ssh student3 10@37.139.32.56

ssh student3 10@37.139.32.56 -D localhost:8080

ssh -i /home/igor/Загрузки//id_rsa_student3_10 student3_10@37.139.32.56 -D localhost:8080 yarn jar /usr/hdp/current/hadoop-mapreduce-client/hadoop-mapreduce-examples.jar

```
Терминал-student3_10@bigdataanalytics2-head-shdpt-v31-1-0:- x

Файл Правка Вид Терминал Вкладки Справка

timelineserver run the timeline server
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0-]$ yarn jar /usr/hdp/current/hadoop-mapreduce-client/hadoop-mapreduce-examples.jar

An example program mats be given as the first argument.

Valid program names are:

aggregatewordcount: An Aggregate based map/reduce program that counts the words in the input files.

aggregatewordcount: An Aggregate based map/reduce program that computes the histogram of the words in the input files.

bbp: A map/reduce program that uses Bailey-Borwein-Plouffe to compute exact digits of Pi.

dbcount: An example job that count the pageview counts from a database.

distbbp: A map/reduce program that uses BaBP-type formula to compute exact bits of Pi.

grep: A map/reduce program that counts the matches of a regex in the input.

join: A job that effects a join over sorted, equally partitioned datasets

multifilewc: A job that counts words from several files.

pentomino: A map/reduce program that estimates Pi using a quasi. Monte Carlo method.

randomevriter: A map/reduce program that writes 106B of random textual data per node.

secondarysort: An example defining a secondary sort to the reduce.

sort: A map/reduce program that sorts the data written by the random writer.

sudoku: A sudoku solver.

teragen: Generate data for the terasort

terasort: Run the terasort

terasort: Run the terasort

terasort: Run the terasort

terasort: Run the terasort

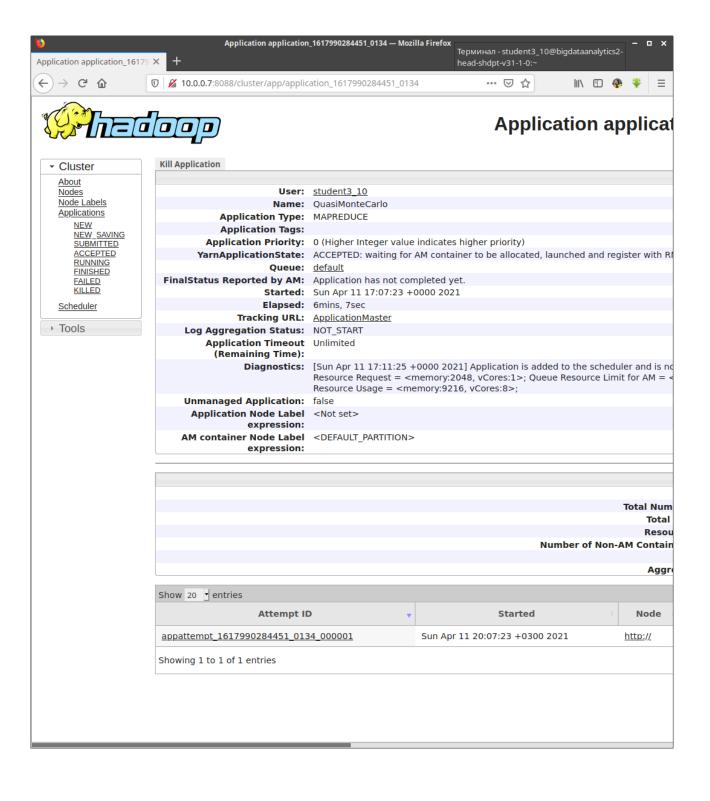
terasort: A map/reduce program that counts the words in the input files.

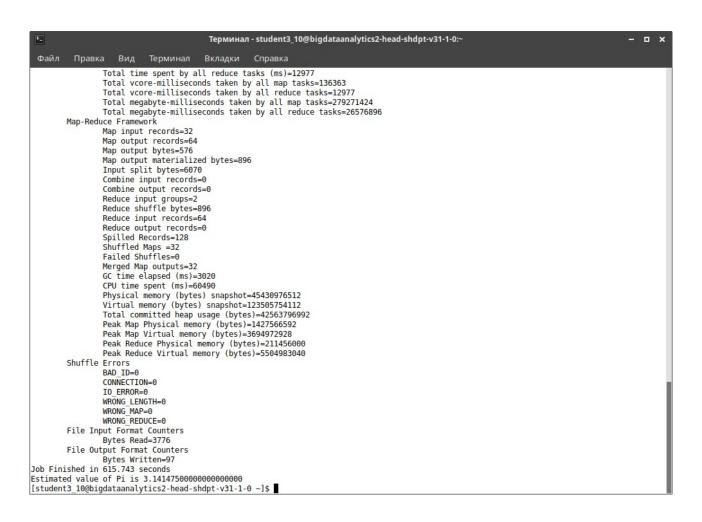
wordmena: A map/reduce program that counts the words in the input files.

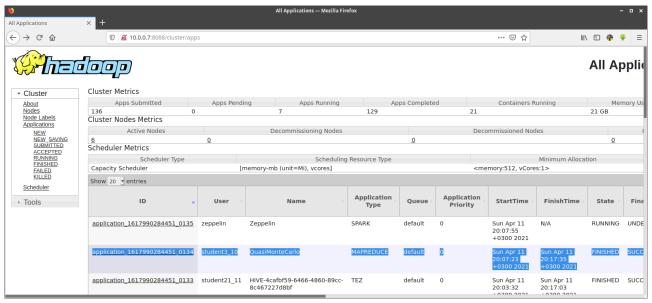
wordmena: A map/reduce program that counts the median length of the words in the input files.

wordstandarddeviation: A map/reduce program that counts the standard deviation of the length of the words in the input files.
```

