Task 1:

Explain the below linux commands with an example. Share the screenshot of each command

with the output :

- **pwd**

  This is a Print Working Directory – it shows the full path of the current working directory

  ```
  [cloudera@quickstart ~]$
  [cloudera@quickstart ~]$ pwd
  /home/cloudera
  [cloudera@quickstart ~]$
  ```

- **vi**

  This is linux text editor. It's used to create and edit files. In the example below, I create a new file f_create.txt with a sentence in there. Then later open the file for editing and add some new text. The file size before and after is now different

  ```
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ vi f_create.txt        Creating a new file
  [cloudera@quickstart session1]$ ls -ltr
  total 4
  -rw-rw-r-- 1 cloudera cloudera 20 Mar 26 21:57 f_create.txt
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ vi f_create.txt        Open the created file / existing file for
  [cloudera@quickstart session1]$                         editing
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ ls -ltr
  total 4
  -rw-rw-r-- 1 cloudera cloudera 107 Mar 26 21:58 f_create.txt
  [cloudera@quickstart session1]$
  ```

- **touch**

  This command creates an empty file. I the example below, I create an empty file called f_touch and show that it's empty because it's size is 0 bytes

  ```
  [cloudera@quickstart session1]$ touch f_touch.txt
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ ls -ltr
  total 4
  -rw-rw-r-- 1 cloudera cloudera 107 Mar 26 21:58 f_create.txt
  -rw-rw-r-- 1 cloudera cloudera   0 Mar 26 22:07 f_touch.txt
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  ```

- **mkdir**

  This is used to create a new directory

  ```
  [cloudera@quickstart session1]$ mkdir test1
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ ls -ltr
  total 8
  -rw-rw-r-- 1 cloudera cloudera  107 Mar 26 21:58 f_create.txt
  -rw-rw-r-- 1 cloudera cloudera    0 Mar 26 22:07 f_touch.txt
  drwxrwxr-x 2 cloudera cloudera 4096 Mar 26 22:15 test1
  [cloudera@quickstart session1]$ █
  ```

- **rm**

  This deletes a file from a location. I will use it to delete the file f_touch.txt

  ```
  [cloudera@quickstart session1]$ ls -ltr
  total 8
  -rw-rw-r-- 1 cloudera cloudera  107 Mar 26 21:58 f_create.txt
  -rw-rw-r-- 1 cloudera cloudera    0 Mar 26 22:07 f_touch.txt
  drwxrwxr-x 2 cloudera cloudera 4096 Mar 26 22:15 test1
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ rm f_touch.txt
  rm: remove regular empty file `f_touch.txt'? yes
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ ls -ltr
  total 8
  -rw-rw-r-- 1 cloudera cloudera  107 Mar 26 21:58 f_create.txt
  drwxrwxr-x 2 cloudera cloudera 4096 Mar 26 22:15 test1
  [cloudera@quickstart session1]$ █
  ```

- **ls**

  This lists the contents of a directory

  ```
  [cloudera@quickstart session1]$ ls
  f_create.txt   test1
  [cloudera@quickstart session1]$
  ```

- **echo**

  This is use to display a line of text that's passed as an argument. It's usually used in shell scripting

  ```
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ echo Sam is testing use of this command
  Sam is testing use of this command
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$
  [cloudera@quickstart session1]$ █
  ```

- **cat**
  This is used to read contents of a file and show output on the console

```
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$ cat f_create.txt
This is a new file


Now editing the file and adding some text

This should increase the size of the file
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$
```

- **who**
  This show the users currently logged into a computer

```
[cloudera@quickstart session1]$ who
cloudera tty1          2019-03-25 11:12 (:0)
cloudera pts/0         2019-03-25 11:15 (:0.0)
cloudera pts/1         2019-03-25 11:15 (:0.0)
cloudera pts/2         2019-03-25 11:16 (:0.0)
cloudera pts/3         2019-03-26 21:47 (:0.0)
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$
```

- **cd**
  This is used to change the directory

```
[cloudera@quickstart SKM]$ pwd
/home/cloudera/SKM
[cloudera@quickstart SKM]$
[cloudera@quickstart SKM]$ cd session1/
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$ pwd
/home/cloudera/SKM/session1
[cloudera@quickstart session1]$
```

- **date**
  This shows the current date and time of the computer

