lab-3-22mcb1002

April 10, 2023

1 Word Count

```
[ ]: !apt-get update
     !apt-get install openjdk-8-jdk-headless -qq > /dev/null
     !wget -q https://downloads.apache.org/spark/spark-3.2.3/spark-3.2.3-bin-hadoop3.
       ↪2.tgz
     !tar -xvf spark-3.2.3-bin-hadoop3.2.tgz
     !pip install -q findspark
```

```
Get:1 https://cloud.r-project.org/bin/linux/ubuntu focal-cran40/ InRelease
[3,622 B]
Hit:2 https://developer.download.nvidia.com/compute/cuda/repos/ubuntu2004/x86_64
InRelease
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:4 http://archive.ubuntu.com/ubuntu focal InRelease
Hit:5 http://ppa.launchpad.net/c2d4u.team/c2d4u4.0+/ubuntu focal InRelease
Get:6 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Hit:7 http://ppa.launchpad.net/cran/libgit2/ubuntu focal InRelease
Hit:8 http://ppa.launchpad.net/deadsnakes/ppa/ubuntu focal InRelease
Get:9 http://archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Hit:10 http://ppa.launchpad.net/graphics-drivers/ppa/ubuntu focal InRelease
Hit:11 http://ppa.launchpad.net/ubuntugis/ppa/ubuntu focal InRelease
Get:12 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages
[2,198 kB]
Get:13 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages
[1,324 kB]
Get:14 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages
[31.2 kB]
Get:15 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [3,069
kB]
Fetched 6,963 kB in 2s (3,046 kB/s)
Reading package lists… Done
spark-3.2.3-bin-hadoop3.2/
spark-3.2.3-bin-hadoop3.2/LICENSE
spark-3.2.3-bin-hadoop3.2/NOTICE
spark-3.2.3-bin-hadoop3.2/R/
spark-3.2.3-bin-hadoop3.2/R/lib/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/
```

```
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/DESCRIPTION
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/INDEX
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/Rd.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/features.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/hsearch.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/links.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/nsInfo.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/package.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/Meta/vignette.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/NAMESPACE
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/R/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/R/SparkR
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/R/SparkR.rdb
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/R/SparkR.rdx
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/doc/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/doc/index.html
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/doc/sparkr-vignettes.R
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/doc/sparkr-vignettes.Rmd
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/doc/sparkr-vignettes.html
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/help/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/help/AnIndex
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/help/SparkR.rdb
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/help/SparkR.rdx
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/help/aliases.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/help/paths.rds
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/html/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/html/00Index.html
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/html/R.css
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/profile/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/profile/general.R
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/profile/shell.R
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/tests/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/tests/testthat/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/tests/testthat/test_basic.R
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/worker/
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/worker/daemon.R
spark-3.2.3-bin-hadoop3.2/R/lib/SparkR/worker/worker.R
spark-3.2.3-bin-hadoop3.2/R/lib/sparkr.zip
spark-3.2.3-bin-hadoop3.2/README.md
spark-3.2.3-bin-hadoop3.2/RELEASE
spark-3.2.3-bin-hadoop3.2/bin/
spark-3.2.3-bin-hadoop3.2/bin/beeline
spark-3.2.3-bin-hadoop3.2/bin/beeline.cmd
spark-3.2.3-bin-hadoop3.2/bin/docker-image-tool.sh
spark-3.2.3-bin-hadoop3.2/bin/find-spark-home
spark-3.2.3-bin-hadoop3.2/bin/find-spark-home.cmd
spark-3.2.3-bin-hadoop3.2/bin/load-spark-env.cmd
```

```
spark-3.2.3-bin-hadoop3.2/bin/load-spark-env.sh
spark-3.2.3-bin-hadoop3.2/bin/pyspark
spark-3.2.3-bin-hadoop3.2/bin/pyspark.cmd
spark-3.2.3-bin-hadoop3.2/bin/pyspark2.cmd
spark-3.2.3-bin-hadoop3.2/bin/run-example
spark-3.2.3-bin-hadoop3.2/bin/run-example.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-class
spark-3.2.3-bin-hadoop3.2/bin/spark-class.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-class2.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-shell
spark-3.2.3-bin-hadoop3.2/bin/spark-shell.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-shell2.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-sql
spark-3.2.3-bin-hadoop3.2/bin/spark-sql.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-sql2.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-submit
spark-3.2.3-bin-hadoop3.2/bin/spark-submit.cmd
spark-3.2.3-bin-hadoop3.2/bin/spark-submit2.cmd
spark-3.2.3-bin-hadoop3.2/bin/sparkR
spark-3.2.3-bin-hadoop3.2/bin/sparkR.cmd
spark-3.2.3-bin-hadoop3.2/bin/sparkR2.cmd
spark-3.2.3-bin-hadoop3.2/conf/
spark-3.2.3-bin-hadoop3.2/conf/fairscheduler.xml.template
spark-3.2.3-bin-hadoop3.2/conf/log4j.properties.template
spark-3.2.3-bin-hadoop3.2/conf/metrics.properties.template
spark-3.2.3-bin-hadoop3.2/conf/spark-defaults.conf.template
spark-3.2.3-bin-hadoop3.2/conf/spark-env.sh.template
spark-3.2.3-bin-hadoop3.2/conf/workers.template
spark-3.2.3-bin-hadoop3.2/data/
spark-3.2.3-bin-hadoop3.2/data/graphx/
spark-3.2.3-bin-hadoop3.2/data/graphx/followers.txt
spark-3.2.3-bin-hadoop3.2/data/graphx/users.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/
spark-3.2.3-bin-hadoop3.2/data/mllib/als/
spark-3.2.3-bin-hadoop3.2/data/mllib/als/sample_movielens_ratings.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/als/test.data
spark-3.2.3-bin-hadoop3.2/data/mllib/gmm_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/images/
spark-3.2.3-bin-hadoop3.2/data/mllib/images/license.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/kittens/
spark-3.2.3-bin-
hadoop3.2/data/mllib/images/origin/kittens/29.5.a_b_EGDP022204.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/kittens/54893.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/kittens/DP153539.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/kittens/DP802813.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/kittens/not-image.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/license.txt
```

```
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/multi-channel/
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/multi-channel/BGRA.png
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/multi-
channel/BGRA_alpha_60.png
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/multi-channel/chr30.4.184.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/origin/multi-channel/grayscale.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/partitioned/
spark-3.2.3-bin-hadoop3.2/data/mllib/images/partitioned/cls=kittens/
spark-3.2.3-bin-
hadoop3.2/data/mllib/images/partitioned/cls=kittens/date=2018-01/
spark-3.2.3-bin-hadoop3.2/data/mllib/images/partitioned/cls=kittens/date=2018-01
/29.5.a_b_EGDP022204.jpg
spark-3.2.3-bin-
hadoop3.2/data/mllib/images/partitioned/cls=kittens/date=2018-01/not-image.txt
spark-3.2.3-bin-
hadoop3.2/data/mllib/images/partitioned/cls=kittens/date=2018-02/
spark-3.2.3-bin-
hadoop3.2/data/mllib/images/partitioned/cls=kittens/date=2018-02/54893.jpg
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hadoop3.2/data/mllib/images/partitioned/cls=kittens/date=2018-02/DP153539.jpg
spark-3.2.3-bin-
hadoop3.2/data/mllib/images/partitioned/cls=kittens/date=2018-02/DP802813.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/partitioned/cls=multichannel/
spark-3.2.3-bin-
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hadoop3.2/data/mllib/images/partitioned/cls=multichannel/date=2018-01/BGRA.png
spark-3.2.3-bin-hadoop3.2/data/mllib/images/partitioned/cls=multichannel/date=20
18-01/BGRA_alpha_60.png
spark-3.2.3-bin-
hadoop3.2/data/mllib/images/partitioned/cls=multichannel/date=2018-02/
spark-3.2.3-bin-hadoop3.2/data/mllib/images/partitioned/cls=multichannel/date=20
18-02/chr30.4.184.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/images/partitioned/cls=multichannel/date=20
18-02/grayscale.jpg
spark-3.2.3-bin-hadoop3.2/data/mllib/iris_libsvm.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/kmeans_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/pagerank_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/pic_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/ridge-data/
spark-3.2.3-bin-hadoop3.2/data/mllib/ridge-data/lpsa.data
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_binary_classification_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_fpgrowth.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_isotonic_regression_libsvm_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_kmeans_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_lda_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_lda_libsvm_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_libsvm_data.txt
```

