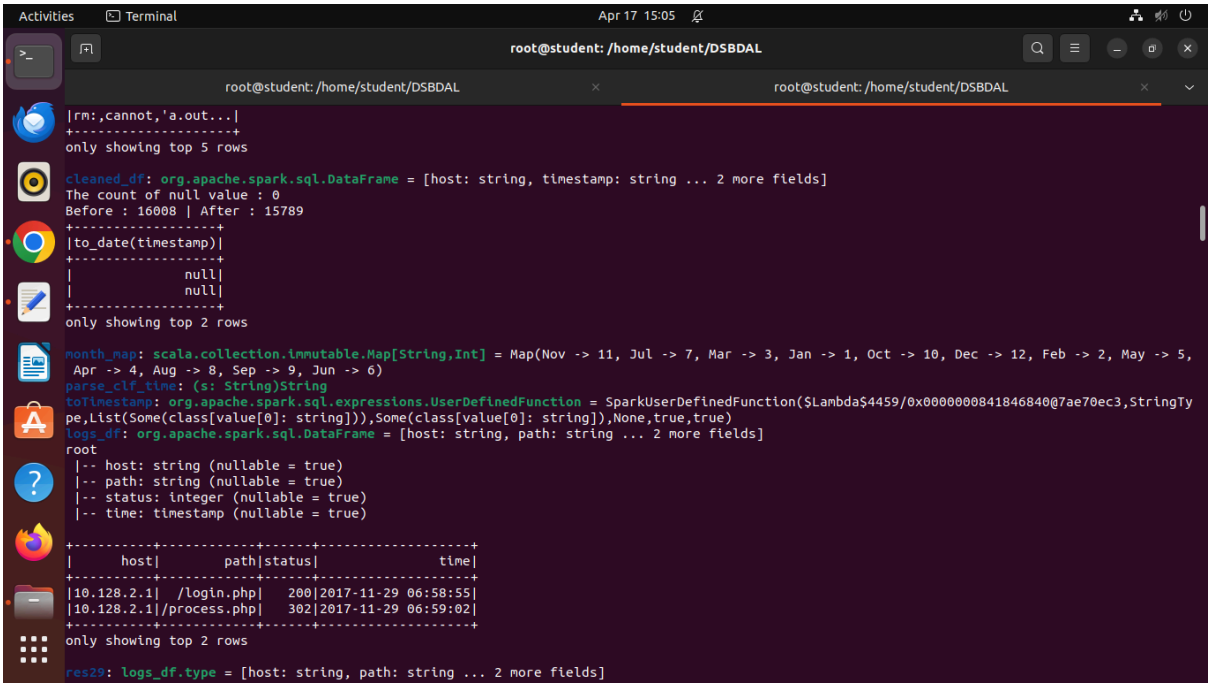
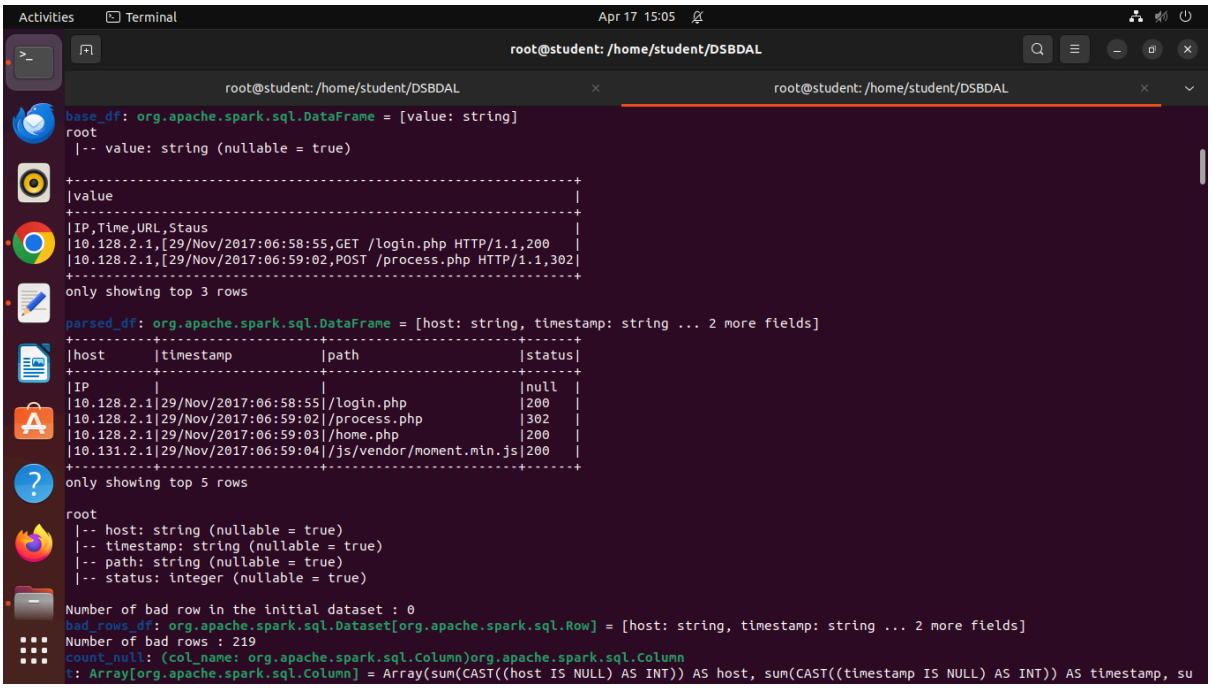
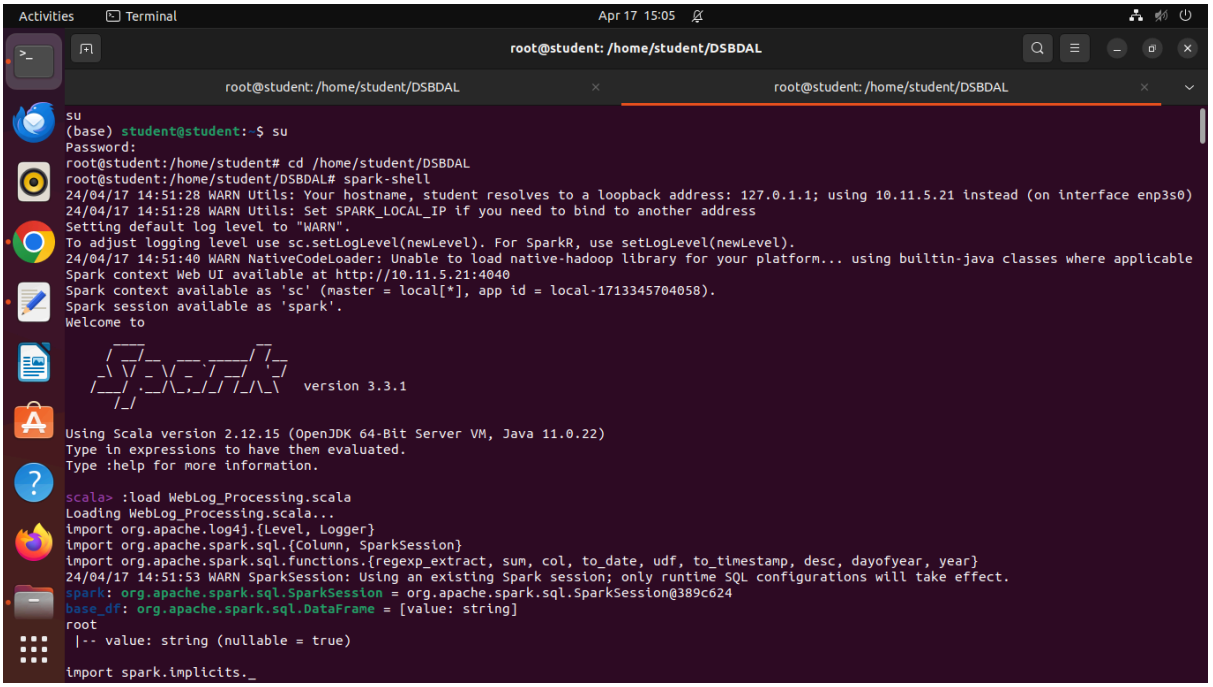
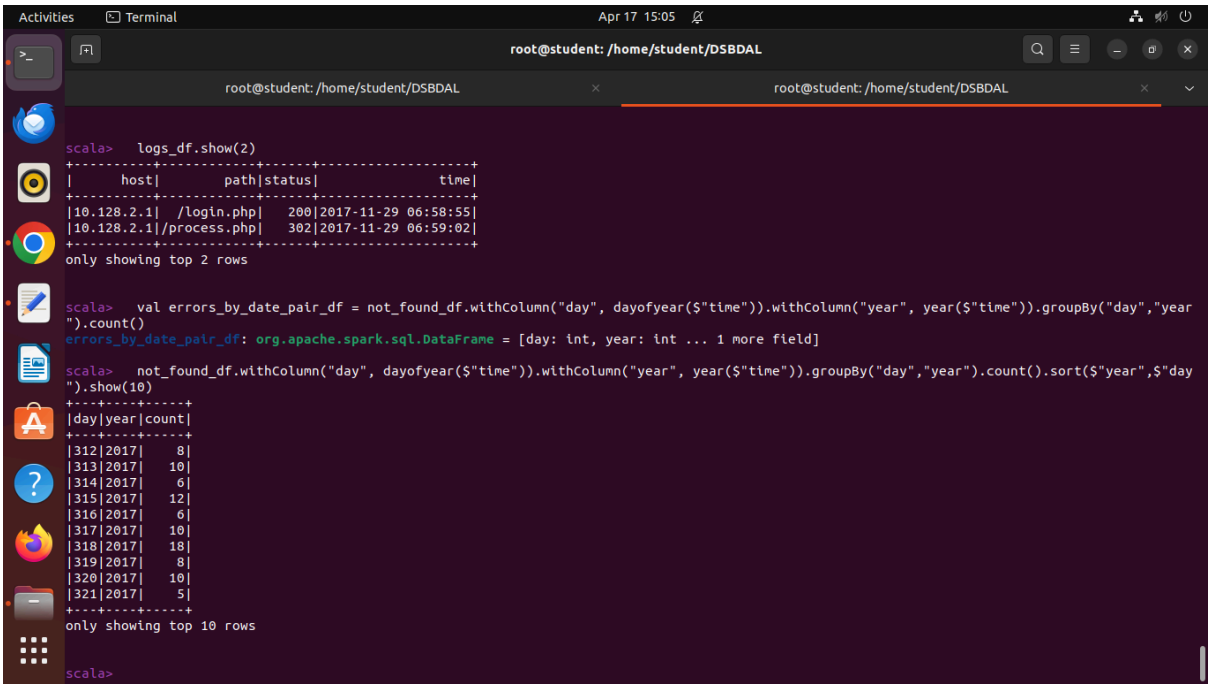
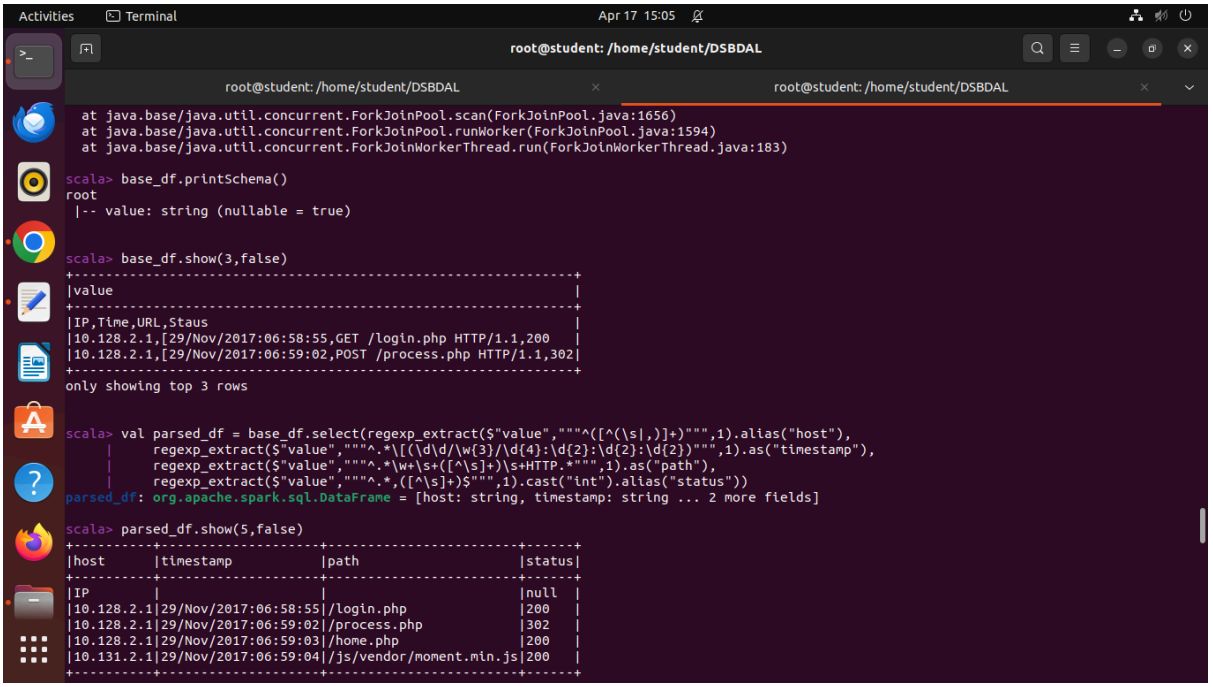
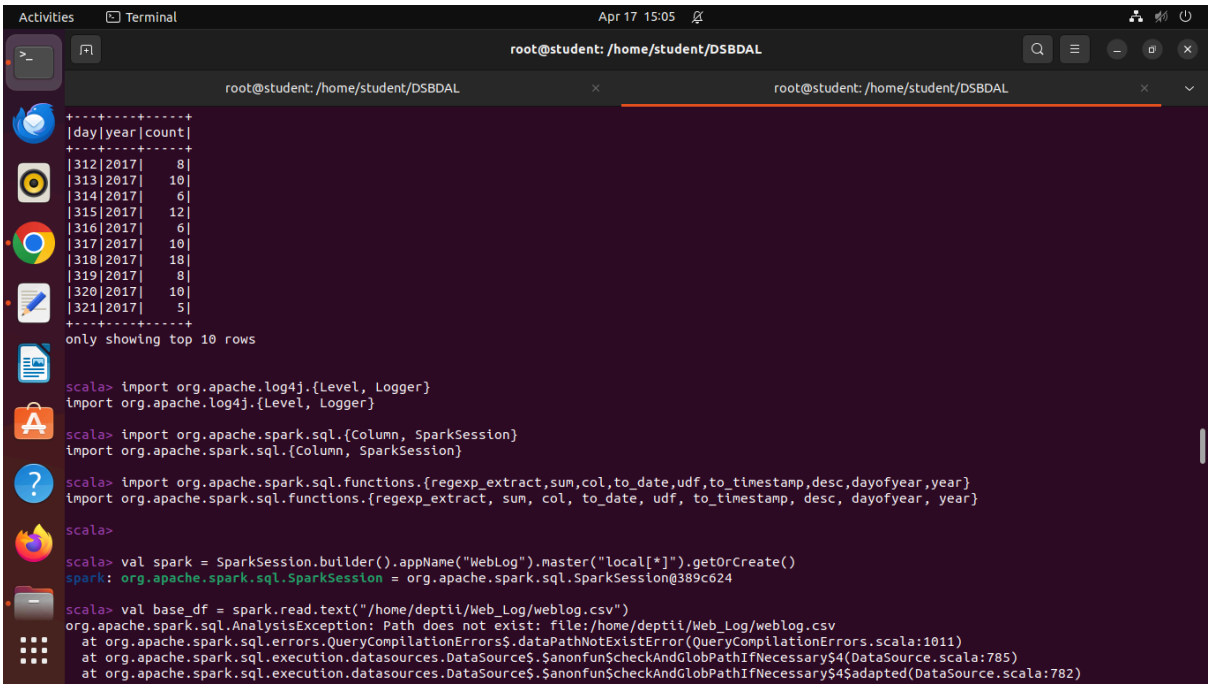

Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
|rm:,cannot,'a.out...|
only showing top 5 rows
cleaned_df: org.apache.spark.sql.DataFrame = [host: string, timestamp: string ... 2 more fields]
The count of null value : 0
Before : 16008 | After : 15789
|to_date(timestamp)|
|null|
|null|
only showing top 2 rows
month_map: scala.collection.immutable.Map[String,Int] = Map(Nov -> 11, Jul -> 7, Mar -> 3, Jan -> 1, Oct -> 10, Dec -> 12, Feb -> 2, May -> 5, Apr -> 4, Aug -> 8, Sep -> 9, Jun -> 6)
