ASSIGNMENT NO: 05

/*

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Problem Statement:

Write a program for identifying tampering in either image or voice data. Use big data as input.

Objectives:

1. To study hash functions.

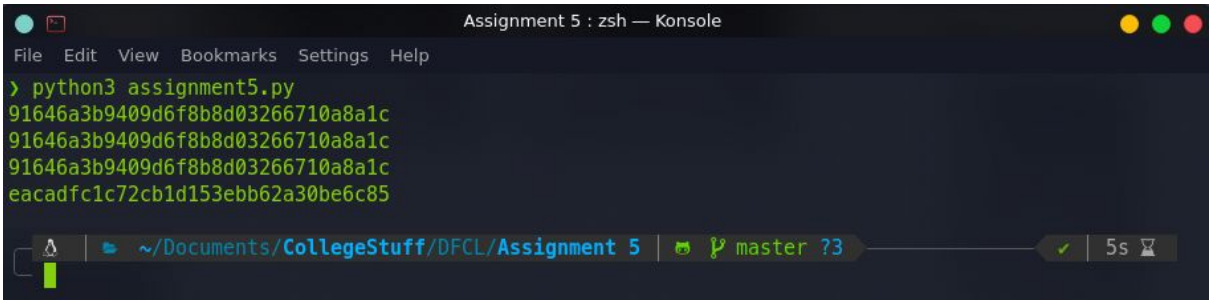
Theory:
SHA, (Secure Hash Algorithms) are set of cryptographic hash functions defined by the language to
be used for various applications such as password security etc. Some variants of it are supported by
Python in the “hashlib” library.
The available algorithms are : sha256,sha384, sha224, sha512, sha1, md5.
To proceed with, lets first discuss the functions going to be used in this article.
Functions associated:
● encode() : Converts the string into bytes to be acceptable by hash function.
● hexdigest() : Returns the encoded data in hexadecimal format.

Code:

```
import hashlib
from PIL import Image

def compareImage(filename1,filename2):
  md5hash = hashlib.md5(filename1)
  image1 = md5hash.hexdigest()

  md5hash = hashlib.md5(filename2)
  image2 = md5hash.hexdigest()
```

```
  if(image1 == image2):
    print(image1)
    print(image2)
    return ("Image Not Tampered")
  else:
    print(image1)
    print(image2)
    return("Image is Tampered")

filename1=Image.open(r'1st.png').tobytes()
filename2=Image.open(r'1st_tamp.png').tobytes()
compareImage(filename1,filename2)

filename1=Image.open(r'1st.png').tobytes()
filename3=Image.open(r'1st_tamp2.png').tobytes()
compareImage(filename1,filename3)
```

Output:



Platform: Ubuntu 20.04

Programming Language Used: Python.

Conclusion: Hence, learned to use the hashlib library and check data tampering through it.