Varun Chavakula (4)

Sowmya Yelmati (32)

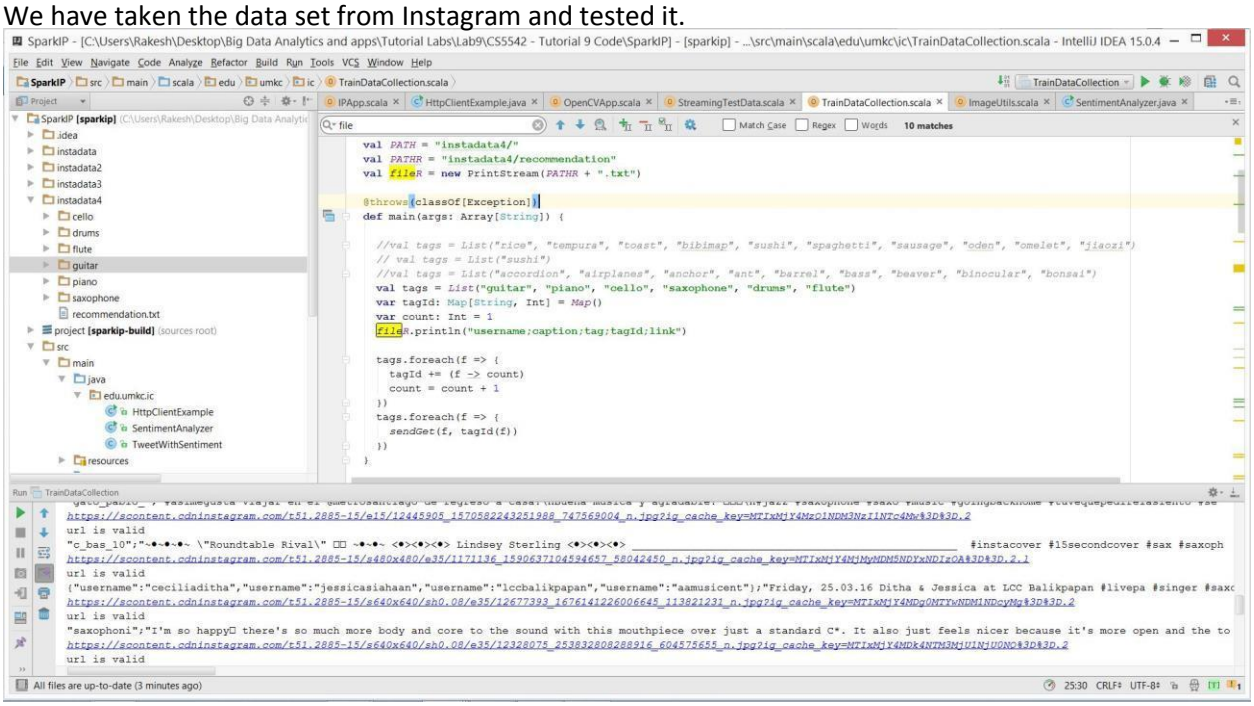
Lab Assignment 9

Spark ML Lib (with Instagram streaming and data from smart devices) and Smart Application

Question 1: Image collection and sentimental analysis based on the image tags using Instagram streaming (related to your project)

- **a. Training Datasets: Instagram Streaming/Categorized Image (e.g., Static UEC Food Dataset) and metadata**
- **b. Testing Datasets e.g., Image, UserGroup, Category, Rating (Instagram streaming)**

We have taken the data set from Instagram and tested it.



