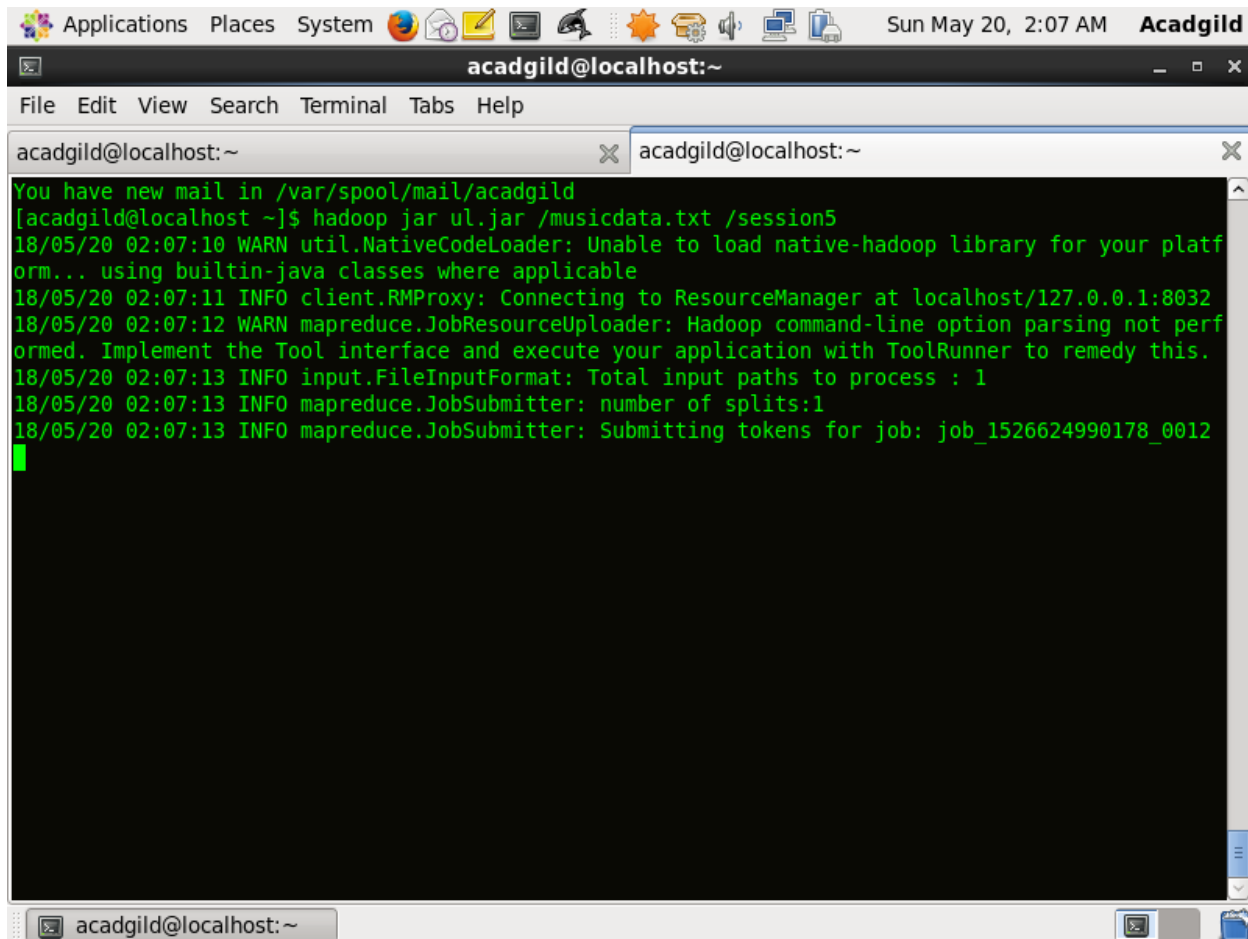


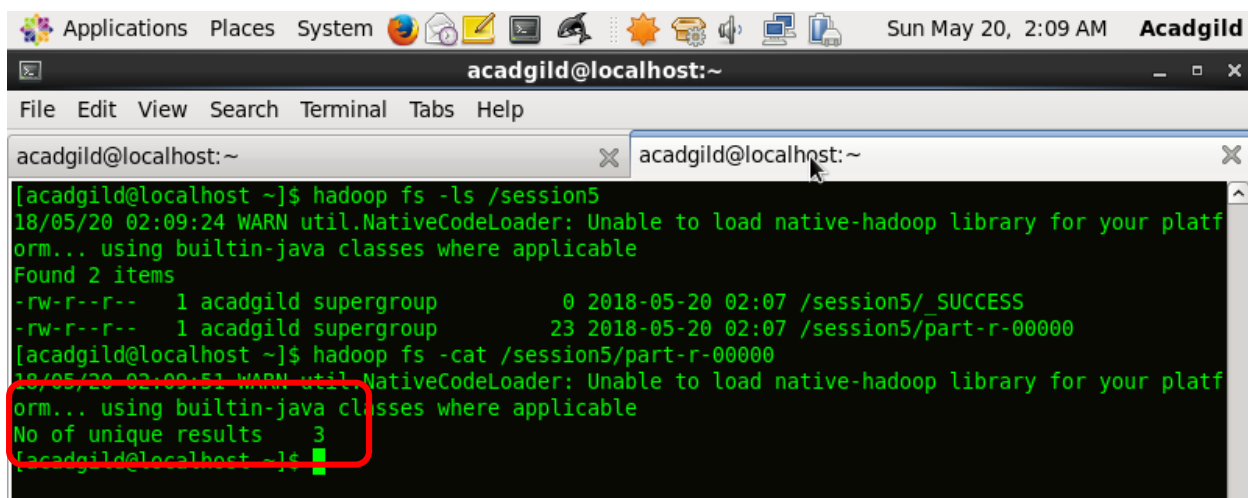
Running command : `hadoop jar ul.jar /musicdata.txt /session5`  
musicdata.txt is the source file stored in HDFS and the output directory is session5



A terminal window titled 'acadgild@localhost:~' showing the execution of a Hadoop MapReduce job. The command `hadoop jar ul.jar /musicdata.txt /session5` has been run. The output shows several log messages: a warning about the native Hadoop library, an info message about connecting to the ResourceManager, another warning about command-line option parsing, and info messages about the number of input paths, splits, and the submission of tokens for job `job_1526624990178_0012`.

```
acadgild@localhost:~  
You have new mail in /var/spool/mail/acadgild  
[acadgild@localhost ~]$ hadoop jar ul.jar /musicdata.txt /session5  
18/05/20 02:07:10 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platf  
orm... using builtin-java classes where applicable  
18/05/20 02:07:11 INFO client.RMPProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032  
18/05/20 02:07:12 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not perf  
ormed. Implement the Tool interface and execute your application with ToolRunner to remedy this.  
18/05/20 02:07:13 INFO input.FileInputFormat: Total input paths to process : 1  
18/05/20 02:07:13 INFO mapreduce.JobSubmitter: number of splits:1  
18/05/20 02:07:13 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1526624990178_0012
```

