co/3uNkMvccBq>

Another day, another PAYDAY!\n\nBitcoin (BTC) has rallied, since the \"hard fork\" on August 1st, that introduced... <https://t.co/zzKHUCVLx0>

Bitcoin = 2864.48 \$, 2436.86 E\nlast hour change : -0.07%\nlast 24h change : 4.45%

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/1PTkq16UMK>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/2ecBZGFvab>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/3jChWzTDeY>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/88B8d8scCJ> <https://t.co/VRoS2wZ3fr>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/BGcoqqUJR> #Bitcoin

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/D75pCmbMp>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/JKag3GLwKY>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/OidTeZxWau> <https://t.co/Qq01Q9fRhD>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/QORLobjPDP>

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/nWsozwmlYm> #Bitcoin uasociolog

Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/tmIpBxQ5dA> #bitcoin #blockchain #fintech

Bitcoin Surges Towards Record Highs As 'Cash' Crashes Over 70%... <https://t.co/pK3uvP9Q3p> <https://t.co/WLcuufncvH>... <https://t.co/hlBOAPSG64>

Bitcoin adds to gains as rival Bitcoin Cash crashes 40% - <https://t.co/u3fJgy66eS> \$BTC #news #markets #cryptocurrencies

Bitcoin has split into two cryptocurrencies. what, exactly, does that mean? <https://t.co/05pPvpadr>..... <https://t.co/6QoFYCVn8C>

Blockchain:Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/XFBednIif> <https://t.co/QLfDBVGi2l>

Blockchain Beginner\u2019s Guide to Understanding Blockchain, Master Bitcoin and\u2026 <https://t.co/6tVeyg99Bw>

Buy \$21.07 of Bitcoin.

Can you pay with bitcoins on Aliexpress? YES NOW U CAN Buy directly from Aliexpress with Bitcoin! <https://t.co/rsOS7ZrEu7>

Cryptocurrency 101 <https://t.co/m3fwsWJLcp> <https://t.co/0kV8nDxQV>

Curious about cryptocurrency? Here's what you should know: <https://t.co/WkdoEYtIl7> <https://t.co/D0nGnZrHwB>..... <https://t.co/EW6ge7PAuW>

ETH-USD\nlatest: \$220.42\n5Min: \$219.61\n30Min: \$220.7\n60Min: \$220.29\nTags: #Eth, #Ethereum, #Ethtrader, #cryptocurrency, #Blockchain

ETH-USD\nlatest: \$220.51\n5Min: \$220.37\n30Min: \$221.25\n60Min: \$220.03\nTags: #Eth, #Ethereum, #Ethtrader, #cryptocurrency, #Blockchain

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German Bitcoin Exchange Hands Out Private Info to Investigators - CoinTelegraph <https://t.co/CLqGxEdL06> #bitcoin\u2026 <https://t.co/ysMKmXSY60>

Get Paid to Click Ads, Add Friends, Post, Chat & Message - Anyone Can Make Money Online with this...\u2026 <https://t.co/5mb8m7RrFD>

Grandpa Had a Pension. This Generation Has Cryptocurrency. <https://t.co/vJGe0FyvAH>

I liked a @YouTube video <https://t.co/CrtTMBent1> Win 1-5 Bitcoin (BTC) in Just 5 mins! + FreeCoins

Is there a historical bitcoin exchange rate calculator? via /r/#Bitcoin <https://t.co/fama3ywx4F> <https://t.co/1HqLNeXgjx>

Le ransomware Cerber cible les portefeuilles Bitcoin - Une mise à jour du célèbre ransomware Cerber vole des in... <https://t.co/Xg5HU9oFsm>

Order your secure and smart Bitcoin hardware wallet - Only 69.60 EUR <https://t.co/WC9nt6QCb7> #bitcoin #btc 15:17 <https://t.co/g1bvDEeyQV>

Priorities for Bitcoin Cash Community (The Road Ahead) <https://t.co/u3yM15qVle>

RT @BTCN: Post Fork Update: The Bitcoin Cash Network and Markets <https://t.co/2HXliBbCFr> #Bitcoin <https://t.co/BHW1B5wFHp>

