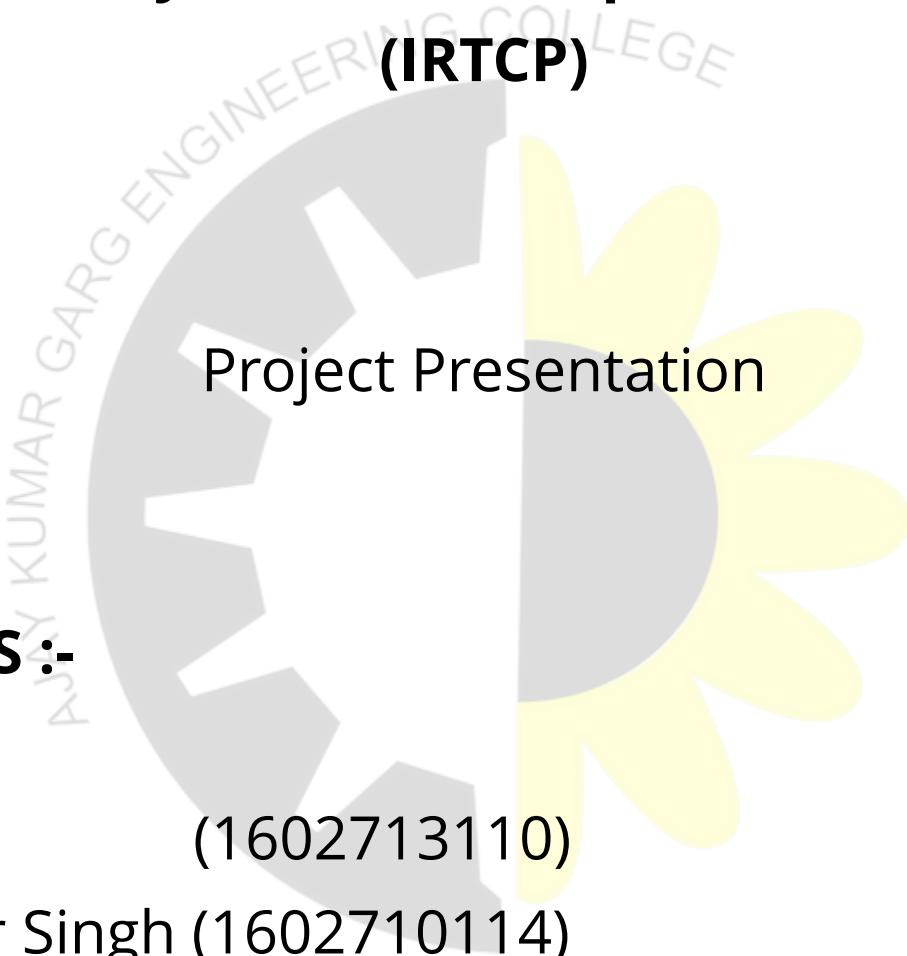


# **Indian Railways Twitter Complaints Prioritisation (IRTCP)**

Project Presentation

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Project Presentation

## **TEAM MEMBERS :-**

Srijan Prakash

(1602713110)

## **GUIDED BY :-**

Mrs. Lipika Goel

Rishitosh Kumar Singh (1602710114)

Silki Gupta (1602713107)

Nikki Rastogi (1602710082)

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# Introduction



# Introduction

- The project reduces the work complexity of scanning through thousands of useless data to find particular information but from here we can directly find the relevant tweets that need attention.
- The machine learning model will be flexible and can be applied to various other local authorities like Nagar Nigam, State electricity board, and various other authorities.
- We just have to filter the tweets on the basis of that particular authority. Reduced operational time.



# Project Purpose

- We try to implement and improve the current system to a better working model and also try to work with new cutting edge technology stack.
- This software package can be readily used by non-programming personal avoiding human handled chances of error.
- Increased operational efficiency.
- Increased accuracy and reliability.
- Increase fault-tolerance.

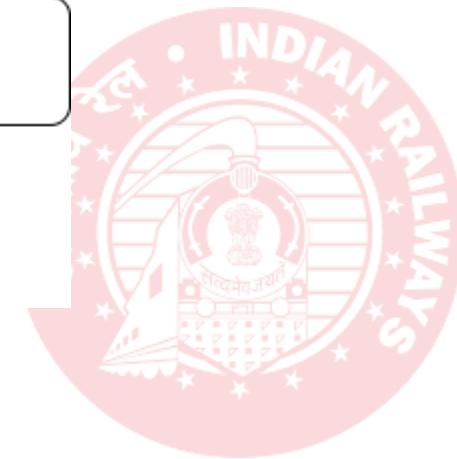
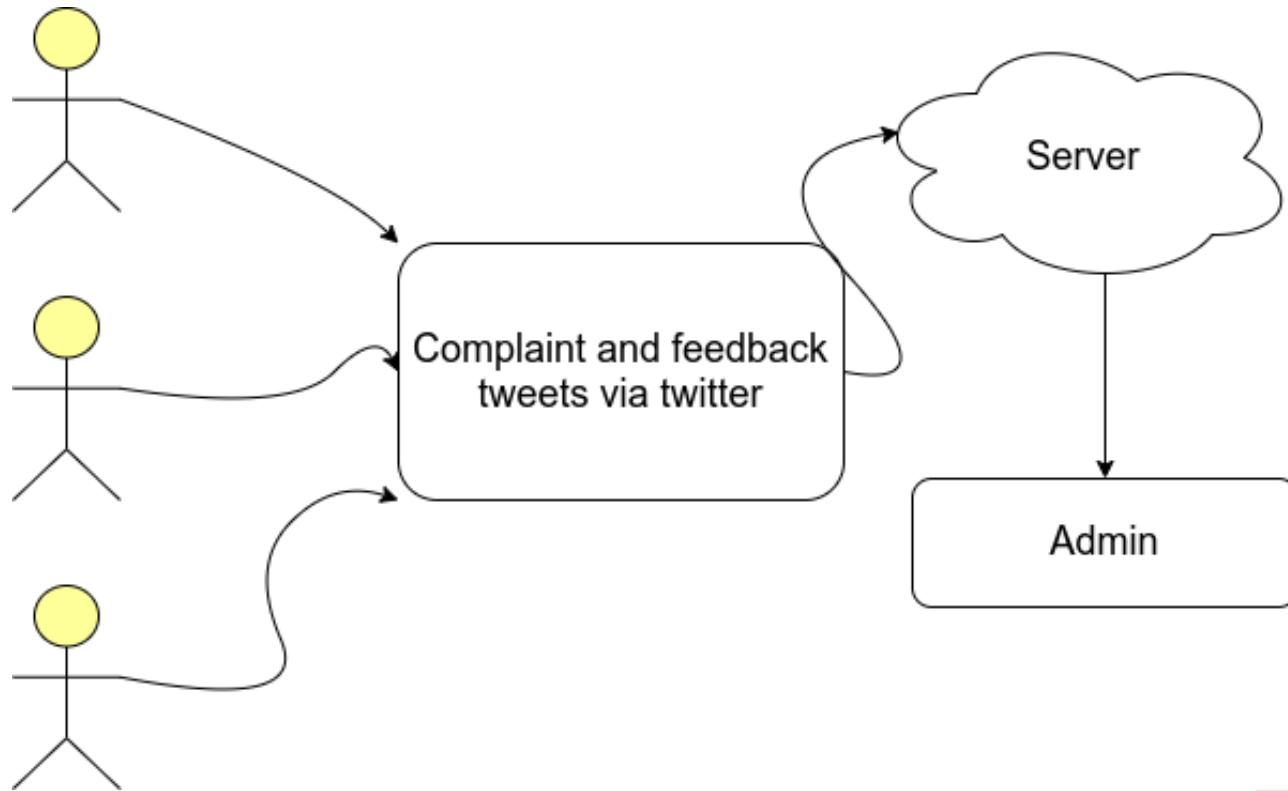


# Project Scope

- This project has a large scope as it has the following features which help in making it easy to use, understand and modify
- Automation of Feedback and complaint addressing
- No need to do Paper Work.
- To save the environment by using paper-free work.
- To increase the accuracy and efficiency of the complaint addressing procedure.
- Management of passenger data



# Project Description



# Description of Platforms

The proposed system will have Five Modules

1. Deployment on Cloud
2. Data Stream Pipelining
3. Machine Learning Pipeline
4. Mobile App
5. Web App



# Deployment on cloud

- **Amazon Elastic Compute Cloud** (Amazon EC2) is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.
- Amazon EC2 presents a true virtual computing environment, allowing you to use web service interfaces to launch instances with a variety of operating systems, load them with your custom application environment, manage your network's access permissions, and run your image using as many or few systems as you desire.