2) Image Classification based on the categories related to your project

Description:

Lab Assignment 9 Varun Chavakula (4)

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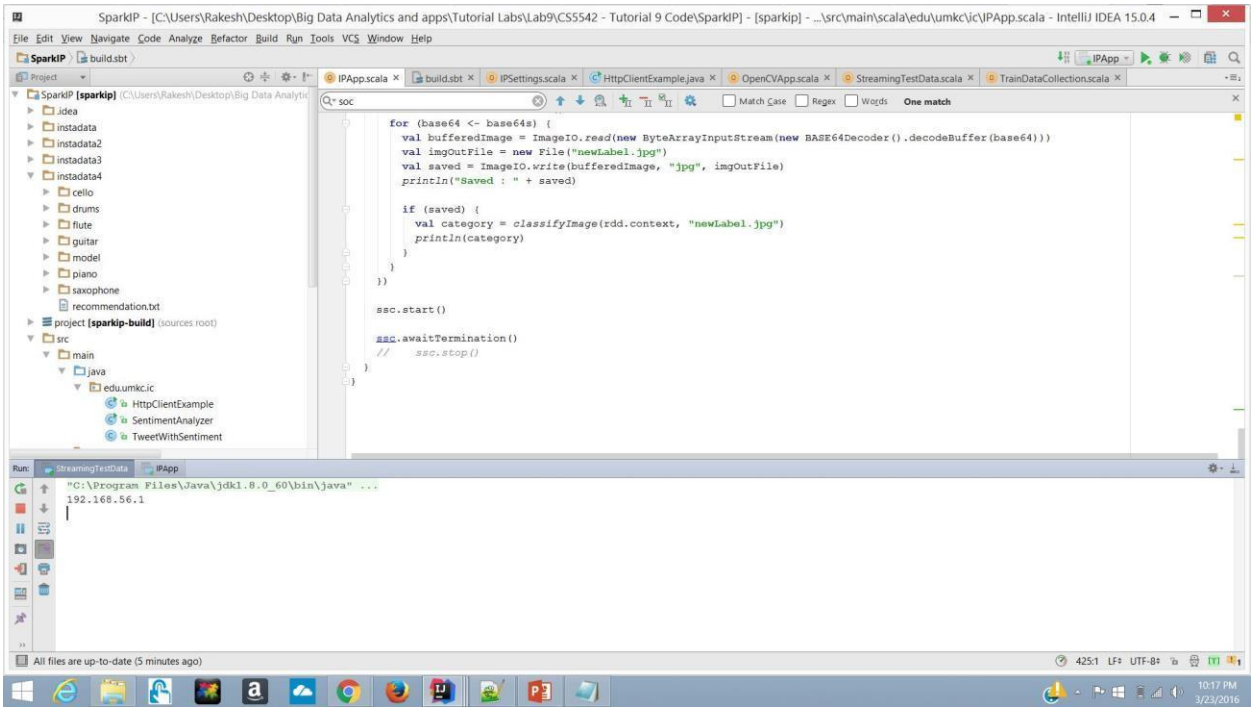
Testing and validation are done by creating a live streaming data to predict live image.



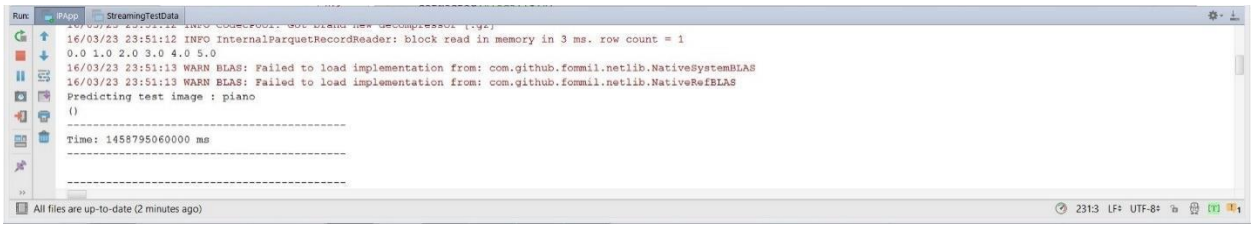
Lab Assignment 9 Varun Chavakula (4)

Sowmya Yelmati (32)

