# ASSIGNMENT-2

# REPORT

**Name:** Kushal Tushar Reshamdalal

**Student ID:** B00824760

**Course:** CSCI-5408

## 1. Cloud Setup process

- The below steps are followed to setup the cloud using Amazon's AWS EC2 instance.
- I created free account on Amazon' aws for accessing instance and storage.
- I created EC2 instance and generated public and private keys pair.
- In the third step I connected EC2 instance using SSH from PUTTY software.
- Then I set up ubuntu authentication.
- Started downloading python, exporting JAVA_HOME, SPARK_HOME.
- In the following step, I downloaded Apache sparks and configured master and slave.
- Finally, I downloaded MongoDB and initiated mongod service.

## 2. Data Extraction

- In the first step I created Twitter account and then I set up Twitter developer account by answering some security questions.
- In the following step I created one Twitter application which generated consumer API keys and access token required python script to fetch tweets from Twitter.
- In this assignment part there are two types tweets fetched
  I. Static tweets (fetched using keywords)
  II. Live tweets (fetched using keywords-streaming)
- Without access tokens(credentials) python code can not connect twitter API and data.
- For this assignment I have used python for tweets extraction and also for articles extraction.

## 3. Tweet Cleaning

- This is the most important part for getting accurate data.
- There were so many characters and emojis which required to be cleaned from the tweets.
- I considered following entities which needed to be removed for getting cleaned tweets using cleaning_tweet() function.
  I. Special characters
  II. Images(jpg)
  III. HTTP/HTTPS URL links
  IV. Emoticons
  V. Lowering the alphabets in tweets (useful for analysis)
- After applying cleaning process, the required data from tweets such as tweet id, username, date(created_at), cleaned tweet, user id and location into csv file.
- I am using MongoDB which I installed on ubuntu on aws to store the data using csv file.

## 4. News Article Data Extraction & Transformation

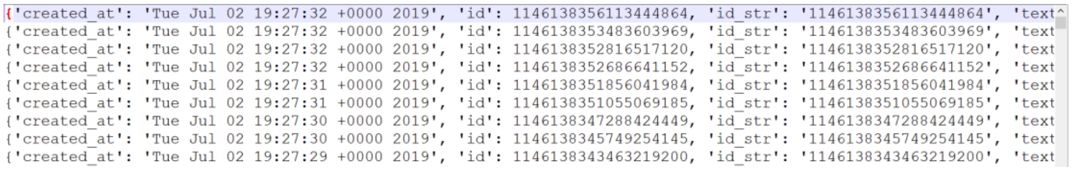
- In the second part of assignment two files are given for article extraction using tags.
- Article_extrction.py extracts the texts lying between two <TEXT> tags.
- It creates two separate folders "020" and "021" having separate news articles.

## 5. Data Processing (Map reduce)

- This works for counting word frequency from "searchedtweets.csv", "streamedtweets.csv" and extracted news articles.

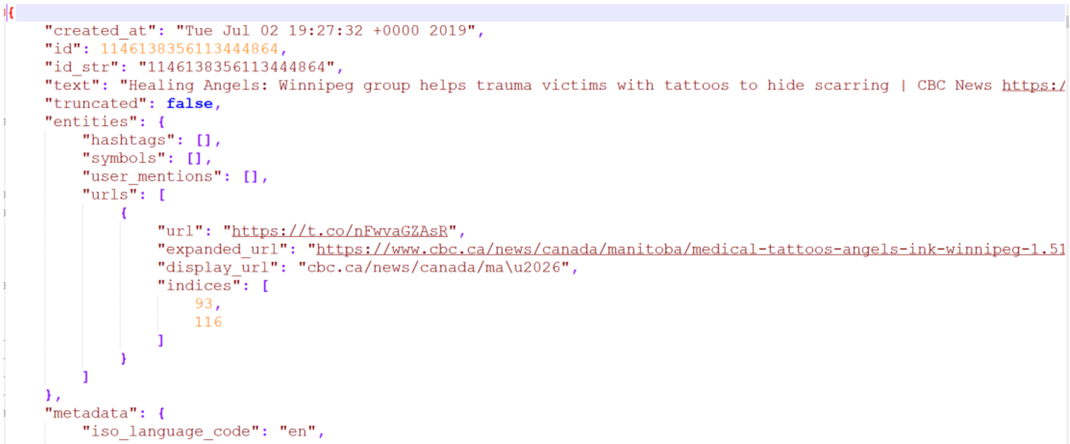
## 6. Sample of tweets in different file formats (.txt, JSON, CSV)

- I have stored raw tweets in text files and JSON files.
- Cleaned tweets are stored in CSV files for both searched and streamed tweets..