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
                                                                                                                                                 _ 0
          Правка Вид Терминал Вкладки
                                                          Справка
  wordstandarddeviation: A map/reduce program that counts the standard deviation of the length of the words in the input files.
[student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ yarn jar /usr/hdp/current/hadoop-mapreduce-client/hadoop-mapreduce-cxamples.
Usage: org.apache.hadoop.examples.QuasiMonteCarlo <nMaps> <nSamples>
Generic options supported are:
-conf <configuration file>
                                        specify an application configuration file
-D <property=value>
                                        define a value for a given property
-fs <file:///|hdfs://namenode:port> specify default filesystem URL to use, overrides 'fs.defaultFS' property from configurations.
-jt <local|resourcemanager:port> specify a ResourceManager
                                        specify a comma-separated list of files to be copied to the map reduce cluster
-files <file1,...>
                                        specify a comma-separated list of intesto be included in the classpath specify a comma-separated list of jar files to be included in the classpath specify a comma-separated list of archives to be unarchived on the compute machines
-libjars <jarl,...>
-archives <archive1,...>
The general command line syntax is:
command [genericOptions] [commandOptions]
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```







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[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]\$ cat license

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IMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL T
HE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCL
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July 22, 1999

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William Hoskins

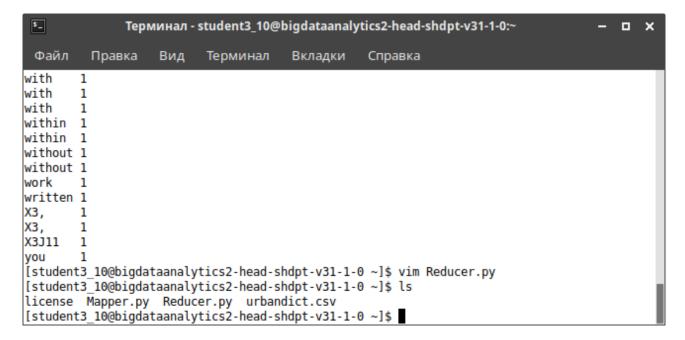
Director, Office of Technology Licensing

[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]\$

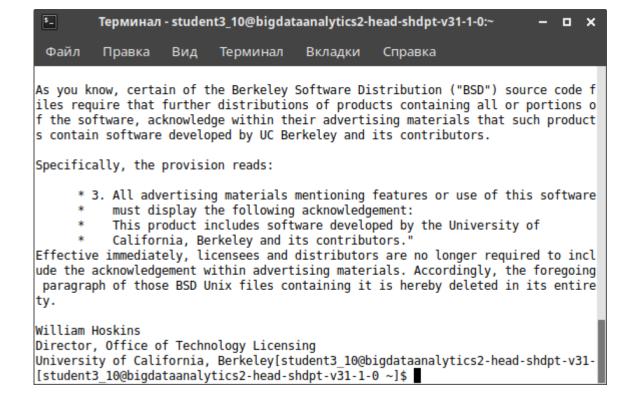
```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
                                                                                                                                        - - x
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it
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entirety.
                 1
William 1
Hoskins 1
Director,
Office 1
of 1
Technology
Licensing
University
                 1
of
California,
Berkeley 1
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ ■
```

vim Reducer.py

ls

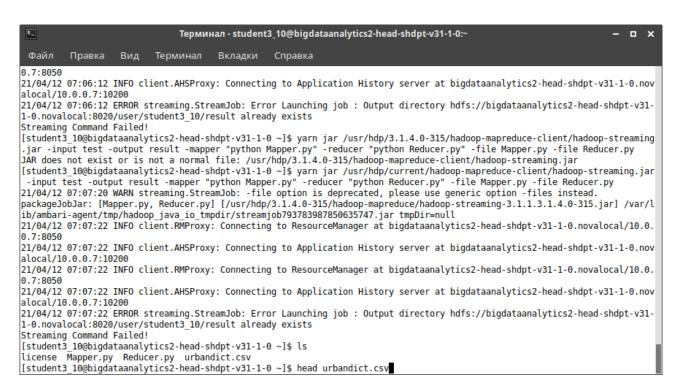


F _			Термин	ал - student3	_10@bigdataanalytics2-head-shdpt-v31-1-0:~	-	0	×
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[student3_10@bi	gdata	aanalyti	cs2-head-sh	dpt-v31-1-0	~]\$			