2) Image Classification based on the categories related to your project

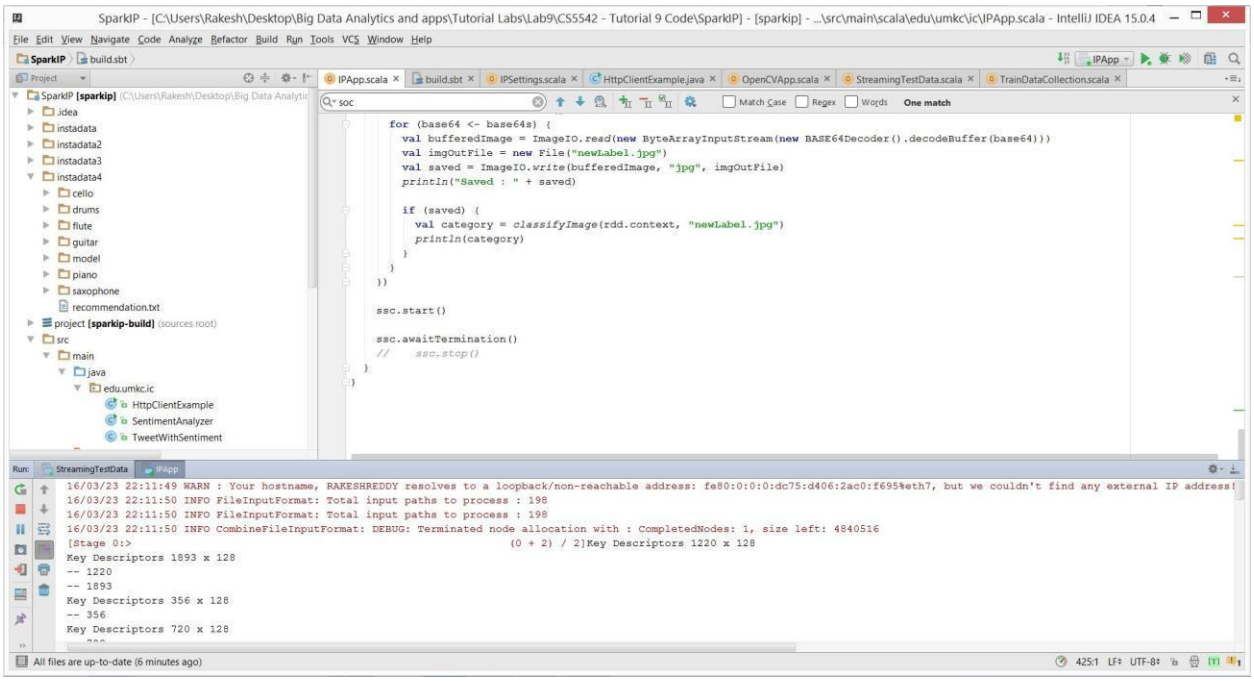
Image classification:

