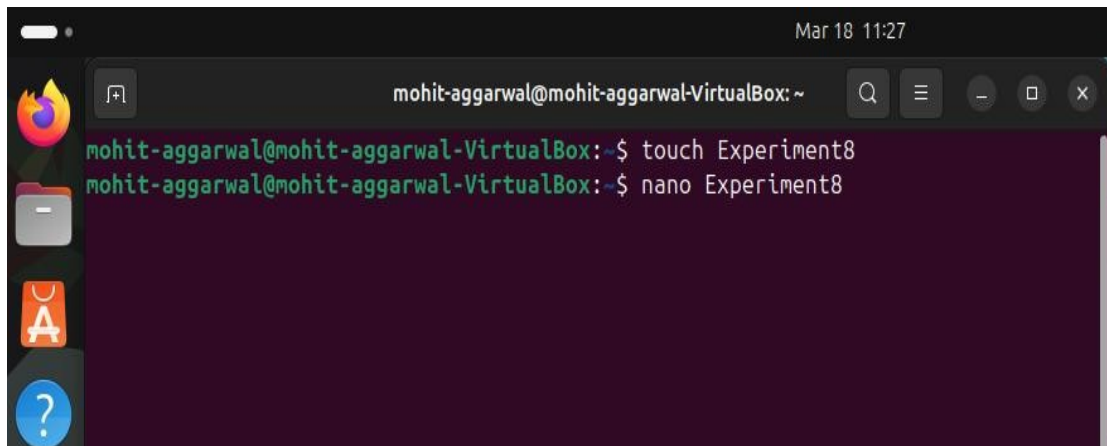


#Steps to Create and Run the Shell Script in Linux

1. Open the terminal.
2. Create a new shell script file.
3. Open the file in a text editor.



4. Write the script inside the file.

```
#!/bin/bash

# Prompt user to enter a system command
echo "Enter a Linux command to execute:"
read user_command # Read user input

# Execute the command and store the output in a file
$user_command > command_output.txt
echo "Command output saved to command_output.txt"

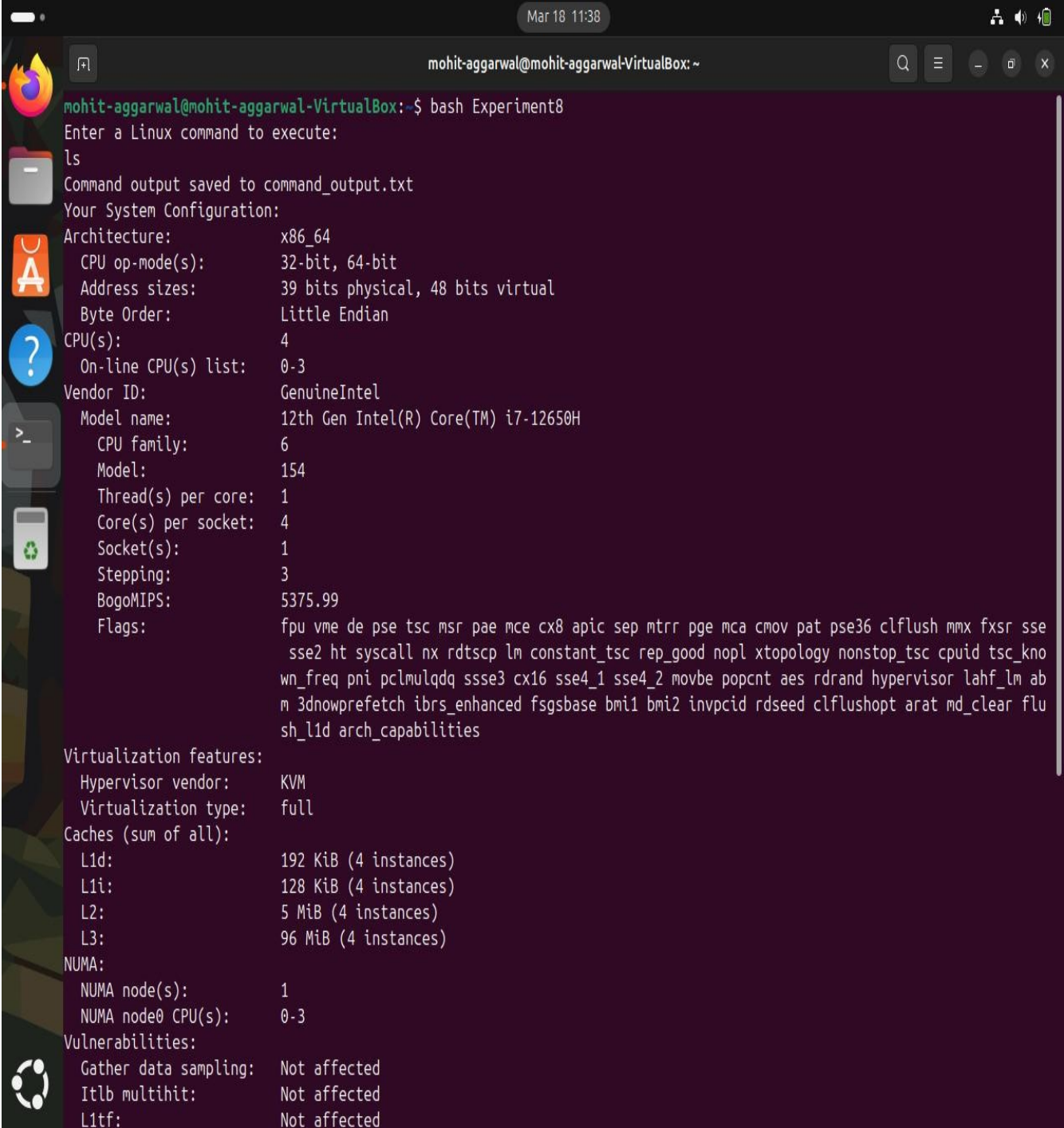
# Display the system configuration
echo "Your System Configuration:"
lscpu # Display CPU information

# Prompt user to enter two numbers for mathematical operations
echo "Enter Two Numbers:"
read Number1
read Number2

# Loop for continuous operation until user exits
while true; do---
    echo "Enter operation (+, -, *, /) or type 'exit' to quit:"
    read char # Read operation input

    case $char in
        '+') echo "Addition: $((Number1 + Number2))" ;;
        '-') echo "Subtraction: $((Number1 - Number2))" ;;
        '*') echo "Multiplication: $((Number1 * Number2))" ;;
        '/')
            if [ "$Number2" -ne 0 ]; then
                echo "Division: $((Number1 / Number2))"
            else
                echo "Error: Division by zero is not allowed."
            fi
            fi---
        ;;
        "exit")
            echo "Exiting..."
            exit 0
        ;;
        *) echo "Invalid input. Please enter a valid operation." ;;
    esac
done
```