RT @Bitcoin\_Friend: #Bitcoin Cash Price Poised to Plummet Once Network Stabilizes <https://t.co/rWdBCXJSYD>

RT @Bitcoin\_Friend: #Bitcoin Mobile SIM Card Top-Ups Now Available in 136 Countries <https://t.co/GAvGgULai5>

RT @CryptoCobain: If bitcoin goes over \$12,000 in the next 2 years I will give everyone that retweets this tweet \$1,000

RT @Crypto\_wizzard: Bitcoin...\$btc #bitcoin #poloniex #bittrex <https://t.co/dCtaaErK2h>

RT @EDinarWorldwide: Online earnings on the internet\n<https://t.co/fAREiakvij>\n#blockchain #cryptocurrency #EinarCoin #business #investment

RT @Excellion: \$LTC with 1MB blocks, 2.5 min block times & #SegWit has more tx throughput than #Bcash. But ego still not contained. <https://t.co/2026>

RT @FXS\_Forex\_EN: New 'bitcoin cash' crashes 30% Friday in volatile first week of trading; Original bitcoin steady #cnbc.com - U.S. <https://t.co/2026>

RT @GameCoin\_Global: The possibility to pay for games with cryptocurrency will help to attract more demand and to increase profit. #ico\u2026

RT @GameCoin\_Global: The technology lets you pay for games/skins/artefacts in different platforms with any cryptocurrency and convert it\u2026

RT @HungZino: Impact of #ai and #blockchain across business. #IoT #BigData #innovation #SmartCity #SmartCities #futureofwork\u2026

RT @Qvolta\_platform: Token launch coming soon!\nMeet a new service for P2P Cryptocurrency exchange!\n#ICO #cryptocurrency #bitcoin\u2026

RT @RandyHilarski: #Bitcoin News OTC Trade Group: Blockchain Smart Contracts Could Spark Interpretation Challenges <https://t.co/UL2VtNQu6q>

RT @ToneVays: So @ViaBTC is now Signaling for #SegWit to be added to #BCash \$BCH \$BCC haha. This Train Wreck / Clown Show is writ\u2026

RT @TuurDemeester: Bitcoin looking bullish. Segwit lock-in broke the downtrend, now in an ascending triangle. <https://t.co/8t3pyfBUyC>

RT @bitcoin\_dude: #Bitcoin & #Crypto news - \"Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts\" More details at <https://t.co/2026>

RT @criptobonds: Is Buy and hold your #bitcoin strategy? Then #criptobonds adds 25% yearly value to your holdings #dogecoin #BCC\u2026

RT @europecoinEUORG: more about EUROPECOIN & FOREX <https://t.co/jPPRJATZdu>\n#cryptocurrency #crypto #altcoins #bittrex #iot #fintech\u2026

RT @koning\_marc: I just published my latest article, this time writing about \$xvg. Follow me on steamit and twitter to never miss out!<https://t.co/2026>

RT @onesoas: Register free and Receive10\$\nInvestment Opportunities in Cryptocurrency Trading...<https://t.co/GxULq2e4lR> <https://t.co/V1RR3Pzn>\u2026

RT @reality\_clash: Reality Clash Token Sale <https://t.co/FcTxdXmLm9> #cryptocurrency #blockchain #ethereum #bitcoin #btc #bitcoins #ICO\u2026