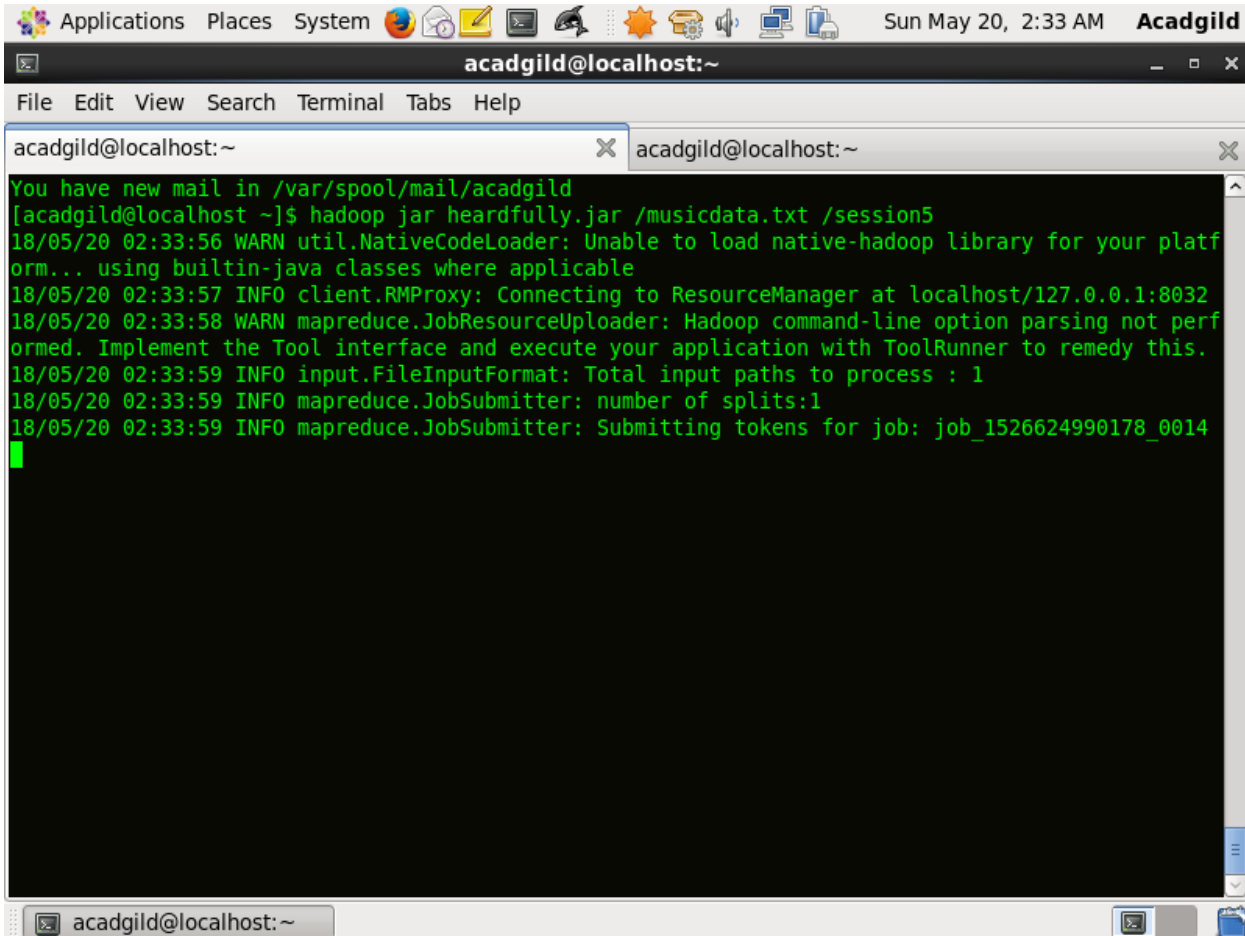
Lets check the output of number of unique listeners stored in /session5 in hdfs  
Running command to `hadoop fs -cat /session5/part-r-00000` to check the contents of the reduced output



A terminal window titled 'acadgild@localhost:~' showing the execution of two Hadoop commands. The first command, `hadoop fs -ls /session5`, lists the contents of the /session5 directory, showing two files: `/session5/_SUCCESS` and `/session5/part-r-00000`. The second command, `hadoop fs -cat /session5/part-r-00000`, displays the contents of the file `part-r-00000`, which is `No of unique results 3`. This output is highlighted with a red box.

```
acadgild@localhost:~  
[acadgild@localhost ~]$ hadoop fs -ls /session5  
18/05/20 02:09:24 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platf  
orm... using builtin-java classes where applicable  
Found 2 items  
-rw-r--r--  1 acadgild supergroup      0 2018-05-20 02:07 /session5/_SUCCESS  
-rw-r--r--  1 acadgild supergroup    23 2018-05-20 02:07 /session5/part-r-00000  
[acadgild@localhost ~]$ hadoop fs -cat /session5/part-r-00000  
18/05/20 02:09:51 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platf  
orm... using builtin-java classes where applicable  
No of unique results  3  
[acadgild@localhost ~]$
```