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spark-3.2.3-bin-hadoop3.2/data/mllib/sample_linear_regression_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_movielens_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_multiclass_classification_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/sample_svm_data.txt
spark-3.2.3-bin-hadoop3.2/data/mllib/streaming_kmeans_data_test.txt
spark-3.2.3-bin-hadoop3.2/data/streaming/
spark-3.2.3-bin-hadoop3.2/data/streaming/AFINN-111.txt
spark-3.2.3-bin-hadoop3.2/examples/
spark-3.2.3-bin-hadoop3.2/examples/jars/
spark-3.2.3-bin-hadoop3.2/examples/jars/scopt_2.12-3.7.1.jar
spark-3.2.3-bin-hadoop3.2/examples/jars/spark-examples_2.12-3.2.3.jar
spark-3.2.3-bin-hadoop3.2/examples/src/
spark-3.2.3-bin-hadoop3.2/examples/src/main/
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/
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hadoop3.2/examples/src/main/java/org/apache/spark/examples/JavaHdfsLR.java
spark-3.2.3-bin-
hadoop3.2/examples/src/main/java/org/apache/spark/examples/JavaLogQuery.java
spark-3.2.3-bin-
hadoop3.2/examples/src/main/java/org/apache/spark/examples/JavaPageRank.java
spark-3.2.3-bin-
hadoop3.2/examples/src/main/java/org/apache/spark/examples/JavaSparkPi.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/JavaS
tatusTrackerDemo.java
spark-3.2.3-bin-
hadoop3.2/examples/src/main/java/org/apache/spark/examples/JavaTC.java
spark-3.2.3-bin-
hadoop3.2/examples/src/main/java/org/apache/spark/examples/JavaWordCount.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaAFTSurvivalRegressionExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaALSExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaBinarizerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaBisectingKMeansExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaBucketedRandomProjectionLSHExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaBucketizerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaChiSqSelectorExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
```

