

# Create Hash Values in Linux

## Project description

The project demonstrates how I used sha256sum to create hash values for two different files which look identical but different in hash value in Linux OS.

## Generate hashes for files

```
analyst@5f5b9aefaf54:~$ ls
file1.txt  file2.txt
analyst@5f5b9aefaf54:~$ cat file1.txt
X5O!P@AP[4\PZX54(P^)^7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H*
analyst@5f5b9aefaf54:~$ cat file2.txt
X5O!P@AP[4\PZX54(P^)^7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H*
9sxa5Yq20Ranalyst@5f5b9aefaf54:~$ sha256sum file1.txt
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffbfd8267  file1.txt
analyst@5f5b9aefaf54:~$ sha256sum file2.txt
2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af9ca017b  file2.txt
analyst@5f5b9aefaf54:~$
```

The first line of the screenshot displays the command I entered, and the other lines display the output prospectively. The code lists all contents of the projects directory. I used the `ls` command to display the files in the directory. The output of my command indicates that there are two files named `file1.txt` and `file2.txt`. I used the `cat` command to display both file content, the output indicates that both files are identical. I used the `sha256sum` command to create hash values for both files, the output indicates that both file hash values are different.

## Compare hashes

```
analyst@5f5b9aefaf54:~$ sha256sum file1.txt >> file1hash
analyst@5f5b9aefaf54:~$ sha256sum file2.txt >> file2hash
analyst@5f5b9aefaf54:~$ cat file1hash
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffbfd8267  file1.txt
analyst@5f5b9aefaf54:~$ cat file2hash
2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af9ca017b  file2.txt
analyst@5f5b9aefaf54:~$ cmp file1hash file2hash
file1hash file2hash differ: char 1, line 1
analyst@5f5b9aefaf54:~$
```

The first line of the screenshot displays the command I entered, and the other lines display the

output prospectively. I created hash values for both files and saved them as another file; file1hash for file1.txt hash value and file2hash for file2.txt hash value. I used the `cmp` command to compare the two files hash values. The output indicates that the hashes differ at the first character in the first line.