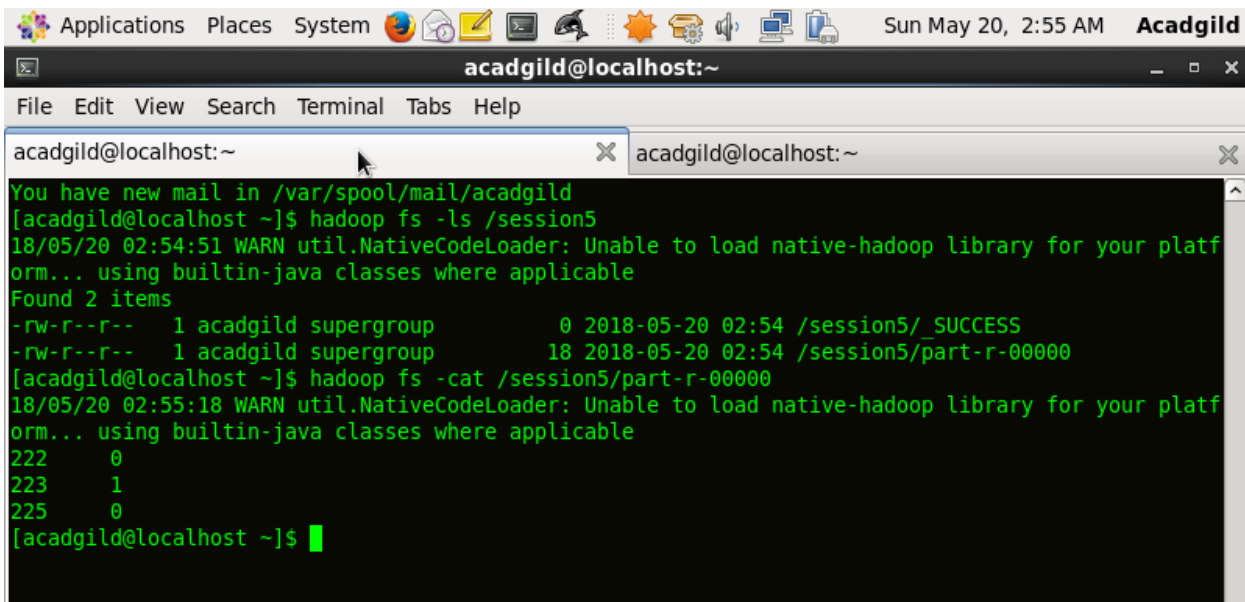
To find the number of times a song was heard fully, I have created another jar heardfully.jar. I am running this jar with the same dataset and output directory



A terminal window titled 'acadgild@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help). It shows the execution of 'hadoop jar heardfully.jar /musicdata.txt /session5'. The output includes several log messages: a warning about the native-hadoop library, an info message about RMPProxy connection, another warning about command-line option parsing, and two info messages about input paths and splits. The terminal ends with a green cursor on a new line.

```
acadgild@localhost:~  
You have new mail in /var/spool/mail/acadgild  
[acadgild@localhost ~]$ hadoop jar heardfully.jar /musicdata.txt /session5  
18/05/20 02:33:56 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platf  
orm... using builtin-java classes where applicable  
18/05/20 02:33:57 INFO client.RMPProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032  
18/05/20 02:33:58 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not perf  
ormed. Implement the Tool interface and execute your application with ToolRunner to remedy this.  
18/05/20 02:33:59 INFO input.FileInputFormat: Total input paths to process : 1  
18/05/20 02:33:59 INFO mapreduce.JobSubmitter: number of splits:1  
18/05/20 02:33:59 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1526624990178_0014  
[acadgild@localhost ~]$
```