yarn jar /usr/hdp/current/hadoop-mapreduce-client/hadoop-streaming.jar -input test -output result -mapper "python3.7 Mapper.py" -reducer "python3.7 Reducer.py" -file Mapper.py -file Reducer.py

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
                                                                                                                                  _ _
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9288_0028_m_000001
Job failed as tasks failed. failedMaps:1 failedReduces:0 killedMaps:0 killedReduces: 0
21/04/12 06:55:25 INFO mapreduce.Job: Counters: 12
         Job Counters
                  Failed map tasks=7
                  Killed map tasks=1
                  Killed reduce tasks=1
                  Launched map tasks=7
                  Other local map tasks=5
                  Data-local map tasks=1
                  Rack-local map tasks=1
                  Total time spent by all maps in occupied slots (ms)=116692
                  Total time spent by all reduces in occupied slots (ms)=0
                  Total time spent by all map tasks (ms)=29173
                  Total vcore-milliseconds taken by all map tasks=29173
                  Total megabyte-milliseconds taken by all map tasks=59746304
21/04/12 06:55:25 ERROR streaming.StreamJob: Job not successful!
Streaming Command Failed!
[student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ yarn jar /usr/hdp/current/hadoop-mapreduce-client/hadoop-streaming.jar
-input test -output result -mapper "python Mapper.py" -reducer "python Reducer.py" -file Mapper.py -file Reducer.py
```



head -n 1 urbandict.csv

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
                                                                                                                                                         Файл
            Правка
                        Вид Терминал
                                                 Вкладки Справка
21/04/12 07:07:22 INFO client.RMProxy: Connecting to ResourceManager at bigdataanalytics2-head-shdpt-v31-1-0.novalocal/10.0.
0.7:8050
21/04/12 07:07:22 INFO client.AHSProxy: Connecting to Application History server at bigdataanalytics2-head-shdpt-v31-1-0.nov
alocal/10.0.0.7:10200
21/04/12 07:07:22 INFO client.RMProxy: Connecting to ResourceManager at bigdataanalytics2-head-shdpt-v31-1-0.novalocal/10.0.
0.7:8050
21/04/12 07:07:22 INFO client.AHSProxy: Connecting to Application History server at bigdataanalytics2-head-shdpt-v31-1-0.nov
alocal/10.0.0.7:10200
21/04/12 07:07:22 ERROR streaming.StreamJob: Error Launching job : Output directory hdfs://bigdataanalytics2-head-shdpt-v31-
1-0.novalocal:8020/user/student3_10/result already exists
Streaming Command Failed!
[student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ ls
license Mapper.py Reducer.py urbandict.csv
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ head urbandict.csv
word_id,word,up_votes,down_votes,author,definition
0000007,Janky,296,255,dc397b2f,"Undesirable; less-than optimum."
0000008,slumpin',16,37,dc397b2f,"low down and funky, but [knee deep] enough to ride to."
0000009,yayeeyay,19,27,dc397b2f,"affirmation; suggestion of encouragement, approval, or interest."
.0000012,hard-core,162,96,d1610749,"anything out of our league that can be good or bad.
0000013,brutal,12,45,40ecelef,"anything out of our league that can be good of bad.
0000013,brutal,12,45,40ecelef, "anything that makes you sweat"
0000014,skanky,9,48,485e4db7,"Anything of or pertaining to a $10,000 hooker."
0000015,ho-bag,26,27,b37fba05,"a term of endearment, used affectionately for your roommate. First used in the schools' parking lot after an incident with the hall moniters."
0000016,massive,36,45,b9dcf126,"really really good. excellently good."
0000017,wtf,183,99,a6c97ba3,"what the fuck? ;; use it <u>in place of expletives.</u> a more polite alternative."
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ head -n 1 urbandict.csv
word_id,word,up_votes,down_votes,author,definition
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```

head urbandict.csv > urbandict_test.csv cat vehicles.csv | python Mapper.py Удалем резалт: hdfs dfs -rm -r result Просмотр: cat vehicles.csv | python3.7 mapper.py



cat vehicles.csv | python3.7 mapper.py | sort | python3.7 reducer.py

```
.
-.Tерминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0
                                                                                                                                                                                                                                 •
File "Reducer.py", line 11
SyntaxError: Non-ASCII character '\xd1' in file Reducer.py on line 11, but no encoding declared; see http://www.python.org/peps/pep-0263.html for details
SyntaxError: Non-ASCII character '\xd1' in file Reducer.py on line 11, but no encoding declared; see http://www.python.org/peps/pep-0263.html for details [student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ cat vehicles.csv | python3.7 Mapper.py | sort | python3.7 Reducer.py

Traceback (most recent call last):
File "Reducer.py", line 18, in <module>
word, count = line.split('\t', 1)
ValueError: not enough values to unpack (expected 2, got 1)
[student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
[students] 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ cat vehicles.csv | python3.7 mapper.py | sort | python3.7 reducer.py acura 12143246
alfa-romeo
                        894208
aston-martin 915150
audi 27500345
            53041036
buick 9
            9414316
                        24267276
chevrolet
chrysler
datsun 280918
                        1452593447
dodge 44587781
ferrari 4808024
            2931321
 fiat
            275376101
2873750514
ford
gmc 28/3/20214
harley-davidson 328464
honda 59867277
hyundai 21931470
 infiniti
                       13550397
           6137143
69589094
 jaguar
 jeep
kia
            19559407
land rover 9
lexus 30034843
lincoln 7796232
                        94400
lincoln 7796232
mazda 14377882
mercedes-benz (
mercury 1162558
mini 7507965
mitsubishi :
                        65436510
                        3672210
morgan 74977
nissan 67049248
pontiac 3417008
porsche 17043208
ram 92764848
 rover
            9843502
 saturn 885346
subaru 30836333
tesla 10943555
toyota 134519824
volkswagen 2
volvo 8615208
                        26791675
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```

scp mapper.py student3_10@37.139.32.56:.

wc -l vehicles.csv

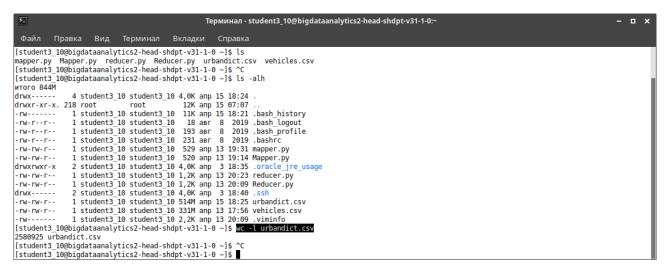
head -n 100000 vehicles.csv > small.csv

Посмотреть что хранится: ls -alh

Почистить/удалить файлы: rm

Посмотреть сколько строк в файле: wc -l <имя.файла>

wc -l urbandict.csv



head -n 100000 vehicles.csv > vehicles.csv head -n 1290462 urbandict.csv > urbandict_new.csv

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:-
 -rw----- 1 student3_10 student3_10 2,2K anp 13 20:09 .viminfo
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ wc -l urbandict.csv
 2580925 urbandict.csv
[student3_100bigdataanalytics2-head-shdpt-v31-1-0 ~]$ ^C
[student3_100bigdataanalytics2-head-shdpt-v31-1-0 ~]$ head -n 1290462 urbandict.csv > urbandict_new.csv
[student3_100bigdataanalytics2-head-shdpt-v31-1-0 ~]$ ls -alh
  итого 1,1G
                               4 student3_10 student3_10 4,0K anp 15 18:53
                             18 root root 12K anp 15 07:07 .

1 student3 10 student3 10 18 as 8 2019 .bash_logout
1 student3 10 student3 10 193 asr 8 2019 .bash_profile
drwxr-xr-x. 218 root
  -rw-r--r--
  -rw-r--r--
                             1 student3_10 student3_10 193 aBr 8 2019 .bashrc 1 student3_10 student3_10 231 aBr 8 2019 .bashrc 1 student3_10 student3_10 529 anp 13 19:31 mapper.py 1 student3_10 student3_10 520 anp 13 19:14 Mapper.py 2 student3_10 student3_10 4,0K anp 3 18:35 .oracle_jrc 1 student3_10 student3_10 1,2K anp 13 20:23 reducer.py
  - rw- rw- r- -
  - rw- rw- r- -
  - rw- rw- r- -
                             1 student3 10 student3 10 1,2K anp 13 20:09 Reducer.py
2 student3 10 student3 10 4,0K anp 3 18:40 .ssh
1 student3 10 student3 10 514M anp 15 18:25 urbandict.csv
  -rw-rw-r--
 drwx-----
-rw-rw-r--
                             1 student3 10 student3 10 246M anp 15 18:53 urbandict_new.csv
1 student3_10 student3_10 331M anp 13 17:56 vehicles.csv
1 student3_10 student3_10 2,2K anp 13 20:09 .viminfo
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```

rm urbandict.csv mv small.csv vihicles.csv Переименовываю файл mv urbandict new.csv urbandict.csv

```
о x
drwx----
                  4 student3 10 student3 10 4.0K anp 15 19:03
1 student3_10 student3_10 529 anp 13 19:31 mapper.py
1 student3_10 student3_10 520 anp 13 19:14 Mapper.py
2 student3_10 student3_10 4,0K anp 3 18:35 .oracle_j
 - rw- rw- r--
 drwxrwxr-x
                                                                               ire_usage
                1 student3_10 student3_10 1,2K anp 13 20:39 reducer.py
1 student3_10 student3_10 1,2K anp 13 20:09 Reducer.py
2 student3_10 student3_10 4,0K anp 3 18:40 .ssh
 - rw- rw- r- -
 drwx----
                 1 student3 10 student3 10 246M anp 15 18:53 urbandict.csv

1 student3 10 student3 10 331M anp 13 17:56 vehicles.csv

1 student3 10 student3 10 2,2K anp 13 20:09 .viminfo
 - rw- rw- r--
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```

Загружаю: hdfs dfs -put vehicles.csv . Загружаю: hdfs dfs -put urbandict.csv .

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:-
      Файл Правка Вид Терминал Вкладки Справка
                                              4 student3_10 student3_10 4,0K anp 15 19:03
18 root root 12K anp 15 07:07
 drwxr-xr-x. 218 root
                                           18 root root 12K anp 15 07:07 ...

1 student3 10 student3 10 11K anp 15 18:21 .bash history
1 student3 10 student3 10 18 asr 8 2019 .bash_logout
1 student3 10 student3 10 193 asr 8 2019 .bash_rofile
1 student3 10 student3 10 231 asr 8 2019 .bashrc
1 student3 10 student3 10 529 anp 13 19:31 mapper.py
1 student3 10 student3 10 520 anp 13 19:14 Mapper.py
2 student3 10 student3 10 4,0K anp 3 18:35 .oracle_jre_us
1 student3 10 student3 10 1,2K anp 13 20:33 reducer.py
2 student3 10 student3 10 1,2K anp 13 20:09 Reducer.py
2 student3 10 student3 10 4,0K anp 3 18:40 .ssh
   -rw-r--r--
   -rw-r--r--
   - rw- rw- r- -
  drwxrwxr-x
   - rw- rw- r--
-rw-rw-r- 1 student3_10 student3_10 1,2K anp 13 20:09 Reducer.py
drwx---- 2 student3_10 student3_10 4,0K anp 3 18:40 .ssh
-rw-rw-r-- 1 student3_10 student3_10 246M anp 15 18:53 urbandict.csv
-rw-rw-r-- 1 student3_10 student3_10 331M anp 13 17:56 vehicles.csv
-rw----- 1 student3_10 student3_10 2,2K anp 13 20:09 .vininfo
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -put urbandict.csv .
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
   Found 5 items
 drwx-----
                                           - student3_10 student3_10
                                                                                                                                                           0 2021-04-15 18:00 .Trash
drwx----- student3_10 student3_10 0 2021-04-13 20:35 staging
drwxr-xr-x - student3_10 student3_10 0 2021-04-15 18:20 lesson
drwxr-xr-x - student3_10 student3_10 0 2021-04-15 17:36 test
-rw-r--r- 2 student3_10 student3_10 257081603 2021-04-15 19:07 urbandict.csv
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ ■
```

Правильный просмотр размера файла: hdfs dfs -ls -h

```
Терминал - student3 10@biqdataanalytics2-head-shdpt-v31-1-0:
                                                                                                                                                                                                   П
  Файл Правка Вид Терминал Вкладки Справка
                  1 student3_10 student3_10 520 anp 13 19:14 Mapper.py
 - rw- rw- r - -
                   2 student3 10 student3 10 4,0K anp 3 18:35 .oracle jr
1 student3 10 student3 10 1,2K anp 13 20:23 reducer.py
drwxrwxr-x
 - rw- rw- r- -
                  1 student3 10 student3 10 1,2K anp 13 20:09 Reducer.py
 - rw- rw- r - -
                  2 student3 10 student3 10 4,0K anp 3 18:40 .ssh
1 student3 10 student3 10 246M anp 15 18:53 urbandict.csv
 - rw- rw- r - -
-rw-rw-r-- 1 student3 10 student3 10 331M ann 13 17:56 vehicles.csv
-rw-rw--- 1 student3 10 student3 10 2,2K ann 13 20:09 .viminfo
[student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -put urbandict.csv .
[student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
                 - student3 10 student3 10
                                                              0 2021-04-15 18:00 .Trash
drwx-----
Found 5 items
                 - student3_10 student3_10
- student3_10 student3_10
- student3_10 student3_10
drwx-----
                                                              0 2021-04-15 18:00 .Trash
                                                              0 2021-04-13 20:35 .staging
0 2021-04-15 18:20 lesson
drwxr-xr-x
drwxr-xr-x
                 - student3_10 student3_10
2 student3_10 student3_10
                                                              0 2021-04-15 17:36 test
```

Удаляем директорию .Trash со всем содержимым: hdfs dfs -rm -r .Trash

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
                                                                                                                                                                                                  о x
 .bash_history
                         .bash_profile
                                                 mapper.py
                                                                          .oracle_jre_usage/ Reducer.py
                                                                                                                           urbandict.csv
                                                                                                                                                    .viminfo
.bash_logout bashrc Mapper.py reducer.py .

[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -rm -r .Trash Deleted .Trash [student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
                                                                                                   .ssh/
                                                                                                                           vehicles.csv
 Found 3 items
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
Found 3 items
drwx-----
drwxr-xr-x
                 - student3_10 student3_10
                                                              0 2021-04-15 19:24 .Trash
0 2021-04-15 19:19 lesson
drwxr-xr-x - student3 10 student3 10 0 2021-04-15 19:19 lesson drwxr-xr-x - student3 10 student3 10 0 2021-04-15 17:36 test [student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -rm -r .Trash
drwxr-xr-x
Deleted .Trash
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
 ound 2 items
drwxr.xr.x - student3_10 student3_10 0 2021-0
drwxr.xr.x - student3_10 student3_10 0 2021-0
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ |
                                                              0 2021-04-15 19:19 lesson
                                                              0 2021-04-15 17:36 test
```

Проверка перемещённых файлов hdfs dfs -ls lesson

hdfs dfs -ls test

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:-
                                                                                                                                                                                                                                о x
                  - student3_10 student3_10
- student3_10 student3_10
- student3_10 student3_10
                                                                       0 2021-04-13 20:35 .staging
drwx-----
                                                                       0 2021-04-15 19:19 lesson
0 2021-04-15 17:36 test
drwxr-xr-x
[student3_10@bigdataanalytics2-head-shdpt-v31-10-0]$ hdfs offs://bigdataanalytics2-head-shdpt-v31-10-0]$ hdfs offs://bigdataanalytics2-head-shdpt-v31-10-0.novalocal:8020/user/student3_10/.staging to trash at: hd fs://bigdataanalytics2-head-shdpt-v31-1-0.novalocal:8020/user/student3_10/.staging
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
Found 3 items
                - student3_10 student3_10
- student3_10 student3_10
- student3_10 student3_10
                                                                       0 2021-04-15 19:24 .Trash
drwx-----
                                                                       0 2021-04-15 19:19 lesson
0 2021-04-15 17:36 test
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -rm -r .Trash
Deleted .Trash
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
Found 2 items

drwxr-xr-x - student3_10 student3_10

drwxr-xr-x - student3_10 student3_10
                                                                       0 2021-04-15 19:19 lesson
0 2021-04-15 17:36 test
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls lesson
 |Students_regulations.com, ----|
Found 1 items
-rw-r--r-- 2 student3_10 student3_10 257081603 2021-04-15 19:07 | | lesson/urbandict.csv
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls tes
 Found 1 items
                   2 student3 10 student3 10 346353924 2021-04-15 17:36 test/vehicles.csv
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```

Проверка размера моей папки: hdfs dfs -du -h

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -rm -r .staging
21/04/15 19:24:53 INFO fs.TrashPolicyDefault: Moved: 'hdfs://bigdataanalytics2-head-shdpt-v31-1-0.novalocal:8020/user/student3_10/.staging' to trash at: hd
fs://bigdataanalytics2-head-shdpt-v31-1-0.novalocal:8020/user/student3_10/.Trash/Current/user/student3_10/.staging
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
Found 3 items
                  - student3_10 student3_10
- student3_10 student3_10
- student3_10 student3_10
                                                                             0 2021-04-15 19:24 .Trash
0 2021-04-15 19:19 lesson
0 2021-04-15 17:36 test
drwxr-xr-x
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -rm -r .Trash
Deleted .Trash
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls
Found 2 items
drwxr-xr-x - student3_10 student3_10
drwxr-xr-x - student3_10 student3_10
                                                                             0 2021-04-15 19:19 lesson
                                                                             0 2021-04-15 17:36 test
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls lesson
Found 1 items
round 11cems
-rw-r--r- 2 student3 10 student3 10 257081603 2021-04-15 19:07 lesson/urbandict.csv
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -ls test
Found 1 items
-rw-r--r- 2 student3_10 student3_10 346353924 2021-04-15 17:36 test/vehicles.csv
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -du -h
245.2 M 490.3 M lesson
330.3 M 660.6 M test
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```

cat vehicles.csv | python3.7 mapper.py

cat vehicles.csv | python3.7 mapper.py | sort | python3.7 reducer.py



current

Удалить: hdfs dfs -rm -r result

Посмотреть результат: hdfs dfs -cat result/part*

cat urbandict.csv | python3.7 mapper.py

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
                                                                                                                                  - 0
        Правка Вид Терминал
                                      Вкладки Справка
319ff6a2
97b18a12
2cff5051
c3cde12e
ff17879
a1901627
c795a9ca
a6c11229
684aab14
999a333b
b8256651
595b54e1
45a1e4b9
c795a9ca
4dda8004
76db3e41
elf4e3a3
efda79c0
53f9899f
d6a93036
4c2aba10
6a6daf75
2dd25d86
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~] cat urbandict.csv | python3.7 mapper.py
```

hdfs dfs -rm r result

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
                                                                                                                                                                                                                                                        - 0
                                                                                                                                                                                                                                                                     ×
  Файл Правка Вид Терминал Вкладки Справка
                         1 student3_10 student3_10 525 anp 16 21:27 mapper.py
1 student3_10 student3_10 529 anp 16 19:39 Mapper.py
2 student3_10 student3_10 4,0K anp 3 18:35 .oracle_j
 - rw- rw- r--
drwxrwxr-x
 - rw- rw- r--
                          1 student3_10 student3_10 1,2K anp 16 21:33 reducer.py
1 student3_10 student3_10 1,2K anp 16 19:55 Reducer.py
  rw-rw-r--
                         2 student3 10 student3 10 4,0K anp 3 18:40 .ssh
1 student3 10 student3 10 246M anp 15 18:53 urbandict.csv
1 student3 10 student3 10 331M anp 13 17:56 vehicles.csv
 - rw- rw- r - -
                          1 student3_10 student3_10 3,7K anp 15 21:36 .viminfo
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ cat urbandict.csv | python3.7 mapper.py | sort | python3.7 Reducer.py 
^[[A^[[ATraceback (most recent call last):
File "Reducer.py", line 40, in <module>
    print(current_word+'/t'+str(current_count))

TypeError: unsupported operand type(s) for +: 'NoneType' and 'str'

[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ cat urbandict.csv | python3.7 mapper.py | sort | python3.7 Reducer.py

Traceback (most recent call last):
File "Reducer.py", line 40, in <module>
    print(current_word+'/t'+str(current_count))

TypeError: unsupported operand type(s) for +: 'NoneType' and 'str'

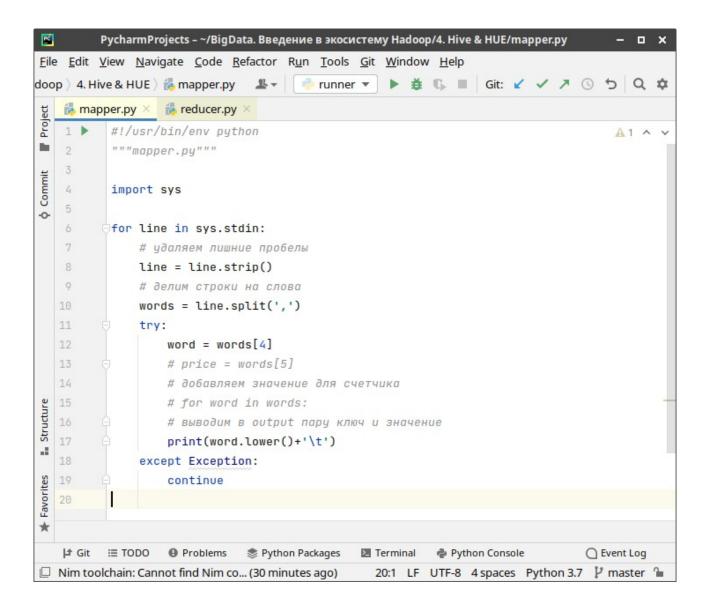
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ cat urbandict.csv | python3.7 mapper.py | sort | python3.7 reducer.py

[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ hdfs dfs -rm r result
rm: `r': No such file or directory
rm: `result': Is a directory
[student3_10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$
```

Для запуска распределенного вычисления воспользуемся командой:

yarn jar /usr/hdp/current/hadoop-mapreduce-client/hadoop-streaming.jar -input lesson -output result -mapper "python3.7 mapper.py" -reducer "python3.7 reducer.py" -file mapper.py -file reducer.py

```
Терминал - student3_10@bigdataanalytics2-head-shdpt-v31-1-0:~
 Файл Правка Вид Терминал Вкладки Справка
21/04/16 21:56:02 INFO mapreduce.Job: Job job 1618415779628_0247 running in uber mode : false
21/04/16 21:56:02 INFO mapreduce.Job: map 0% reduce 0%
21/04/16 21:56:12 INFO mapreduce.Job: Task Id : attempt 1618415779628 0247 m 000000 0, Status : FAILED
[2021-04-16 21:56:10.417]Container killed on request. Exit code is 137
[2021-04-16 21:56:10.431]Container exited with a non-zero exit code 137.
[2021-04-16 21:56:10.434]Killed by external signal
21/04/16 21:56:15 INFO mapreduce.Job: map 50% reduce 0%
21/04/16 21:56:23 INFO mapreduce.Job: map 100% reduce 0%
21/04/16 21:56:26 INFO mapreduce.Job: map 100% reduce 100%
21/04/16 21:56:26 INFO mapreduce.Job: Job job 1618415779628 0247 completed successfully
21/04/16 21:56:26 INFO mapreduce.Job: Counters: 56
         File System Counters
                  FILE: Number of bytes read=15399937
                  FILE: Number of bytes written=31517869
                  FILE: Number of read operations=0
                  FILE: Number of large read operations=0
                  FILE: Number of write operations=0
                  HDFS: Number of bytes read=257122730
                  HDFS: Number of bytes written=0
HDFS: Number of read operations=11
                  HDFS: Number of large read operations=0
                  HDFS: Number of write operations=2
         Job Counters
                  Failed map tasks=1
                  Launched map tasks=3
                  Launched reduce tasks=1
                  Other local map tasks=1
                  Data-local map tasks=1
                  Rack-local map tasks=1
                  Total time spent by all maps in occupied slots (ms)=112752
                   Total time spent by all reduces in occupied slots (ms)=31328
                  Total time spent by all map tasks (ms)=28188
Total time spent by all reduce tasks (ms)=7832
                   Total vcore-milliseconds taken by all map tasks=28188
                  Total vcore-milliseconds taken by all reduce tasks=7832
                   Total megabyte-milliseconds taken by all map tasks=57729024
                  Total megabyte-milliseconds taken by all reduce tasks=16039936
         Map-Reduce Framework
                  Map input records=1290462
                  Map output records=1290462
                  Map output bytes=12819007
                  Map output materialized bytes=15399943
                  Input split bytes=296
                  Combine input records=0
                  Combine output records=0
                  Reduce input groups=825036
                  Reduce shuffle bytes=15399943
                  Reduce input records=1290462
                   Reduce output records=0
                   Spilled Records=2580924
                   Shuffled Maps =2
                  Failed Shuffles=0
                  Merged Map outputs=2
                  GC time elapsed (ms)=559
                  CPU time spent (ms)=15810
                  Physical memory (bytes) snapshot=3073064960
Virtual memory (bytes) snapshot=12877406208
                   Total committed heap usage (bytes)=2898788352
                  Peak Map Physical memory (bytes)=2898/88352
Peak Map Virtual memory (bytes)=3689484288
Peak Reduce Physical memory (bytes)=210972672
Peak Reduce Virtual memory (bytes)=5499621376
         Shuffle Errors
                  BAD ID=0
                  CONNECTION=0
                  TO FRROR=0
                  WRONG LENGTH=0
[student3 10@bigdataanalytics2-head-shdpt-v31-1-0 ~]$ yarn jar /usr/hdp/current/hadoop-mapreduce-client/hadoop-streaming.jar
-input lesson -output result -mapper "python3.7 mapper.py" -reducer "python3.7 reducer.py" -file mapper.py -file reducer.pyr
```



```
PC
         PycharmProjects – ~/BigData. Введение в экосистему Hadoop/4. Hive & HUE/reducer.py
<u>File Edit View Navigate Code Refactor Run Tools Git Window Help</u>
doop 〉 4. Hive & HUE 〉 🐉 reducer.py 🎩 🔻 📗 👂 runner 🔻 🕨 🐞 🖫 📕 🕒 Git: 🗹 🗸 🧷 🧐 🔾 🜣
    #!/usr/bin/env python
                                                                           A1 A1 2 A V
"""reduser.py"""
    2
Commit
         from operator import itemgetter
         Dimport sys
    6
    7
          current_word = None
          current_count = 0
   9
          word = None
          # читаем строки из STDIN
         for line in sys.stdin:
   12
              line = line.strip()
   13
             # line = line.lower()
              # удаляем пробелы в конце и начале строки
            # разделяем пары ключ и значение
              try:
   17
                  word, count = line.split('\t', 1)
              except Exception:
   19
                  continue
   21
              # преобразуем значение в число
              trv:
   23
                  count = int(count)
   24
              except ValueError:
                  # игнорируем ошибки
                  continue
              # на Reduce приходят данные после фазы Sort
              # поэтому этот код будет работать
              if current_word == word:
   31
                  current_count += count
         else:
   32
   33
                  if current word:
                      # пишем результат в STDOUT
   34
Structure
                      print(current_word+'\t'+str(current_count))
                  current_count = count
   37
                  current_word = word
...
   38
          # не забываем про последнее слово
Favorites
   39
          if current_word == word:
              print(current_word+'\t'+str(current_count))
   40
*
           for line in sys.stdin > else

    ▼ Terminal  Python Console

                                                                              C Event Log
                                              32:7 LF UTF-8 4 spaces Python 3.7 12 master 🐿
Nim toolchain: Cannot find Nim co... (31 minutes ago)
```