

# Cyber Security

## Practical 4: Implement Brute force Attack and Virus

Brute Force Input:

```
import itertools
import string

def bruteforce(password):
    chars = string.printable.strip()
    attempts = 0
    for length in range(1, len(password) + 1):
        for guess in itertools.product(chars, repeat=length):
            attempts += 1
            guess = ''.join(guess)
            if guess == password:
                return (attempts, guess)
    return (attempts, None)

password = input("Input the password to crack: ")
attempts, guess = bruteforce(password)
if guess:
    print(f"Password cracked in {attempts} attempts. The password is {guess}.")
else:
    print(f"Password not cracked after {attempts} attempts.")
```

Brute Force Output:

```
PS C:\Users\Admin> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe d:/Aditya04/bruteforce.py
Input the password to crack: 5555
Password cracked in 5037090 attempts. The password is 5555.
```

Virus Input (Creating file and deleting it):

```
import os
import time
def create_files(directory):
    if not os.path.exists(directory):
        os.makedirs(directory)

    for i in range(5):
        file_path = os.path.join(directory, f"malicious_file_{i}.txt")
        with open(file_path, 'w') as file:
            file.write(f"This is a simulated malicious file {i}.")
        print(f"Created: {file_path}")

def delete_files(directory):
    if os.path.exists(directory):
        for file_name in os.listdir(directory):
            file_path = os.path.join(directory, file_name)
            if os.path.isfile(file_path):
                os.remove(file_path)
                print(f"Deleted: {file_path}")
        os.rmdir(directory)
        print(f"Deleted directory: {directory}")

if __name__ == "__main__":
    test_directory = "D:\Test"

    print("Simulating malicious behavior...")
    create_files(test_directory)

    # Simulate waiting time
    time.sleep(10) # 10 seconds

    delete_files(test_directory)

    print("Simulation completed and cleaned up.")
```

Virus Output:

```
PS C:\Users\Admin> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe d:/Aditya04/virus.py
Simulating malicious behavior...
Created: D:\Test\malicious_file_0.txt
Created: D:\Test\malicious_file_1.txt
Created: D:\Test\malicious_file_2.txt
Created: D:\Test\malicious_file_3.txt
Created: D:\Test\malicious_file_4.txt
Deleted: D:\Test\malicious_file_0.txt
Deleted: D:\Test\malicious_file_1.txt
Deleted: D:\Test\malicious_file_2.txt
Deleted: D:\Test\malicious_file_3.txt
Deleted: D:\Test\malicious_file_4.txt
Deleted directory: D:\Test
Simulation completed and cleaned up.
```