

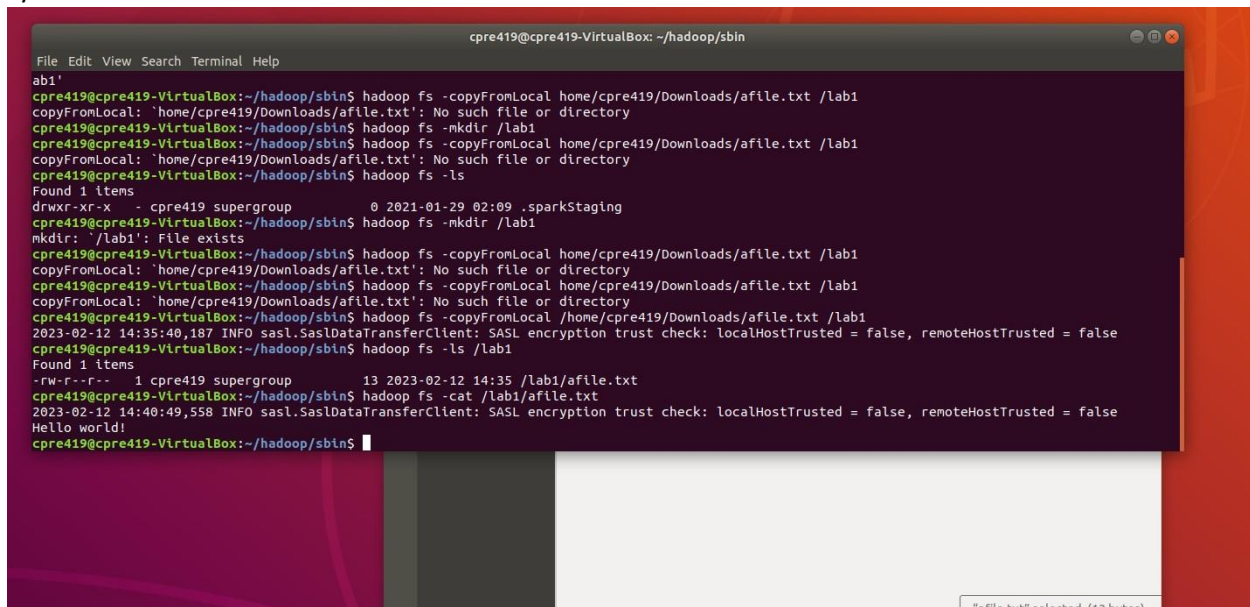
# CPR E 419

## Lab 1

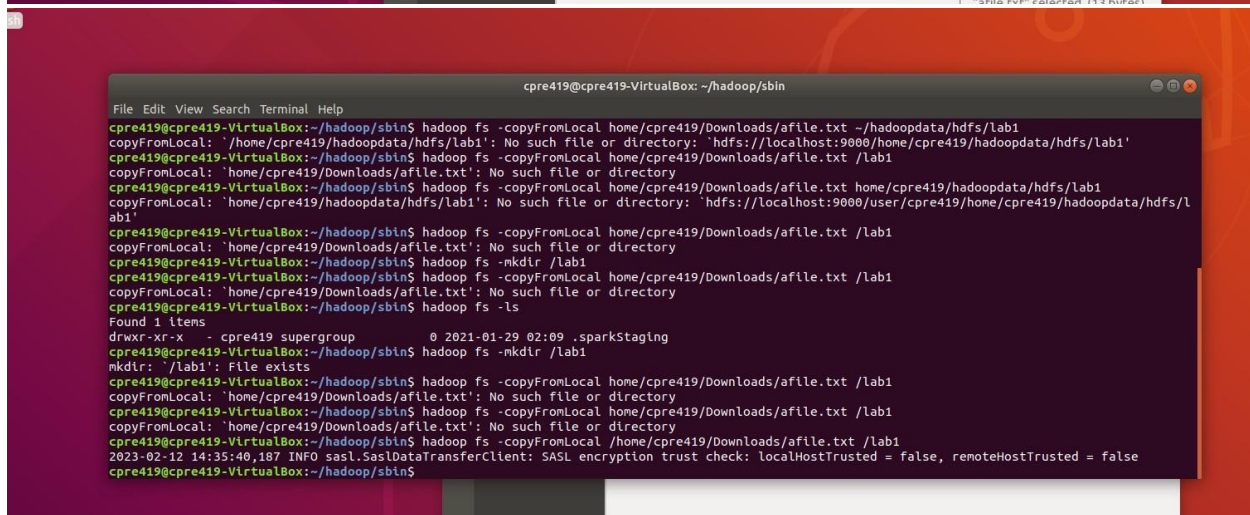
### Eranda Sooriyarachchi

#### Experiment 1

Experiment 1 was simply to create afile.txt and move it using Hadoop fs command to the Hadoop file system. Attached below is the screenshot of the successful file transfer.