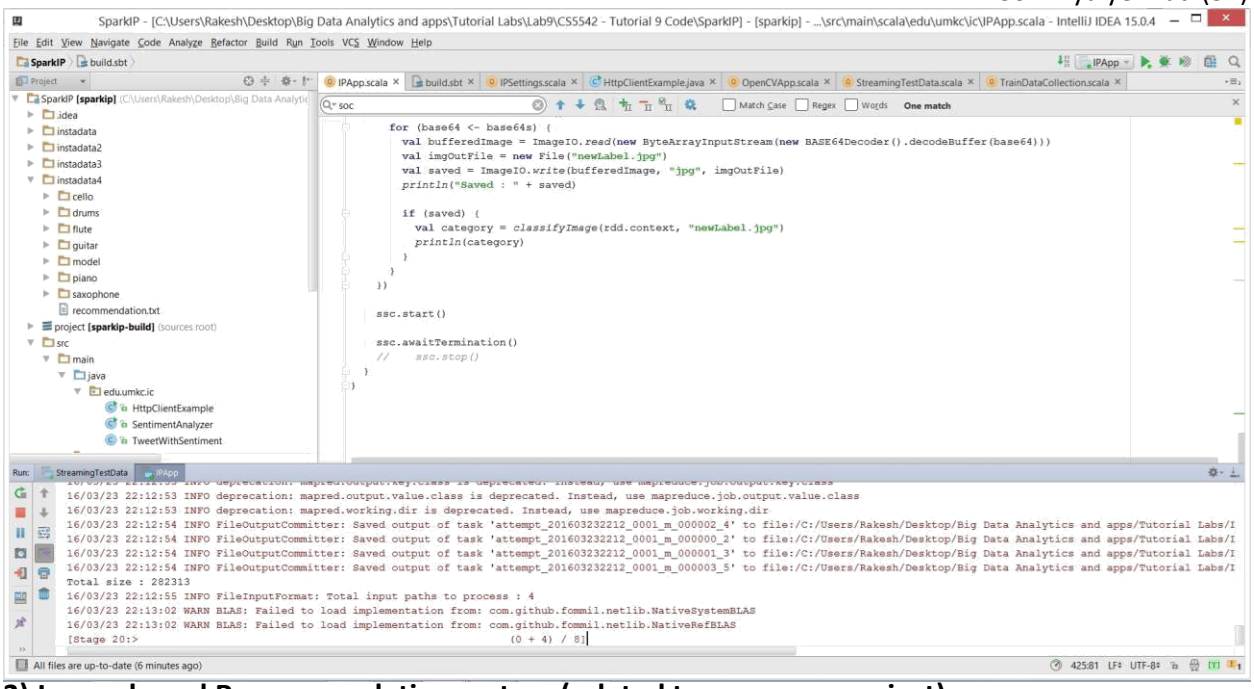
Prediction of the live tag



Steps:

1. key descriptors of the images are obtained.





3) Image-based Recommendation system (related to your own project)

a. The rating based on sentiment analysis of Instagram metadata

b. Expected outcome is to make a recommendation based on user image input or profile (e.g., preferences, location, gender, age)

4) Instagram trend notification to smartphone/smartwatch

5) Mobile Recommendation through smartphone/smartwatch using your ML application

1) Image collection and sentimental analysis based on the image tags using Instagram streaming (related to your project)

a. Training Datasets: Instagram Streaming/Categorized Image (e.g., Static UEC Food Dataset) and metadata

b. Testing Datasets e.g., Image, UserGroup, Category, Rating (Instagram streaming)