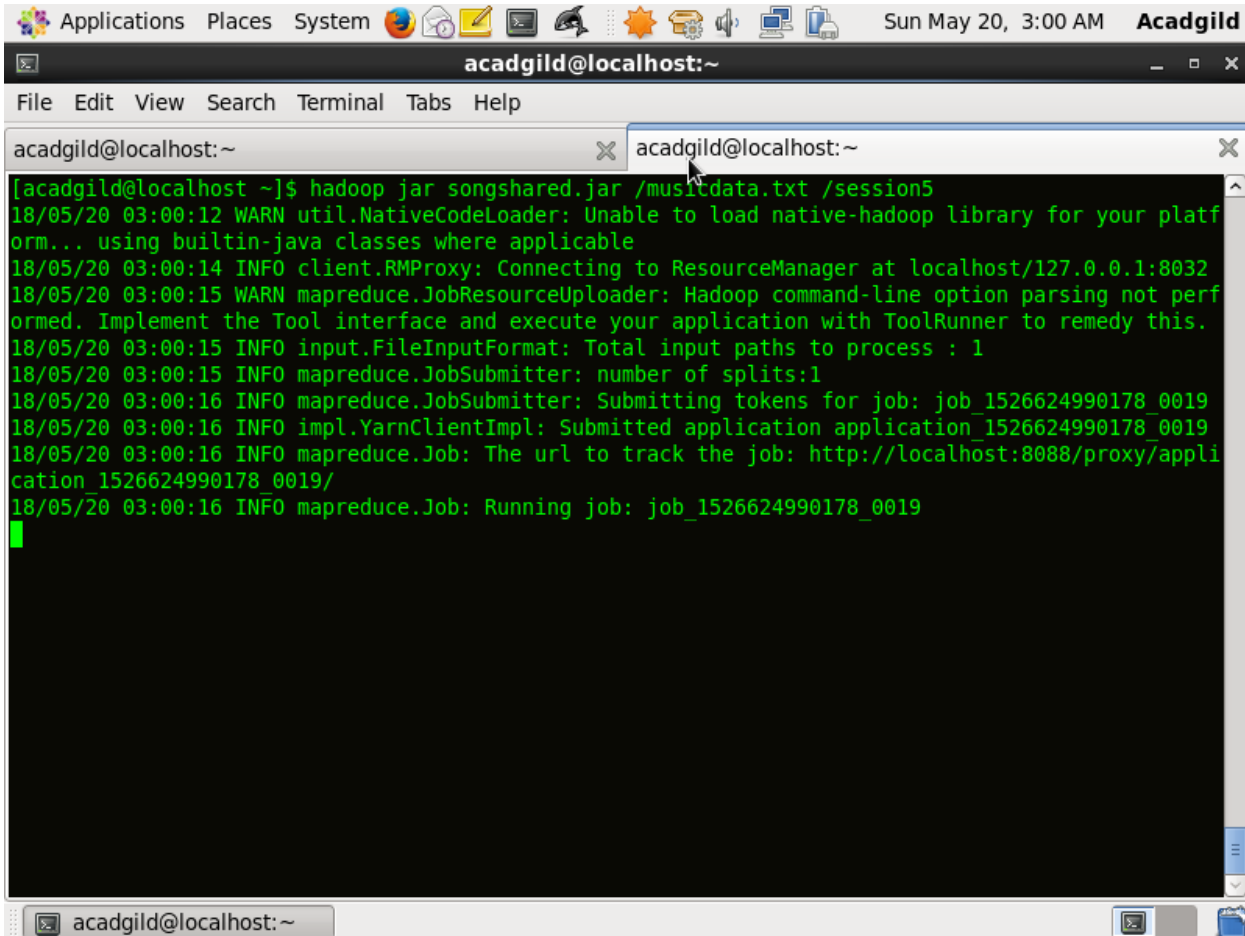
Output:



A terminal window titled 'acadgild@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help). It shows the execution of 'hadoop fs -ls /session5' and 'hadoop fs -cat /session5/part-r-00000'. The first command lists two files with permissions, owner, group, size, and timestamps. The second command outputs the contents of the file, which are three lines of numbers: '222 0', '223 1', and '225 0'. The terminal ends with a green cursor on a new line.