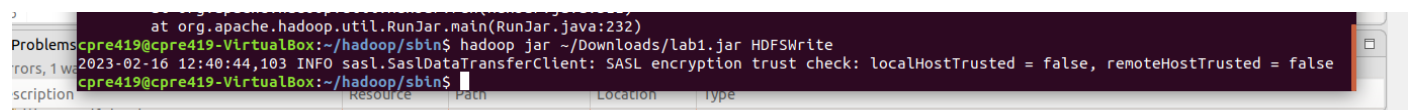


```
File Edit View Search Terminal Help
cpre419@cpre419-VirtualBox: ~/hadoop/sbin
ab1'
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -mkdir /lab1
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -ls
Found 1 items
drwxr-xr-x  - cpre419 supergroup          0 2021-01-29 02:09 .sparkStaging
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -mkdir /lab1
mkdir: '/lab1': File exists
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal /home/cpre419/Downloads/afle.txt /lab1
2023-02-12 14:35:40,187 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localhostTrusted = false, remoteHostTrusted = false
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -ls /lab1
Found 1 items
-rw-r--r--  1 cpre419 supergroup          13 2023-02-12 14:35 /lab1/afle.txt
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -cat /lab1/afle.txt
2023-02-12 14:40:49,558 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localhostTrusted = false, remoteHostTrusted = false
Hello world!
cpre419@cpre419-VirtualBox:~/hadoop/sbin$
```



```
File Edit View Search Terminal Help
cpre419@cpre419-VirtualBox: ~/hadoop/sbin
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt ~/hadoopdata/hdfs/lab1
copyFromLocal: '/home/cpre419/hadoopdata/hdfs/lab1': No such file or directory: 'hdfs://localhost:9000/home/cpre419/hadoopdata/hdfs/lab1'
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt home/cpre419/hadoopdata/hdfs/lab1
copyFromLocal: 'home/cpre419/hadoopdata/hdfs/lab1': No such file or directory: 'hdfs://localhost:9000/user/cpre419/home/cpre419/hadoopdata/hdfs/lab1'
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -mkdir /lab1
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cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -ls
Found 1 items
drwxr-xr-x  - cpre419 supergroup          0 2021-01-29 02:09 .sparkStaging
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -mkdir /lab1
mkdir: '/lab1': File exists
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal home/cpre419/Downloads/afle.txt /lab1
copyFromLocal: 'home/cpre419/Downloads/afle.txt': No such file or directory
cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop fs -copyFromLocal /home/cpre419/Downloads/afle.txt /lab1
2023-02-12 14:35:40,187 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localhostTrusted = false, remoteHostTrusted = false
cpre419@cpre419-VirtualBox:~/hadoop/sbin$
```