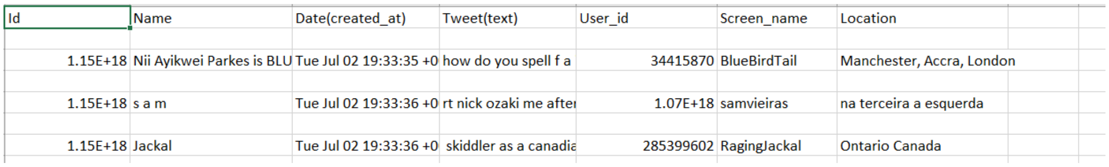
```
{'created_at': 'Tue Jul 02 19:27:32 +0000 2019', 'id': 1146138356113444864, 'id_str': '1146138356113444864', 'text
{'created_at': 'Tue Jul 02 19:27:32 +0000 2019', 'id': 1146138353483603969, 'id_str': '1146138353483603969', 'text
{'created_at': 'Tue Jul 02 19:27:32 +0000 2019', 'id': 1146138352816517120, 'id_str': '1146138352816517120', 'text
{'created_at': 'Tue Jul 02 19:27:32 +0000 2019', 'id': 1146138352686641152, 'id_str': '1146138352686641152', 'text
{'created_at': 'Tue Jul 02 19:27:31 +0000 2019', 'id': 1146138351856041984, 'id_str': '1146138351856041984', 'text
{'created_at': 'Tue Jul 02 19:27:31 +0000 2019', 'id': 1146138351055069185, 'id_str': '1146138351055069185', 'text
{'created_at': 'Tue Jul 02 19:27:30 +0000 2019', 'id': 1146138347288424449, 'id_str': '1146138347288424449', 'text
{'created_at': 'Tue Jul 02 19:27:30 +0000 2019', 'id': 1146138345749254145, 'id_str': '1146138345749254145', 'text
{'created_at': 'Tue Jul 02 19:27:29 +0000 2019', 'id': 1146138343463219200, 'id_str': '1146138343463219200', 'text
```

*Figure 1. Raw tweets in text file*



```
{
    "created_at": "Tue Jul 02 19:27:32 +0000 2019",
    "id": 1146138356113444864,
    "id_str": "1146138356113444864",
    "text": "Healing Angels: Winnipeg group helps trauma victims with tattoos to hide scarring | CBC News https:/
    "truncated": false,
    "entities": {
        "hashtags": [],
        "symbols": [],
        "user_mentions": [],
        "urls": [
            {
                "url": "https://t.co/nFwvaGZAsR",
                "expanded_url": "https://www.cbc.ca/news/canada/manitoba/medical-tattoos-angels-ink-winnipeg-1.51
                "display_url": "cbc.ca/news/canada/ma\u2026",
                "indices": [
                    93,
                    116
                ]
            }
        ]
    },
    "metadata": {
        "iso_language_code": "en",
```

*Figure 2 Raw tweets in JSON*



| Id | Name | Date(created_at) | Tweet(text) | User_id | Screen_name | Location |
|---|---|---|---|---|---|---|
| 1.15E+18 | Nii Ayikwei Parkes is BLU | Tue Jul 02 19:33:35 +0 | how do you spell f a | 34415870 | BlueBirdTail | Manchester, Accra, London |
| 1.15E+18 | s a m | Tue Jul 02 19:33:36 +0 | rt nick ozaki me after | 1.07E+18 | samvieiras | na terceira a esquerda |
| 1.15E+18 | Jackal | Tue Jul 02 19:33:36 +0 | skiddler as a canadia | 285399602 | RagingJackal | Ontario Canada |

*Figure 3. Cleaned tweets in CSV*

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