5. Save and exit the editor.
6. Give execution permissions to the script.
7. Run the script.



```
mohit-aggarwal@mohit-aggarwal-VirtualBox: ~  
mohit-aggarwal@mohit-aggarwal-VirtualBox:~$ bash Experiment8  
Enter a Linux command to execute:  
ls  
Command output saved to command_output.txt  
Your System Configuration:  
Architecture:          x86_64  
CPU op-mode(s):        32-bit, 64-bit  
Address sizes:          39 bits physical, 48 bits virtual  
Byte Order:             Little Endian  
CPU(s):                 4  
On-line CPU(s) list:    0-3  
Vendor ID:              GenuineIntel  
Model name:             12th Gen Intel(R) Core(TM) i7-12650H  
CPU family:             6  
Model:                  154  
Thread(s) per core:     1  
Core(s) per socket:     4  
Socket(s):              1  
Stepping:               3  
BogoMIPS:               5375.99  
Flags:                  fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse  
sse2 ht syscall nx rdtscp lm constant_tsc rep_good nopl xtopology nonstop_tsc cpuid tsc_kno  
wn_freq pni pclmulqdq ssse3 cx16 sse4_1 sse4_2 movbe popcnt aes rdrand hypervisor lahf_lm ab  
m 3dnowprefetch ibrs_enhanced fsgsbase bmi1 bmi2 invpcid rdseed clflushopt arat md_clear flu  
sh_l1d arch_capabilities  
  
Virtualization features:  
Hypervisor vendor:      KVM  
Virtualization type:    full  
Caches (sum of all):  
L1d:                     192 KiB (4 instances)  
L1i:                     128 KiB (4 instances)  
L2:                      5 MiB (4 instances)  
L3:                      96 MiB (4 instances)  
NUMA:  
NUMA node(s):            1  
NUMA node0 CPU(s):       0-3  
Vulnerabilities:  
Gather data sampling:    Not affected  
Itlb multihit:           Not affected  
L1tf:                   Not affected
```

8. Follow the prompts to enter inputs and perform calculations.

```
mohit-aggarwal@mohit-aggarwal-VirtualBox: ~  
rdrand hypervisor lahf_lm abm 3dnowprefetch ibrs_enhanced fsgsba  
se bmi1 bmi2 invpcid rdseed clflushopt arat md_clear flush_l1d arch_capabilities  
Virtualization features:  
Hypervisor vendor: KVM  
Virtualization type: full  
Caches (sum of all):  
L1d: 192 KiB (4 instances)  
L1i: 128 KiB (4 instances)  
L2: 5 MiB (4 instances)  
L3: 96 MiB (4 instances)  
NUMA:  
NUMA node(s): 1  
NUMA node0 CPU(s): 0-3  
Vulnerabilities:  
Gather data sampling: Not affected  
Itlb multihit: Not affected  
L1tf: Not affected  
Mds: Not affected  
Meltdown: Not affected  
Mmio stale data: Not affected  
Reg file data sampling: Vulnerable: No microcode  
Retbleed: Mitigation; Enhanced IBRS  
Spec rstack overflow: Not affected  
Spec store bypass: Vulnerable  
Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization  
Spectre v2: Mitigation; Enhanced / Automatic IBRS; RSB filling; PBRSE-IBRS SW sequence; BHI SW loop, KV  
M SW loop  
Srbds: Not affected  
Tsx async abort: Not affected  
Enter Two Numbers:  
2  
2  
Enter operation (+, -, *, /) or type 'exit' to quit:  
+  
Addition: 4  
Enter operation (+, -, *, /) or type 'exit' to quit:  
exit  
Exiting...  
mohit-aggarwal@mohit-aggarwal-VirtualBox:~$
```

9. Check the stored output in the generated file.

```
GNU nano 7.2 command_output.txt *  
200-command_output.txt  
calculator.sh  
command_output.txt  
casen.sh  
chmod1.txt  
cli_practice  
command_output.txt  
conditional  
conditionalIf  
consultants  
cpu_info.txt  
cstyle  
Desktop  
Documents  
Downloads  
experiment  
Experiment8  
File1.txt  
File2.txt  
File.txt  
g22  
head2.txt  
head.txt  
m1.txt  
menu.sh  
menu.sh  
mohit  
mohit2  
mohitagg  
mohitagg.txt  
m.txt  
Music  
Pictures  
Practice  
Public  
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo  
^X Exit ^R Read File ^R Replace ^U Paste ^J Justify ^_ Go To Line M-E Redo
```