# Deployment on cloud

The screenshot shows the AWS EC2 Dashboard interface. On the left, there is a navigation sidebar with various links such as New EC2 Experience, EC2 Dashboard, Events, Tags, Limits, Instances, Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The Instances link is currently selected.

The main content area displays a table of EC2 instances. The columns include Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), IPv4 Public IP, IPv6 IPs, Key Name, and Monitoring. The table lists five instances:

| Name             | Instance ID         | Instance Type | Availability Zone | Instance State | Status Checks | Alarm Status | Public DNS (IPv4) | IPv4 Public IP | IPv6 IPs | Key Name | Monitoring |
|------------------|---------------------|---------------|-------------------|----------------|---------------|--------------|-------------------|----------------|----------|----------|------------|
| Xampp            | i-08ce20d76f69557ef | t2.micro      | us-east-2c        | stopped        | None          | None         | -                 | -              | -        | Hadoop   | disabled   |
| TS3000           | i-08fd646ec45721b5d | t2.medium     | us-east-2b        | stopped        | None          | None         | -                 | -              | -        | Hadoop   | disabled   |
| Hadoop-Namenode  | i-0c396735b989b9946 | t2.medium     | us-east-2c        | stopped        | None          | None         | -                 | -              | -        | Hadoop   | disabled   |
| Hadoop-datanode1 | i-0d669a44e342dc6b7 | t2.micro      | us-east-2c        | stopped        | None          | None         | -                 | -              | -        | Hadoop   | disabled   |
| Hadoop-datanode2 | i-0e069ca77f8940b0b | t2.micro      | us-east-2c        | stopped        | None          | None         | -                 | -              | -        | Hadoop   | disabled   |

Below the table, a modal window titled "Instances" is open, showing the details for three specific instances: Hadoop-Namenode, Hadoop-datanode1, and Hadoop-datanode2. The modal has tabs for Description, Status Checks, Monitoring, and Tags. The Description tab lists the instance IDs: i-0c396735b989b9946, i-0d669a44e342dc6b7, and i-0e069ca77f8940b0b.

At the bottom of the page, there are links for Feedback, English (US), and a footer with copyright information: © 2008 - 2020, Amazon Internet Services Private Ltd, or its affiliates. All rights reserved. Privacy Policy Terms of Use.

# Virtual Machines cluster

```
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.3.0-1032-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

System information as of Mon Aug 10 12:33:07 UTC 2020

System load: 0.16 Processes: 97
Usage of /: 52.1% of 7.69GB Users logged in: 0
Memory usage: 16% IP address for eth0: 172.31.40.64
Swap usage: 0%

* Are you ready for Kubernetes 1.19? It's nearly here! Try RC3 with
  sudo snap install microk8s --channel=1.19/candidate --classic

https://microk8s.io/ has docs and details.

* Canonical Livepatch is available for installation.
  - Reduce system reboots and improve kernel security. Activate at:
    https://ubuntu.com/livepatch

38 packages can be updated.
0 updates are security updates.

Last login: Mon Aug 10 12:31:55 2020 from 171.78.211.53
ubuntu@ec2slave2:~$ █

● Shell Shell No. 2 Shell No. 3
```

Slave 2

```
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.3.0-1032-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

System information as of Mon Aug 10 12:32:54 UTC 2020

System load: 0.08 Processes: 96
Usage of /: 51.3% of 7.69GB Users logged in: 0
Memory usage: 16% IP address for eth0: 172.31.42.178
Swap usage: 0%

* Are you ready for Kubernetes 1.19? It's nearly here! Try RC3 with
  sudo snap install microk8s --channel=1.19/candidate --classic

https://microk8s.io/ has docs and details.

* Canonical Livepatch is available for installation.
  - Reduce system reboots and improve kernel security. Activate at:
    https://ubuntu.com/livepatch

10 12:31:50 2020 from 171.78.211.53
█

● Shell Shell No. 3
```

Slave 1

```
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.3.0-1032-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

System information as of Mon Aug 10 12:32:41 UTC 2020

System load: 0.1 Processes: 107
Usage of /: 52.2% of 7.69GB Users logged in: 0
Memory usage: 4% IP address for eth0: 172.31.42.254
Swap usage: 0%

* Are you ready for Kubernetes 1.19? It's nearly here! Try RC3 with
  sudo snap install microk8s --channel=1.19/candidate --classic

https://microk8s.io/ has docs and details.

* Canonical Livepatch is available for installation.
  - Reduce system reboots and improve kernel security. Activate at:
    https://ubuntu.com/livepatch

38 packages can be updated.
0 updates are security updates.

Last login: Mon Aug 10 12:31:18 2020 from 171.78.211.53
ubuntu@ec2master:~$ █

● Shell Shell No. 2 Shell No. 3
```

Master



# Data Stream Pipelining

- One of the first requirements is to get access to the streaming data; in this case, real-time tweets. Twitter provides a very convenient API to fetch tweets in a streaming manner.
- In addition, We also use Kafka to buffer the tweets before processing. Kafka provides a distributed queuing service that can be used to store the data when the data creation rate is more than the processing rate. It also has several other uses.



# Starting Zookeeper on every node

```
ubuntu@ec2slave2:~$ zkServer.sh start
ZooKeeper JMX enabled by default
Using config: /home/ubuntu/zookeeper-3.4.14/bin/../conf/zoo.cfg
Starting zookeeper ... already running as process 1392.
ubuntu@ec2slave2:~$ zkServer.sh status
ZooKeeper JMX enabled by default
Using config: /home/ubuntu/zookeeper-3.4.14/bin/../conf/zoo.cfg
Mode: leader
ubuntu@ec2slave2:~$ █
```

Slave 2

```
ubuntu@ec2slave1:~$ zkServer.sh start
ZooKeeper JMX enabled by default
Using config: /home/ubuntu/zookeeper-3.4.14/bin/../conf/zoo.cfg
Starting zookeeper ... already running as process 1460.
ubuntu@ec2slave1:~$ zkServer.sh status
ZooKeeper JMX enabled by default
Using config: /home/ubuntu/zookeeper-3.4.14/bin/../conf/zoo.cfg
Mode: follower
ubuntu@ec2slave1:~$ █
```

Slave 1

```
ubuntu@ec2master:~$ zkServer.sh start
ZooKeeper JMX enabled by default
Using config: /home/ubuntu/zookeeper-3.4.14/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
ubuntu@ec2master:~$ zkServer.sh status
ZooKeeper JMX enabled by default
Using config: /home/ubuntu/zookeeper-3.4.14/bin/../conf/zoo.cfg
Mode: follower
ubuntu@ec2master:~$ █
```

Master

# Currently running daemons

```
ubuntu@ec2slave2:~$ jps
1392 QuorumPeerMain
2087 Jps
2042 Worker
1548 Kafka
ubuntu@ec2slave2:~$
```

Slave 2

```
ubuntu@ec2slave1:~$ jps
2129 Jps
1460 QuorumPeerMain
2084 Worker
1598 Kafka
ubuntu@ec2slave1:~$
```

Slave 1

```
ubuntu@ec2master:~$ jps
1584 QuorumPeerMain
2113 Jps
2053 Master
1642 Kafka
ubuntu@ec2master:~$
```