RT @timpastoor: A terrible year in Bitcoin. <https://t.co/pTAq2uBTL>

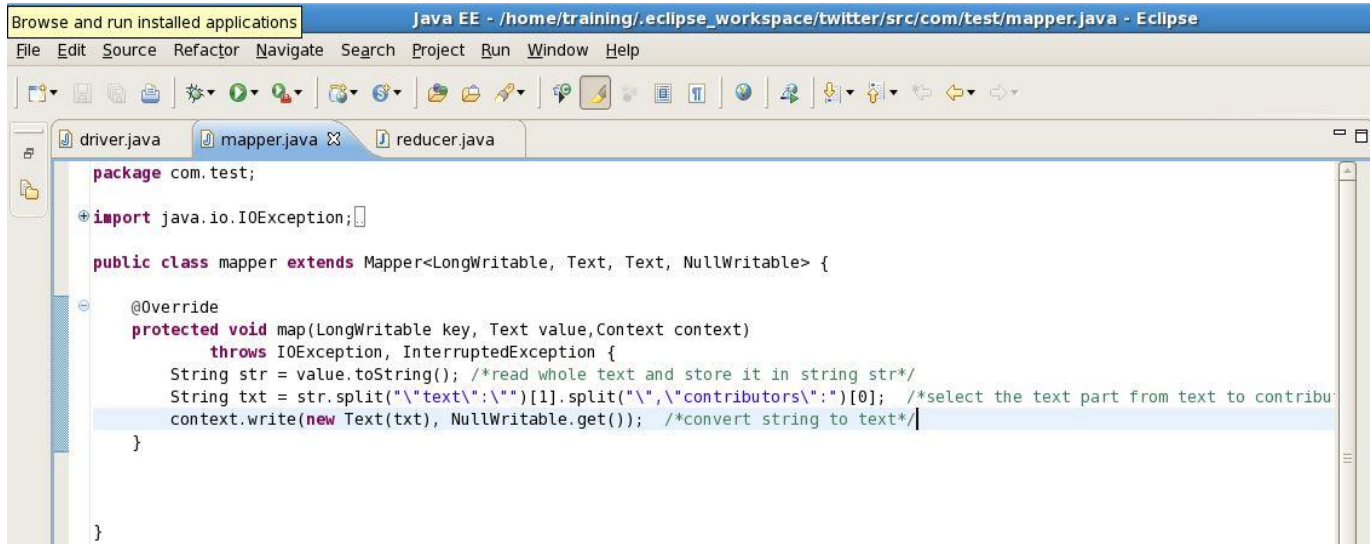
RT @yurimir12: \$ESP @EspersCoin Daily Twitter Giveaway <https://t.co/SQLgXl5d7U> #altcoin #blockchain #cryptocurrency #altcoins\u2026

Retweeted Cryptowizzard (@Crypto wizzard):\n\nBitcoin...\$btc #bitcoin #poloniex #bittrex <https://t.co/Plt3mcq37V> <https://t.co/hEBHApwYpr>



**Step 4:** Now the file is passed to the mapper which reads the file line by line. The data will be processed and smaller chunks of data will be created

Below is the screenshot of Mapper Class

The screenshot shows the Eclipse IDE with the 'mapper.java' file open. The code defines a Mapper class that extends Mapper<LongWritable, Text, Text, NullWritable>. It has a map method that takes a LongWritable key, a Text value, and a Context context. The map method reads the text value into a string, splits it by 'text\\':" to get the first part, and then splits that part by '\\","contributors\\':" to get the contributor names. It then writes a new Text object with the contributor names to the context.