parse_clf_time: (s: String)String
toTimestamp: org.apache.spark.sql.expressions.UserDefinedFunction = SparkUserDefinedFunction($Lambda$4459/0x0000000841846840@7ae70ec3,StringType,List(Some(class[value[0]: string])),Some(class[value[0]: string]),None,true,true)
logs_df: org.apache.spark.sql.DataFrame = [host: string, path: string ... 2 more fields]
root
|-- host: string (nullable = true)
|-- path: string (nullable = true)
|-- status: integer (nullable = true)
|-- time: timestamp (nullable = true)
|host|path|status|time|
|10.128.2.1| /login.php| 200|2017-11-29 06:58:55|
|10.128.2.1|/process.php| 302|2017-11-29 06:59:02|
only showing top 2 rows
res29: logs_df.type = [host: string, path: string ... 2 more fields]

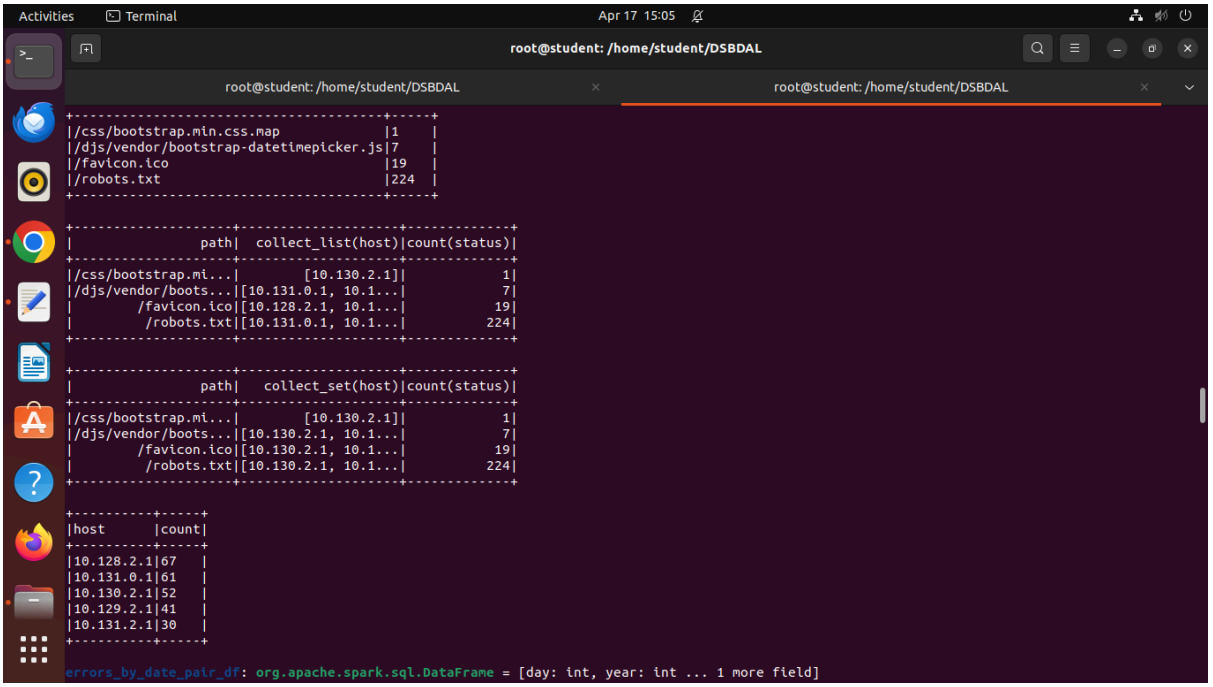

Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
base_df: org.apache.spark.sql.DataFrame = [value: string]
root
|-- value: string (nullable = true)
|value|
|IP,Time,URL,Staus|
|10.128.2.1,[29/Nov/2017:06:58:55,GET /login.php HTTP/1.1,200|
|10.128.2.1,[29/Nov/2017:06:59:02,POST /process.php HTTP/1.1,302|
only showing top 3 rows
parsed_df: org.apache.spark.sql.DataFrame = [host: string, timestamp: string ... 2 more fields]
host	timestamp	path	status
IP			null
10.128.2.1	29/Nov/2017:06:58:55	/login.php	200
10.128.2.1	29/Nov/2017:06:59:02	/process.php	302
10.128.2.1	29/Nov/2017:06:59:03	/home.php	200
10.131.2.1	29/Nov/2017:06:59:04	/js/vendor/moment.min.js	200
only showing top 5 rows
root
-- host: string (nullable = true)
-- timestamp: string (nullable = true)
-- path: string (nullable = true)
-- status: integer (nullable = true)
Number of bad row in the initial dataset : 0
bad_rows_df: org.apache.spark.sql.Dataset[org.apache.spark.sql.Row] = [host: string, timestamp: string ... 2 more fields]
Number of bad rows : 219
count_null: (col_name: org.apache.spark.sql.Column)org.apache.spark.sql.Column
t: Array[org.apache.spark.sql.Column] = Array(sum(CAST((host IS NULL) AS INT)) AS host, sum(CAST((timestamp IS NULL) AS INT)) AS timestamp, su

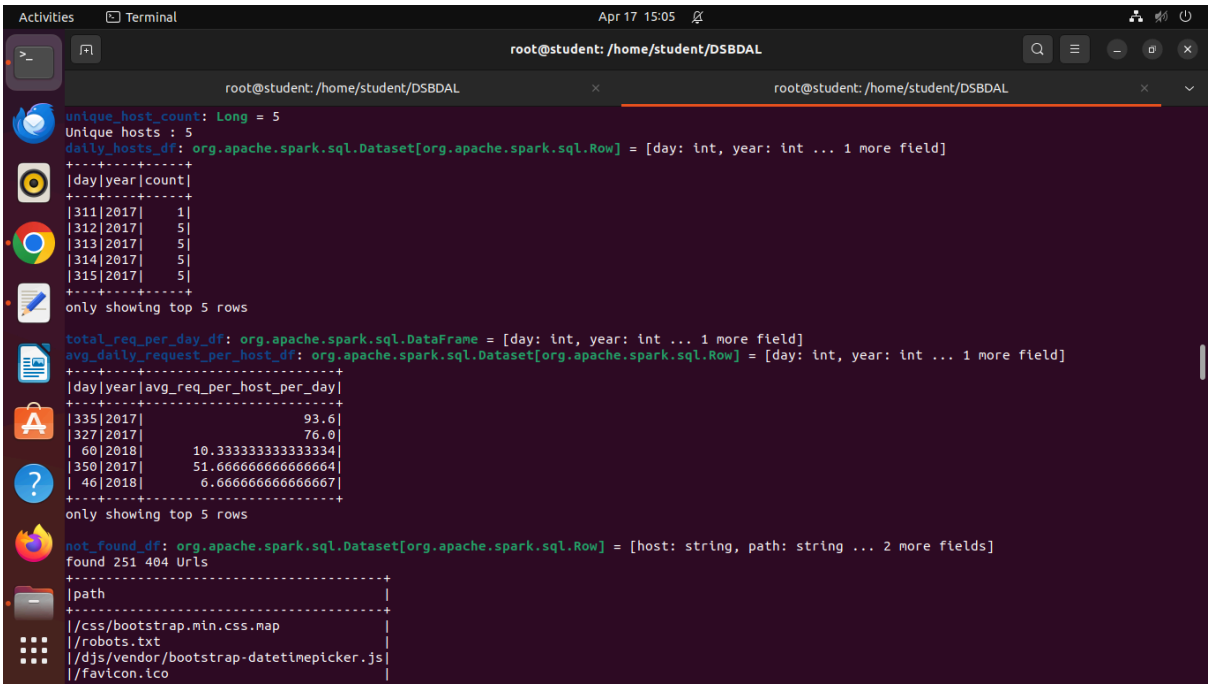

Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
su
(base) student@student:~$ su
Password:
root@student:/home/student# cd /home/student/DSBDAL
root@student:/home/student/DSBDAL# spark-shell
24/04/17 14:51:28 WARN Utils: Your hostname, student resolves to a loopback address: 127.0.1.1; using 10.11.5.21 instead (on interface enp3s0)
24/04/17 14:51:28 WARN Utils: Set SPARK_LOCAL_IP if you need to bind to another address
Setting default log level to "WARN".
To adjust logging level use sc.setLogLevel(newLevel). For SparkR, use setLogLevel(newLevel).
24/04/17 14:51:40 WARN NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Spark context Web UI available at http://10.11.5.21:4040
Spark context available as 'sc' (master = local[*], app id = local-1713345704058).
Spark session available as 'spark'.
Welcome to
version 3.3.1
Using Scala version 2.12.15 (OpenJDK 64-Bit Server VM, Java 11.0.22)
Type in expressions to have them evaluated.