Master

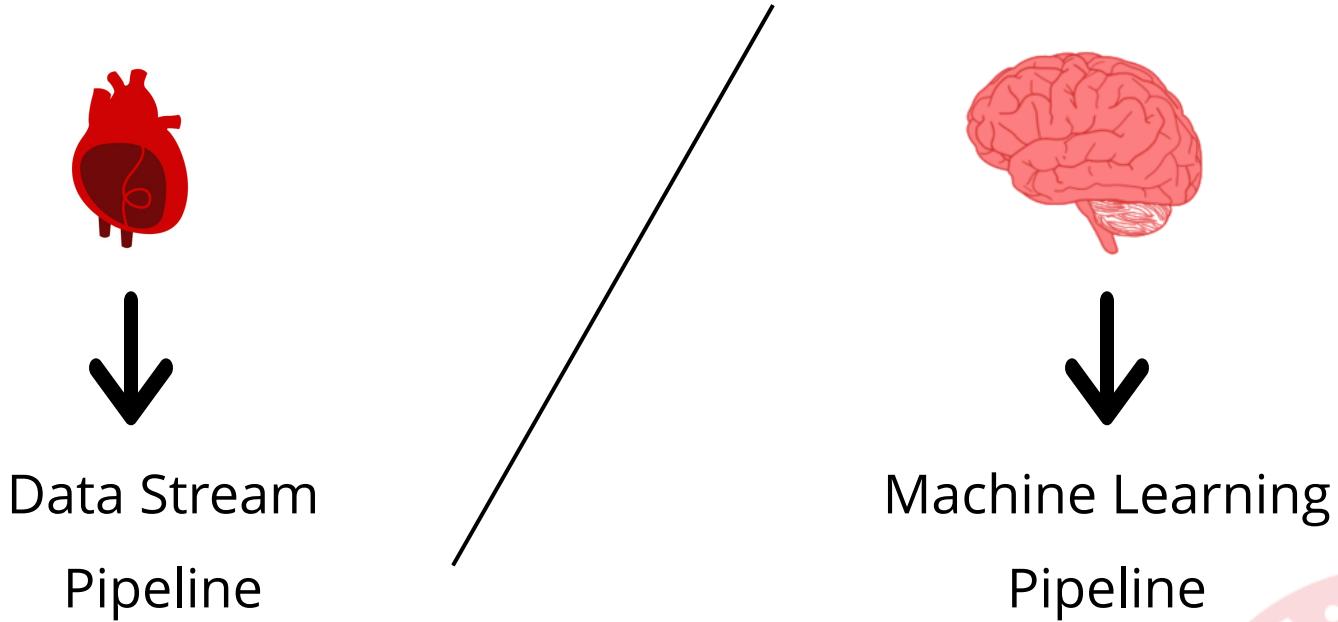
# Live tweets from twitter

```
ubuntu@ec2master:~/Documents/irtcp$ python3 kafka_file/stream_data.py
#SAVE RAILWAY SAVE NATION
WE WANT JUSTICE ACT APPRENTICES
@narendramodi @PiyushGoyal @RailMinIndia... https://t.co/38iUzeXlD8
@Debashi70964923 @RajeshK67990631 @drmsambalpur @PiyushGoyalOffc @PiyushGoyal @RailMinIndia @PMOIndia Sir, the trai... https://t.co/NBqkEMbJhr
@PiyushGoyalOffc @RailwaySeva @drmbct @DRMJaipur @GMNRailway @WesternRly Please provide temporary stop @palghar of... https://t.co/HMyiGKF2yZ
@AIRAAOFFICIAL @narendramodi @PiyushGoyal @ShivaGopalMish1 @RailMinIndia @AIRF_COMMs @v_k_yadava @IR_CRB... https://t.co/78LUuVdsR3
Ab To kardo postpone @DrRPNishank @DG_NTA

#PostponeJEE_NEETSept
#ER_Start_initial_AlP_Training_Online
When we Call to Divisional office for Enquiry abt Training Schedule, Same Ans... https://t.co/kVTztDodte
INDIAN RAILWAYS EXTENDS SUSPENSION OF EXPRESS, PASSENGER, SUBURBAN TRAINS TILL SEPTEMBER 30 !!

Now Please postpon... https://t.co/ryHYj9yeXI
@AIRAAOFFICIAL @narendramodi @PiyushGoyal @ShivaGopalMish1 @RailMinIndia @AIRF_COMMs @v_k_yadava @IR_CRB @airfindia @PMOIndia We need job
#SaveRailway_SaveNation
Indian Railways not only creates jobs but secure it, whether it is skilled like apprentice... https://t.co/qd80aF5snM
Railway apprentices Jay hind
```

# Machine Learning Pipeline



# Machine Learning Pipeline

- Feature Extraction (TFIDF)

$TF(t, d)$  : Term frequency of 't' in document 'd'

$DF(t, D)$  : Document frequency of 't' in collection of documents 'D'

$IDF(t, D)$  : Term document frequency of 't' in collection of documents 'D'

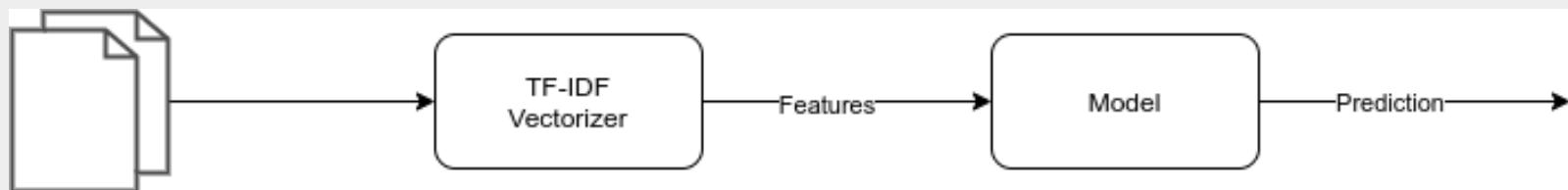
$$= \log\left(\frac{|D|+1}{DF(t,D)+1}\right)$$

$$TFIDF(t, d, D) = TF(t, d) * IDF(t, D)$$

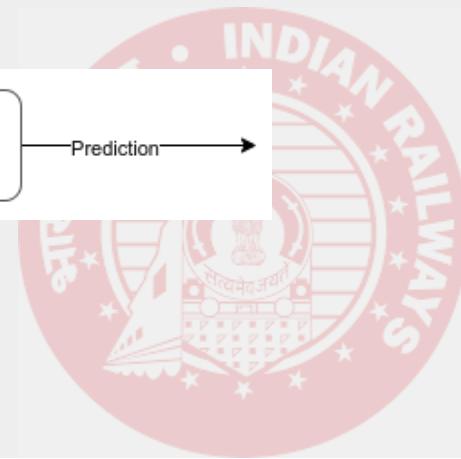
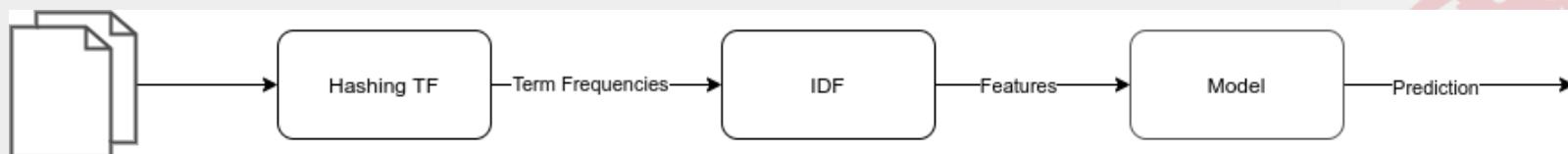


# Machine Learning Pipeline

sklearn pipeline



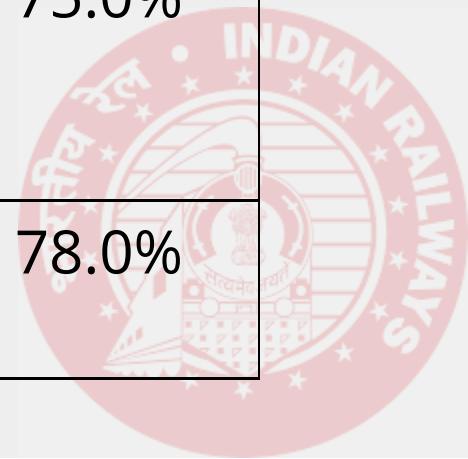
pySpark pipeline



# Model Comparision

- We have tried various machine learning classification models currently supported by Spark MLlib. Our results were as follow:

| Model               | Train Accuracy | Testing Accuracy | Recall | Precision |
|---------------------|----------------|------------------|--------|-----------|
| SVM                 | 87.1%          | 62.5%            | 52.3%  | 68.7%     |
| Logistic Regression | 87.9%          | 67.5%            | 57.1%  | 75.0%     |
| Naive Bayes         | 85.0%          | 75.0%            | 71.0%  | 78.0%     |