Lab Assignment 9
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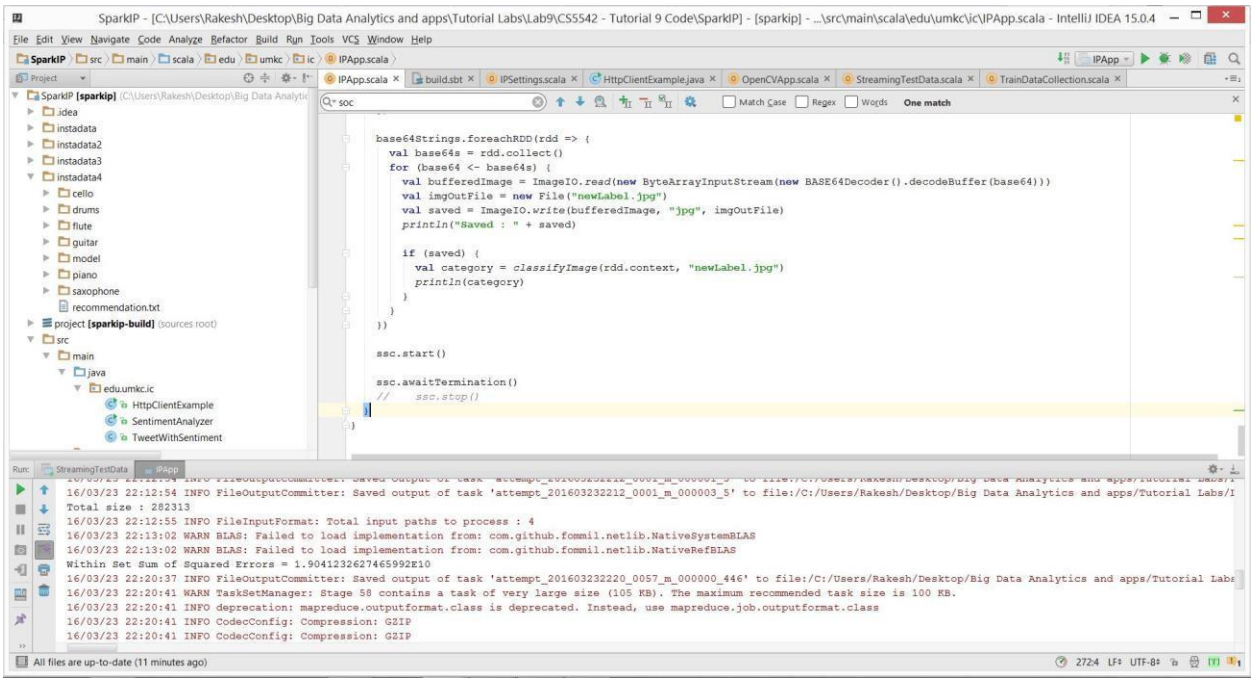
5. Displaying for squared errors



Lab Assignment 9
Varun Chavakula (4)