```
vaChiSquareTestExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaCorrelationExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaCountVectorizerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaDCTExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaDecisionTreeClassificationExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaDecisionTreeRegressionExample.java
spark-3.2.3-bin-
hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/JavaDocument.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaElementwiseProductExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaEstimatorTransformerParamExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaFMClassifierExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaFMRegressorExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaFPGrowthExample.java
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vaFeatureHasherExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaGaussianMixtureExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaGeneralizedLinearRegressionExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaGradientBoostedTreeClassifierExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaGradientBoostedTreeRegressorExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaImputerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaIndexToStringExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaInteractionExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaIsotonicRegressionExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaKMeansExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaLDAExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaLabeledDocument.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
```

vaLinearRegressionWithElasticNetExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaLinearSVCExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaLogisticRegressionSummaryExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaLogisticRegressionWithElasticNetExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaMaxAbsScalerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaMinHashLSHExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaMinMaxScalerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaModelSelectionViaCrossValidationExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaModelSelectionViaTrainValidationSplitExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaMulticlassLogisticRegressionWithElasticNetExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaMultilayerPerceptronClassifierExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaNGramExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaNaiveBayesExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaNormalizerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaOneHotEncoderExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaOneVsRestExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaPCAExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaPipelineExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaPolynomialExpansionExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaPowerIterationClusteringExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaPrefixSpanExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaQuantileDiscretizerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaRFormulaExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaRandomForestClassifierExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja

vaRandomForestRegressorExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaRobustScalerExample.java
spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
vaSQLTransformerExample.java
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spark-3.2.3-bin-hadoop3.2/examples/src/main/java/org/apache/spark/examples/ml/Ja
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vaTfIdfExample.java
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vaTokenizerExample.java
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/JavaBinaryClassificationMetricsExample.java
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/JavaBisectingKMeansExample.java
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/JavaDecisionTreeRegressionExample.java
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/JavaGradientBoostingClassificationExample.java
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/ml/
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spark-3.2.3-bin-
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/ml/fm_regressor_example.py
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hadoop3.2/examples/src/main/python/ml/gaussian_mixture_example.py
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hadoop3.2/examples/src/main/python/ml/generalized_linear_regression_example.py
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/ml/interaction_example.py
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spark-3.2.3-bin-
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/ml/robust_scaler_example.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/ml/sql_transformer.py
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spark-3.2.3-bin-
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spark-3.2.3-bin-
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spark-3.2.3-bin-
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/mllib/naive_bayes_example.py
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spark-3.2.3-bin-
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spark-3.2.3-bin-
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/mllib/word2vec_example.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/pagerank.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/parquet_inputformat.py
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/pi.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/sort.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/sql/
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/sql/arrow.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/sql/basic.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/sql/datasource.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/sql/hive.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/sql/streaming/
spark-3.2.3-bin-
hadoop3.2/examples/src/main/python/sql/streaming/structured_kafka_wordcount.py
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hadoop3.2/examples/src/main/python/sql/streaming/structured_network_wordcount.py
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ork_wordcount_windowed.py
spark-3.2.3-bin-
hadoop3.2/examples/src/main/python/sql/streaming/structured_sessionization.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/status_api_demo.py
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/streaming/hdfs_wordcount.py
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hadoop3.2/examples/src/main/python/streaming/network_wordcount.py
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spark-3.2.3-bin-hadoop3.2/examples/src/main/python/streaming/queue_stream.py
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hadoop3.2/examples/src/main/python/streaming/recoverable_network_wordcount.py
spark-3.2.3-bin-
hadoop3.2/examples/src/main/python/streaming/sql_network_wordcount.py
spark-3.2.3-bin-
hadoop3.2/examples/src/main/python/streaming/stateful_network_wordcount.py
spark-3.2.3-bin-hadoop3.2/examples/src/main/python/transitive_closure.py
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spark-3.2.3-bin-hadoop3.2/examples/src/main/r/
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/RSparkSQLExample.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/data-manipulation.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/dataframe.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/als.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/bisectingKmeans.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/decisionTree.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/fmClassifier.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/fmRegressor.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/fpm.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/gaussianMixture.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/gbt.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/glm.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/isoreg.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/kmeans.R
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spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/kstest.R
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spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/logit.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/ml.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/mlp.R
spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/naiveBayes.R
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spark-3.2.3-bin-hadoop3.2/examples/src/main/r/ml/survreg.R
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hadoop3.2/examples/src/main/r/streaming/structured_network_wordcount.R
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INF/services/org.apache.spark.sql.SparkSessionExtensionsProvider
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INF/services/org.apache.spark.sql.jdbc.JdbcConnectionProvider
spark-3.2.3-bin-hadoop3.2/examples/src/main/resources/dir1/
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mulatorMetricsTest.scala
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spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/DFSR
eadWriteTest.scala
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erSubmissionTest.scala
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ptionHandlingTest.scala
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iBroadcastTest.scala
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leSkewedGroupByTest.scala
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edGroupByTest.scala
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kRemoteFileTest.scala
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nsions/AgeExample.scala
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nsions/SessionExtensionsWithLoader.scala
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hx/Analytics.scala
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hx/SynthBenchmark.scala
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FTSurvivalRegressionExample.scala
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inarizerExample.scala
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isectingKMeansExample.scala
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ucketedRandomProjectionLSHExample.scala
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ucketizerExample.scala
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orrelationExample.scala
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ountVectorizerExample.scala
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ataFrameExample.scala
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ecisionTreeClassificationExample.scala
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ecisionTreeExample.scala
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eveloperApiExample.scala
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lementwiseProductExample.scala
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stimatorTransformerParamExample.scala
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MClassifierExample.scala
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MRegressorExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/F
PGrowthExample.scala
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eatureHasherExample.scala
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hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/GBTExample.scala
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aussianMixtureExample.scala
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eneralizedLinearRegressionExample.scala
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radientBoostedTreeClassifierExample.scala
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radientBoostedTreeRegressorExample.scala
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mputerExample.scala
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ndexToStringExample.scala
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nteractionExample.scala
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sotonicRegressionExample.scala
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MeansExample.scala
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inearRegressionExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/L
inearRegressionWithElasticNetExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/L

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spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/MinHashLSHExample.scala

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spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/MulticlassLogisticRegressionWithElasticNetExample.scala

spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/MultilayerPerceptronClassifierExample.scala

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spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/PowerIterationClusteringExample.scala

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spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/QuantileDiscretizerExample.scala

spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/RFormulaExample.scala

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andomForestExample.scala
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obustScalerExample.scala
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QLTransformerExample.scala
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spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/S
topWordsRemoverExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/S
tringIndexerExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/ml/S
ummarizerExample.scala
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fIdfExample.scala
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b/BisectingKMeansExample.scala
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b/ChiSqSelectorExample.scala
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b/CosineSimilarity.scala
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b/DecisionTreeClassificationExample.scala