# Processing live tweets

```
xerial.snappy_snappy-java-1.1.2.6.jar
9 INFO StandaloneAppClient$ClientEndpoint: Connecting to master spark://172.31.42.254:7077...
9 INFO TransportClientFactory: Successfully created connection to /172.31.42.254:7077 after 42 ms (0 ms spent in bootstraps)
9 INFO StandaloneSchedulerBackend: Connected to Spark cluster with app ID app-20200810125259-0000
9 INFO Utils: Successfully started service 'org.apache.spark.network.netty.NettyBlockTransferService' on port 42689.
9 INFO NettyBlockTransferService: Server created on ip-172-31-42-254.us-east-2.compute.internal:42689
9 INFO BlockManager: Using org.apache.spark.storage.RandomBlockReplicationPolicy for block replication policy
9 INFO StandaloneAppClient$ClientEndpoint: Executor added: app-20200810125259-0000/0 on worker-20200810124525-172.31.42.178-43843 (172.31.42.178:43843) with 1 c
9 INFO StandaloneSchedulerBackend: Granted executor ID app-20200810125259-0000/0 on hostPort 172.31.42.178:43843 with 1 core(s), 1024.0 MB RAM
9 INFO StandaloneAppClient$ClientEndpoint: Executor added: app-20200810125259-0000/1 on worker-20200810124525-172.31.40.64-46825 (172.31.40.64:46825) with 1 cor
9 INFO StandaloneSchedulerBackend: Granted executor ID app-20200810125259-0000/1 on hostPort 172.31.40.64:46825 with 1 core(s), 1024.0 MB RAM
9 INFO BlockManagerMaster: Registering BlockManager BlockManagerId(driver, ip-172-31-42-254.us-east-2.compute.internal, 42689, None)
9 INFO BlockManagerMasterEndpoint: Registering block manager ip-172-31-42-254.us-east-2.compute.internal:42689 with 366.3 MB RAM, BlockManagerId(driver, ip-172-
ternal, 42689, None)
9 INFO BlockManagerMaster: Registered BlockManager BlockManagerId(driver, ip-172-31-42-254.us-east-2.compute.internal, 42689, None)
9 INFO BlockManager: Initialized BlockManager: BlockManagerId(driver, ip-172-31-42-254.us-east-2.compute.internal, 42689, None)
9 INFO StandaloneAppClient$ClientEndpoint: Executor updated: app-20200810125259-0000/0 is now RUNNING
9 INFO StandaloneAppClient$ClientEndpoint: Executor updated: app-20200810125259-0000/1 is now RUNNING
9 INFO StandaloneSchedulerBackend: SchedulerBackend is ready for scheduling beginning after reached minRegisteredResourcesRatio: 0.0
...
433c1a28de7c7ee75ff8
...
43411a28de7c7ee75ffa
...
434a1a28de7c7ee75ffc
...
```

# Spark Web UI

Not secure | 13.59.160.62:8080

Apache Spark 2.4.5

## Spark Master at spark://172.31.42.254:7077

URL: spark://172.31.42.254:7077

Alive Workers: 2

Cores in use: 2 Total, 2 Used

Memory in use: 2.0 GB Total, 2.0 GB Used

Applications: 1 Running, 0 Completed

Drivers: 0 Running, 0 Completed

Status: ALIVE

### Workers (2)

| Worker Id                                 | Address             | State | Cores      | Memory                     |
|---|---------------------|-------|------------|----------------------------|
| worker-20200810124525-172.31.40.64-46825  | 172.31.40.64:46825  | ALIVE | 1 (1 Used) | 1024.0 MB (1024.0 MB Used) |
| worker-20200810124525-172.31.42.178-43843 | 172.31.42.178:43843 | ALIVE | 1 (1 Used) | 1024.0 MB (1024.0 MB Used) |

### Running Applications (1)

| Application ID          | Name            | Cores | Memory per Executor | Submitted Time      | User   | State   | Duration |
|-------------------------|-----------------|-------|---------------------|---------------------|--------|---------|----------|
| app-20200810125259-0000 | (kill) Streamer | 2     | 1024.0 MB           | 2020/08/10 12:52:59 | ubuntu | RUNNING | 2.5 min  |

### Completed Applications (0)

| Application ID | Name | Cores | Memory per Executor | Submitted Time | User | State | Duration |
|----------------|------|-------|---------------------|----------------|------|-------|----------|
|----------------|------|-------|---------------------|----------------|------|-------|----------|

# Spark Web UI

Not secure | 13.59.160.62:4040/jobs/

Jobs Stages Storage Environment Executors Streaming Streamer application UI

## Spark Jobs (?)

User: ubuntu  
Total Uptime: 2.3 min  
Scheduling Mode: FIFO  
Completed Jobs: 34

Event Timeline

### Completed Jobs (34)

| Job Id | Description  | Submitted           | Duration | Stages: Succeeded/Total | Tasks (for all stages): Succeeded/Total |
|--------|--|---------------------|----------|-------------------------|---|
| 33     | call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381<br>call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381 | 2020/08/10 12:55:10 | 0.1 s    | 1/1                     | 1/1                                     |
| 32     | call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381<br>call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381 | 2020/08/10 12:55:10 | 61 ms    | 1/1                     | 1/1                                     |
| 31     | treeAggregate at IDF.scala:54<br>treeAggregate at IDF.scala:54   | 2020/08/10 12:55:10 | 0.4 s    | 1/1                     | 1/1                                     |
| 30     | runJob at PythonRDD.scala:153<br>runJob at PythonRDD.scala:153   | 2020/08/10 12:55:10 | 0.1 s    | 1/1                     | 1/1                                     |
| 29     | runJob at PythonRDD.scala:153<br>runJob at PythonRDD.scala:153   | 2020/08/10 12:55:00 | 61 ms    | 1/1                     | 1/1                                     |
| 28     | call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381<br>call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381 | 2020/08/10 12:54:50 | 0.1 s    | 1/1                     | 1/1                                     |
| 27     | call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381<br>call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381 | 2020/08/10 12:54:50 | 84 ms    | 1/1                     | 1/1                                     |
| 26     | treeAggregate at IDF.scala:54<br>treeAggregate at IDF.scala:54   | 2020/08/10 12:54:50 | 0.3 s    | 1/1                     | 1/1                                     |
| 25     | runJob at PythonRDD.scala:153<br>runJob at PythonRDD.scala:153   | 2020/08/10 12:54:50 | 91 ms    | 1/1                     | 1/1                                     |
| 24     | call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381<br>call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381 | 2020/08/10 12:54:40 | 0.2 s    | 1/1                     | 1/1                                     |
| 23     | call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381<br>call at /home/ubuntu/spark-2.4.5-bin-hadoop2.7/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py:2381 | 2020/08/10 12:54:40 | 72 ms    | 1/1                     | 1/1                                     |
| 22     | treeAggregate at IDF.scala:54<br>treeAggregate at IDF.scala:54   | 2020/08/10 12:54:40 | 0.4 s    | 1/1                     | 1/1                                     |
| 21     | runJob at PythonRDD.scala:153<br>runJob at PythonRDD.scala:153   | 2020/08/10 12:54:40 | 0.1 s    | 1/1                     | 1/1                                     |
| 20     | runJob at PythonRDD.scala:153<br>runJob at PythonRDD.scala:153   | 2020/08/10 12:54:30 | 0.1 s    | 1/1                     | 1/1                                     |
| 19     | runJob at PythonRDD.scala:153<br>runJob at PythonRDD.scala:153   | 2020/08/10 12:54:20 | 0.1 s    | 1/1                     | 1/1                                     |
| 18     | runJob at PythonRDD.scala:153<br>runJob at PythonRDD.scala:153   | 2020/08/10 12:54:10 | 94 ms    | 1/1                     | 1/1                                     |

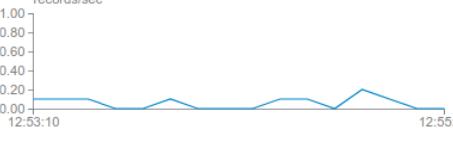
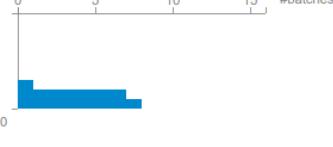
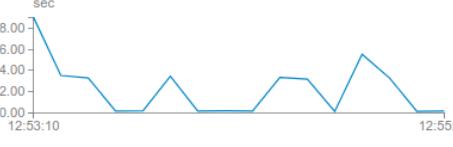
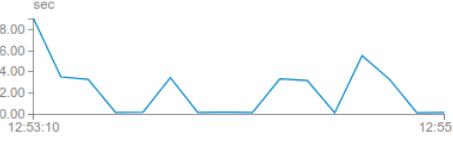
# Spark Web UI

Not secure | 13.59.160.62:4040/streaming/

Spark 2.4.5 Jobs Stages Storage Environment Executors Streaming Streamer application UI

## Streaming Statistics

Running batches of 10 seconds for 2 minutes 45 seconds since 2020/08/10 12:53:00 (16 completed batches, 9 records)

|  | Timelines (Last 16 batches, 0 active, 16 completed)  | Histograms  |
|--|--|---|
| ▶ Input Rate<br>Avg: 0.06 records/sec        | <br>records/sec |   |
| Scheduling Delay (?)<br>Avg: 2 ms            | <br>sec         |   |
| Processing Time (?)<br>Avg: 2 seconds 232 ms | <br>sec         |   |
| Total Delay (?)<br>Avg: 2 seconds 235 ms     | <br>sec        |  |