```
[cloudera@quickstart session1]$ date
Tue Mar 26 22:43:41 CAT 2019
[cloudera@quickstart session1]$
```

- **cal**

  This shows the calendar for the current month and highlights the current date

```
[cloudera@quickstart session1]$ cal
      March 2019
Su Mo Tu We Th Fr Sa
                1  2
 3  4  5  6  7  8  9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
[cloudera@quickstart session1]$ _
```

- **mv**

  This is used to move files from one location to another as well as rename them. In the example below, a file f_create.txt is renamed to test_mv.txt

```
[cloudera@quickstart session1]$ ls -ltr
total 8
-rw-rw-r-- 1 cloudera cloudera  107 Mar 26 21:58 f_create.txt
drwxrwxr-x 2 cloudera cloudera 4096 Mar 26 22:15 test1
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$ mv f_create.txt test_mv.txt
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$ ls -ltr
total 8
-rw-rw-r-- 1 cloudera cloudera  107 Mar 26 21:58 test_mv.txt
drwxrwxr-x 2 cloudera cloudera 4096 Mar 26 22:15 test1
[cloudera@quickstart session1]$
```

- **cp**
  This is used to copy a file from one location to another or make a copy of an existing file in the same location

```
[cloudera@quickstart session1]$ ls -ltr
total 8
-rw-rw-r-- 1 cloudera cloudera  107 Mar 26 21:58 test_mv.txt
drwxrwxr-x 2 cloudera cloudera 4096 Mar 26 22:15 test1
[cloudera@quickstart session1]$ cp test_mv.txt test_cp.txt
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$ ls -ltr
total 12
-rw-rw-r-- 1 cloudera cloudera  107 Mar 26 21:58 test_mv.txt
drwxrwxr-x 2 cloudera cloudera 4096 Mar 26 22:15 test1
-rw-rw-r-- 1 cloudera cloudera  107 Mar 26 22:47 test_cp.txt
[cloudera@quickstart session1]$
```

- **which**
  This is used to find the full path of an executable file associated with a given command. In the example below, the Java executable file is shown

```
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$ which java
/usr/java/jdk1.7.0_67-cloudera/bin/java
[cloudera@quickstart session1]$
[cloudera@quickstart session1]$
```

Task 2:

Execute WordMedian , WordMean , WordStandardDeviation programs using hadoop-

mapreduce-examples-2.6.0.jar file present in your AcadGild VM.

- Located the file under /usr/lib/Hadoop-mapreduce

Exact file name wasn't there so I used using hadoop-mapreduce-examples-2.6.0-cdh5.13.0.jar which was the closest match

- Create a sample text file and placed it on HDFS

```
[cloudera@quickstart SKM]$ hadoop fs -put sampleFICT.txt /skm
```

- Execute the file for wordmedian

```
[cloudera@quickstart session1]$ hadoop jar /usr/lib/hadoop-mapreduce/hadoop-mapreduce-examples-2.6.0-cdh5.13.0.jar wordmedian /skm/sampleFICT.txt /skm/wmed
```

- WordMedian result is below

```
              File Input Format Counters
                    Bytes Read=5196229
              File Output Format Counters
                    Bytes Written=160
The median is: 4
[cloudera@quickstart session1]$ █
```

- Execute the file for wordmean

```
[cloudera@quickstart session1]$ hadoop jar /usr/lib/hadoop-mapreduce/hadoop-mapreduce-examples-2.6.0-cdh5.13.0.jar wordmean /skm/sampleFICT.txt /skm/wmean█
```

- WordMean result is below

```
              File Input Format Counters
                    Bytes Read=5196229
              File Output Format Counters
                    Bytes Written=29
The mean is: 4.196229
```

- Execute the file for WordStandardDeviation

```
[cloudera@quickstart session1]$ hadoop jar /usr/lib/hadoop-mapreduce/hadoop-mapreduce-examples-2.6.0-cdh5.13.0.jar wordstandarddeviation /skm/sampleFICT.txt
/skm/wsdev
```

- WordStandardDeviation result is below

```
              File Input Format Counters
                    Bytes Read=5196229
              File Output Format Counters
                    Bytes Written=45
The standard deviation is: 2.2160359156744285
[cloudera@quickstart session1]$ █
```