Fundamental of Cyber Security

B. Tech CSE III Semester

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Use of python programming in security

How to compute hash value of a password

Program

```
pw = str(raw_input("Enter the password:"))
# hash for string
print('Hash value of the password is:', hash(pw))
```

Program

- pw=str(raw_input("Enter a pasaword:"))
- print("Entered password:" +pw)
- hash_pwd=hash(pw)
- print("Hash value of the password is:")
- print(+hash_pwd)

Input and Output

Input

Enter the password:scot@123

Output

Hash value of the password is: 847220105

Python File Handling: Create, Open, Append, Read, Write

- **Steps:**
- Open the file
- Add or delete or update the data
- Close the file

- **File Access Modes**

- There are 6 access modes in python.

- Read Only ('r') : Open text file for reading. The handle is positioned at the beginning of the file. If the file does not exists, raises I/O error. This is also the default mode in which file is opened.

- Read and Write ('r+') : Open the file for reading and writing. The handle is positioned at the beginning of the file. Raises I/O error if the file does not exists.

- Write Only ('w') : Open the file for writing. For existing file, the data is truncated and over-written. The handle is positioned at the beginning of the file. Creates the file if the file does not exists.

- **File Access Modes**
- There are 6 access modes in python.
- Write and Read ('w+') : Open the file for reading and writing. For existing file, data is truncated and over-written. The handle is positioned at the beginning of the file.
- Append Only ('a') : Open the file for writing. The file is created if it does not exist. The handle is positioned at the end of the file. The data being written will be inserted at the end, after the existing data.
- Append and Read ('a+') : Open the file for reading and writing. The file is created if it does not exist. The handle is positioned at the end of the file. The data being written will be inserted at the end, after the existing data.

Example

```python
for i in range(10):
  f = open("file1.txt", "a+")
  f.write("This is line %d\r\n" % (i+1))
  f.close()
```

Output

- This program creates new file "file1.txt" and following content will be added.

Output

This is line 1

This is line 2

This is line 3

This is line 4

This is line 5

This is line 6

This is line 7

This is line 8

This is line 9

This is line 10

Program for writing username and password in file.

```python
unm = str(raw_input("Enter username:"))
pw = str(raw_input("Enter the password:"))
# hash for string
a=hash(pw)
print('Username:', unm)
print('Hash value of the password is:', a)
f = open("pwd.txt", "w+")
f.write("%s" %(unm))
f.write("%s" %(a))
f.close()
```

Input and Output

Input

Username: johnj

Hash value of the password is: 647925657

Output:

A new file "pwd.txt" will be created which contains following entries.

johnj647925657

Exercise for students

Write down a python program which creates a file that contains the entries like username and hashed password for 10 users.

Solution (for 2 users):

```python
for i in range(2):
    unm = str(raw_input("Enter username:"))
    pw = str(raw_input("Enter the password:"))
    # hash for string
    a=hash(pw)
    print('Username:', unm)
    print('Hash value of the password is:', a)
    f = open("pwd2.txt", "a+")
    f.write("%s" %(unm))
    f.write("%s\n" %(a))
    f.close()
```

Input and Output

- Enter username:sumit

- Enter the password:sumit@123

- Username: sumit

- Hash value of the password is: 1044013440

- Enter username:hement

- Enter the password:hement#321

- Username: hement

- Hash value of the password is: -142909824

Input and Output

- One file "pwd2.txt" will be created which contains following entries.

sumit1044013440

hement-142909824

Home work:

- Write a python program to store the details of 10 credit card holders in a file. Use the concept of python file handling. Following parameters, you have to store in the created file:

- Card holder name

- Hash value of credit card number

- Hash value of expiry date

- Take the values of card holder name, credit card number and expiry date as the inputs from the user.