### Active Batches (0)

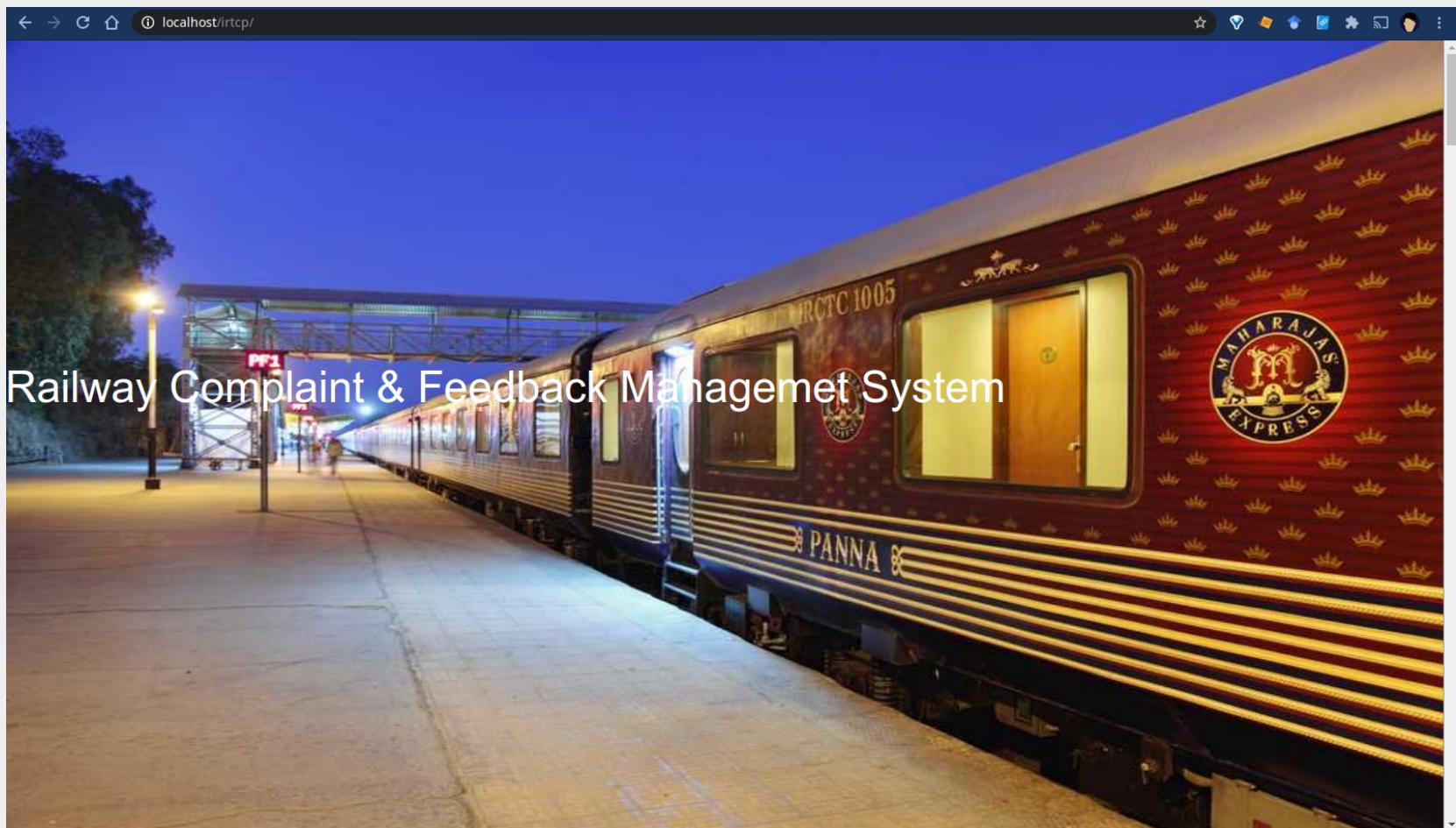
| Batch Time | Records | Scheduling Delay (?) | Processing Time (?) | Output Ops: Succeeded/Total | Status |
|------------|---------|----------------------|---------------------|-----------------------------|--------|
|------------|---------|----------------------|---------------------|-----------------------------|--------|

### Completed Batches (last 16 out of 16)

| Batch Time          | Records   | Scheduling Delay (?) | Processing Time (?) | Total Delay (?) | Output Ops: Succeeded/Total |
|---------------------|-----------|----------------------|---------------------|-----------------|-----------------------------|
| 2020/08/10 12:55:40 | 0 records | 1 ms                 | 0.1 s               | 0.1 s           | 1/1                         |

Web App  
and  
Mobile App

# Admin Web UI



# Admin Web UI

The screenshot shows a web-based administrative interface for managing complaints. The top navigation bar includes links for 'Emergency' and 'Feedback' on the left, and 'Previous Complaints' on the right. The main content area displays a list of complaints from users, each with a 'Reply' button. The complaints are as follows:

- @IRCTCOfficial Why Delhi to Trivandrum train giving some error while booking. [Reply](#)
- @souravkrmaJhi @PiyushGoyalOffc @RailwaySeva @anandmahindra Sir they won't wait for me or arrange me on a train til... [Reply](#)
- @advocate\_asinha @WesternRly @IRCTCOfficial @PiyushGoyal @PiyushGoyalOffc Full amount will be refunded in 7-10 working days. [Reply](#)
- @PMOIndia @RailMinIndia @IRCTCOfficial Is this a joke you guyes are doing? I am tried from 1600 hrs till now but th... [Reply](#)
- #IndianRailways Issues Timings of Special Trains on 15 Routes Amid #Coronavirus Lockdown; Here Are Details #COVID19... [Reply](#)
- I tried to book my ticket twice from Dimapur to new delhi, amount of ticket is deducted from my account twice but i... [Reply](#)
- plz start booking for train no 02310 we are trying since 4 pm today 11-05-2020 [Reply](#)
- @RailMinIndia Fare is too much, how to manage for labour and patient persons...@himantabiswa [Reply](#)
- @PayelPiyaDey @RailMinIndia We can only raise our complain, but no one is there look out on this [Reply](#)
- Sir Delhi train booking can not happening from irctc's website [Reply](#)
- @shrutikamal @IRCTCOfficial @irctc\_app Same here, happened with me thrice money got deducted @IRCTCOfficial... [Reply](#)
- @IRCTCOfficial @RailMinIndia Why new delhi-patna booking is still not available in train From new delhi to rajend... [Reply](#)
- Was sitting on the screen since 3pm,website hanged at 4pm,revised time was 6pm & then continuos errors.Had checked... [Reply](#)

A large text input field labeled 'Type your response...' is positioned on the right side of the complaints list. A blue 'Reply' button is located at the bottom of this input field.

# Admin Web UI

The screenshot shows a web-based administrative interface for managing complaints. The top navigation bar includes links for 'Emergency' and 'Feedback' on the left, and 'Previous Complaints' on the right. The main content area displays a list of complaints from users, each with a 'Reply' button:

- @AIRAAOOFFICIAL @narendramodi @PiyushGoyal @ShivaGopalMish1 @AIRF\_COMMS @airfindia @RailMinIndia  
@v\_k\_yadava... https://t.co/rxWCF7ZyAL [Reply](#)
- Here it is too early to die poor, sir Somewhere in life, the shroud will not become expensive. #मोरीजी\_रेजगार\_दो...  
https://t.co/Wgpl6FLiq1 [Reply](#)
- Why Indian Railways Is Best!? https://t.co/q9CX5CzEwm [Reply](#)
- @DrRPNishank #NTAPOSPOSEJEE\_NEET Sir Indian railway suspend train till 30 sept How can I travel And reach to the...  
https://t.co/ZjfmVsJ0sL [Reply](#)
- Why Indian Railways Is Best!? https://t.co/lYkJdkHuA [Reply](#)
- A very beautiful and extraordinary concept of Restaurant on Wheels at Asansol station is really captivating and inn...  
https://t.co/aLIZRN1OQj [Reply](#)
- GOOD NEWS 😊😊😊😊  
#मोरीजी\_रेजगार\_दो #Rail\_Apprentice berojgari se pareshan rail apprentice mang rahane rojgar Ham hamara haak mang ra...  
https://t.co/MM9LPgkknQ2 [Reply](#)
- @AIRAAOOFFICIAL @narendramodi @PMOIndia @PiyushGoyal @ShivaGopalMish1 @AIRF\_COMMS @airfindia @nfrindia...  
https://t.co/OyasMVLf0l [Reply](#)
- #we need job sir ji [Reply](#)
- My Transaction ID is 100002375679841& 100002375766288 booked on 4 Aug 2020, ticket has not been booked, but the amou...  
https://t.co/xj2zUH8vfQ [Reply](#)
- Achievement amidst difficult times. @GMSRailway @RailMinIndia https://t.co/tGjewx7FwX [Reply](#)
- @Ravishk356 @PiyushGoyal #ER\_Start\_Initial\_AlP\_Training\_Online @EasternRailway @drmsdah @RailMinIndia @PMOIndia...  
https://t.co/ltjjdWfZw [Reply](#)

To the right of the complaints list is a large input field labeled 'Type your response...' with a placeholder 'We appreciate your |'. A blue 'Reply' button is located below this field.