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b/DecisionTreeRegressionExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/DecisionTreeRunner.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/DenseKMeans.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/ElementwiseProductExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/FPGrowthExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/GaussianMixtureExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/GradientBoostedTreesRunner.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/GradientBoostingClassificationExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/GradientBoostingRegressionExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/HypothesisTestingExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/HypothesisTestingKolmogorovSmirnovTestExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/IsotonicRegressionExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/KMeansExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/KernelDensityEstimationExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/LBFGSExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/LDAExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/LatentDirichletAllocationExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/LogisticRegressionWithLBFGSExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/MovieLensALS.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli

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b/MultiLabelMetricsExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/MulticlassMetricsExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/MultivariateSummarizer.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/NaiveBayesExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/NormalizerExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/PCAOnRowMatrixExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/PCAOnSourceVectorExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/PMMLModelExportExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/PowerIterationClusteringExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/PrefixSpanExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/RandomForestClassificationExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/RandomForestRegressionExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/RandomRDDGeneration.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/RankingMetricsExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/RecommendationExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/SVDExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/SVMWithSGDExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/SampledRDDs.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/SimpleFPGrowth.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/SparseNaiveBayes.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/StandardScalerExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/StratifiedSamplingExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/StreamingKMeansExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/StreamingLinearRegressionExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
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b/StreamingLogisticRegression.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/StreamingTestExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/SummaryStatisticsExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/TFIDFExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/TallSkinnyPCA.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/TallSkinnySVD.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/mlli
b/Word2VecExample.scala
spark-3.2.3-bin-
hadoop3.2/examples/src/main/scala/org/apache/spark/examples/pythonconverters/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/pyth
onconverters/AvroConverters.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
RDDRelation.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
SQLDataSourceExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
SimpleTypedAggregator.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
SparkSQLExample.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
UserDefinedScalar.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
UserDefinedTypedAggregation.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
UserDefinedUntypedAggregation.scala
spark-3.2.3-bin-
hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/hive/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
hive/SparkHiveExample.scala
spark-3.2.3-bin-
hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/jdbc/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
jdbc/ExampleJdbcConnectionProvider.scala
spark-3.2.3-bin-
hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/streaming/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
streaming/StructuredComplexSessionization.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
streaming/StructuredKafkaWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
streaming/StructuredKerberizedKafkaWordCount.scala

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spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
streaming/StructuredNetworkWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
streaming/StructuredNetworkWordCountWindowed.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/sql/
streaming/StructuredSessionization.scala
spark-3.2.3-bin-
hadoop3.2/examples/src/main/scala/org/apache/spark/examples/streaming/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/CustomReceiver.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/DirectKafkaWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/DirectKerberizedKafkaWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/HdfsWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/NetworkWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/QueueStream.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/RawNetworkGrep.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/RecoverableNetworkWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/SqlNetworkWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/StatefulNetworkWordCount.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/StreamingExamples.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/clickstream/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/clickstream/PageViewGenerator.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scala/org/apache/spark/examples/stre
aming/clickstream/PageViewStream.scala
spark-3.2.3-bin-hadoop3.2/examples/src/main/scripts/
spark-3.2.3-bin-hadoop3.2/examples/src/main/scripts/getGpusResources.sh
spark-3.2.3-bin-hadoop3.2/jars/
spark-3.2.3-bin-hadoop3.2/jars/HikariCP-2.5.1.jar
spark-3.2.3-bin-hadoop3.2/jars/JLargeArrays-1.5.jar
spark-3.2.3-bin-hadoop3.2/jars/JTransforms-3.1.jar
spark-3.2.3-bin-hadoop3.2/jars/RoaringBitmap-0.9.0.jar
spark-3.2.3-bin-hadoop3.2/jars/ST4-4.0.4.jar
spark-3.2.3-bin-hadoop3.2/jars/activation-1.1.1.jar
spark-3.2.3-bin-hadoop3.2/jars/aircompressor-0.21.jar
spark-3.2.3-bin-hadoop3.2/jars/algebra_2.12-2.0.1.jar
spark-3.2.3-bin-hadoop3.2/jars/annotations-17.0.0.jar
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spark-3.2.3-bin-hadoop3.2/jars/antlr-runtime-3.5.2.jar
spark-3.2.3-bin-hadoop3.2/jars/antlr4-runtime-4.8.jar
spark-3.2.3-bin-hadoop3.2/jars/aopalliance-repackaged-2.6.1.jar
spark-3.2.3-bin-hadoop3.2/jars/arpack-2.2.1.jar
spark-3.2.3-bin-hadoop3.2/jars/arpack_combined_all-0.1.jar
spark-3.2.3-bin-hadoop3.2/jars/arrow-format-2.0.0.jar
spark-3.2.3-bin-hadoop3.2/jars/arrow-memory-core-2.0.0.jar
spark-3.2.3-bin-hadoop3.2/jars/arrow-memory-netty-2.0.0.jar
spark-3.2.3-bin-hadoop3.2/jars/arrow-vector-2.0.0.jar
spark-3.2.3-bin-hadoop3.2/jars/audience-annotations-0.5.0.jar
spark-3.2.3-bin-hadoop3.2/jars/automaton-1.11-8.jar
spark-3.2.3-bin-hadoop3.2/jars/avro-1.10.2.jar
spark-3.2.3-bin-hadoop3.2/jars/avro-ipc-1.10.2.jar
spark-3.2.3-bin-hadoop3.2/jars/avro-mapred-1.10.2.jar
spark-3.2.3-bin-hadoop3.2/jars/blas-2.2.1.jar
spark-3.2.3-bin-hadoop3.2/jars/bonecp-0.8.0.RELEASE.jar
spark-3.2.3-bin-hadoop3.2/jars/breeze-macros_2.12-1.2.jar
spark-3.2.3-bin-hadoop3.2/jars/breeze_2.12-1.2.jar
spark-3.2.3-bin-hadoop3.2/jars/cats-kernel_2.12-2.1.1.jar
spark-3.2.3-bin-hadoop3.2/jars/chill-java-0.10.0.jar
spark-3.2.3-bin-hadoop3.2/jars/chill_2.12-0.10.0.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-cli-1.2.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-codec-1.15.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-collections-3.2.2.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-compiler-3.0.16.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-compress-1.21.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-crypto-1.1.0.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-dbcp-1.4.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-io-2.8.0.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-lang-2.6.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-lang3-3.12.0.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-logging-1.1.3.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-math3-3.4.1.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-net-3.1.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-pool-1.5.4.jar
spark-3.2.3-bin-hadoop3.2/jars/commons-text-1.10.0.jar
spark-3.2.3-bin-hadoop3.2/jars/compress-lzf-1.0.3.jar
spark-3.2.3-bin-hadoop3.2/jars/core-1.1.2.jar
spark-3.2.3-bin-hadoop3.2/jars/curator-client-2.13.0.jar
spark-3.2.3-bin-hadoop3.2/jars/curator-framework-2.13.0.jar
spark-3.2.3-bin-hadoop3.2/jars/curator-recipes-2.13.0.jar
spark-3.2.3-bin-hadoop3.2/jars/datanucleus-api-jdo-4.2.4.jar
spark-3.2.3-bin-hadoop3.2/jars/datanucleus-core-4.1.17.jar
spark-3.2.3-bin-hadoop3.2/jars/datanucleus-rdbms-4.1.19.jar
spark-3.2.3-bin-hadoop3.2/jars/derby-10.14.2.0.jar
spark-3.2.3-bin-hadoop3.2/jars/dropwizard-metrics-hadoop-
metrics2-reporter-0.1.2.jar
spark-3.2.3-bin-hadoop3.2/jars/flatbuffers-java-1.9.0.jar
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spark-3.2.3-bin-hadoop3.2/jars/generex-1.0.2.jar
spark-3.2.3-bin-hadoop3.2/jars/gson-2.2.4.jar
spark-3.2.3-bin-hadoop3.2/jars/guava-14.0.1.jar
spark-3.2.3-bin-hadoop3.2/jars/hadoop-client-api-3.3.1.jar
spark-3.2.3-bin-hadoop3.2/jars/hadoop-client-runtime-3.3.1.jar
spark-3.2.3-bin-hadoop3.2/jars/hadoop-shaded-guava-1.1.1.jar
spark-3.2.3-bin-hadoop3.2/jars/hadoop-yarn-server-web-proxy-3.3.1.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-beeline-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-cli-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-common-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-exec-2.3.9-core.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-jdbc-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-llap-common-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-metastore-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-serde-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-service-rpc-3.1.2.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-shims-0.23-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-shims-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-shims-common-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-shims-scheduler-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-storage-api-2.7.2.jar
spark-3.2.3-bin-hadoop3.2/jars/hive-vector-code-gen-2.3.9.jar
spark-3.2.3-bin-hadoop3.2/jars/hk2-api-2.6.1.jar
spark-3.2.3-bin-hadoop3.2/jars/hk2-locator-2.6.1.jar
spark-3.2.3-bin-hadoop3.2/jars/hk2-utils-2.6.1.jar
spark-3.2.3-bin-hadoop3.2/jars/htrace-core4-4.1.0-incubating.jar
spark-3.2.3-bin-hadoop3.2/jars/httpclient-4.5.13.jar
spark-3.2.3-bin-hadoop3.2/jars/httpcore-4.4.14.jar
spark-3.2.3-bin-hadoop3.2/jars/istack-commons-runtime-3.0.8.jar
spark-3.2.3-bin-hadoop3.2/jars/ivy-2.5.0.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-annotations-2.12.3.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-core-2.12.3.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-core-asl-1.9.13.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-databind-2.12.3.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-dataformat-yaml-2.12.3.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-datatype-jsr310-2.11.2.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-mapper-asl-1.9.13.jar
spark-3.2.3-bin-hadoop3.2/jars/jackson-module-scala_2.12-2.12.3.jar
spark-3.2.3-bin-hadoop3.2/jars/jakarta.annotation-api-1.3.5.jar
spark-3.2.3-bin-hadoop3.2/jars/jakarta.inject-2.6.1.jar
spark-3.2.3-bin-hadoop3.2/jars/jakarta.servlet-api-4.0.3.jar
spark-3.2.3-bin-hadoop3.2/jars/jakarta.validation-api-2.0.2.jar
spark-3.2.3-bin-hadoop3.2/jars/jakarta.ws.rs-api-2.1.6.jar
spark-3.2.3-bin-hadoop3.2/jars/jakarta.xml.bind-api-2.3.2.jar
spark-3.2.3-bin-hadoop3.2/jars/janino-3.0.16.jar
spark-3.2.3-bin-hadoop3.2/jars/javassist-3.25.0-GA.jar
spark-3.2.3-bin-hadoop3.2/jars/javax.jdo-3.2.0-m3.jar
spark-3.2.3-bin-hadoop3.2/jars/javolution-5.5.1.jar
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spark-3.2.3-bin-hadoop3.2/jars/jaxb-api-2.2.11.jar
spark-3.2.3-bin-hadoop3.2/jars/jaxb-runtime-2.3.2.jar
spark-3.2.3-bin-hadoop3.2/jars/jcl-over-slf4j-1.7.30.jar
spark-3.2.3-bin-hadoop3.2/jars/jdo-api-3.0.1.jar
spark-3.2.3-bin-hadoop3.2/jars/jersey-client-2.34.jar
spark-3.2.3-bin-hadoop3.2/jars/jersey-common-2.34.jar
spark-3.2.3-bin-hadoop3.2/jars/jersey-container-servlet-2.34.jar
spark-3.2.3-bin-hadoop3.2/jars/jersey-container-servlet-core-2.34.jar
spark-3.2.3-bin-hadoop3.2/jars/jersey-hk2-2.34.jar
spark-3.2.3-bin-hadoop3.2/jars/jersey-server-2.34.jar
spark-3.2.3-bin-hadoop3.2/jars/jline-2.14.6.jar
spark-3.2.3-bin-hadoop3.2/jars/joda-time-2.10.10.jar
spark-3.2.3-bin-hadoop3.2/jars/jodd-core-3.5.2.jar
spark-3.2.3-bin-hadoop3.2/jars/jpam-1.1.jar
spark-3.2.3-bin-hadoop3.2/jars/json-1.8.jar
spark-3.2.3-bin-hadoop3.2/jars/json4s-ast_2.12-3.7.0-M11.jar
spark-3.2.3-bin-hadoop3.2/jars/json4s-core_2.12-3.7.0-M11.jar
spark-3.2.3-bin-hadoop3.2/jars/json4s-jackson_2.12-3.7.0-M11.jar
spark-3.2.3-bin-hadoop3.2/jars/json4s-scalap_2.12-3.7.0-M11.jar
spark-3.2.3-bin-hadoop3.2/jars/jsr305-3.0.0.jar
spark-3.2.3-bin-hadoop3.2/jars/jta-1.1.jar
spark-3.2.3-bin-hadoop3.2/jars/jul-to-slf4j-1.7.30.jar
spark-3.2.3-bin-hadoop3.2/jars/kryo-shaded-4.0.2.jar
spark-3.2.3-bin-hadoop3.2/jars/kubernetes-client-5.4.1.jar
spark-3.2.3-bin-hadoop3.2/jars/kubernetes-model-admissionregistration-5.4.1.jar
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spark-3.2.3-bin-hadoop3.2/jars/kubernetes-model-apps-5.4.1.jar
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spark-3.2.3-bin-hadoop3.2/jars/kubernetes-model-certificates-5.4.1.jar
spark-3.2.3-bin-hadoop3.2/jars/kubernetes-model-common-5.4.1.jar
spark-3.2.3-bin-hadoop3.2/jars/kubernetes-model-coordination-5.4.1.jar
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spark-3.2.3-bin-hadoop3.2/jars/kubernetes-model-storageclass-5.4.1.jar
spark-3.2.3-bin-hadoop3.2/jars/lapack-2.2.1.jar
spark-3.2.3-bin-hadoop3.2/jars/leveldbjni-all-1.8.jar
spark-3.2.3-bin-hadoop3.2/jars/libfb303-0.9.3.jar
spark-3.2.3-bin-hadoop3.2/jars/libthrift-0.12.0.jar
```