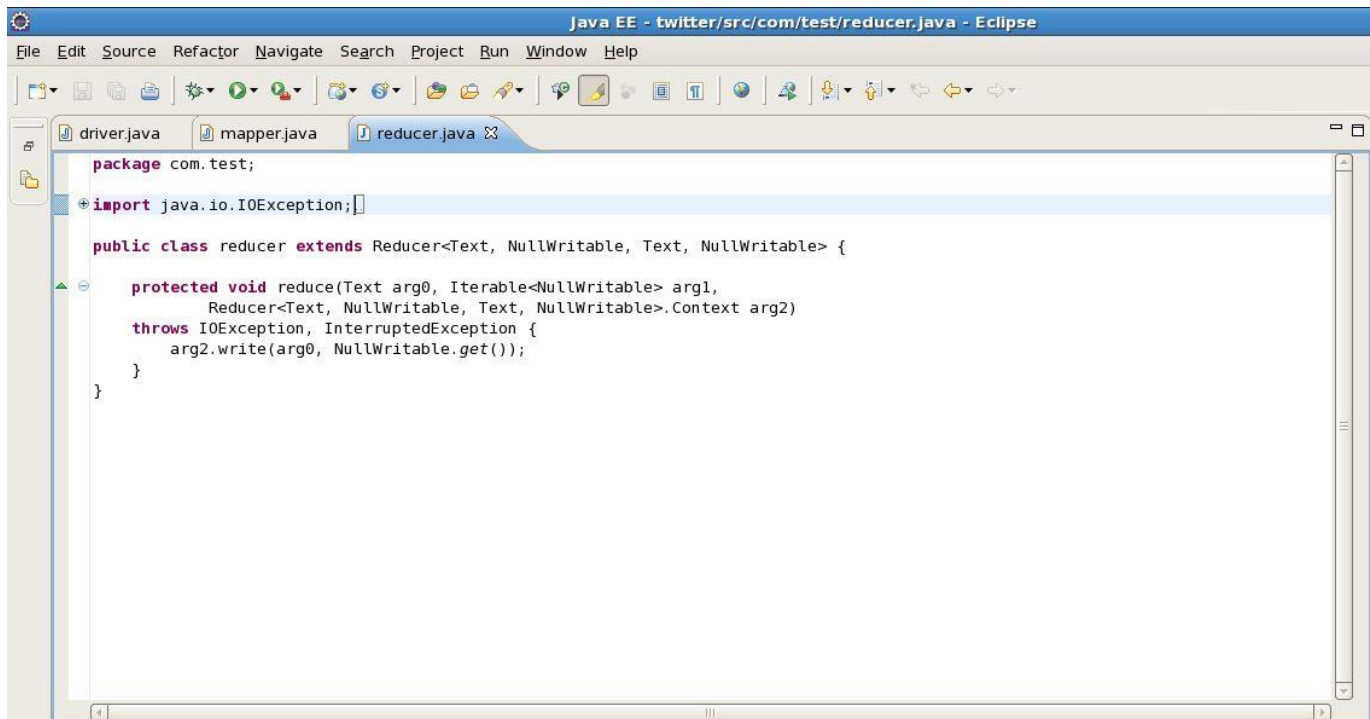
```
package com.test;

import java.io.IOException;

public class mapper extends Mapper<LongWritable, Text, Text, NullWritable> {

    @Override
    protected void map(LongWritable key, Text value, Context context)
        throws IOException, InterruptedException {
        String str = value.toString(); /*read whole text and store it in string str*/
        String txt = str.split("\\text\\':"')[1].split("\\',"contributors\\':"')[0]; /*select the text part from text to contribu
        context.write(new Text(txt), NullWritable.get()); /*convert string to text*/
    }
}
```

The output of the Mapper is given as input to the Reducer. After processing new set of output is produced. Below is the screenshot of reducer class.

The screenshot shows the Eclipse IDE with the 'reducer.java' file open. The code defines a Reducer class that extends Reducer<Text, NullWritable, Text, NullWritable>. It has a reduce method that takes a Text arg0, an Iterable<NullWritable> arg1, and a Reducer<Text, NullWritable, Text, NullWritable>.Context arg2. The reduce method writes the arg0 to the context.