# MongoDB

- Replication (Support master - slave replication)
- Schema-less database
- Document oriented
- Capped Collections
- Sharding
- High Performance
- MongoDB Stich (now Realm, for providing API endpoints)

# MongoDB

cloud.mongodb.com/v2/5eaae88618d09d7d5c1babc4#clusters

BDCoE Access Manager Support Billing See Product Tour All Clusters Rishabh

IRTCP Atlas Realm Charts

DATA STORAGE Clusters Triggers Data Lake SECURITY Database Access Network Access Advanced

Clusters

SANDBOX irtcpdb Version 4.2.8 CONNECT METRICS COLLECTIONS ...

CLUSTER TIER M0 Sandbox (General)

REGION AWS / Mumbai (ap-south-1)

TYPE Replica Set - 3 nodes

LINKED REALM APP irtcp

Find a cluster...

Operations R: 0 W: 0.09 Last 6 Hours

Logical Size 306.9 KB Last 30 Days

Connections 5 Last 6 Hours

512.0 MB max 0.0 B

Enhance Your Experience  
For dedicated throughput, richer metrics and enterprise security options, upgrade your cluster now!

Upgrade

System Status: All Good

©2020 MongoDB, Inc. Status Terms Privacy Atlas Blog Contact Sales

Feature Requests

Feedback icon

Feedback icon

# MongoDB Database

MongoDB Compass - ircpdb-vdq17.mongodb.net:27017/ircp

Local

4 DBS 10 COLLECTIONS C

HOSTS  
ircpdb-shard-00-00-vdq1...  
ircpdb-shard-00-01-vdq17...  
ircpdb-shard-00-02-vdq1...

CLUSTER  
Replica Set (ircpdb-shard-0)  
3 Nodes

EDITION  
MongoDB 4.2.8 Enterprise

Filter your data

> admin

> config

< ircp + -

- emergency
- feedback
- replied

> local

Collections

CREATE COLLECTION

| Collection Name | Documents | Avg. Document Size | Total Document Size | Num. Indexes | Total Index Size | Properties                         |
|-----------------|-----------|--------------------|---------------------|--------------|------------------|------------------------------------|
| emergency       | 103       | 348.4 B            | 35.0 KB             | 1            | 36.0 KB          | <span style="color: red;">-</span> |
| feedback        | 487       | 345.1 B            | 164.1 KB            | 1            | 44.0 KB          | <span style="color: red;">-</span> |
| replied         | 7         | 406.7 B            | 2.8 KB              | 1            | 36.0 KB          | <span style="color: red;">-</span> |

# MongoDB Database

The screenshot shows the MongoDB Compass interface connected to the database `irtcp.emergency`. The left sidebar lists collections under the `irtcp` database, including `emergency`, `feedback`, `replied`, and `local`. The main pane displays the `Documents` tab for the `emergency` collection, which contains 103 documents. The results are paginated from 1 to 20 of 103. Each document is represented by a preview showing fields like `_id`, `tweet_id`, `tweet`, `username`, `profile_image_url`, `pnr`, and `timestamp`.

Below is a sample of the document previews:

```
_id: ObjectId("5eb902c3726209653fea845d")
tweet_id: "1259751577658683392"
tweet: "@Ratnadeep12047 @RailMinIndia @GunasekaranMu By the end of this week I..."
username: "BloodFisherman"
profile_image_url: "https://pbs.twimg.com/profile_images/1101568414647181312/tucQgmn9_norm..."
pnr: "0"
timestamp: 2020-05-11T07:45:26.490+00:00
```

```
_id: ObjectId("5eb902c5726209653fea845f")
tweet_id: "1259751605936820224"
tweet: "Indian Railways: IRCTC train booking to start at 4 pm: All you need to..."
```

```
_id: ObjectId("5eb90331726209653fea8483")
tweet_id: "1259752034909089792"
tweet: "@RailMinIndia Will I get a train from Kachiguda to Bangalore ????"
```

# MongoDB Database

MongoDB Compass - ircpdb-vdq17.mongodb.net:27017/ircp.feedback

Local

4 DBS 10 COLLECTIONS

HOSTS  
ircpdb-shard-00-00-vdq1...  
ircpdb-shard-00-01-vdq17...  
ircpdb-shard-00-02-vdq1...

CLUSTER  
Replica Set (ircpdb-shard-0)  
3 Nodes

EDITION  
MongoDB 4.2.8 Enterprise

Filter your data

admin  
config  
ircp  
emergency  
feedback  
replied  
local

Documents Aggregations Schema Explain Plan Indexes Validation

DOCUMENTS 487 TOTAL SIZE 164.1KB AVG. SIZE 345B INDEXES 1 TOTAL SIZE 44.0KB AVG. SIZE 44.0KB

ADD DATA FILTER OPTIONS FIND RESET ...

Displaying documents 1 - 20 of 487

`_id: ObjectId("5eb8f23ffd9e34cb17e7ele2")  
tweet_id: "1259733883404386304"  
tweet: "@CMOTamilNadu sir this seems to be bad planning. Kindly have them sort..."  
username: "latasrinivasan"  
profile_image_url: "https://pbs.twimg.com/profile_images/1215737864102612993/C56nMBb5_norm..."  
pnr: "0"  
timestamp: 2020-05-11T06:35:42.644+00:00`

`_id: ObjectId("5eb8f247fd9e34cb17e7ele4")  
tweet_id: "1259733883404386304"  
tweet: "@EaseMyTrip We are a working people, and don't have time to chase you ..."  
username: "pranayrathore7"  
profile_image_url: "https://pbs.twimg.com/profile_images/1205720835018784768/jtVKVF0h_norm..."  
pnr: "0"  
timestamp: 2020-05-11T06:35:51.111+00:00`

`_id: ObjectId("5eb8f25af9e34cb17e7elea")  
tweet_id: "1259733981630586880"  
tweet: "Hi, @IRCTC_News @IRCTCofficial is Senior citizen allow to board the sp..."  
username: "Lalit_Bishu"  
profile_image_url: "https://pbs.twimg.com/profile_images/739238736/Smile_normal.JPG"  
pnr: "0"  
timestamp: 2020-05-11T06:36:10.854+00:00`

`_id: ObjectId("5eb8f268fd9e34cb17e7elf2")  
tweet_id: "1259734034025861122"  
tweet: "@Sagarjog16 @RailMinIndia @PiyushGoyal @SureshAngadi_ Action will be t..."  
username: "drmnrald"  
profile_image_url: "https://pbs.twimg.com/profile_images/1200291592021504000/rGlu2ICZ_norm..."  
pnr: "0"  
timestamp: 2020-05-11T06:36:24.673+00:00`