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spark-3.2.3-bin-hadoop3.2/jars/mesos-1.4.0-shaded-protobuf.jar
spark-3.2.3-bin-hadoop3.2/jars/metrics-core-4.2.0.jar
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```

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spark-3.2.3-bin-hadoop3.2/jars/spark-yarn_2.12-3.2.3.jar
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spark-3.2.3-bin-hadoop3.2/jars/spire-platform_2.12-0.17.0.jar
spark-3.2.3-bin-hadoop3.2/jars/spire-util_2.12-0.17.0.jar
spark-3.2.3-bin-hadoop3.2/jars/spire_2.12-0.17.0.jar
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spark-3.2.3-bin-hadoop3.2/jars/univocity-parsers-2.9.1.jar
spark-3.2.3-bin-hadoop3.2/jars/velocity-1.5.jar
spark-3.2.3-bin-hadoop3.2/jars/xbean-asm9-shaded-4.20.jar
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spark-3.2.3-bin-hadoop3.2/jars/zookeeper-jute-3.6.2.jar
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spark-3.2.3-bin-hadoop3.2/kubernetes/dockerfiles/spark/bindings/R/
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spark-3.2.3-bin-hadoop3.2/kubernetes/dockerfiles/spark/entrypoint.sh
spark-3.2.3-bin-hadoop3.2/kubernetes/tests/
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spark-3.2.3-bin-hadoop3.2/kubernetes/tests/py_container_checks.py
spark-3.2.3-bin-hadoop3.2/kubernetes/tests/pyfiles.py
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spark-3.2.3-bin-hadoop3.2/licenses/
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spark-3.2.3-bin-hadoop3.2/licenses/LICENSE-JTransforms.txt
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spark-3.2.3-bin-hadoop3.2/python/docs/source/development/setting_ide.rst
spark-3.2.3-bin-hadoop3.2/python/docs/source/development/testing.rst
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```

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hadoop3.2/python/docs/source/migration_guide/pyspark_3.1_to_3.2.rst
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spark-3.2.3-bin-hadoop3.2/python/docs/source/reference/pyspark.pandas/window.rst
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spark-3.2.3-bin-hadoop3.2/python/docs/source/reference/pyspark.streaming.rst
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spark-3.2.3-bin-hadoop3.2/python/docs/source/user_guide/arrow_pandas.rst
spark-3.2.3-bin-hadoop3.2/python/docs/source/user_guide/index.rst
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spark-3.2.3-bin-
hadoop3.2/python/docs/source/user_guide/pandas_on_spark/types.rst
spark-3.2.3-bin-hadoop3.2/python/docs/source/user_guide/python_packaging.rst
spark-3.2.3-bin-hadoop3.2/python/docs/source/user_guide/sql/
spark-3.2.3-bin-hadoop3.2/python/docs/source/user_guide/sql/arrow_pandas.rst
spark-3.2.3-bin-hadoop3.2/python/docs/source/user_guide/sql/index.rst
spark-3.2.3-bin-hadoop3.2/python/lib/
spark-3.2.3-bin-hadoop3.2/python/lib/PY4J_LICENSE.txt
spark-3.2.3-bin-hadoop3.2/python/lib/py4j-0.10.9.5-src.zip
spark-3.2.3-bin-hadoop3.2/python/lib/pyspark.zip
spark-3.2.3-bin-hadoop3.2/python/mypy.ini
spark-3.2.3-bin-hadoop3.2/python/pylintrc
spark-3.2.3-bin-hadoop3.2/python/pyspark/
spark-3.2.3-bin-hadoop3.2/python/pyspark/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/__pycache__/
spark-3.2.3-bin-hadoop3.2/python/pyspark/__pycache__/install.cpython-38.pyc
spark-3.2.3-bin-hadoop3.2/python/pyspark/_globals.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/_typing.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/accumulators.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/accumulators.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/broadcast.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/broadcast.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/cloudpickle/
spark-3.2.3-bin-hadoop3.2/python/pyspark/cloudpickle/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/cloudpickle/cloudpickle.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/cloudpickle/cloudpickle_fast.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/cloudpickle/compat.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/conf.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/conf.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/context.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/context.pyi
```

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spark-3.2.3-bin-hadoop3.2/python/pyspark/daemon.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/install.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/java_gateway.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/join.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/__init__.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/base.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/classification.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/clustering.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/clustering.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/common.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/common.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/evaluation.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/feature.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/feature.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/fpm.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/functions.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/linalg/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/linalg/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/param/
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/param/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/param/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/param/_shared_params_code_gen.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/param/_shared_params_code_gen.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/param/shared.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/param/shared.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/pipeline.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/pipeline.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/recommendation.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/recommendation.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/regression.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/regression.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/stat.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/stat.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/__init__.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_algorithms.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_base.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_evaluation.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_feature.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_image.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_linalg.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_param.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_persistence.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_pipeline.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_util.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tests/test_wrapper.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tree.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/tuning.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/util.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/wrapper.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/ml/wrapper.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/_typing.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/classification.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/classification.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/clustering.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/clustering.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/common.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/common.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/evaluation.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/evaluation.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/feature.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/feature.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/fpm.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/fpm.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/linalg/
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/linalg/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/linalg/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/linalg/distributed.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/linalg/distributed.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/random.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/random.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/recommendation.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/recommendation.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/regression.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/regression.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/stat/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/stat/_statistics.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/stat/_statistics.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/stat/distribution.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/stat/distribution.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/stat/test.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/stat/test.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/tests/
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/tests/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/tests/test_algorithms.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/tests/test_feature.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/tests/test_linalg.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/tests/test_stat.py
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hadoop3.2/python/pyspark/mllib/tests/test_streaming_algorithms.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/tree.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/util.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/mllib/util.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/_typing.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/accessors.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/base.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/categorical.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/config.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/base.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/binary_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/boolean_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/categorical_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/complex_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/date_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/datetime_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/null_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/num_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/string_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/data_type_ops/udt_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/datetimes.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/exceptions.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/extensions.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/frame.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/generic.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexes/
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexes/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexes/base.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexes/category.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexes/datetimes.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexes/multi.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexes/numeric.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/indexing.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/internal.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/missing/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/missing/common.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/missing/frame.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/missing/groupby.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/missing/indexes.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/missing/window.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/plot/__init__.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/spark/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/spark/accessors.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/spark/functions.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/spark/utils.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/strings.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/__init__.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/data_type_ops/__init__.py
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hadoop3.2/python/pyspark/pandas/tests/data_type_ops/test_binary_ops.py
spark-3.2.3-bin-
hadoop3.2/python/pyspark/pandas/tests/data_type_ops/test_boolean_ops.py
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hadoop3.2/python/pyspark/pandas/tests/data_type_ops/test_categorical_ops.py
spark-3.2.3-bin-
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hadoop3.2/python/pyspark/pandas/tests/data_type_ops/test_complex_ops.py
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spark-3.2.3-bin-
hadoop3.2/python/pyspark/pandas/tests/data_type_ops/test_string_ops.py
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hadoop3.2/python/pyspark/pandas/tests/data_type_ops/test_udt_ops.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/indexes/__init__.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/plot/__init__.py
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hadoop3.2/python/pyspark/pandas/tests/plot/test_frame_plot_matplotlib.py
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hadoop3.2/python/pyspark/pandas/tests/plot/test_frame_plot_plotly.py
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spark-3.2.3-bin-
hadoop3.2/python/pyspark/pandas/tests/plot/test_series_plot_plotly.py
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hadoop3.2/python/pyspark/pandas/tests/test_dataframe_conversion.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_dataframe_spark_io.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_default_index.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_expanding.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_extension.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_frame_spark.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_indexing.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_indexops_spark.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_internal.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_namespace.py
```