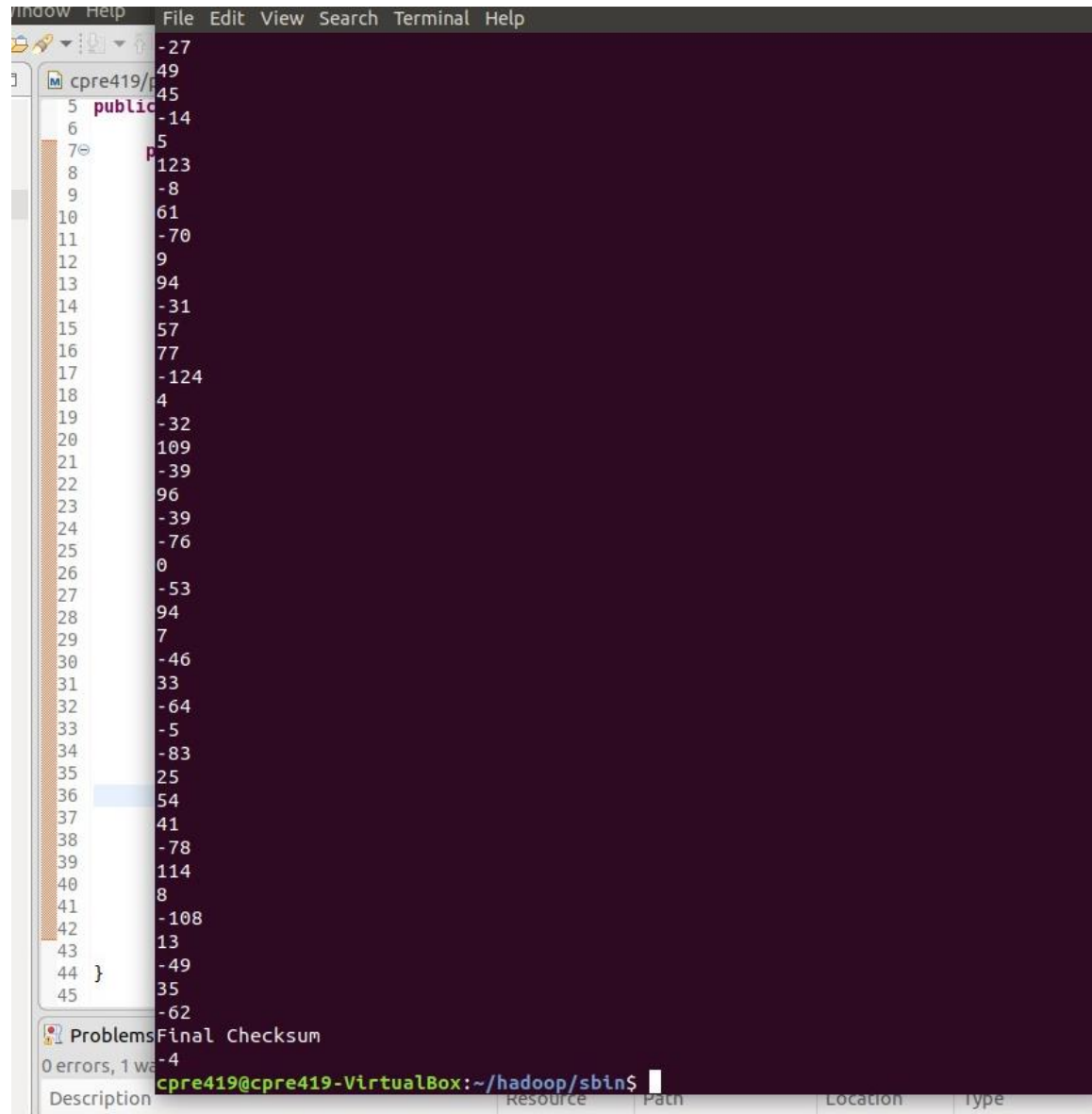
HDFSWrite.java was successfully compiled and run on command line giving the following output:



```
at org.apache.hadoop.util.RunJar.main(RunJar.java:232)
Problems cpre419@cpre419-VirtualBox:~/hadoop/sbin$ hadoop jar ~/Downloads/lab1.jar HDFSWrite
2023-02-16 12:40:44,103 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localhostTrusted = false, remoteHostTrusted = false
cpre419@cpre419-VirtualBox:~/hadoop/sbin$
```

## Experiment 2

A java program to calculate the checksum was implemented. The source code has been included in the zipped folder. The below is a screenshot of the output of the program.



The screenshot shows an IDE with a Java file named `Checksum.java` and its output. The code is as follows:

```
1 public class Checksum {
2     public static void main(String[] args) {
3         int sum = 0;
4         for (int i = 0; i < args.length; i++) {
5             sum += Integer.parseInt(args[i]);
6         }
7         System.out.println("Final Checksum: " + sum);
8     }
9 }
```

The output of the program is displayed in the console, showing the final checksum for each input argument:

```
Final Checksum: -27
Final Checksum: 49
Final Checksum: 45
Final Checksum: -14
Final Checksum: 5
Final Checksum: 123
Final Checksum: -8
Final Checksum: 61
Final Checksum: -70
Final Checksum: 9
Final Checksum: 94
Final Checksum: -31
Final Checksum: 57
Final Checksum: 77
Final Checksum: -124
Final Checksum: 4
Final Checksum: -32
Final Checksum: 109
Final Checksum: -39
Final Checksum: 96
Final Checksum: -39
Final Checksum: -76
Final Checksum: 0
Final Checksum: -53
Final Checksum: 94
Final Checksum: 7
Final Checksum: -46
Final Checksum: 33
Final Checksum: -64
Final Checksum: -5
Final Checksum: -83
Final Checksum: 25
Final Checksum: 54
Final Checksum: 41
Final Checksum: -78
Final Checksum: 114
Final Checksum: 8
Final Checksum: -108
Final Checksum: 13
Final Checksum: -49
Final Checksum: 35
Final Checksum: -62
```

The IDE's Problems view at the bottom shows "0 errors, 1 warning". The terminal shows the command prompt `cp419@cp419-VirtualBox:~/hadoop/sbin$`.