# MongoDB Database

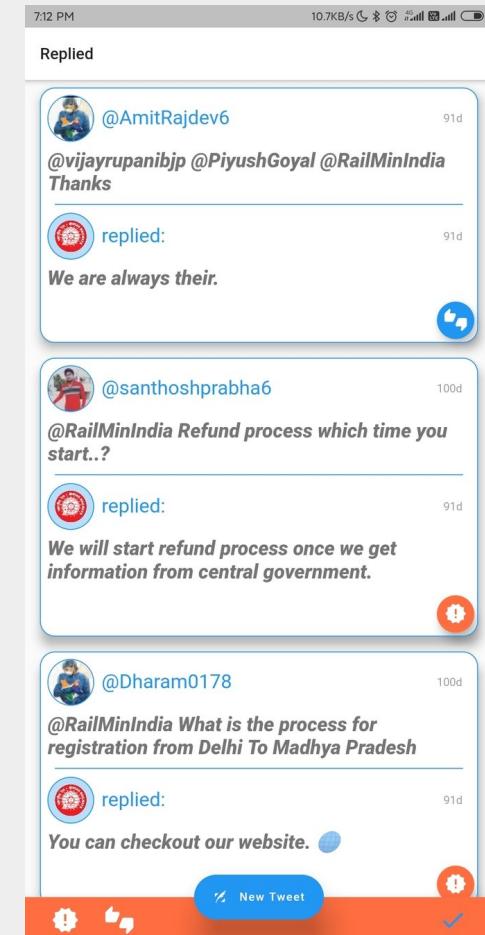
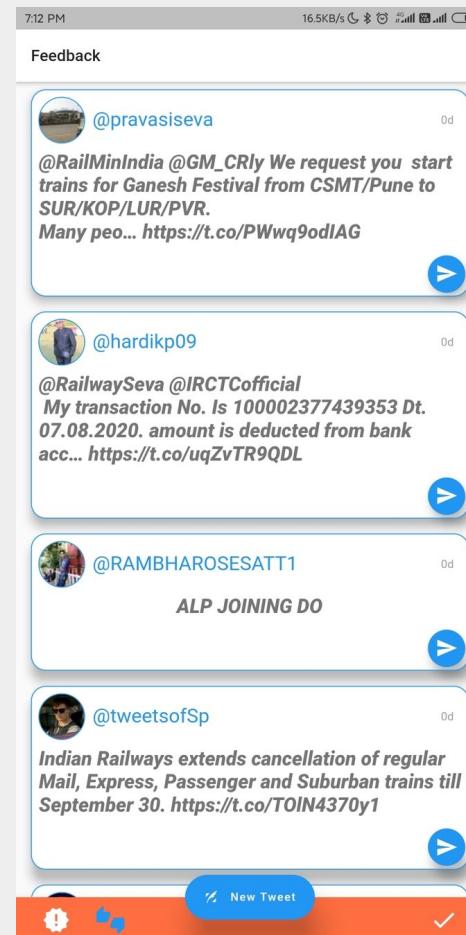
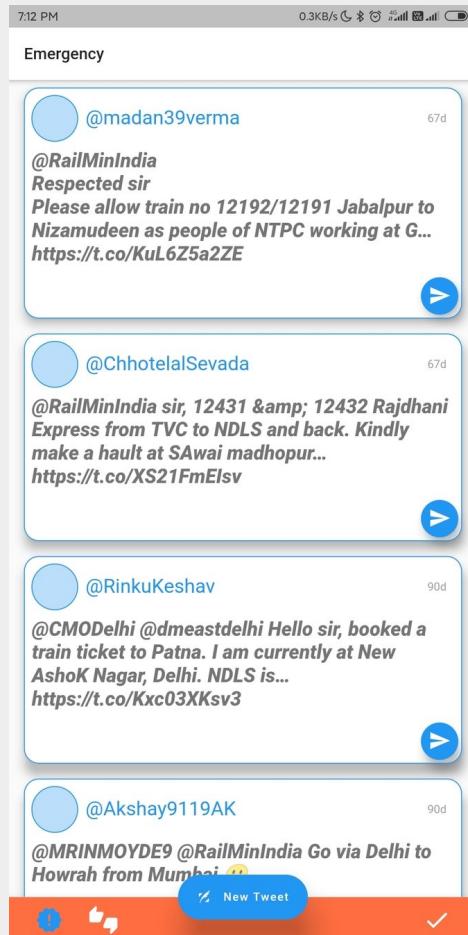
The screenshot shows the MongoDB Compass interface connected to the database `irtcpdb-vdq17.mongodb.net:27017/irtcp.replied`. The left sidebar displays the local database with 4 DBs and 10 collections, including `irtcp.replied` which is selected. The main pane shows the `irtcp.replied` collection with 7 documents and 1 index. The `Documents` tab is active, displaying three documents:

```
_id: ObjectId("5ead02e25f53ef00c78ffce7")
tweet_id: "1256453200426696700"
tweet: "I had booked ticket for journey on 14 May through PRS counter.Kindly s..."
username: "hussein_sahab_"
profile_image_url: "https://pbs.twimg.com/profile_images/1008644698968350721/Zp1_ld4k_norm..."
pnr: "0"
timestamp: 2020-05-02T05:19:30.000+00:00
reply: "As ticket is booked from counter, you have to cancel it from counter."
reply_timestamp: 2020-05-10T21:12:04.346+00:00
type: "feedback"

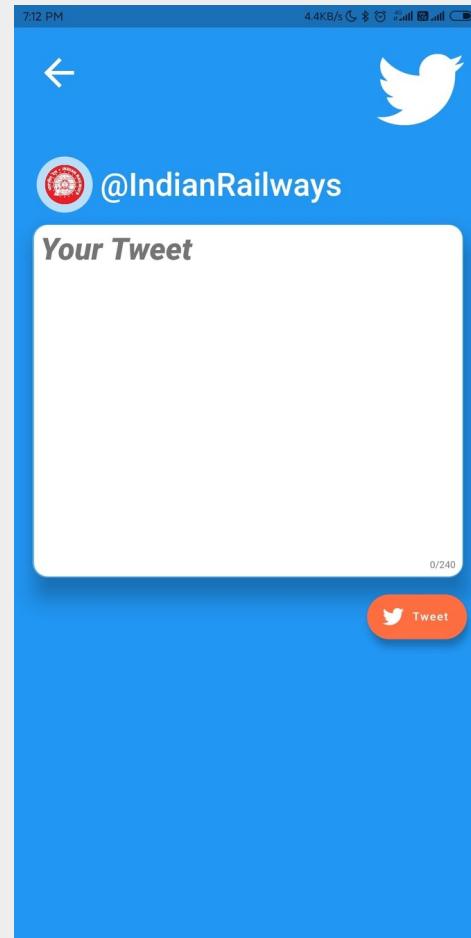
_id: ObjectId("5ead03015f53ef00c78ffcf1")
tweet_id: "1256453321428045800"
tweet: "@NikhilKarvel @SWRRLY @RailMinIndia @drmsbc @drmUBL @PiyushGoyalOfc T..."
username: "DrmMys"
profile_image_url: "https://pbs.twimg.com/profile_images/991408269611581440/0GBcrX-n_norm..."
pnr: "0"
timestamp: 2020-05-02T05:20:01.000+00:00
reply: "It's our pleasure to help others"
reply_timestamp: 2020-05-10T21:16:36.056+00:00
type: "feedback"

_id: ObjectId("5ead03aa5f53ef00c78ffd11")
tweet_id: "1256454034824802300"
tweet: "I am creating my portfolio with 30 share Reliance @ 1200 30 IRCTC @ 13..."
username: "DejyotiM"
profile_image_url: "https://pbs.twimg.com/profile_images/1254469977601646595/TugCmMgU_norm..."
pnr: "0"
timestamp: 2020-05-02T05:22:50.000+00:00
type: "emergency"
reply: "You can earn a huge profit."
reply_timestamp: 2020-05-10T19:42:45.908+00:00
```

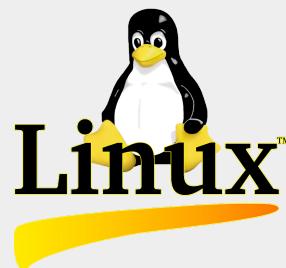
# Admin mobile app



# Admin mobile app



# Software / Hardware Requirements



# Software Requirements

- Linux (Debian, Arch based)
- Apache Zookeeper
- Apache Kafka
- Apache Spark
- Jupyter Notebook
- VSCode (Mobile App Development)
- WebStorm (Website development)
- LaTex

# Hardware Requirements

- 2.7GHz x86 processor (4 threads)
- 4GB of system memory (RAM) (8GB recommended)
- 512GB of hard-drive space
- Keyboard/Mouse for data input
- Monitor to display output

# Cluster Requirements

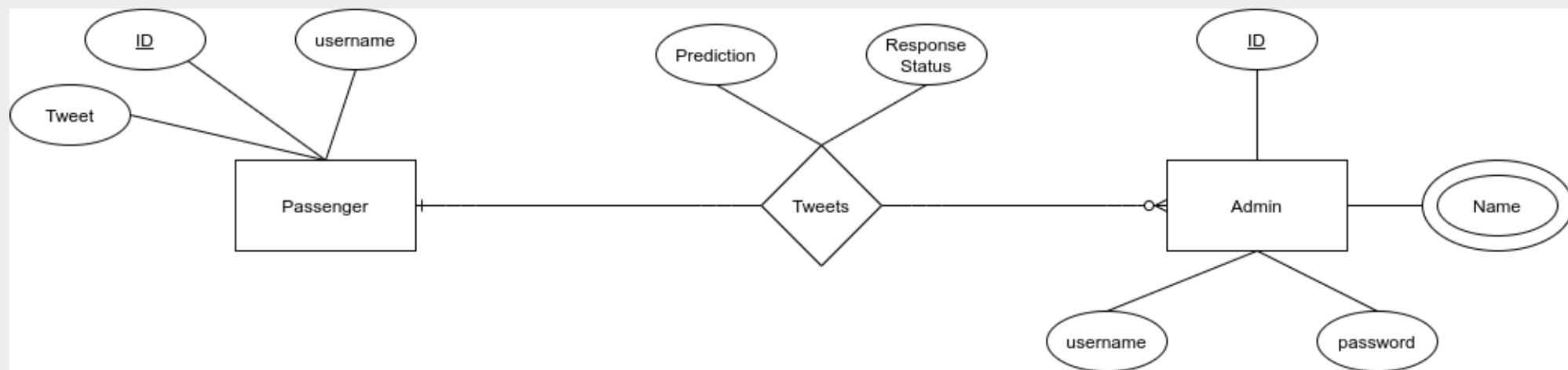
- Local Area Network (LAN)
- One master node (At least)
- Two slave nodes (At least)
- Commodity hardware can be used