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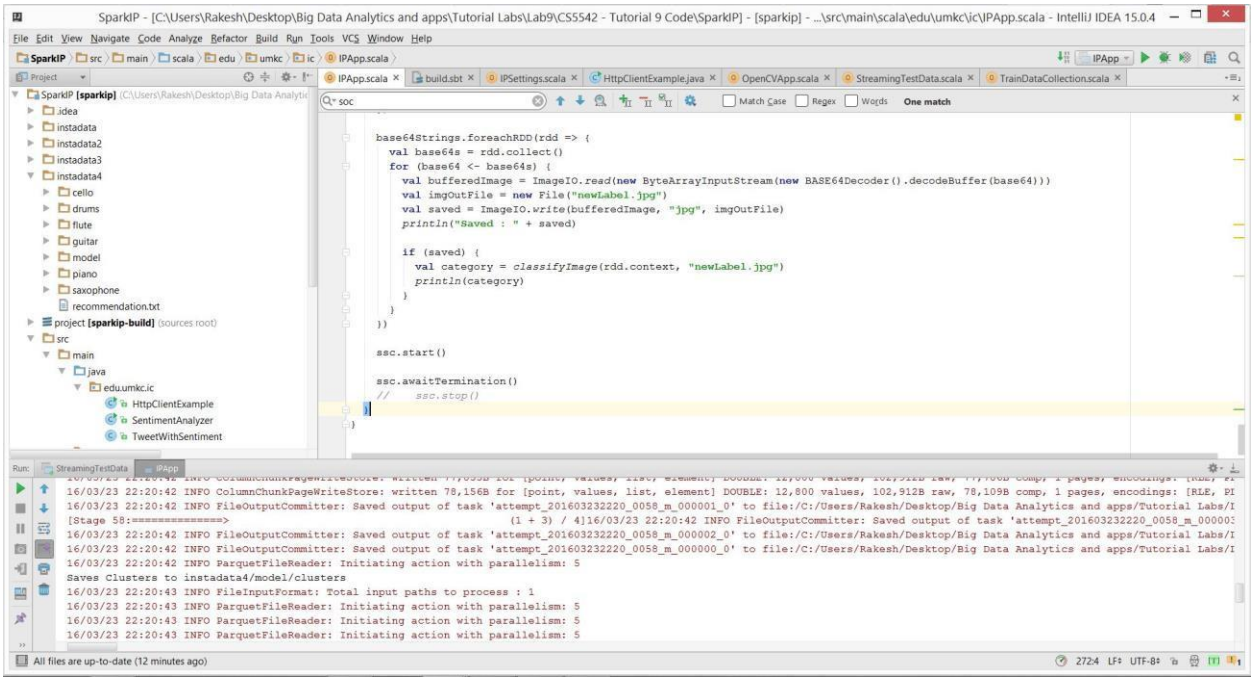
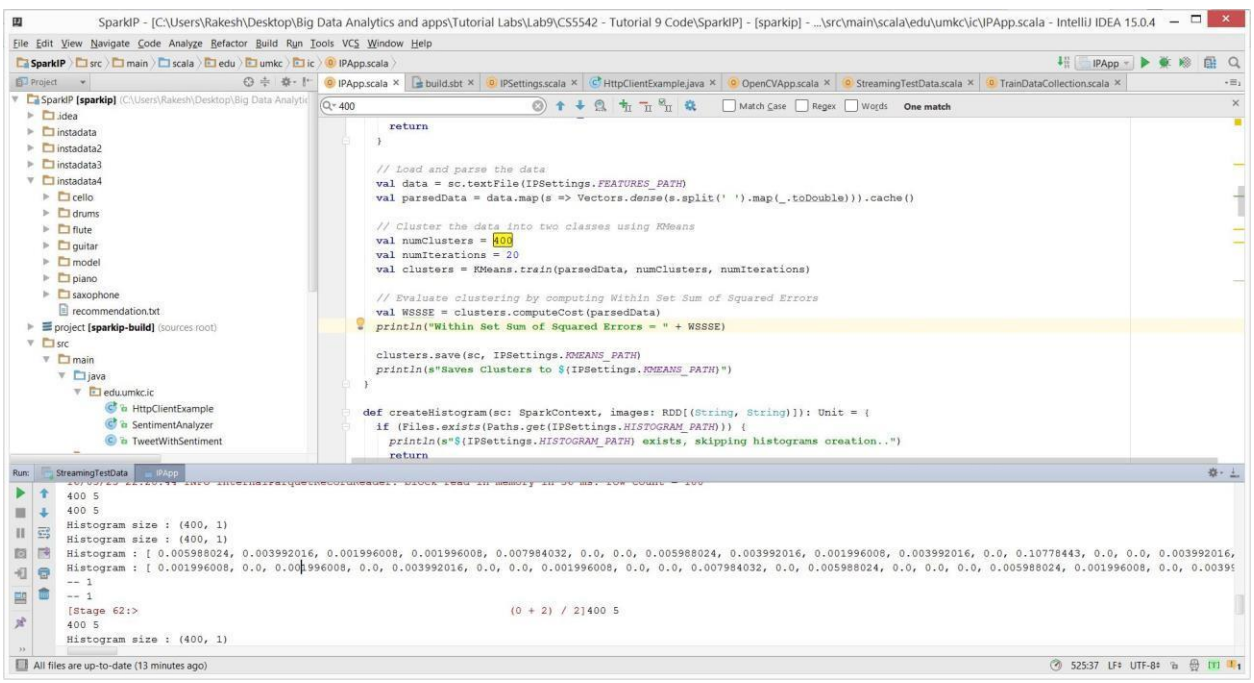
6. Clustering the image Bag of Visual words