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spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_numpy_compat.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_ops_on_diff_frames.py
spark-3.2.3-bin-
hadoop3.2/python/pyspark/pandas/tests/test_ops_on_diff_frames_groupby.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_ops_on_diff_frames_gr
oupby_expanding.py
spark-3.2.3-bin-
hadoop3.2/python/pyspark/pandas/tests/test_ops_on_diff_frames_groupby_rolling.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_repr.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_reshape.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_rolling.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_series.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_series_conversion.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_series_datetime.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_series_string.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_spark_functions.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_sql.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_stats.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_typedef.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_utils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/tests/test_window.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/typedef/
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/typedef/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/typedef/string_typehints.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/typedef/typehints.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/usage_logging/
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/usage_logging/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/usage_logging/usage_logger.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/utils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/pandas/window.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/profiler.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/profiler.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/py.typed
spark-3.2.3-bin-hadoop3.2/python/pyspark/python/
spark-3.2.3-bin-hadoop3.2/python/pyspark/python/pyspark/
spark-3.2.3-bin-hadoop3.2/python/pyspark/python/pyspark/shell.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/rdd.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/rdd.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/rddsampler.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/information.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/information.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/profile.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/profile.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/requests.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/requests.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/tests/
```

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spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/tests/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resource/tests/test_resources.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resultiterable.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/resultiterable.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/serializers.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/shell.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/shuffle.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/_typing.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/avro/
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/avro/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/avro/functions.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/avro/functions.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/catalog.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/catalog.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/column.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/column.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/conf.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/conf.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/context.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/context.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/dataframe.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/dataframe.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/functions.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/functions.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/group.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/group.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/_typing/
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/_typing/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/_typing/protocols/
spark-3.2.3-bin-
hadoop3.2/python/pyspark/sql/pandas/_typing/protocols/__init__.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/_typing/protocols/frame.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/_typing/protocols/series.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/conversion.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/conversion.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/functions.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/functions.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/group_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/group_ops.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/map_ops.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/map_ops.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/serializers.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/typehints.py
```

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spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/types.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/pandas/utils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/readwriter.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/readwriter.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/session.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/session.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/streaming.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/streaming.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_arrow.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_catalog.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_column.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_conf.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_context.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_functions.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_pandas_cogrouped_map.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_pandas_grouped_map.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_pandas_map.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_pandas_udf.py
spark-3.2.3-bin-
hadoop3.2/python/pyspark/sql/tests/test_pandas_udf_grouped_agg.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_pandas_udf_scalar.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_pandas_udf_typehints.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_pandas_udf_window.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_readwriter.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_session.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_streaming.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_types.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_udf.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/tests/test_utils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/types.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/types.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/udf.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/udf.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/utils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/window.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/sql/window.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/statcounter.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/statcounter.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/status.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/status.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/storagelevel.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/storagelevel.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/
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spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/context.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/dstream.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/dstream.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/kinesis.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/kinesis.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/listener.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/listener.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/tests/
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/tests/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/tests/test_context.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/tests/test_dstream.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/streaming/tests/test_listener.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/taskcontext.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/taskcontext.pyi
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/mllibutils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/mlutils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/pandasutils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/sqlutils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/streamingutils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/testing/utils.py
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spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/__init__.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_appsubmit.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_broadcast.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_conf.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_context.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_daemon.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_install_spark.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_join.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_pin_thread.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_profiler.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_rdd.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_rddbarrier.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_readwrite.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_serializers.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_shuffle.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_taskcontext.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_util.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/tests/test_worker.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/traceback_utils.py
spark-3.2.3-bin-hadoop3.2/python/pyspark/util.py
```

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spark-3.2.3-bin-hadoop3.2/python/pyspark/util.pyi
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spark-3.2.3-bin-hadoop3.2/python/pyspark.egg-info/
spark-3.2.3-bin-hadoop3.2/python/pyspark.egg-info/PKG-INFO
spark-3.2.3-bin-hadoop3.2/python/pyspark.egg-info/SOURCES.txt
spark-3.2.3-bin-hadoop3.2/python/pyspark.egg-info/dependency_links.txt
spark-3.2.3-bin-hadoop3.2/python/pyspark.egg-info/requires.txt
spark-3.2.3-bin-hadoop3.2/python/pyspark.egg-info/top_level.txt
spark-3.2.3-bin-hadoop3.2/python/run-tests
spark-3.2.3-bin-hadoop3.2/python/run-tests-with-coverage
spark-3.2.3-bin-hadoop3.2/python/run-tests.py
spark-3.2.3-bin-hadoop3.2/python/setup.cfg
spark-3.2.3-bin-hadoop3.2/python/setup.py
spark-3.2.3-bin-hadoop3.2/python/test_coverage/
spark-3.2.3-bin-hadoop3.2/python/test_coverage/conf/
spark-3.2.3-bin-hadoop3.2/python/test_coverage/conf/spark-defaults.conf
spark-3.2.3-bin-hadoop3.2/python/test_coverage/coverage_daemon.py
spark-3.2.3-bin-hadoop3.2/python/test_coverage/sitecustomize.py
spark-3.2.3-bin-hadoop3.2/python/test_support/
spark-3.2.3-bin-hadoop3.2/python/test_support/SimpleHTTPServer.py
spark-3.2.3-bin-hadoop3.2/python/test_support/hello/
spark-3.2.3-bin-hadoop3.2/python/test_support/hello/hello.txt
spark-3.2.3-bin-hadoop3.2/python/test_support/hello/sub_hello/
spark-3.2.3-bin-hadoop3.2/python/test_support/hello/sub_hello/sub_hello.txt
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/ages.csv
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/ages_newlines.csv
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/_SUCCESS
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=0/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=0/c=0/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=0/c=0/.part-
r-00000-829af031-b970-49d6-ad39-30460a0be2c8.orc.crc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=0/c=0/part-r
-00000-829af031-b970-49d6-ad39-30460a0be2c8.orc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=1/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=1/c=1/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=1/c=1/.part-
r-00000-829af031-b970-49d6-ad39-30460a0be2c8.orc.crc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/orc_partitioned/b=1/c=1/part-r
-00000-829af031-b970-49d6-ad39-30460a0be2c8.orc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/_SUCCESS
spark-3.2.3-bin-
hadoop3.2/python/test_support/sql/parquet_partitioned/_common_metadata
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/_metadata
```

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spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2014/
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hadoop3.2/python/test_support/sql/parquet_partitioned/year=2014/month=9/
spark-3.2.3-bin-
hadoop3.2/python/test_support/sql/parquet_partitioned/year=2014/month=9/day=1/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2014/
month=9/day=1/.part-r-00008.gz.parquet.crc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2014/
month=9/day=1/part-r-00008.gz.parquet
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
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spark-3.2.3-bin-
hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/month=10/day=25/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=10/day=25/.part-r-00002.gz.parquet.crc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=10/day=25/.part-r-00004.gz.parquet.crc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=10/day=25/part-r-00002.gz.parquet
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=10/day=25/part-r-00004.gz.parquet
spark-3.2.3-bin-
hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/month=10/day=26/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=10/day=26/.part-r-00005.gz.parquet.crc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=10/day=26/part-r-00005.gz.parquet
spark-3.2.3-bin-
hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/month=9/
spark-3.2.3-bin-
hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/month=9/day=1/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=9/day=1/.part-r-00007.gz.parquet.crc
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/parquet_partitioned/year=2015/
month=9/day=1/part-r-00007.gz.parquet
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/people.json
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/people1.json
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/people_array.json
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/people_array_utf16le.json
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/streaming/
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/streaming/text-test.txt
spark-3.2.3-bin-hadoop3.2/python/test_support/sql/text-test.txt
spark-3.2.3-bin-hadoop3.2/python/test_support/userlib-0.1.zip
spark-3.2.3-bin-hadoop3.2/python/test_support/userlibrary.py
spark-3.2.3-bin-hadoop3.2/sbin/
spark-3.2.3-bin-hadoop3.2/sbin/decommission-slave.sh
spark-3.2.3-bin-hadoop3.2/sbin/decommission-worker.sh
```

```
spark-3.2.3-bin-hadoop3.2/sbin/slaves.sh
spark-3.2.3-bin-hadoop3.2/sbin/spark-config.sh
spark-3.2.3-bin-hadoop3.2/sbin/spark-daemon.sh
spark-3.2.3-bin-hadoop3.2/sbin/spark-daemons.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-all.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-history-server.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-master.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-mesos-dispatcher.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-mesos-shuffle-service.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-slave.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-slaves.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-thriftserver.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-worker.sh
spark-3.2.3-bin-hadoop3.2/sbin/start-workers.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-all.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-history-server.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-master.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-mesos-dispatcher.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-mesos-shuffle-service.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-slave.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-slaves.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-thriftserver.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-worker.sh
spark-3.2.3-bin-hadoop3.2/sbin/stop-workers.sh
spark-3.2.3-bin-hadoop3.2/sbin/workers.sh
spark-3.2.3-bin-hadoop3.2/yarn/
spark-3.2.3-bin-hadoop3.2/yarn/spark-3.2.3-yarn-shuffle.jar
```

Setting JAVA home

