Assignment 1: Text Processing and Automation

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Objective:
Write and execute a bash script using grep, sed, and awk to list login attempts on a Linux system and extract attempted usernames and error messages into a separate file.

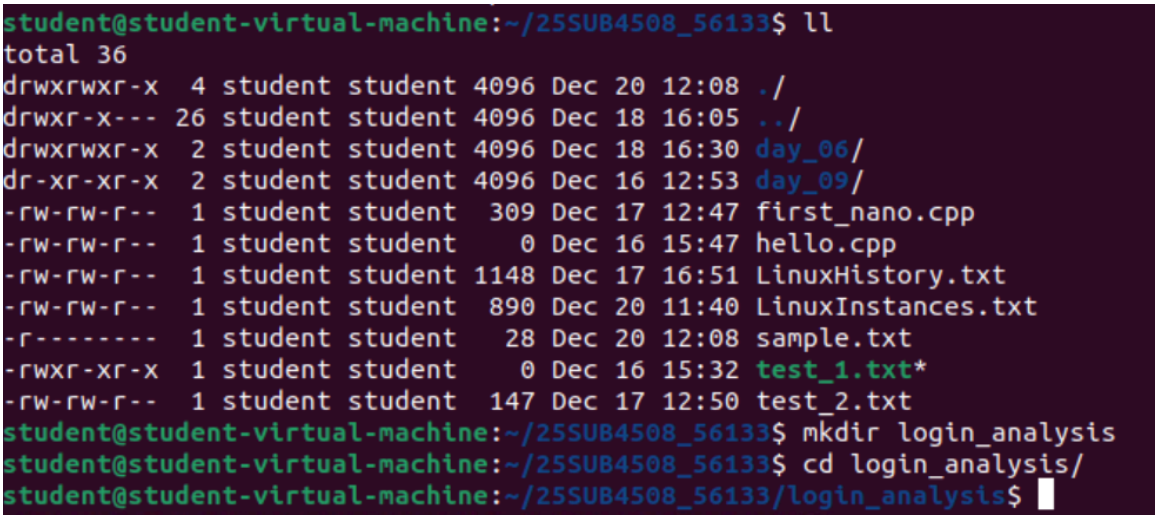
Log File Used

For this assignment, authentication logs are read from:
/var/log/auth.log (read-only access)

Step 1: Create Working Directory

Command:
mkdir login_analysis
cd login_analysis

Screenshot:



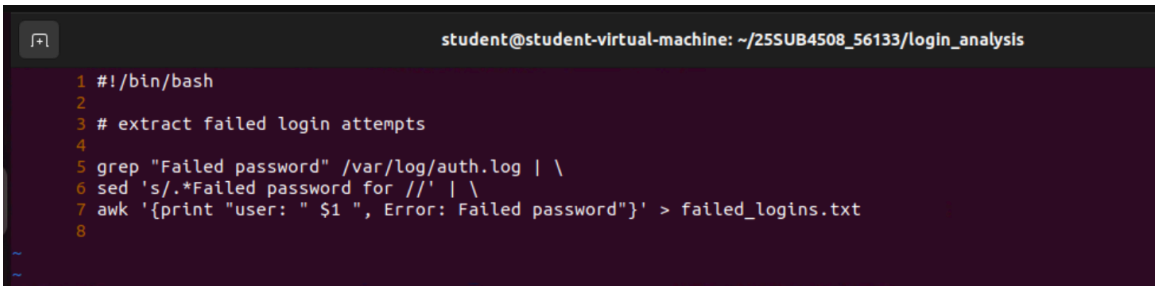
Step 2: Create Bash Script

Command:
vi login_attempts.sh

Script Content:
#!/bin/bash
grep "Failed password" /var/log/auth.log | \
sed 's/.*Failed password for //' | \
awk '{print "User:" $1 ", Error:" "Failed password"}' > failed_logins.txt

Screenshot:

```
student@student-virtual-machine:~/25SUB4508_56133/login_analysis$ ls -l /var/log/auth.log
-rw-r----- 1 syslog adm 114803 Dec 20 14:17 /var/log/auth.log
student@student-virtual-machine:~/25SUB4508_56133/login_analysis$ vi login_attempts.sh
```



Step 3: Give Execute Permission

Command:
chmod +x login_attempts.sh

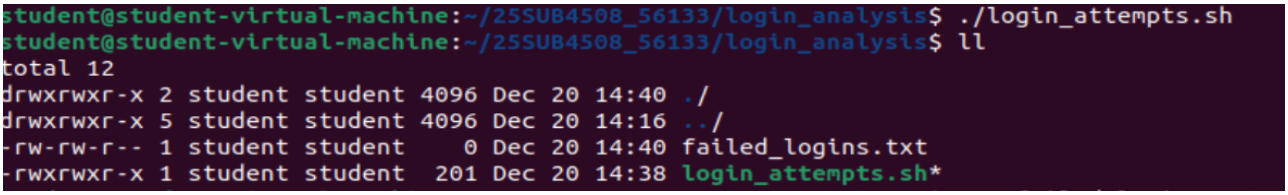
Screenshot:

```
student@student-virtual-machine:~/25SUB4508_56133/login_analysis$ vi login_attempts.sh
student@student-virtual-machine:~/25SUB4508_56133/login_analysis$ chmod +x login_attempts.sh
student@student-virtual-machine:~/25SUB4508_56133/login_analysis$
```

Step 4: Execute Script

Command:
./login_attempts.sh

Screenshot:



Step 5: View Output File

Command:
cat failed_logins.txt

Output:
User:root, Error:Failed password
User:admin, Error:Failed password

Screenshot:

External Tools

- GNU Bash Shell
- GNU grep
- GNU sed
- GNU awk
- Linux Authentication Logs (auth.log)
- Ubuntu Linux OS
- Vi Text Editor