Type :help for more information.
scala> :load WebLog_Processing.scala
Loading WebLog_Processing.scala...
import org.apache.log4j.{Level, Logger}
import org.apache.spark.sql.{Column, SparkSession}
import org.apache.spark.sql.functions.{regexp_extract, sum, col, to_date, udf, to_timestamp, desc, dayofyear, year}
24/04/17 14:51:53 WARN SparkSession: Using an existing Spark session; only runtime SQL configurations will take effect.
spark: org.apache.spark.sql.SparkSession = org.apache.spark.sql.SparkSession@389c624
base_df: org.apache.spark.sql.DataFrame = [value: string]
root
|-- value: string (nullable = true)
import spark.implicits._

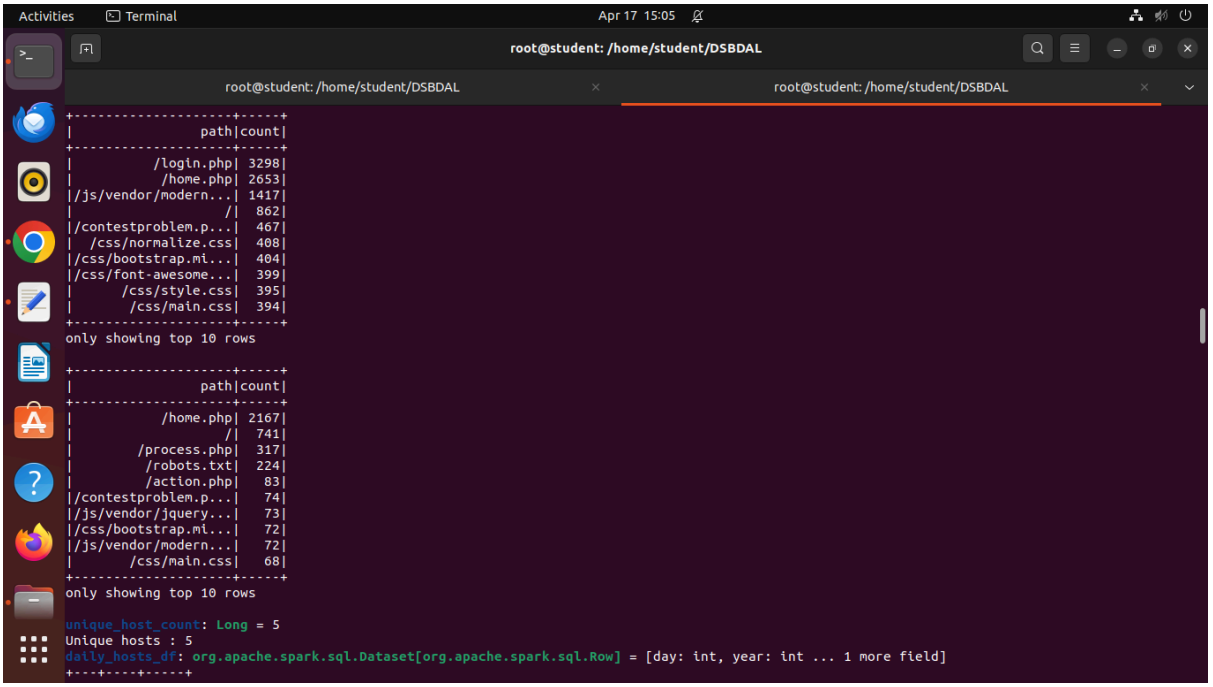

Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
scala> logs_df.show(2)
+----------+-----------+------+-------------------+
| host| path|status| time|
+----------+-----------+------+-------------------+
|10.128.2.1| /login.php| 200|2017-11-29 06:58:55|
|10.128.2.1|/process.php| 302|2017-11-29 06:59:02|
+----------+-----------+------+-------------------+
only showing top 2 rows
scala> val errors_by_date_pair_df = not_found_df.withColumn("day", dayofyear($"time")).withColumn("year", year($"time")).groupBy("day","year").count()
errors_by_date_pair_df: org.apache.spark.sql.DataFrame = [day: int, year: int ... 1 more field]
scala> not_found_df.withColumn("day", dayofyear($"time")).withColumn("year", year($"time")).groupBy("day","year").count().sort($"year",$"day").show(10)
+---+----+-----+
|day|year|count|
+---+----+-----+
312	2017	8
313	2017	10
314	2017	6
315	2017	12
316	2017	6
317	2017	10
318	2017	18
319	2017	8
320	2017	10
321	2017	5
+---+----+-----+
only showing top 10 rows
scala>

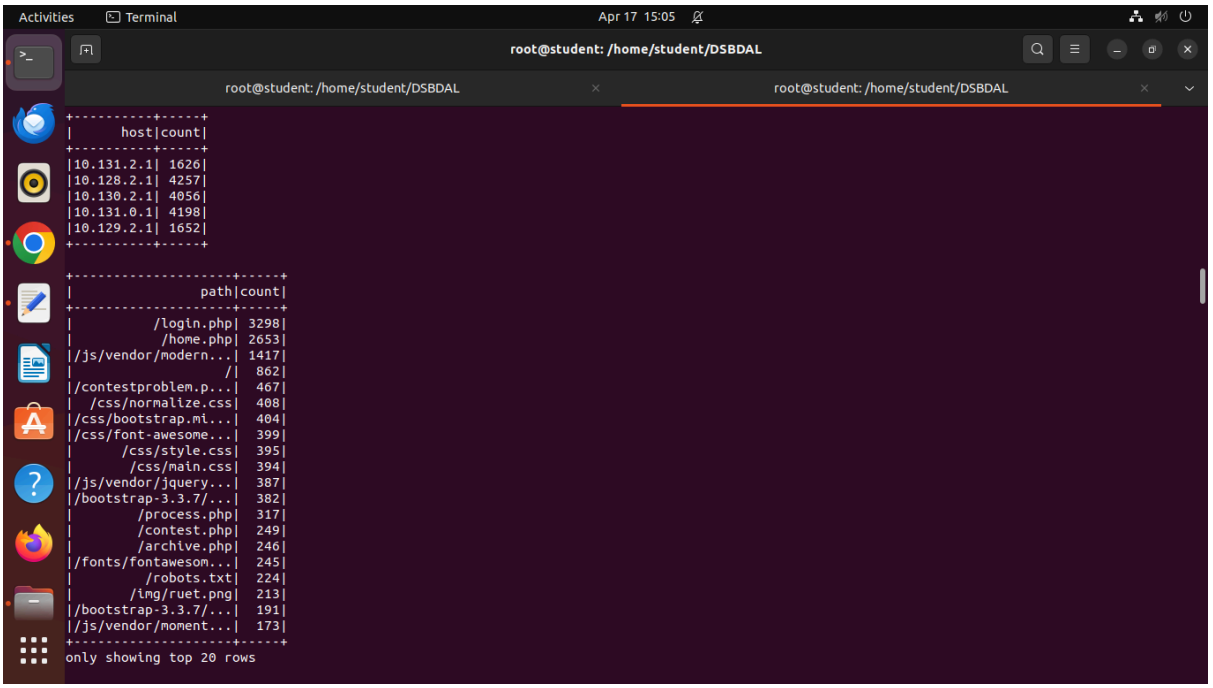

Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
at java.base/java.util.concurrent.ForkJoinPool.scan(ForkJoinPool.java:1656)
at java.base/java.util.concurrent.ForkJoinPool.runWorker(ForkJoinPool.java:1594)
at java.base/java.util.concurrent.ForkJoinWorkerThread.run(ForkJoinWorkerThread.java:183)
scala> base_df.printSchema()
root
|-- value: string (nullable = true)
scala> base_df.show(3,false)
+---+
|value |
+---+
|IP,Time,URL,Staus |
|10.128.2.1,[29/Nov/2017:06:58:55,GET /login.php HTTP/1.1,200 |
|10.128.2.1,[29/Nov/2017:06:59:02,POST /process.php HTTP/1.1,302|
+---+
only showing top 3 rows
scala> val parsed_df = base_df.select(regexp_extract($"value","""^([^(\s|,)]+)""",1).alias("host"),
| regexp_extract($"value","""^.*\[(\d\d/\w{3}/\d{4}:\d{2}:\d{2}:\d{2})""",1).as("timestamp"),
| regexp_extract($"value","""^.*\w+\s+([^\s]+)\s+HTTP.*""",1).as("path"),
| regexp_extract($"value","""^.*,([^\s]+)$""",1).cast("int").alias("status"))
parsed_df: org.apache.spark.sql.DataFrame = [host: string, timestamp: string ... 2 more fields]
scala> parsed_df.show(5,false)
+----------+--------------------+-----------------------+------+
|host |timestamp |path |status|
+----------+--------------------+-----------------------+------+
