Assignment - 8

of

Cyber Security Laboratory

(CSE612)

Bachelor of Technology (CSE)

By

Ramoliya Kaushal (22000409)

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Course In-charge: Prof. Ninad Bhavsar

Department of Computer Science and Engineering

School Engineering and Technology
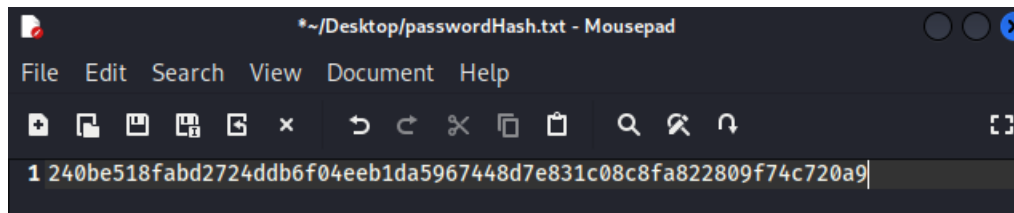
Navrachana University, Vadodara

Spring Semester

(2025)

Q1. Install John the Ripper in Ubuntu (For Kali Linux it is inbuilt) using the following command: sudo apt-get install john-the-ripper OR sudo apt-get install john
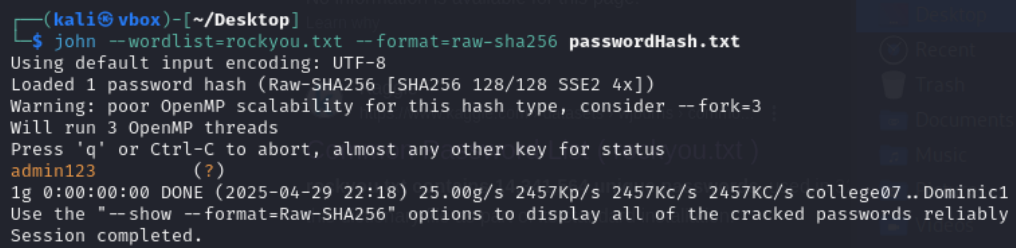
1. Installation of John the Ripper

Q2. Demonstrate how to use the single crack mode for password cracking.

```
  ┌──(kali☯vbox)-[~/Desktop]
  └─$ john --single --format=Raw-SHA256 passwordHash.txt
Using default input encoding: UTF-8
Loaded 1 password hash (Raw-SHA256 [SHA256 128/128 SSE2 4x])
Warning: poor OpenMP scalability for this hash type, consider --fork=3
Will run 3 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
Almost done: Processing the remaining buffered candidate passwords, if any.
0g 0:00:00:00 DONE (2025-04-29 22:10) 0g/s 0p/s 0c/s 0C/s
Session completed.
```

*~/Desktop/passwordHash.txt - Mousepad

File   Edit   Search   View   Document   Help

1 240be518fabd2724ddb6f04eeb1da5967448d7e831c08c8fa822809f74c720a9

Q3. Demonstrate how to use the word list mode for password cracking.

```
┌──(kali㉿vbox)-[~/Desktop]
└─$ john --wordlist=rockyou.txt --format=raw-sha256 passwordHash.txt
Using default input encoding: UTF-8
Loaded 1 password hash (Raw-SHA256 [SHA256 128/128 SSE2 4x])
Warning: poor OpenMP scalability for this hash type, consider --fork=3
Will run 3 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
admin123         (?)
1g 0:00:00:00 DONE (2025-04-29 22:18) 25.00g/s 2457Kp/s 2457Kc/s 2457KC/s college07..Dominic1
Use the "--show --format=Raw-SHA256" options to display all of the cracked passwords reliably
Session completed.
```

Q4. Demonstrate how to use the incremental mode for password cracking.

```
┌──(kali㊀vbox)-[~/Desktop]
└─$ echo -n 'passw0rd' | sha256sum
8f0e2f76e22b43e2855189877e7dc1e1e7d98c226c95db247cd1d547928334a9  -

┌──(kali㊀vbox)-[~/Desktop]
└─$ echo user01:8f0e2f76e22b43e2855189877e7dc1e1e7d98c226c95db247cd1d547928334a9>>inc.txt

┌──(kali㊀vbox)-[~/Desktop]
└─$ john --incremental --format=raw-sha256 inc.txt
Using default input encoding: UTF-8
Loaded 1 password hash (Raw-SHA256 [SHA256 128/128 SSE2 4x])
Warning: poor OpenMP scalability for this hash type, consider --fork=3
Will run 3 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
passw0rd          (user01)
1g 0:00:00:01 DONE (2025-04-29 23:16) 0.8771g/s 366484p/s 366484c/s 366484C/s budgai1..sty181
Use the "--show --format=Raw-SHA256" options to display all of the cracked passwords reliably
Session completed.

┌──(kali㊀vbox)-[~/Desktop]
└─$ ▮
```