```python
import os
os.environ["JAVA_HOME"] = "/usr/lib/jvm/java-8-openjdk-amd64"
os.environ["SPARK_HOME"] = "/content/spark-3.2.3-bin-hadoop3.2"
```

```python
import findspark
findspark.init()
from pyspark.sql import SparkSession
spark = SparkSession.builder.master("local[*]").getOrCreate()
```

```python
words = "Hello, this is big data framework and it will be fun".split()
words
```

```
['Hello,',
 'this',
 'is',
 'big',
 'data',
 'framework',
```

```
    'and',
    'it',
    'will',
    'be',
    'fun']
```

```python
import pyspark
from pyspark.context import SparkContext
from pyspark import SparkConf
sc = SparkContext.getOrCreate(SparkConf().setMaster("local[*]"))
```

Parallelizing to create RDD

```python
words_rdd = sc.parallelize(words)
words_rdd
```

```
ParallelCollectionRDD[0] at readRDDFromFile at PythonRDD.scala:274
```

Map function

```python
word_tuples_rdd = words_rdd.map(lambda x: (x, 1))
word_tuples_rdd
```

```
PythonRDD[1] at RDD at PythonRDD.scala:53
```

```python
word_tuples_rdd.collect()
```

```
[('Hello,', 1),
 ('this', 1),
 ('is', 1),
 ('big', 1),
 ('data', 1),
 ('framework', 1),
 ('and', 1),
 ('it', 1),
 ('will', 1),
 ('be', 1),
 ('fun', 1)]
```

```python
word_tuples_rdd.take(4)
```

```
[('Hello,', 1), ('this', 1), ('is', 1), ('big', 1)]
```

Reducer

```python
word_counts_rdd = word_tuples_rdd.reduceByKey(lambda x, y: x + y)
word_counts_rdd
```

```
[ ]: PythonRDD[7] at RDD at PythonRDD.scala:53
```

```
[ ]: word_counts = word_counts_rdd.collect()
     word_counts
```

```
[ ]: [('Hello,', 1),
      ('this', 1),
      ('is', 1),
      ('framework', 1),
      ('big', 1),
      ('data', 1),
      ('and', 1),
      ('it', 1),
      ('will', 1),
      ('be', 1),
      ('fun', 1)]
```

```
[13]: f = open("/content/drive/MyDrive/Big data framework and tech/sampleText.txt",␣
      ↪"r")
     text_data = f.read()
     words = text_data.split()
     words
```

```
[13]: ['Frameworks',
      'provide',
      'structure.',
      'The',
      'core',
      'objective',
      'of',
      'the',
      'Big',
      'Data',
      'Framework',
      'is',
      'to',
      'provide',
      'a',
      'structure',
      'for',
      'enterprise',
      'organisations',
      'that',
      'aim',
      'to',
      'benefit',
      'from',
```

```
'the',
'potential',
'of',
'Big',
'Data.',
'In',
'order',
'to',
'achieve',
'long-term',
'success,',
'Big',
'Data',
'is',
'more',
'than',
'just',
'the',
'combination',
'of',
'skilled',
'people',
'and',
'technology',
'-',
'it',
'requires',
'structure',
'and',
'capabilities.',
'The',
'Big',
'Data',
'Framework',
'was',
'developed',
'because',
'-',
'although',
'the',
'benefits',
'and',
'business',
'cases',
'of',
'Big',
'Data',
```

```
'are',
'apparent',
'-',
'many',
'organizations',
'struggle',
'to',
'embed',
'a',
'successful',
'Big',
'Data',
'practice',
'in',
'their',
'organization.',
'The',
'structure',
'provided',
'by',
'the',
'Big',
'Data',
'Framework',
'provides',
'an',
'approach',
'for',
'organizations',
'that',
'takes',
'into',
'account',
'all',
'organizational',
'capabilities',
'of',
'a',
'successful',
'Big',
'Data',
'practice.',
'All',
'the',
'way',
'from',
'the',
```

```
'definition',
'of',
'a',
'Big',
'Data',
'strategy,',
'to',
'the',
'technical',
'tools',
'and',
'capabilities',
'an',
'organization',
'should',
'have.',
'The',
'main',
'benefits',
'of',
'applying',
'a',
'Big',
'Data',
'framework',
'include:',
'The',
'Big',
'Data',
'Framework',
'provides',
'a',
'structure',
'for',
'organisations',
'that',
'want',
'to',
'start',
'with',
'Big',
'Data',
'or',
'aim',
'to',
'develop',
'their',
```

```
'Big',
'Data',
'capabilities',
'further.',
'The',
'Big',
'Data',
'Framework',
'includes',
'all',
'organisational',
'aspects',
'that',
'should',
'be',
'taken',
'into',
'account',
'in',
'a',
'Big',
'Data',
'organization.',
'The',
'Big',
'Data',
'Framework',
'is',
'vendor',
'independent.',
'It',
'can',
'be',
'applied',
'to',
'any',
'organization',
'regardless',
'of',
'choice',
'of',
'technology,',
'specialisation',
'or',
'tools.',
'The',
'Big',
```

```
'Data',
'Framework',
'provides',
'a',
'common',
'reference',
'model',
'that',
'can',
'be',
'used',
'across',
'departmental',
'functions',
'or',
'country',
'boundaries.',
'The',
'Big',
'Data',
'Framework',
'identifies',
'core',
'and',
'measurable',
'capabilities',
'in',
'each',
'of',
'its',
'six',
'domains',
'so',
'that',
'the',
'organization',
'can',
'develop',
'over',
'time.',
'Big',
'Data',
'is',
'a',
'people',
'business.',
'Even',
```

```
'with',
'the',
'most',
'advanced',
'computers',
'and',
'processors',
'in',
'the',
'world,',
'organisations',
'will',
'not',
'be',
'successful',
'without',
'the',
'appropriate',
'knowledge',
'and',
'skills.',
'The',
'Big',
'Data',
'Framework',
'therefore',
'aims',
'to',
'increase',
'the',
'knowledge',
'of',
'everyone',
'who',
'is',
'interested',
'in',
'Big',
'Data.',
'The',
'modular',
'approach',
'and',
'accompanying',
'certification',
'scheme',
'aims',
```

```
    'to',
    'develop',
    'knowledge',
    'about',
    'Big',
    'Data',
    'in',
    'a',
    'similar',
    'structured',
    'fashion.']
```

[14]:
```python
words_rdd = sc.parallelize(words)
words_rdd
```

[14]: ParallelCollectionRDD[8] at readRDDFromFile at PythonRDD.scala:274

[15]:
```python
word_tuples_rdd = words_rdd.map(lambda x: (x, 1))
word_tuples_rdd.collect()
```

[15]:
```
[('Frameworks', 1),
 ('provide', 1),
 ('structure.', 1),
 ('The', 1),
 ('core', 1),
 ('objective', 1),
 ('of', 1),
 ('the', 1),
 ('Big', 1),
 ('Data', 1),
 ('Framework', 1),
 ('is', 1),
 ('to', 1),
 ('provide', 1),
 ('a', 1),
 ('structure', 1),
 ('for', 1),
 ('enterprise', 1),
 ('organisations', 1),
 ('that', 1),
 ('aim', 1),
 ('to', 1),
 ('benefit', 1),
 ('from', 1),
 ('the', 1),
 ('potential', 1),
 ('of', 1),
```

```
('Big', 1),
('Data.', 1),
('In', 1),
('order', 1),
('to', 1),
('achieve', 1),
('long-term', 1),
('success,', 1),
('Big', 1),
('Data', 1),
('is', 1),
('more', 1),
('than', 1),
('just', 1),
('the', 1),
('combination', 1),
('of', 1),
('skilled', 1),
('people', 1),
('and', 1),
('technology', 1),
('-', 1),
('it', 1),
('requires', 1),
('structure', 1),
('and', 1),
('capabilities.', 1),
('The', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('was', 1),
('developed', 1),
('because', 1),
('-', 1),
('although', 1),
('the', 1),
('benefits', 1),
('and', 1),
('business', 1),
('cases', 1),
('of', 1),
('Big', 1),
('Data', 1),
('are', 1),
('apparent', 1),
('-', 1),
```

