Create hash values

Project description

In this project I will investigate two files that appear to be identical, I will compare their hash values. If the hash values differ, it confirms that the files are not identical. I will use hash functions such as the sha - 256 to generate a hash value for each file, I will store each hash value in a separate folder. I will compare the hash values stored in the new folders using the ‘cmp’ command.

Generate hashes for files

In my home directory, I have two files which contain similar data. I will use the ‘ls’ command to list the files in my home directory then I will use ‘cat’ command to display content of both files. After reviewing them, they both look identical.

```
analyst@2457a173e876:~$ ls
file1.txt  file2.txt
analyst@2457a173e876:~$ cat file1.txt cat file2.txt
X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H*
cat: cat: No such file or directory
X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H*
9sxa5Yq20Ranalyst@2457a173e876:~$
```

To be 100% certain that the files are identical, I will hash both files and then compare their hash values. To do this I will use the hash function called sha256 which will print put the hash value of the files. The generated hash values are not identical which confirms that the files are different

```
9sxa5Yq20Ranalyst@2457a173e876:~$ sha256sum file1.txt
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffbdfd8267  file1.txt
analyst@2457a173e876:~$ sha256sum file2.txt
2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af9ca017b  file2.txt
analyst@2457a173e876:~$
```

Compare hashes

Here I'm trying to look for the difference between the files. I will generate the hashed value for each file and send the output to a new file. I will use the sha256sum command to generate the hash values

```
analyst@0d5a68af7f0b:~$ sha256sum file1.txt >> file1hash
analyst@0d5a68af7f0b:~$ sha256sum file2.txt >> file2hash
analyst@0d5a68af7f0b:~$ ls
file1.txt  file1hash  file2.txt  file2hash
```

Two new files have been created, the hashed value of 'file1.txt' is in 'file1hash' and hashed value of 'file2.txt' is in file2hash. Next, I compared the two new files using the 'cmp' command. The out 'char 1, line' tells us the hashes differ at the first character in the first line

```
131f95c51cc819465fa1797f6ccacf9d494aaaff46fa3eac73ae63ffbdfd8267  file1.txt
cat: cat: No such file or directory
2558ba9a4cad1e69804ce03aa2a029526179a91a5e38cb723320e83af9ca017b  file2.txt
analyst@0d5a68af7f0b:~$ cmp file1hash file2hash
file1hash file2hash differ: char 1, line 1
analyst@0d5a68af7f0b:~$
```

Summary

In summary, although the contents may appear the same, checking the hash value ensures the files are really the same. Using the sha256 function allowed me to generate the hash value which confirmed to me the files are different,