7. Histograms for features of images



Lab Assignment 9
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8. Confusion Matrix Almost we got accuracy of 45%

```
16/03/23 23:24:51 WARN BLAS: Failed to load implementation from: com.github.fommil.netlib.NativeSystemBLAS
16/03/23 23:24:51 WARN BLAS: Failed to load implementation from: com.github.fommil.netlib.NativeRefBLAS
|=================== Confusion matrix ==========================
0.0  3.0  0.0  6.0   0.0  0.0
0.0  9.0  0.0  1.0   0.0  0.0
0.0  6.0  0.0  1.0   0.0  0.0
0.0  2.0  0.0  14.0  0.0  0.0
0.0  3.0  0.0  4.0   0.0  0.0
0.0  8.0  0.0  4.0   0.0  0.0
16/03/23 23:24:55 INFO FileOutputCommitter: Saved output of task 'attempt_201603232324_0013_m_000000_47' to file:/C:/Users/Rakesh/Desktop/Big Data Analytics and apps/Tutorial Labs/
16/03/23 23:24:55 INFO deprecation: mapreduce.outputformat.class is deprecated. Instead, use mapreduce.job.outputformat.class
```

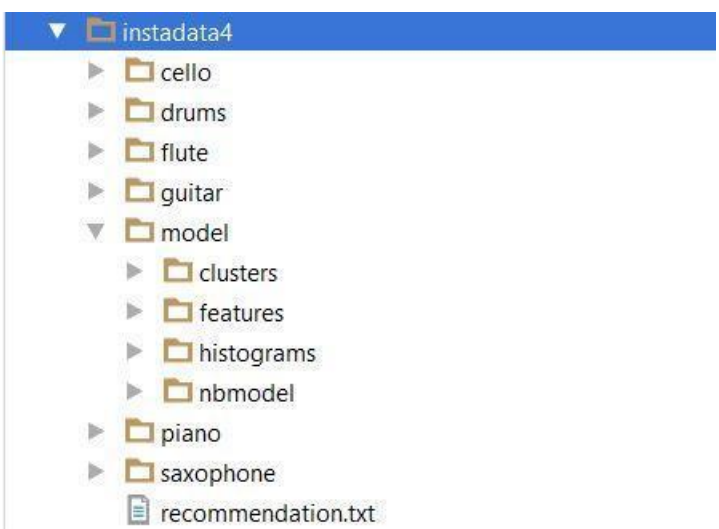
9. Built the Naïve Bayes Model

```
16/03/23 23:24:56 INFO ParquetFileReader: Initiating action with parallelism: 5
Naive Bayes Model generated
-------------------------------------------
Time: 1458793498000 ms
-------------------------------------------

16/03/23 23:24:58 WARN ReceiverSupervisorImpl: Restarting receiver with delay 2000 ms: Socket data stream had no more data
16/03/23 23:24:58 ERROR ReceiverTracker: Deregistered receiver for stream 0: Restarting receiver with delay 2000ms: Socket data stream had no more data
16/03/23 23:24:58 WARN BlockManager: Block input-0-1458793498000 replicated to only 0 peer(s) instead of 1 peers
-------------------------------------------
Time: 1458793500000 ms
```

10. **Predicting the tag for Live Image Data – Piano tag**

```
16/03/23 23:51:12 INFO InternalParquetRecordReader: block read in memory in 3 ms. row count = 1
0.0 1.0 2.0 3.0 4.0 5.0
16/03/23 23:51:13 WARN BLAS: Failed to load implementation from: com.github.fommil.netlib.NativeSystemBLAS
16/03/23 23:51:13 WARN BLAS: Failed to load implementation from: com.github.fommil.netlib.NativeRefBLAS
Predicting test image : piano
()
-------------------------------------------
Time: 1458795060000 ms
-------------------------------------------

-------------------------------------------
```

11. Trained model stored in Data folder



3) Image-based Recommendation system (related to your own project)

a. The rating based on sentiment analysis of Instagram metadata

b. Expected outcome is to make a recommendation based on user image input or profile (e.g., preferences, location, gender, age)

- We have recommended the top Music Instruments for the user.
- We have assigned userId based on the alphabets.
- We have collected recommendation.txt with "username;caption;tag;tagId;link"
- We have used the user preference with UserId,TagId,SentimentRating