```
('many', 1),
('organizations', 1),
('struggle', 1),
('to', 1),
('embed', 1),
('a', 1),
('successful', 1),
('Big', 1),
('Data', 1),
('practice', 1),
('in', 1),
('their', 1),
('organization.', 1),
('The', 1),
('structure', 1),
('provided', 1),
('by', 1),
('the', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('provides', 1),
('an', 1),
('approach', 1),
('for', 1),
('organizations', 1),
('that', 1),
('takes', 1),
('into', 1),
('account', 1),
('all', 1),
('organizational', 1),
('capabilities', 1),
('of', 1),
('a', 1),
('successful', 1),
('Big', 1),
('Data', 1),
('practice.', 1),
('All', 1),
('the', 1),
('way', 1),
('from', 1),
('the', 1),
('definition', 1),
('of', 1),
('a', 1),
```

```
('Big', 1),
('Data', 1),
('strategy,', 1),
('to', 1),
('the', 1),
('technical', 1),
('tools', 1),
('and', 1),
('capabilities', 1),
('an', 1),
('organization', 1),
('should', 1),
('have.', 1),
('The', 1),
('main', 1),
('benefits', 1),
('of', 1),
('applying', 1),
('a', 1),
('Big', 1),
('Data', 1),
('framework', 1),
('include:', 1),
('The', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('provides', 1),
('a', 1),
('structure', 1),
('for', 1),
('organisations', 1),
('that', 1),
('want', 1),
('to', 1),
('start', 1),
('with', 1),
('Big', 1),
('Data', 1),
('or', 1),
('aim', 1),
('to', 1),
('develop', 1),
('their', 1),
('Big', 1),
('Data', 1),
('capabilities', 1),
```

```
('further.', 1),
('The', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('includes', 1),
('all', 1),
('organisational', 1),
('aspects', 1),
('that', 1),
('should', 1),
('be', 1),
('taken', 1),
('into', 1),
('account', 1),
('in', 1),
('a', 1),
('Big', 1),
('Data', 1),
('organization.', 1),
('The', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('is', 1),
('vendor', 1),
('independent.', 1),
('It', 1),
('can', 1),
('be', 1),
('applied', 1),
('to', 1),
('any', 1),
('organization', 1),
('regardless', 1),
('of', 1),
('choice', 1),
('of', 1),
('technology,', 1),
('specialisation', 1),
('or', 1),
('tools.', 1),
('The', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('provides', 1),
```

```
('a', 1),
('common', 1),
('reference', 1),
('model', 1),
('that', 1),
('can', 1),
('be', 1),
('used', 1),
('across', 1),
('departmental', 1),
('functions', 1),
('or', 1),
('country', 1),
('boundaries.', 1),
('The', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('identifies', 1),
('core', 1),
('and', 1),
('measurable', 1),
('capabilities', 1),
('in', 1),
('each', 1),
('of', 1),
('its', 1),
('six', 1),
('domains', 1),
('so', 1),
('that', 1),
('the', 1),
('organization', 1),
('can', 1),
('develop', 1),
('over', 1),
('time.', 1),
('Big', 1),
('Data', 1),
('is', 1),
('a', 1),
('people', 1),
('business.', 1),
('Even', 1),
('with', 1),
('the', 1),
('most', 1),
```

```
('advanced', 1),
('computers', 1),
('and', 1),
('processors', 1),
('in', 1),
('the', 1),
('world,', 1),
('organisations', 1),
('will', 1),
('not', 1),
('be', 1),
('successful', 1),
('without', 1),
('the', 1),
('appropriate', 1),
('knowledge', 1),
('and', 1),
('skills.', 1),
('The', 1),
('Big', 1),
('Data', 1),
('Framework', 1),
('therefore', 1),
('aims', 1),
('to', 1),
('increase', 1),
('the', 1),
('knowledge', 1),
('of', 1),
('everyone', 1),
('who', 1),
('is', 1),
('interested', 1),
('in', 1),
('Big', 1),
('Data.', 1),
('The', 1),
('modular', 1),
('approach', 1),
('and', 1),
('accompanying', 1),
('certification', 1),
('scheme', 1),
('aims', 1),
('to', 1),
('develop', 1),
('knowledge', 1),
```

```
        ('about', 1),
        ('Big', 1),
        ('Data', 1),
        ('in', 1),
        ('a', 1),
        ('similar', 1),
        ('structured', 1),
        ('fashion.', 1)]
```

[16]: `word_counts_rdd = word_tuples_rdd.reduceByKey(lambda x, y: x + y)`

[17]: `result = word_counts_rdd.collect()`

[18]: `sorted(result, key=lambda x: x[1])`

[18]:
```
[('enterprise', 1),
 ('benefit', 1),
 ('potential', 1),
 ('long-term', 1),
 ('more', 1),
 ('than', 1),
 ('just', 1),
 ('combination', 1),
 ('technology', 1),
 ('capabilities.', 1),
 ('was', 1),
 ('developed', 1),
 ('although', 1),
 ('business', 1),
 ('cases', 1),
 ('are', 1),
 ('apparent', 1),
 ('organizational', 1),
 ('way', 1),
 ('technical', 1),
 ('tools', 1),
 ('have.', 1),
 ('applying', 1),
 ('framework', 1),
 ('include:', 1),
 ('start', 1),
 ('further.', 1),
 ('aspects', 1),
 ('independent.', 1),
 ('It', 1),
 ('applied', 1),
 ('regardless', 1),
```

```
('common', 1),
('reference', 1),
('model', 1),
('used', 1),
('departmental', 1),
('functions', 1),
('country', 1),
('boundaries.', 1),
('identifies', 1),
('measurable', 1),
('domains', 1),
('business.', 1),
('computers', 1),
('world,', 1),
('skills.', 1),
('increase', 1),
('interested', 1),
('modular', 1),
('accompanying', 1),
('similar', 1),
('Frameworks', 1),
('structure.', 1),
('objective', 1),
('In', 1),
('order', 1),
('achieve', 1),
('success,', 1),
('skilled', 1),
('it', 1),
('requires', 1),
('because', 1),
('many', 1),
('struggle', 1),
('embed', 1),
('practice', 1),
('provided', 1),
('by', 1),
('takes', 1),
('practice.', 1),
('All', 1),
('definition', 1),
('strategy,', 1),
('main', 1),
('want', 1),
('includes', 1),
('organisational', 1),
('taken', 1),
```

```
('vendor', 1),
('any', 1),
('choice', 1),
('technology,', 1),
('specialisation', 1),
('tools.', 1),
('across', 1),
('each', 1),
('its', 1),
('six', 1),
('so', 1),
('over', 1),
('time.', 1),
('Even', 1),
('most', 1),
('advanced', 1),
('processors', 1),
('will', 1),
('not', 1),
('without', 1),
('appropriate', 1),
('therefore', 1),
('everyone', 1),
('who', 1),
('certification', 1),
('scheme', 1),
('about', 1),
('structured', 1),
('fashion.', 1),
('provide', 2),
('benefits', 2),
('organizations', 2),
('an', 2),
('approach', 2),
('into', 2),
('account', 2),
('core', 2),
('aim', 2),
('from', 2),
('Data.', 2),
('people', 2),
('their', 2),
('organization.', 2),
('all', 2),
('should', 2),
('with', 2),
('aims', 2),
```

```
    ('organisations', 3),
    ('provides', 3),
    ('knowledge', 3),
    ('for', 3),
    ('-', 3),
    ('successful', 3),
    ('organization', 3),
    ('or', 3),
    ('develop', 3),
    ('can', 3),
    ('structure', 4),
    ('capabilities', 4),
    ('be', 4),
    ('is', 5),
    ('in', 6),
    ('that', 6),
    ('and', 8),
    ('Framework', 9),
    ('to', 10),
    ('a', 10),
    ('The', 11),
    ('of', 11),
    ('the', 13),
    ('Data', 20),
    ('Big', 22)]
```

[ ]: