Task 1:

1. Check whether /user/acadgild directory exists or not in the HDFS.

Used command –test - d command to verify the same.

Evaluates the expression parameter.

-d filename where filename is directory

Wrote if statement to verify the output

2. If it doesn't exist, then create this.

Created directory by using mkdir command

```
[acadgild@localhost -]$ if $(hadoop fs -test -d /user/acadgild/hadoop); then echo 'directory exists'; else echo 'Need to create new one'; fi |
18/83/18 05:38:30 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
Need to create new one |
[acadgild@localhost ~]$ hadoop fs -mkdir /user/acadgild/hadoop |
18/03/18 05:36:54 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
You have new mail in /var/spool/mail/acadgild |
18/03/18 05:37:14 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:12 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:23 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:23 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:23 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:23 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:23 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:23 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:21 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable |
18/03/18 05:37:21 MARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using built
```

Task 2:

Create a file in HDFS under directory /user/acadgild/hadoop, with name word-count.txt. To achieve above task, adopted below approaches

As HDFS is write once and read many times , we can create zero byte file in hdfs and append text to that using

- a. 'text to be appended' with 'appendToFile' command This command appends the data to an existing file on hdfs.
- b. Directly putting text in new file with 'echo' & put command
- c. Or by creating local file in local FS and then appending the contents of same using appendToFile command to created file in HDFS

1. Approach a:

Create ZERO Byte Using 'touchz' command in HDFS

 i. Not a single file is present under user/acadgild/hadoop folder in HDFS ii. Created new file as word-count.txt

```
[acadgild@localhost ~]$ hadoop fs -touchz /user/acadgild/hadoop/word-count.txt
18/03/18 05:44:25 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ hadoop fs -ls /user/acadgild/hadoop
18/03/18 05:44:35 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 1 items
-TW-F--F-- 1 acadgild supergroup
[acadgild@localhost ~]$ 

0 2018-03-18 05:44 /user/acadgild/hadoop/word-count.txt
```

iii. Appending to ZERO byte file with 'echo' command and appendToFile Command

```
[acadgild@localhost -]s echo "Hi, This is assignment 2 from Acadgild session." | hadoop fs -appendToFile - /user/acadgild/hadoop/word-count.txt  
18/03/18 05:48:44 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable  
[acadgild@localhost -]s echo "These are very good sessions." | hadoop fs -appendToFile - /user/acadgild/hadoop/word-count.txt  
18/03/18 05:49:48 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable  
You have new mail in /var/spool/mail/acadgild  
[acadgild@localhost -]s echo "Assignments are also very good which allows us to explore more on Hadoop.Thanks AcadGild." | hadoop fs -appendToFile - adoop/word-count.txt  
18/03/18 05:50:27 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable  
[acadgild@localhost -]s hadoop is -cat /user/acadgild/hadoop/word-count.txt  
18/03/18 05:50:45 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform...  
H, This is assignment 2 from Acadgild session.  
These are very good sessions.  
Assignments are also very good which allows us to explore more on Hadoop.Thanks AcadGild.  
[acadgild@localhost -]s hadoop sessions.
```

2. Approach b.

 Echo text to be put in file and give the file name which doesn't exists in hdfs directory

```
| acadgild@localhost -]$ cho "This is the demonstration of adding new line using Put command instead of appendToFile." | hadoop fs -put - /user/acadgiount2.txt |
18/03/18 05:54:28 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable [acadgild@localhost -]$ hadoop fs -ls /user/acadgild/hadoop/
18/03/18 05:54:37 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable found 3 items -rw-r--r- 1 acadgild supergroup 168 2018-03-18 05:50 /user/acadgild/hadoop/word-count.txt -rw-r--- 1 acadgild supergroup 9.2018-03-18 05:52 /user/acadgild/hadoop/word-count1.txt -rw-r--- 1 acadgild supergroup 88 2018-03-18 05:54 /user/acadgild/hadoop/wordcount2.txt |
-rw-r---- 1 acadgild supergroup 88 2018-03-18 05:54 /user/acadgild/hadoop/wordcount2.txt |
```

This can be achieved using 'Put' command as well instead of 'appendToFile' command In this command destination file is not created in HDFS

3. Approach C:

i. Create a ZERO byte file in HDFS named as word-count3.txt

```
[acadgild@localhost ~]$ hadoop fs -touchz /user/acadgild/hadoop/word-count3.txt
18/03/18 05:59:58 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ hadoop fs -ls /user/acadgild/hadoop
18/03/18 06:00:50 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 4 Items
-rw-r--r-- 1 acadgild supergroup
168 2018-03-18 05:50 /user/acadgild/hadoop/word-count.txt
-rw-r--r-- 1 acadgild supergroup
0 2018-03-18 05:52 /user/acadgild/hadoop/word-count1.txt
-rw-r--r-- 1 acadgild supergroup
0 2018-03-18 06:00 /user/acadgild/hadoop/word-count3.txt
-rw-r--r-- 1 acadgild supergroup
88 2018-03-18 05:54 /user/acadgild/hadoop/wordcount2.txt
[acadgild@localhost ~]$
```

ii. Create a file locally using nano editor

```
acadgild@tocalhost -|s Cat /nome/acadgild/Desktop/Prachi/word-countlobetopied.txt
This is the file for Approach 3, where we are creating a local file using nano editor which we will append to existing word-count3.txt file of HDFS under directory /Prachi/acadgild/ha
top
This will be achieved using appendToFile command where source will be word-countToBeCopied.txt and destination will be word-count3.txt.

Enjoy Experimenting . !!!!
Tou have new mail in /var/spool/mail/acadgild
[acadgild@localhost -|$ |
```

iii. Append this local file to file created in HDFS

Task 3:

Locally created file can be moved to HDFS with below two command

- a. Put command
- b. CopyFromLocal
- c. moveFromLocal

Approach a:

- iv. Using Put command
- v. Put command is not restricted for source as local file system, it can copy file which is remotely available

Created a file locally using nano editor named as 'max-temp.txt'

Copy file to HDFS using 'put' command

```
[acadgild@localhost ~]$ hadoop fs -put /home/acadgild/Desktop/Prachi/max-temp.txt /user/acadgild/hadoop

18/83/18 06:08:34 WARN util.NativeCodeLoadgild

[acadgild@localhost ~]$ hadoop fs -ls /user/acadgild/hadoop

18/03/18 06:08:52 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable

Found 5 items

-rw-r--r-- 1 acadgild supergroup

-r
```

```
[acadgild@localhost -]$ hadoop fs -cat /user/acadgild/hadoop/max-temp.txt
18/03/18 06:07:22 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Temprature Details
10-03-2018,32
11-03-2018,33
12-03-2018,33
12-03-2018,33
14-03-2018,33
15-03-2018,33
15-03-2018,33
15-03-2018,33
17-03-2018,33
18-03-2018,30
19-03-2018,30
19-03-2018,30
19-03-2018,30
19-03-2018,30
19-03-2018,35
21-03-2018,35

21-03-2018,35

You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$
```

Approach b:

- vi. Using 'copyFromLocal' Command
- vii. Similar to 'put' command however source is restricted to local file system.

Created a file locally using nano editor

```
[acadgild@localhost ~]$ nano /home/acadgild/Desktop/Prachi/max-temp1.txt
```

```
GNU nano 2.0.9 File: /home/acadgild/Desktop/Prachi/max-temp1.txt

10-03-2018,32
11-03-2018,33
12-03-2018,33
15-03-2018,31
16-03-2018,33
17-03-2018,33
18-03-2018,30
19-03-2018,30
19-03-2018,30
19-03-2018,30
19-03-2018,30
Save modified buffer (ANSWERING "No" WILL DESTROY CHANGES) ?

Y Yes
No C Cancel
```

Copy file to HDFS using 'copyFromLocal' command

```
| facadgild@localhost -|s | hadoop | fs -copyFromlocal / home/acadgild/Desktop/Prachi/max-templ.txt / user/acadgild/hadoop | fs -copyFromlocal / home/acadgild/Desktop/Prachi/max-templ.txt / user/acadgild/hadoop | fs -cs / user/acadgild/hadoop/max-templ.tx | using builtin-java classes where applicable | found | fs -cs / user/acadgild/hadoop/max-templ.tx | fs -cs / user/acadgild/hadoop/word-count.tx | fs -cs / user/acadgild/hadoop/max-templ.tx | fs -cs / user/acadgild/hadoop/max-templ.tx | fs -cs / user/acadgild/hadoop/max-templ.tx | fs -cs / user/acadgild/hadoop/word-count2.tx | fs -cs / user/acadgild/hadoop/max-templ.tx | fs -cs / user/acadgild/hadoop/ma
```

Approach c:

- viii. Using 'moveFromLocal' Command
 - ix. This command will remove file from local file system.

Create another file named as max-temp2.txt, using nano editor

```
### Pile: /home/acadglld/Desktop/Prachi/max-temp2.txt

#### Modified

18-03-2018.32

18-03-2018.31

18-03-2018.31

18-03-2018.31

18-03-2018.31

18-03-2018.32

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

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18-03-2018.33

18-03-2018.33

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18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.33

18-03-2018.
```

Move file from local to HDFS using moveFromLocal command

Once file is moved to HDFS, it won't be available in local file system

```
[acadgild@localhost ~]$ ls -l /home/acadgild/Desktop/Prachi
total 1032176
drwxrwxr-x. 3 acadgild acadgild
                                           4096 Mar 17 10:11 CaseStudyI
-rw-rw-r--. 1 acadgild acadgild 1056906185 Mar 4 21:18 file.txt
-rw-rw-r--. 1 acadgild acadgild 1022 Mar 17 10:11 Links.txt
 rw-rw-r--. 1 acadgild acadgild
                                             169 Mar 17 12:43 max-temp1.txt
                                             190 Mar 17 12:38 max-temp.txt
-rw-rw-r--. 1 acadgild acadgild
-rw-r--r--. 1 acadgild acadgild
drwxrwxr-x. 3 acadgild acadgild
                                             380 Mar
                                                      4 21:50 Output.txt
                                            4096 Mar 5 08:34 PigExamples
                                              67 Mar 4 23:17 ToCopied.txt
-rw-rw-r--. 1 acadgild acadgild
drwxrwxr-x. 2 acadgild acadgild
                                           4096 Mar 4 18:37 WordCount
-rw-rw-r--. 1 acadgild acadgild
                                             353 Mar 17 12:22 word-countToBeCopied.txt
[acadgild@localhost ~]$
```

Task 4:

Change the permission of the file /user/acadgild/hadoop/max-temp.txt, such that only the owner and the group members have full control over the file.

By default, when we create a directory or a file, the owner is the user that creates the directory (or file) and the group is the group of that user, as shown here.

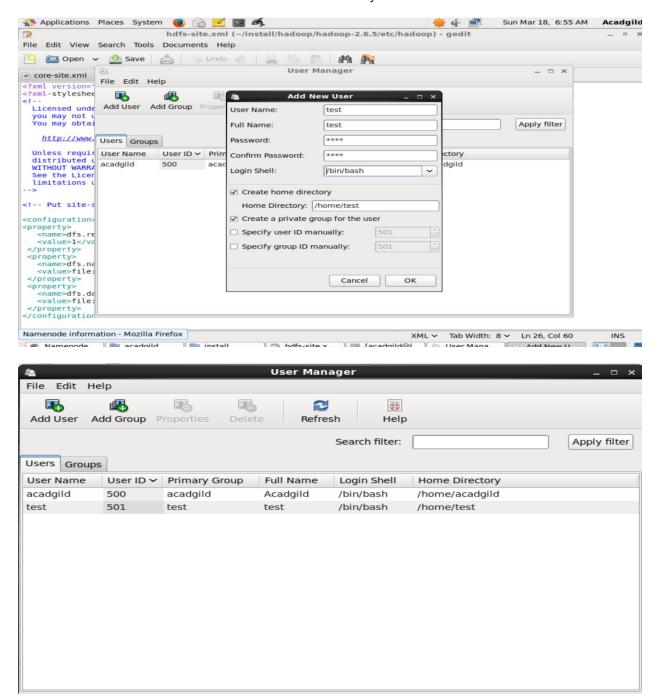
```
[acadgild@localhost ~]$ hadoop fs -ls /user/acadgild/hadoop
18/03/18 06:29:22 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
found 7 items

rw-r--r-- 1 acadgild supergroup
190 2018-03-18 06:05 /user/acadgild/hadoop/max-temp.txt
-rw-r--r-- 1 acadgild supergroup
109 2018-03-18 06:06 /user/acadgild/hadoop/max-temp1.txt
-rw-r--r-- 1 acadgild supergroup
168 2018-03-18 06:10 /user/acadgild/hadoop/max-temp2.txt
-rw-r--r-- 1 acadgild supergroup
168 2018-03-18 05:50 /user/acadgild/hadoop/word-count.txt
-rw-r--r-- 1 acadgild supergroup
168 2018-03-18 06:02 /user/acadgild/hadoop/word-count3.txt
-rw-r--r-- 1 acadgild supergroup
168 2018-03-18 06:02 /user/acadgild/hadoop/word-count3.txt
-rw-r--r-- 1 acadgild supergroup
18/03/18 06:02 /user/acadgild/hadoop/word-count3.txt
-rw-r--r-- 1 acadgild supergroup
```