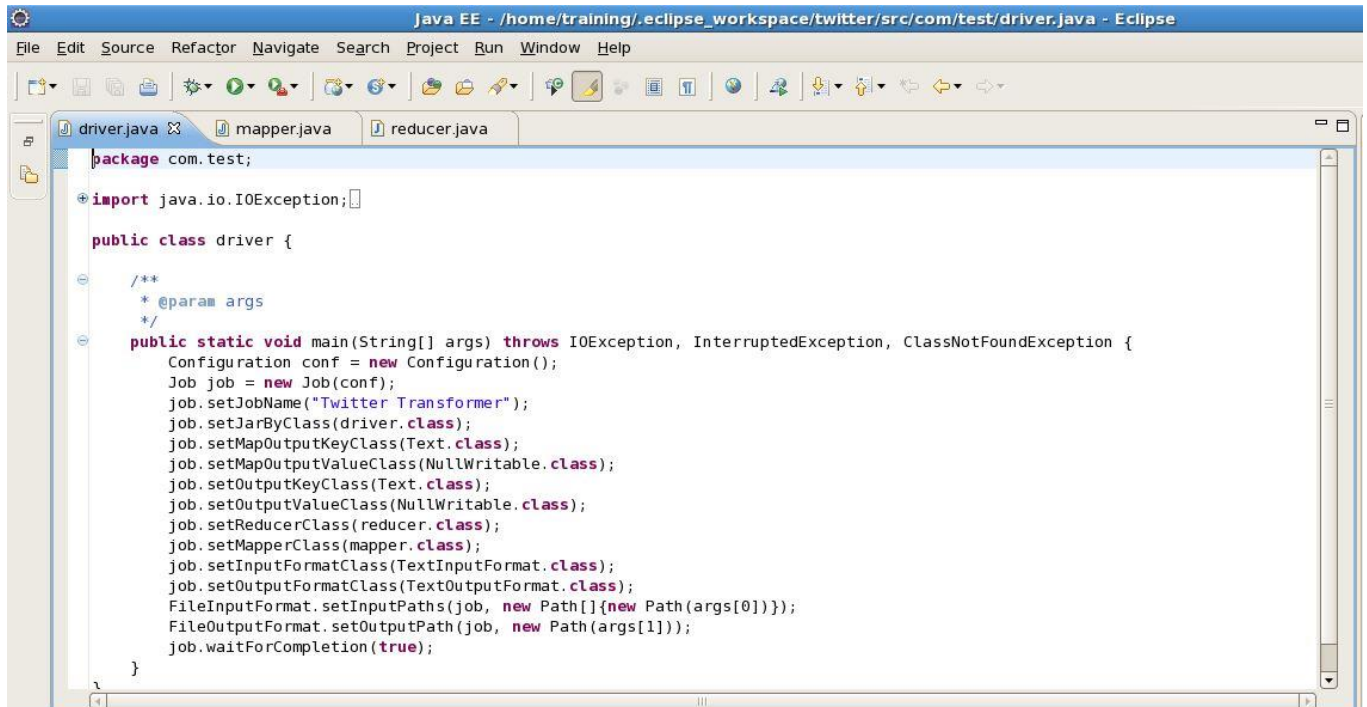
```
package com.test;

import java.io.IOException;

public class reducer extends Reducer<Text, NullWritable, Text, NullWritable> {

    protected void reduce(Text arg0, Iterable<NullWritable> arg1,
        Reducer<Text, NullWritable, Text, NullWritable>.Context arg2)
        throws IOException, InterruptedException {
        arg2.write(arg0, NullWritable.get());
    }
}
```

The mapper and the reducer class are being driven by the driver class. Below is the screenshot of the Driver class.



```
package com.test;

import java.io.IOException;

public class driver {

    /**
     * @param args
     */
    public static void main(String[] args) throws IOException, InterruptedException, ClassNotFoundException {
        Configuration conf = new Configuration();
        Job job = new Job(conf);
        job.setJobName("Twitter Transformer");
        job.setJarByClass(driver.class);
        job.setMapOutputKeyClass(Text.class);
        job.setMapOutputValueClass(NullWritable.class);
        job.setOutputKeyClass(Text.class);
        job.setOutputValueClass(NullWritable.class);
        job.setReducerClass(reducer.class);
        job.setMapperClass(mapper.class);
        job.setInputFormatClass(TextInputFormat.class);
        job.setOutputFormatClass(TextOutputFormat.class);
        FileInputFormat.setInputPaths(job, new Path[]{new Path(args[0])});
        FileOutputFormat.setOutputPath(job, new Path(args[1]));
        job.waitForCompletion(true);
    }
}
```