IP			null
10.128.2.1	29/Nov/2017:06:58:55	/login.php	200
10.128.2.1	29/Nov/2017:06:59:02	/process.php	302
10.128.2.1	29/Nov/2017:06:59:03	/home.php	200
10.131.2.1	29/Nov/2017:06:59:04	/js/vendor/moment.min.js	200
+----------+--------------------+-----------------------+------+


Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
+---+----+-----+
|day|year|count|
+---+----+-----+
312	2017	8
313	2017	10
314	2017	6
315	2017	12
316	2017	6
317	2017	10
318	2017	18
319	2017	8
320	2017	10
321	2017	5
+---+----+-----+
only showing top 10 rows
scala> import org.apache.log4j.{Level, Logger}
import org.apache.log4j.{Level, Logger}
scala> import org.apache.spark.sql.{Column, SparkSession}
import org.apache.spark.sql.{Column, SparkSession}
scala> import org.apache.spark.sql.functions.{regexp_extract,sum,col,to_date,udf,to_timestamp,desc,dayofyear,year}
import org.apache.spark.sql.functions.{regexp_extract, sum, col, to_date, udf, to_timestamp, desc, dayofyear, year}
scala>
scala> val spark = SparkSession.builder().appName("WebLog").master("local[*]").getOrCreate()
spark: org.apache.spark.sql.SparkSession = org.apache.spark.sql.SparkSession@389c624
scala> val base_df = spark.read.text("/home/deptii/Web_Log/weblog.csv")
org.apache.spark.sql.AnalysisException: Path does not exist: file:/home/deptii/Web_Log/weblog.csv
at org.apache.spark.sql.errors.QueryCompilationErrors$.dataPathNotExistError(QueryCompilationErrors.scala:1011)
at org.apache.spark.sql.execution.datasources.DataSource$.$anonfun$checkAndGlobPathIfNecessary$4(DataSource.scala:785)
at org.apache.spark.sql.execution.datasources.DataSource$.$anonfun$checkAndGlobPathIfNecessary4adapted(DataSource.scala:782)


Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
+--------------------------------------+-----+
/css/bootstrap.min.css.map	1
/djs/vendor/bootstrap-datetimepicker.js	7
/favicon.ico	19
/robots.txt	224
+--------------------------------------+-----+
+--------------------+--------------------+------------+
| path| collect_list(host)|count(status)|
+--------------------+--------------------+------------+
|/css/bootstrap.mi...| [10.130.2.1]| 1|
/djs/vendor/boots...	[10.131.0.1, 10.1...	7
/favicon.ico	[10.128.2.1, 10.1...	19
/robots.txt	[10.131.0.1, 10.1...	224
+--------------------+--------------------+------------+
+--------------------+--------------------+------------+
| path| collect_set(host)|count(status)|
+--------------------+--------------------+------------+
|/css/bootstrap.mi...| [10.130.2.1]| 1|
/djs/vendor/boots...	[10.130.2.1, 10.1...	7
/favicon.ico	[10.130.2.1, 10.1...	19
/robots.txt	[10.130.2.1, 10.1...	224
+--------------------+--------------------+------------+
+----------+-----+
|host |count|
+----------+-----+
10.128.2.1	67
10.131.0.1	61
10.130.2.1	52
10.129.2.1	41
10.131.2.1	30
+----------+-----+
errors_by_date_pair_df: org.apache.spark.sql.DataFrame = [day: int, year: int ... 1 more field]


Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
unique_host_count: Long = 5
Unique hosts : 5
daily_hosts_df: org.apache.spark.sql.Dataset[org.apache.spark.sql.Row] = [day: int, year: int ... 1 more field]
+---+----+-----+
|day|year|count|
+---+----+-----+
311	2017	1
312	2017	5
313	2017	5
314	2017	5
315	2017	5
+---+----+-----+
only showing top 5 rows
total_req_per_day_df: org.apache.spark.sql.DataFrame = [day: int, year: int ... 1 more field]
avg_daily_request_per_host_df: org.apache.spark.sql.Dataset[org.apache.spark.sql.Row] = [day: int, year: int ... 1 more field]
+---+----+------------------------+
|day|year|avg_req_per_host_per_day|
+---+----+------------------------+
335	2017	93.6
327	2017	76.0
60	2018	10.333333333333334
350	2017	51.666666666666664
46	2018	6.666666666666667
+---+----+------------------------+
only showing top 5 rows
not_found_df: org.apache.spark.sql.Dataset[org.apache.spark.sql.Row] = [host: string, path: string ... 2 more fields]
found 251 404 Urls
+--------------------------------------+
|path |
+--------------------------------------+
|/css/bootstrap.min.css.map |
|/robots.txt |
|/djs/vendor/bootstrap-datetimepicker.js|
|/favicon.ico |


Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
+--------------------+-----+
| path|count|
+--------------------+-----+
| /login.php| 3298|
| /home.php| 2653|
|/js/vendor/modern...| 1417|
| /| 862|
|/contestproblem.p...| 467|
| /css/normalize.css| 408|
|/css/bootstrap.mi...| 404|
|/css/font-awesome...| 399|
| /css/style.css| 395|
| /css/main.css| 394|
+--------------------+-----+
only showing top 10 rows
+--------------------+-----+
| path|count|
+--------------------+-----+
/home.php	2167
/	741
/process.php	317
/robots.txt	224
/action.php	83
/contestproblem.p...	74
/js/vendor/jquery...	73
/css/bootstrap.mi...	72
/js/vendor/modern...	72
/css/main.css	68
+--------------------+-----+
only showing top 10 rows
unique_host_count: Long = 5
Unique hosts : 5
daily_hosts_df: org.apache.spark.sql.Dataset[org.apache.spark.sql.Row] = [day: int, year: int ... 1 more field]
+---+----+-----+


Activities
Terminal
Apr 17 15:05
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
root@student: /home/student/DSBDAL
+----------+-----+
| host|count|
+----------+-----+
|10.131.2.1| 1626|
|10.128.2.1| 4257|
|10.130.2.1| 4056|
|10.131.0.1| 4198|
|10.129.2.1| 1652|
+----------+-----+
+--------------------+-----+
| path|count|
+--------------------+-----+
| /login.php| 3298|
| /home.php| 2653|
|/js/vendor/modern...| 1417|
| /| 862|
|/contestproblem.p...| 467|
| /css/normalize.css| 408|
|/css/bootstrap.mi...| 404|
|/css/font-awesome...| 399|
| /css/style.css| 395|
| /css/main.css| 394|
|/js/vendor/jquery...| 387|
|/bootstrap-3.3.7/...| 382|
/process.php	317
/contest.php	249
/archive.php	246
/fonts/fontawesom...	245
/robots.txt	224
/img/ruet.png	213
/bootstrap-3.3.7/...	191
/js/vendor/moment...	173
+--------------------+-----+
only showing top 20 rows