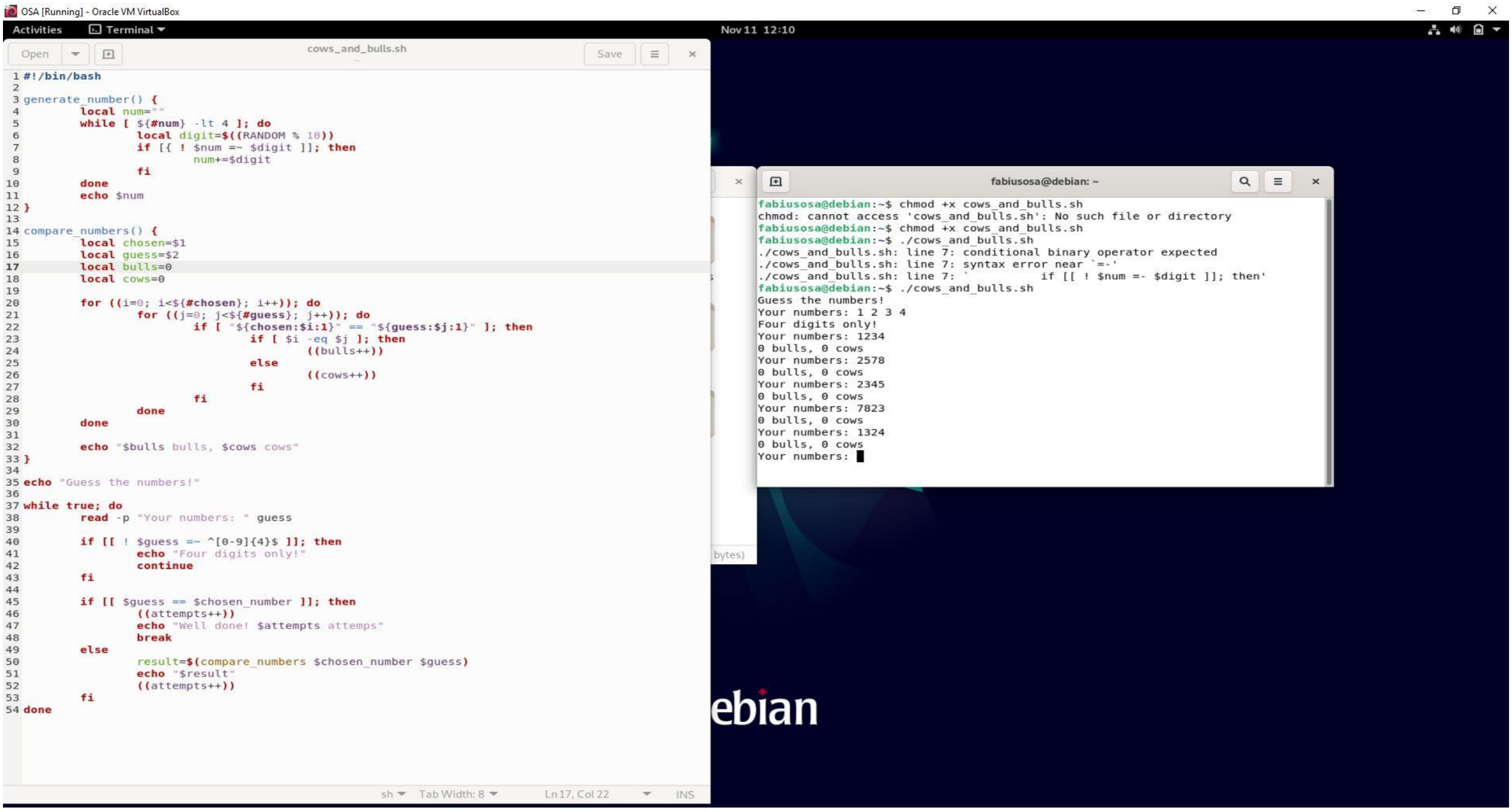
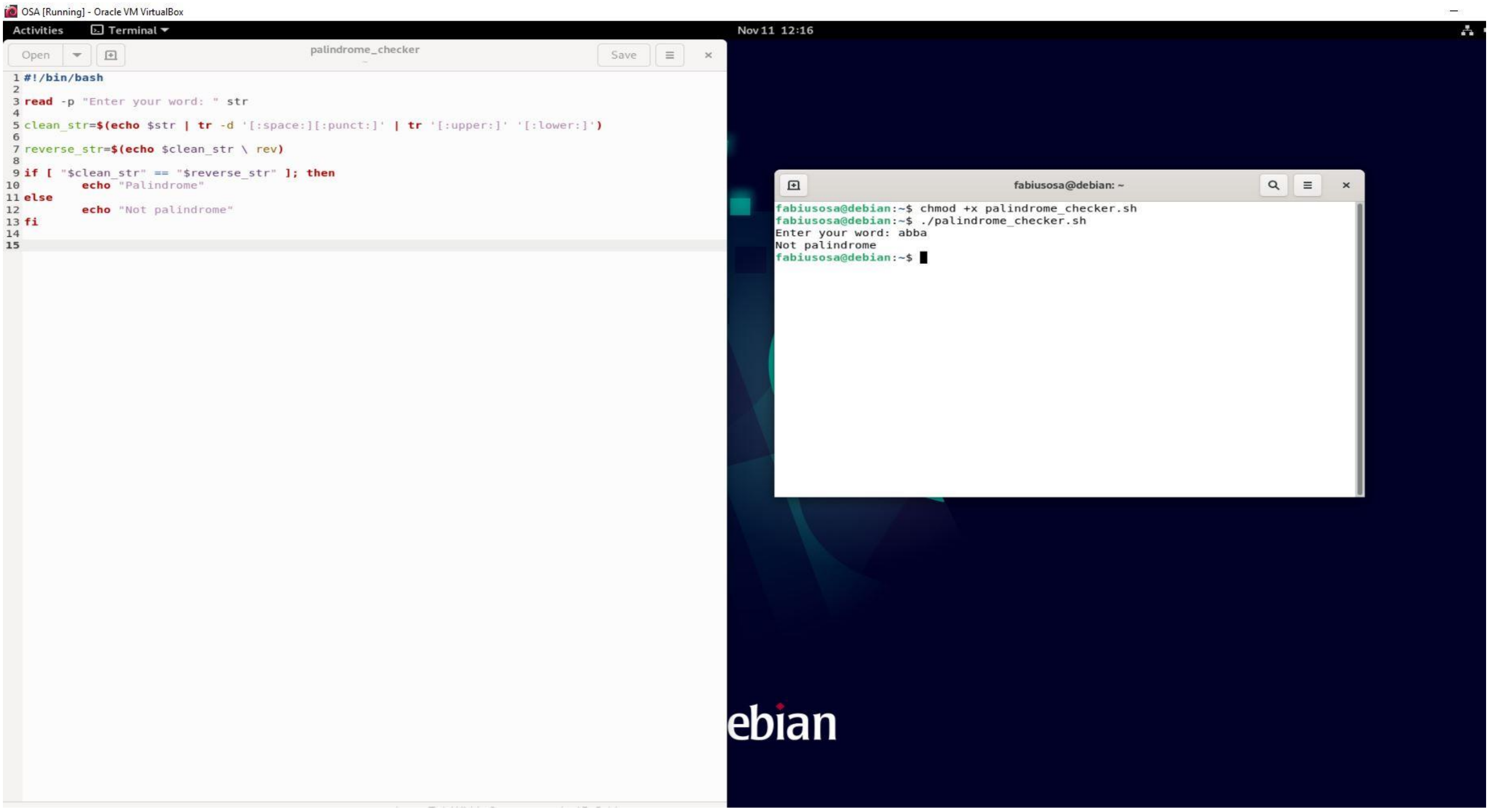
Pop Fabius-Sever
FILS 1231B
CN HW6

CN HW 6



```bash
#!/bin/bash

generate_number() {
        local num=""
        while [ ${#num} -lt 4 ]; do
                local digit=$((RANDOM % 10))
                if [{ ! $num =~ $digit ]]; then
                        num+=$digit
                fi
        done
        echo $num
}

compare_numbers() {
        local chosen=$1
        local guess=$2
        local bulls=0
        local cows=0

        for ((i=0; i<${#chosen}; i++)); do
                for ((j=0; j<${#guess}; j++)); do
                        if [ "${chosen:$i:1}" == "${guess:$j:1}" ]; then
                                if [ $i -eq $j ]; then
                                        ((bulls++))
                                else
                                        ((cows++))
                                fi
                        fi
                done
        done

        echo "$bulls bulls, $cows cows"
}

echo "Guess the numbers!"

while true; do
        read -p "Your numbers: " guess

        if [[ ! $guess =~ ^[0-9]{4}$ ]]; then
                echo "Four digits only!"
                continue
        fi

        if [[ $guess == $chosen_number ]]; then
                ((attempts++))
                echo "Well done! $attempts attemps"
                break
        else
                result=$(compare_numbers $chosen_number $guess)
                echo "$result"
                ((attempts++))
        fi
done
```

```
fabiusosa@debian:~$ chmod +x cows_and_bulls.sh
chmod: cannot access 'cows_and_bulls.sh': No such file or directory
fabiusosa@debian:~$ chmod +x cows_and_bulls.sh
fabiusosa@debian:~$ ./cows_and_bulls.sh
./cows_and_bulls.sh: line 7: conditional binary operator expected
./cows_and_bulls.sh: line 7: syntax error near `=-'
./cows_and_bulls.sh: line 7: `          if [[ ! $num =- $digit ]]; then'
fabiusosa@debian:~$ ./cows_and_bulls.sh
Guess the numbers!
Your numbers: 1 2 3 4
Four digits only!
Your numbers: 1234
0 bulls, 0 cows
Your numbers: 2578
0 bulls, 0 cows
Your numbers: 2345
0 bulls, 0 cows
Your numbers: 7823
0 bulls, 0 cows
Your numbers: 1324
0 bulls, 0 cows
Your numbers: 
```



```bash
#!/bin/bash

read -p "Enter your word: " str

clean_str=$(echo $str | tr -d '[:space:][:punct:]' | tr '[:upper:]' '[:lower:]')

reverse_str=$(echo $clean_str \ rev)

if [ "$clean_str" == "$reverse_str" ]; then
        echo "Palindrome"
else
        echo "Not palindrome"
fi
```

```
fabiusosa@debian:~$ chmod +x palindrome_checker.sh
fabiusosa@debian:~$ ./palindrome_checker.sh
Enter your word: abba
Not palindrome
fabiusosa@debian:~$ 
```

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Ex 3) For a given IP with its associated mask compute:

IP Address: 192.168.1.100

Subnet Mask: 255.255.255.0 → /24

a) Network and Broadcast address:

/24 → 0

Network Address = 192.168.1.0

Broadcast Address:

/24 → 255

Broadcast Address = 192.168.1.255

b) The first and the last available address for stations:

First Available Address = 192.168.1.0 +1 = 192.168.1.1

Last Available Address = 192.168.1.255 -1 = 192.168.1.254

c) The total number of station addresses available:

/24 → 2^(32-24) = 2^8 = 256

Total Available Addresses for Stations = 256 - 2 = 254