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SEC : A

TITLE : UNIX LAB TASK (SSH COMMAND)

SYSTEM -1:

A) Establishing Connection :

```
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ ssh --help
unknown option -- -
usage: ssh [-46AaCfGgKkMnNqsTtVvXxYy] [-B bind_interface]
          [-b bind_address] [-c cipher_spec] [-D [bind_address:]port]
          [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
          [-i identity_file] [-J [user@]host[:port]] [-L address]
          [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
          [-Q query_option] [-R address] [-S ctl_path] [-W host:port]
          [-w local_tun[:remote_tun]] destination [command]
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eno1: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc fq_codel state DOWN group default qlen 1000
    link/ether 10:e7:c6:39:92:55 brd ff:ff:ff:ff:ff:ff
    altname enp0s31f6
3: wlp2s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether fc:01:7c:8e:53:6f brd ff:ff:ff:ff:ff:ff
    inet 172.50.4.155/20 brd 172.50.15.255 scope global noprefixroute wlp2s0
        valid_lft forever preferred_lft forever
    inet6 fe80::fe01:7cff:fe8e:536f/64 scope link
        valid_lft forever preferred_lft forever
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ ssh student@172.50.4.155
The authenticity of host '172.50.4.155 (172.50.4.155)' can't be established.
ECDSA key fingerprint is SHA256:djMJiaCgs6nr5UP9XCMhVhzFkD+6duag7jp2G5LbjPU.
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '172.50.4.155' (ECDSA) to the list of known hosts.
student@172.50.4.155's password:
Welcome to Ubuntu 20.04.4 LTS (GNU/Linux 5.11.0-38-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

559 updates can be applied immediately.
458 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

New release '22.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.
```

B) Connection Established :

```
Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Wed Mar 20 14:59:53 2024 from 172.50.10.70
(base) student@ai-HP-ProDesk-600-G4-MT:~$ cd Desktop
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ ls
422113  422167  a.out      BitStuffingServer.java  CheckSum.java  network  SegFault.c  stuff.class  wee.py
422134  622126.py  BitStuffingClient.java  CheckSum.class  MST.cpp       question1.html  SPT.cpp    stuff.java
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop$
```

C) Running programs :

(1. awk 2. sed 3. echo)

(here the output files awk_out.txt sed_output1.txt are created and they can be seen in ls command)

```
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ cd 422167
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167$ ls
Unix
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167$ cd Unix
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ls
awk.sh  file1.txt  sed.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ chmod +x awk.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ./awk.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ./awk.sh >> awk_out.txt
awk: cmd. line:1: (FILENAME=file1.txt FNR=1) fatal: printf: no arguments
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ls
awk_out.txt  awk.sh  file1.txt  sed.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ./sed.sh >> sed_output1.txt
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ls
awk_out.txt  awk.sh  file1.txt  sed_output1.txt  sed_output.txt  sed.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ./sed.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ls
awk_output1.txt  awk_out.txt  awk.sh  echo.sh  file1.txt  sed_output1.txt  sed_output.txt  sed.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ chmod +x echo.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ./echo.sh >> echo_out.txt
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ ls
awk_output1.txt  awk_out.txt  awk.sh  echo_out.txt  echo.sh  file1.txt  sed_output1.txt  sed_output.txt  sed.sh
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$ cat echo_out.txt
HELLO !!!
(base) student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422167/Unix$
```

NOTE : Output files are not shown in assignment instead I have shown that the output files are created in the directory by using ls command after every output

SYSTEM - 2:

N-QUEENS , FACTORIAL OF A NUMBER

```

student@labdesktop:~$ ssh student@172.50.10.64
student@172.50.10.64's password:
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.15.0-88-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

282 updates can be applied immediately.
164 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

New release '22.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

3 updates could not be installed automatically. For more details,
see /var/log/unattended-upgrades/unattended-upgrades.log
Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Wed Mar 20 16:12:37 2024 from 172.50.15.41
student@ai-HP-ProDesk-600-G4-MT:~$ cd Desktop
student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ ls
422113.java  a      a.out      BitStuff.java  s1223.py      slid.java      sshRev3.png  stuffing.class  UNIX
622133      ABCD    ap.html     DBMS           s1233.py      sshRev1.png   sshRev4.png  task22.cpp     unixpics1
6.py        afv.py   BitStuff.class 'np lab'       sandeep.queue5.1.24  sshRev2.png   sshRev5.png  tcp.java
student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ python3 afv.py
factorial of 5 is : 120
student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ cd UNIX
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX$ cd week_6
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX/week_6$ ./Build_And_Run.sh
Executing main program with static library...
Enter no.of Queens : 3
Solution does not exist
Executing main program with dynamic library...
Enter no.of Queens : 4
Solution does not exist
Compilation successful
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX/week_6$ 5
5: command not found
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX/week_6$ ./Build_And_Run.sh
Executing main program with static library...
Enter no.of Queens : 5
1 0 0 0
0 0 0 0
0 0 0 1
0 1 0 0
0 0 0 1
0 0 1 0

3 updates could not be installed automatically. For more details,
see /var/log/unattended-upgrades/unattended-upgrades.log
Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Wed Mar 20 16:12:37 2024 from 172.50.15.41
student@ai-HP-ProDesk-600-G4-MT:~$ cd Desktop
student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ ls
422113.java  a      a.out      BitStuff.java  s1223.py      slid.java      sshRev3.png  stuffing.class  UNIX
622133      ABCD    ap.html     DBMS           s1233.py      sshRev1.png   sshRev4.png  task22.cpp     unixpics1
6.py        afv.py   BitStuff.class 'np lab'       sandeep.queue5.1.24  sshRev2.png   sshRev5.png  tcp.java
student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ python3 afv.py
factorial of 5 is : 120
student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ cd UNIX
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX$ cd week_6
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX/week_6$ ./Build_And_Run.sh
Executing main program with static library...
Enter no.of Queens : 3
Solution does not exist
Executing main program with dynamic library...
Enter no.of Queens : 4
Solution does not exist
Compilation successful
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX/week_6$ 5
5: command not found
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX/week_6$ ./Build_And_Run.sh
Executing main program with static library...
Enter no.of Queens : 5
1 0 0 0
0 0 0 1
0 1 0 0
0 0 0 1
0 0 1 0
0 0 1 0

Executing main program with dynamic library...
Enter no.of Queens : 6
Solution does not exist
Compilation successful
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/UNIX/week_6$ cd
student@ai-HP-ProDesk-600-G4-MT:~$ cd Desktop
student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ python3 s1223.py
123Enter the number to push3
3333
333student@ai-HP-ProDesk-600-G4-MT:~/Desktop$ 

```