# **System Design and Methodology**

# ER Diagram

An entity-relationship diagram is a data modelling technique that graphically illustrates an information system's entities and the relationships between those entities

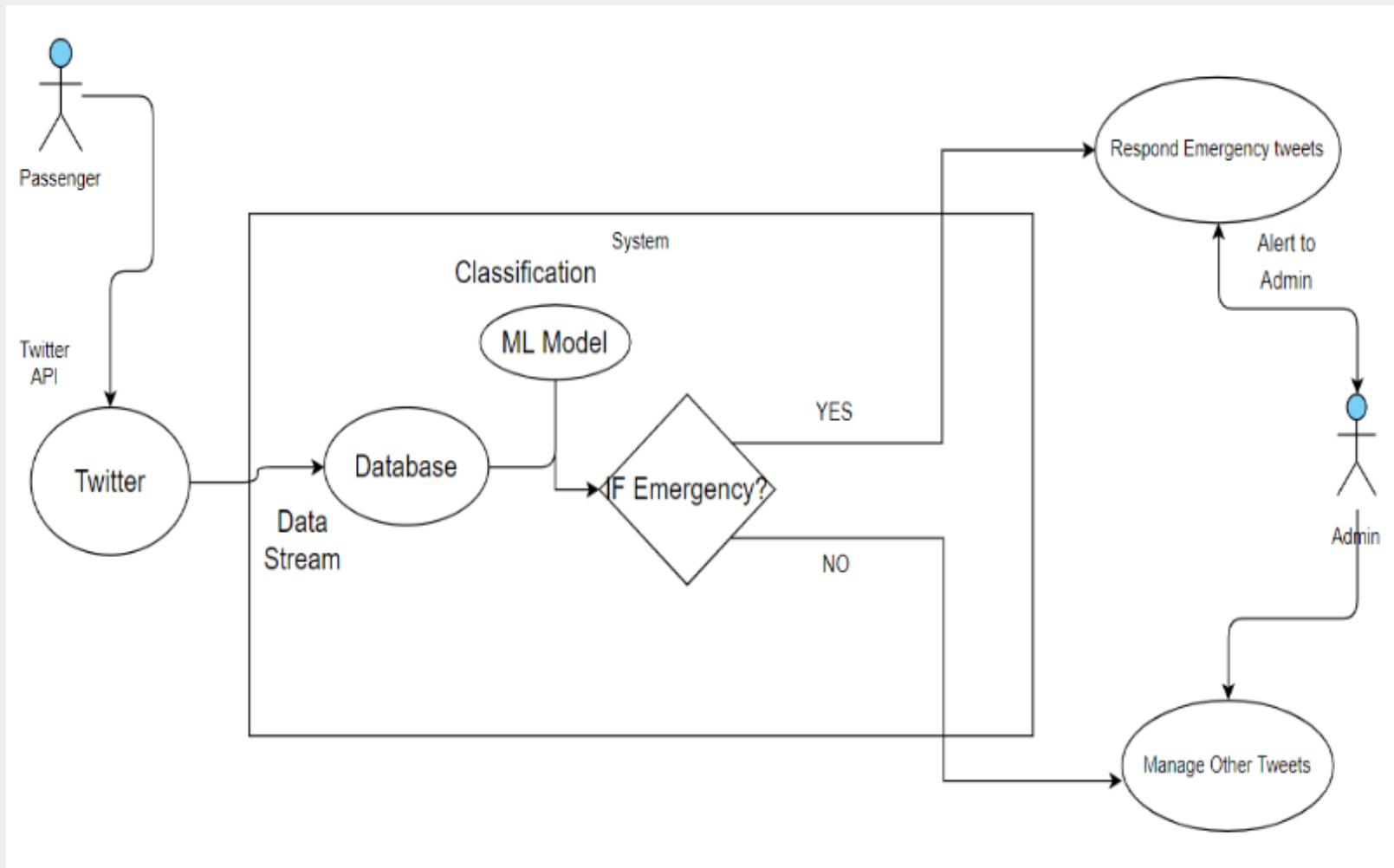
# ER Diagram



# Use Case Diagram

A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. Simplest representation of a user's interaction that shows the relationship between the user and the different use cases in which user involved

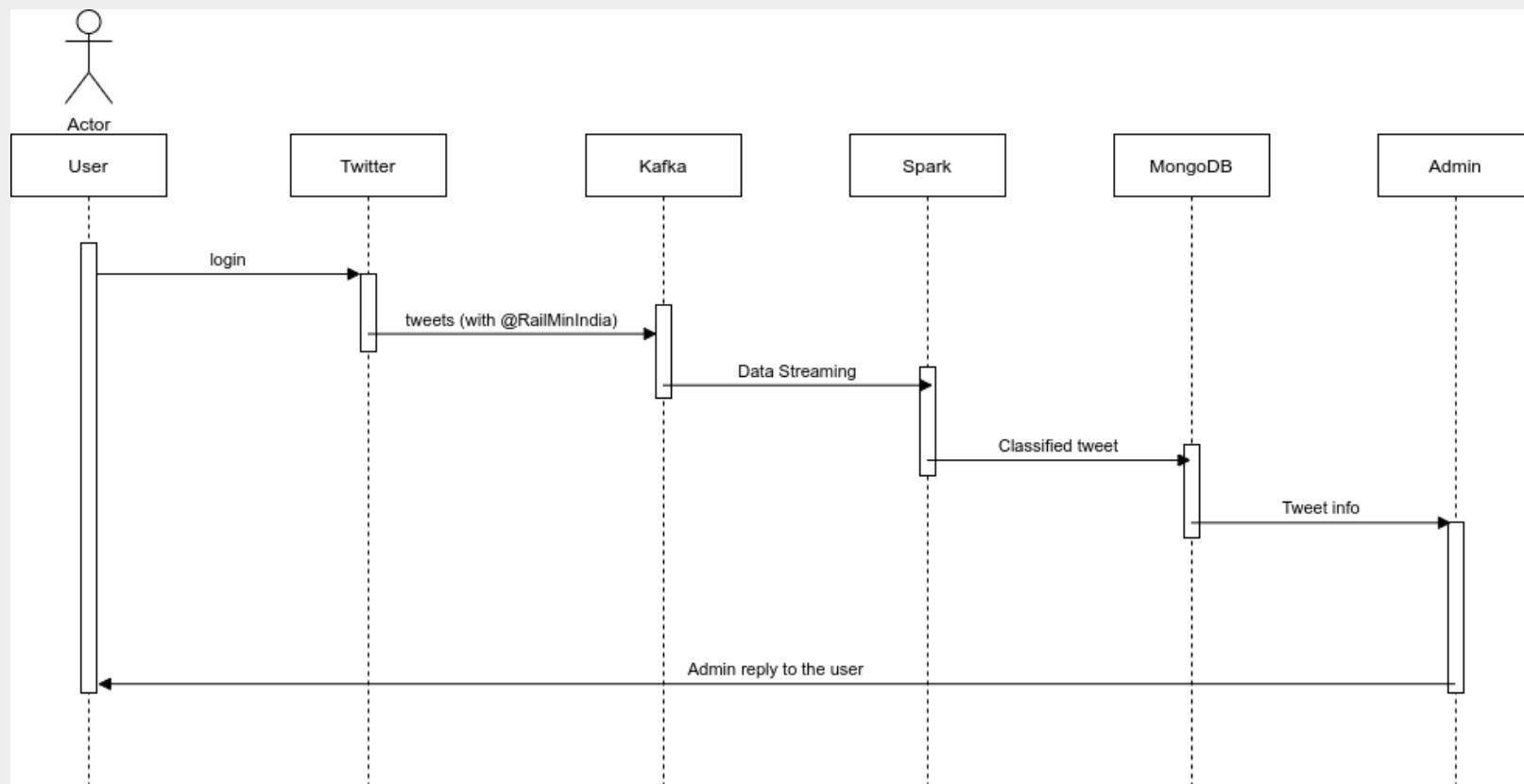
# Use Case Diagram



# Sequence Diagram

- A sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these interactions take place.
- Sequence diagrams describe how and in what order the objects are in a system function

# Sequence Diagram



# Future Use

