Panja, Kumara Satya Gopal

Class ID: 32

Tutorial Lab-3

Objective:

- Implementing Linear Regression model for chimpanzee's daily activity
- Implementing K-Means Clustering for chimpanzee's daily activity.
- Designing simple application to give the summary of video by using clarify API.

Technologies Used:

Java, Scala, Intellij, Git

Description:

By using Linear regression, we can identify the realationship between two variables. And K-means clustering algorithm partitions the n observations into k cluster. Clarify API gives the summary of video. Here I took my own data set.

Screenshots:

1 Linear Regression:

```
17/02/08 21:00:47 INFO BlockManagerMaster: Registered BlockManager

(-0.4307829, [-1.63735562648104, -2.00621178480549, -1.86242597251066, -1.02470580167082, -0.522940888712441, -0.86317:

17/02/08 21:00:54 WARN BLAS: Failed to load implementation from: com.github.fommil.netlib.NativeSystemBLAS

17/02/08 21:00:54 WARN BLAS: Failed to load implementation from: com.github.fommil.netlib.NativeRefBLAS

training Mean Squared Error = 7.237245802502208

test Mean Squared Error = 8.82877171326214

SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".

SLF4J: Defaulting to no-operation (NOP) logger implementation

SLF4J: See <a href="http://www.slf4j.org/codes.html#StaticLoggerBinder">http://www.slf4j.org/codes.html#StaticLoggerBinder</a> for further details.

Process finished with exit code 0
```

2. K-Means Clustering:

```
Within Set Sum of Squared Errors = 0.359999999998835
Clustering on training data:
([6.1, 6.1, 6.1], 2)
([6.2,6.2,6.2],2)
([7.0,7.0,7.0],5)
([7.1,7.1,7.1],5)
([7.2,7.2,7.2],5)
([9.0,9.0,9.0],0)
([9.1,9.1,9.1],0)
([9.2,9.2,9.2],0)
([0.0,0.0,0.0],1)
([0.1,0.1,0.1],1)
([0.2,0.2,0.2],1)
([2.0,2.0,2.0],4)
([2.1,2.1,2.1],4)
([2.2,2.2,2.2],4)
([4.0, 4.0, 4.0], 3)
([4.1, 4.1, 4.1], 3)
([4.2, 4.2, 4.2], 3)
([6.0,6.0,6.0],2)
```

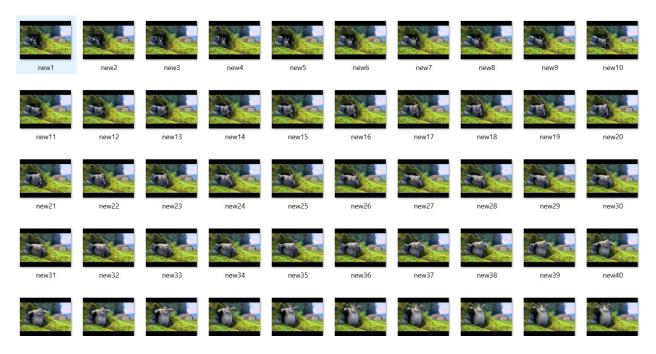
3.1 Key Frame Detection:

```
Feb 08, 2017 10:30:02 PM com.github.fommil.jni.JniLoader liberalLoad
INFO: successfully loaded C:\Users\Gopal\AppData\Local\Temp\jniloader2895799988661581054netlib-native_ref-win-x86_64.dll
574.0
567.0
561.0
530.0
508.0
607.0
514.0
479.0
464.0
448.0
330.0
464.0
461.0
504.0
476.0
323.0
497.0
505.0
433.0
450.0
455.0
430.0
```

3.2 Annotation:



3.3 Frames of the video:



3.4 Main Frames of the video:





0_0.9835255354 200988

209_0.00494233 9373970346

3.5 Summary:



