

```

-rw-r--r-- 1 acadgild supergroup 16951772 2018-08-07 19:38 /hadoopdata/usecase/genome-scores.csv
-rw-r--r-- 1 acadgild supergroup 18103 2018-08-07 19:37 /hadoopdata/usecase/genome-tags.csv
-rw-r--r-- 1 acadgild supergroup 944010 2018-08-07 19:37 /hadoopdata/usecase/links.csv
-rw-r--r-- 1 acadgild supergroup 2283410 2018-08-07 19:36 /hadoopdata/usecase/movies.csv
-rw-r--r-- 1 acadgild supergroup 25389657 2018-08-07 19:39 /hadoopdata/usecase/ratings.csv

```

Here we have created the jar file (session.jar) from the java program and run the mapreduce program.

```

[acadgild@localhost ~]$ hadoop jar session.jar /hadoopdata/usecase/movies.csv /hadoopdata/usecase/ratings.csv /output
18/08/07 22:25:42 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
18/08/07 22:25:43 INFO client.RMProxy: Connecting to ResourceManager at localhost/127.0.0.1:8032
18/08/07 22:25:44 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the Tool interface and execute your application with ToolRunner to remedy this.
18/08/07 22:25:45 INFO input.FileInputFormat: Total input paths to process : 1
18/08/07 22:25:45 INFO input.FileInputFormat: Total input paths to process : 1
18/08/07 22:25:45 INFO mapreduce.JobSubmitter: number of splits:2
18/08/07 22:25:45 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1533624178420_0023
18/08/07 22:25:45 INFO impl.YarnClientImpl: Submitted application application_1533624178420_0023
18/08/07 22:25:45 INFO mapreduce.Job: The url to track the job: http://localhost:8088/proxy/application_1533624178420_0023/
18/08/07 22:25:45 INFO mapreduce.Job: Running job: job_1533624178420_0023
18/08/07 22:25:55 INFO mapreduce.Job: Job job_1533624178420_0023 running in uber mode : false
18/08/07 22:25:55 INFO mapreduce.Job: map 0% reduce 0%
18/08/07 22:26:07 INFO mapreduce.Job: map 50% reduce 0%
18/08/07 22:26:10 INFO mapreduce.Job: map 100% reduce 0%
18/08/07 22:26:23 INFO mapreduce.Job: map 100% reduce 75%
18/08/07 22:26:26 INFO mapreduce.Job: map 100% reduce 84%
18/08/07 22:26:29 INFO mapreduce.Job: map 100% reduce 94%
18/08/07 22:26:31 INFO mapreduce.Job: map 100% reduce 100%
18/08/07 22:26:31 INFO mapreduce.Job: Job job_1533624178420_0023 completed successfully
18/08/07 22:26:32 INFO mapreduce.Job: Counters: 50
  File System Counters
    FILE: Number of bytes read=20203379

    Combine output records=0
    Reduce input groups=45843
    Reduce shuffle bytes=20203385
    Reduce input records=1094418
    Reduce output records=45843
    Spilled Records=2188836
    Shuffled Maps =2
    Failed Shuffles=0
    Merged Map outputs=2
    GC time elapsed (ms)=789
    CPU time spent (ms)=18730
    Physical memory (bytes) snapshot=512204800
    Virtual memory (bytes) snapshot=6172860416
    Total committed heap usage (bytes)=325808128

  Shuffle Errors
    BAD_ID=0
    CONNECTION=0
    IO_ERROR=0
    WRONG_LENGTH=0
    WRONG_MAP=0
    WRONG_REDUCE=0

  File Input Format Counters
    Bytes Read=0

  File Output Format Counters
    Bytes Written=1520050
You have new mail in /var/spool/mail/acadgild

Found 2 items
-rw-r--r-- 1 acadgild supergroup 0 2018-08-07 22:26 /output/_SUCCESS
-rw-r--r-- 1 acadgild supergroup 1520050 2018-08-07 22:26 /output/part-r-00000
[acadgild@localhost ~]$ hadoop fs -cat /output

```

After running the map reduce program we found the following:

What are the movie titles that the user has rated?

How many times a movie has been rated by the user?

In question 2 above, what is the average rating given for a movie?

```

[acadgild@localhost ~]$ hadoop fs -cat /output/part-r-00000 | head
18/08/07 22:35:56 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Toy Story (1995)      2681      3.897799
GoldenEye (1995)     1300      3.428077
City Hall (1996)     204       3.235294
Curled (1996)       14        3.250000
"Comic 0           0         NaN
Up in Smoke (1957)   0         NaN
First Daughter (1999) 0         NaN
"Flaw 1            3.500000
Battle of Los Angeles (2011) 3      3.000000
Jason Becker: Not Dead Yet (2012) 0      NaN

```