In this case, the acadgild account is used to create the directory, so the owner is acadgild and the group is supergroup.

We can change the ownership of the directory, if we don't want to use the default owner/group (acadgild/supergroup) for this directory.

To validate the command chown created new user as test in Operating system and created a directory under user folder for a user and made that user owner of that directory



chown command: to change file owner and group information.

The user test belongs to test group

hadoop fs -chown test:test /user/test

chmod command : to change file access permissions such as read, write, and access.

hadoop fs -chmod u=rwx,g=rwx,o=r /user/acadgild/hadoop/max-temp.txt

```
Here the user - "u",
the group - "g",
other users - "o",
r - read , w -write ,x -execute
```

```
[acadgild@localhost ~]$ hadoop fs -chmod u=rwx,g=rwx,o=r /user/acadgild/hadoop/max-temp.txt
18/03/24 10:01:35 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ hadoop fs -ls /user/acadgild/hadoop
18/03/24 10:01:51 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 7 Items
-rwxfrwxr- 1 acadgild supergroup 190 2018-03-18 06:05 /user/acadgild/hadoop/max-temp.txt
-rw-r--r- 1 acadgild supergroup 160 2018-03-18 06:05 /user/acadgild/hadoop/max-temp1.txt
-rw-r--r- 1 acadgild supergroup 160 2018-03-18 06:06 /user/acadgild/hadoop/max-temp2.txt
-rw-r--r- 1 acadgild supergroup 160 2018-03-18 06:06 /user/acadgild/hadoop/word-count.txt
-rw-r--r- 1 acadgild supergroup 0 2018-03-18 06:05 /user/acadgild/hadoop/word-count1.txt
-rw-r--r- 1 acadgild supergroup 353 2018-03-18 06:02 /user/acadgild/hadoop/word-count3.txt
-rw-r--r- 1 acadgild supergroup 353 2018-03-18 06:02 /user/acadgild/hadoop/word-count3.txt
[acadgild@localhost ~]$
```

this can be written as

hadoop fs -chmod 774 /user/acadgild/hadoop/max-temp1.txt

```
[acadgild@localhost ~]$ hadoop fs -chmod 774 /user/acadgild/hadoop/max-temp1.txt

18/03/24 10:09:54 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ hadoop fs -ls /user/acadgild/hadoop
[8/03/24 10:10:02 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 7 items
Found 7 items
-rwxrwxr- 1 acadgild supergroup
190 2018-03-18 06:05 /user/acadgild/hadoop/max-temp.txt
-rwxrwxr- 1 acadgild supergroup
169 2018-03-18 06:08 /user/acadgild/hadoop/max-temp1.txt
-rw-r--r- 1 acadgild supergroup
168 2018-03-18 06:08 /user/acadgild/hadoop/max-temp2.txt
-rw-r--r- 1 acadgild supergroup
168 2018-03-18 05:50 /user/acadgild/hadoop/word-count.txt
-rw-r--r- 1 acadgild supergroup
9 2018-03-18 05:52 /user/acadgild/hadoop/word-count1.txt
-rw-r--r- 1 acadgild supergroup
88 2018-03-18 06:02 /user/acadgild/hadoop/word-count3.txt
-rw-r---- 1 acadgild supergroup
88 2018-03-18 06:554 /user/acadgild/hadoop/wordcount2.txt
[acadgild@localhost ~]$
```

Execute = 1

Write =2

Read = 4

Octal Value	Read	Write	Execute
7	Υ	Υ	Υ
6	Υ	Υ	-
5	Υ	-	Υ
4	Υ	-	-
3	-	Y	Υ
2	-	Y	-
1	-	-	Υ
0	-	-	-