**Step 5:** AFFIN Dictionary will be used in order to analyze the sentiments of the tweets. Each word in the dictionary is given a rating from +5 to -5. Screenshot below shows the words with associated ratings.

abandon	-2
abandoned	-2
abandons	-2
abducted	-2
abduction	-2
abductions	-2
abhor	-3
abhorred	-3
abhorrent	-3
abhors	-3
abilities	2
ability	2
aboard	1
absentee	-1
absentees	-1
absolve	2
absolved	2
absolves	2
absolving	2
absorbed	1
abuse	-3
abused	-3
abuses	-3
abusive	-3
accept	1
accepted	1

envy	-1
envying	-1
erroneous	-2
error	-2
errors	-2
escape	-1
escapes	-1
escaping	-1
esteemed	2
ethical	2
euphoria	3
euphoric	4
eviction	-1
evil	-3
exaggerate	-2
exaggerated	-2
exaggerates	-2
exaggerating	-2
exasperated	2
excellence	3
excellent	3
excite	3
excited	3
excitement	3
exciting	3
exclude	-1

worsened	-3
worsening	-3
worsens	-3
worshiped	3
worst	-3
worth	2
worthless	-2
worthy	2
wow	4
wowow	4
wowww	4
wrathful	-3
wreck	-2
wrong	-2
wronged	-2
wtf	-4
yeah	1
yearning	1
yees	2
yes	1
youthful	2
yucky	-2
yummy	3
zealot	-2
zealots	-2
zealous	2

**Step 6:** After analyzing the sentiments of the tweets using AFFIN dictionary. The output obtained is shown in the screenshot below.



Cryptocurrency 101 <https://t.co/m3fwsWJLcp> <https://t.co/0kv8nDxQqV>  
RT @timpastoor: A terrible year in Bitcoin. <https://t.co/pTAqz2uBtL> -3.0  
@RudyHavenstein Believe it or not, John Mack is going full bore into bitcoin. -2.0  
Priorities for Bitcoin Cash Community (The Road Ahead) <https://t.co/u3yML5qVle>  
Bitcoin = 2864.48 \$, 2436.86 E\nlast hour change : -0.07%\nlast 24h change : 4.45%  
Grandpa Had a Pension. This Generation Has Cryptocurrency. <https://t.co/vJGe0FyvAH>  
RT @Crypto\_wizzard: Bitcoin...\$btc #bitcoin #poloniex #bittrex <https://t.co/dCtaaErK2h>  
Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/BGcoqUJjR> #Bitcoin  
Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/2ecBZGFvab>  
Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/3jChWzTDeY>  
Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/D75PpCMBmp>  
Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/JKag3GLwKY>  
Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/QORLobjPDP>  
I liked a @YouTube video <https://t.co/CrtTM3ENTl> Win 1-5 Bitcoin (BTC) in Just 5 mins! + FreeCoins 2.0  
#bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/aFvava0iH5> #cc  
Bitcoin Cash Block Production Accelerates as Mining Difficulty Adjusts <https://t.co/BGcoqUJjR> #Bitcoin  
#Bitcoin Cash Price Poised to Plummet Once Network Stabilizes <https://t.co/59iromKG0c> via @Cointelegraph  
Notable growth in bitcoin market in India via /r/#Bitcoin <https://t.co/HpiNSCvbNW> <https://t.co/1HqLNeXgix> 2.0  
RT @Bitcoin\_Friend: #Bitcoin Cash Price Poised to Plummet Once Network Stabilizes <https://t.co/rWdBXcJ5YD>  
RT @Bitcoin\_Friend: #Bitcoin Mobile SIM Card Top-Ups Now Available in 136 Countries <https://t.co/GAvGgULAI5>  
Blockchain Beginner\2019s Guide to Understanding Blockchain, Master Bitcoin and\2026 <https://t.co/6tVeyg99Bw>

Earn Free #bitcoins get paid with a low Minimum 2 Dollar Withdrawal at <https://t.co/ISK4L30e0A> the best site to earn free #bitcoin #ea 2.0  
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