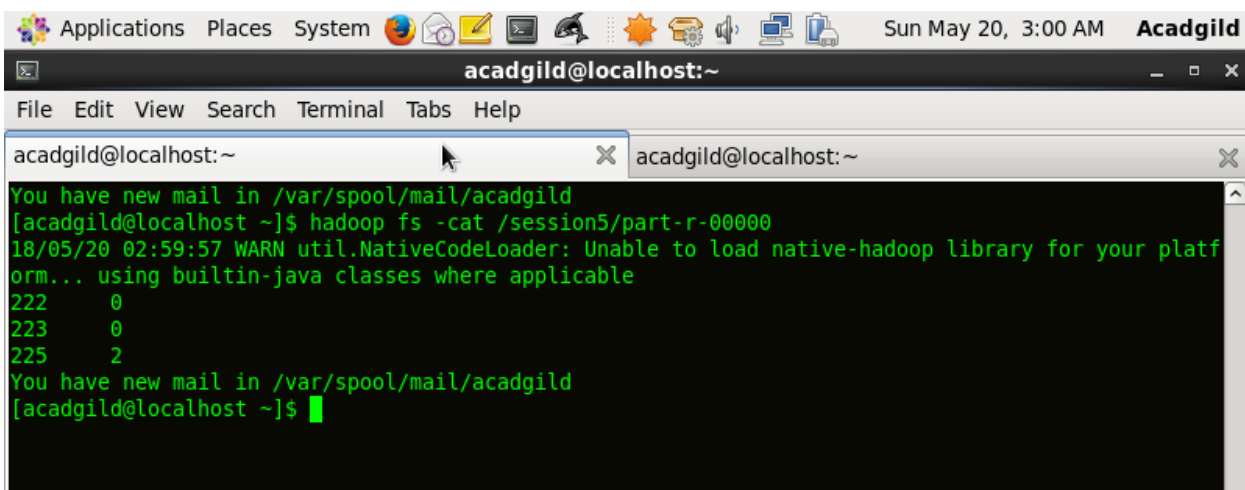
```
acadgild@localhost:~  
You have new mail in /var/spool/mail/acadgild  
[acadgild@localhost ~]$ hadoop fs -ls /session5  
18/05/20 02:54:51 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platf  
orm... using builtin-java classes where applicable  
Found 2 items  
-rw-r--r-- 1 acadgild supergroup 0 2018-05-20 02:54 /session5/ SUCCESS  
-rw-r--r-- 1 acadgild supergroup 18 2018-05-20 02:54 /session5/part-r-00000  
[acadgild@localhost ~]$ hadoop fs -cat /session5/part-r-00000  
18/05/20 02:55:18 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platf  
orm... using builtin-java classes where applicable  
222 0  
223 1  
225 0  
[acadgild@localhost ~]$
```

To see the number of times a song was shared, I have created another jar songshared.jar  
Running it with same dataset and storing output in /session5

A terminal window titled 'acadgild@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help). It shows the execution of a Hadoop job. The command is 'hadoop jar songshared.jar /musicdata.txt /session5'. The output includes several log messages from Hadoop, such as warnings about native code loading and information about connecting to the ResourceManager, submitting the application, and running the job. The job ID is 'job\_1526624990178\_0019'.

```
acadgild@localhost:~  
[acadgild@localhost ~]$ hadoop jar songshared.jar /musicdata.txt /session5  
18/05/20 03:00:12 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your plat  
orm... using builtin-java classes where applicable  
18/05/20 03:00:14 INFO client.RMPProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032  
18/05/20 03:00:15 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not perf  
ormed. Implement the Tool interface and execute your application with ToolRunner to remedy this.  
18/05/20 03:00:15 INFO input.FileInputFormat: Total input paths to process : 1  
18/05/20 03:00:15 INFO mapreduce.JobSubmitter: number of splits:1  
18/05/20 03:00:16 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1526624990178_0019  
18/05/20 03:00:16 INFO impl.YarnClientImpl: Submitted application application_1526624990178_0019  
18/05/20 03:00:16 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/appli  
cation_1526624990178_0019/  
18/05/20 03:00:16 INFO mapreduce.Job: Running job: job_1526624990178_0019  
[acadgild@localhost ~]$
```

Lets checkout the output:

A terminal window titled 'acadgild@localhost:~' with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help). It shows the execution of a Hadoop command to cat a file. The command is 'hadoop fs -cat /session5/part-r-00000'. The output shows the contents of the file, which are three lines of numbers: '222 0', '223 0', and '225 2'. There are also messages about new mail in the spool directory.

```
acadgild@localhost:~  
You have new mail in /var/spool/mail/acadgild  
[acadgild@localhost ~]$ hadoop fs -cat /session5/part-r-00000  
18/05/20 02:59:57 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your plat  
orm... using builtin-java classes where applicable  
222 0  
223 0  
225 2  
You have new mail in /var/spool/mail/acadgild  
[acadgild@localhost ~]$
```