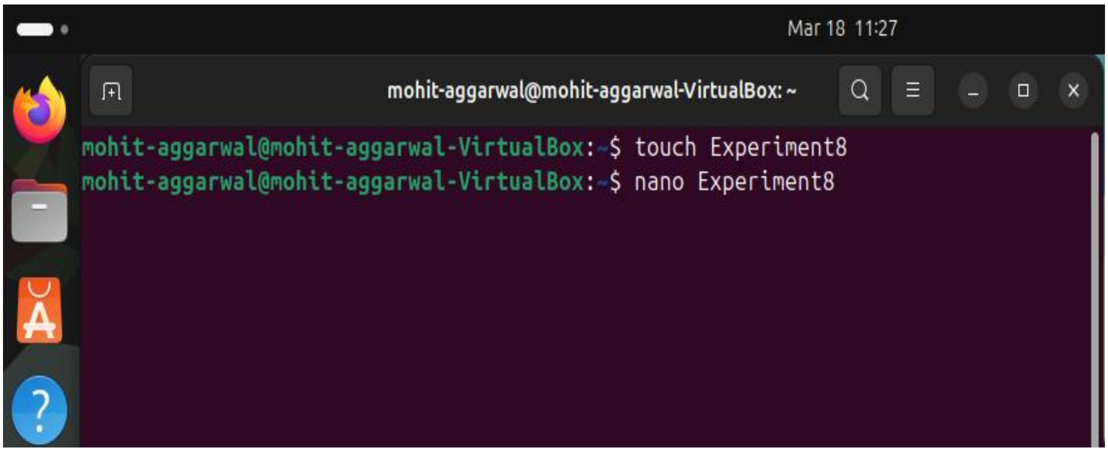
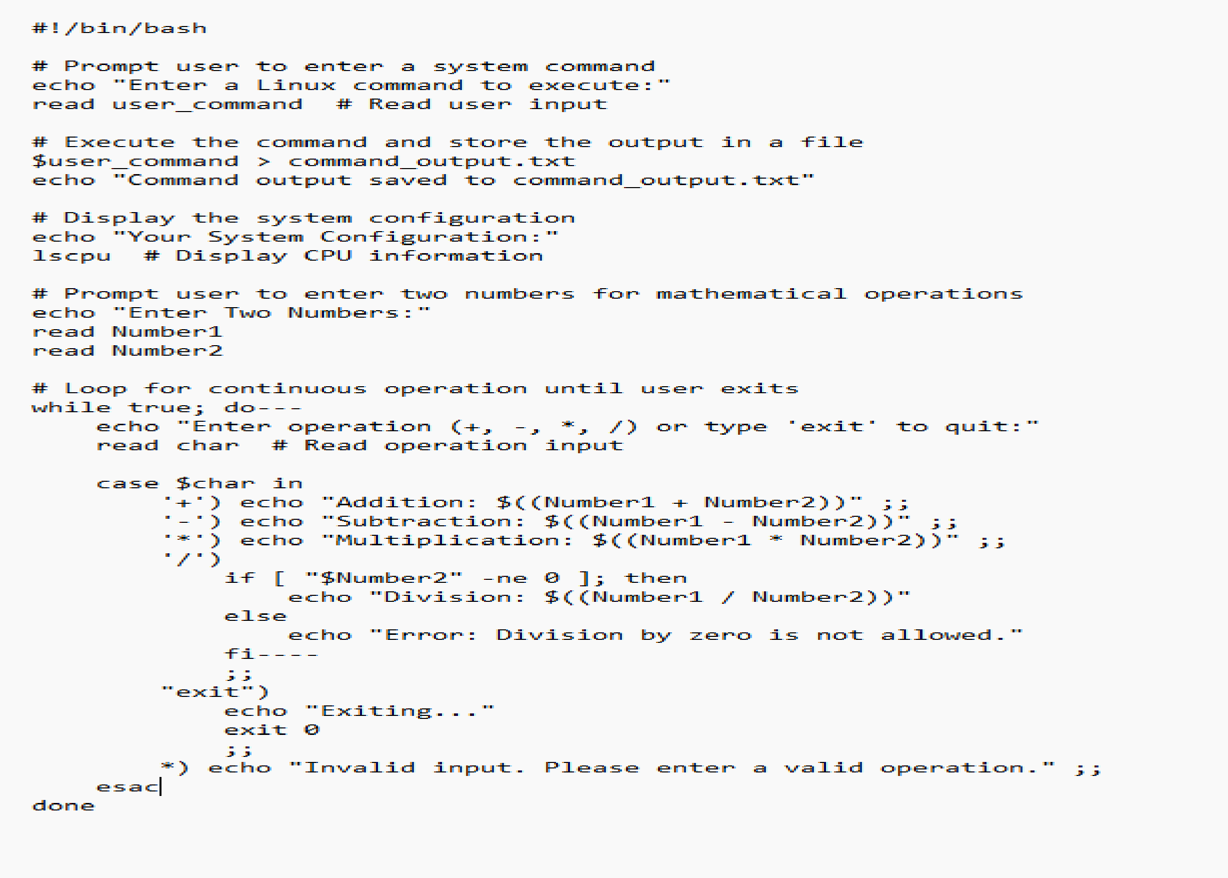
#Steps to Create and Run the Shell Script in Linux

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



```
mohit-aggarwal@mohit-aggarwal-VirtualBox:~$ touch Experiment8
mohit-aggarwal@mohit-aggarwal-VirtualBox:~$ nano Experiment8
```

4. Write the script inside the file.

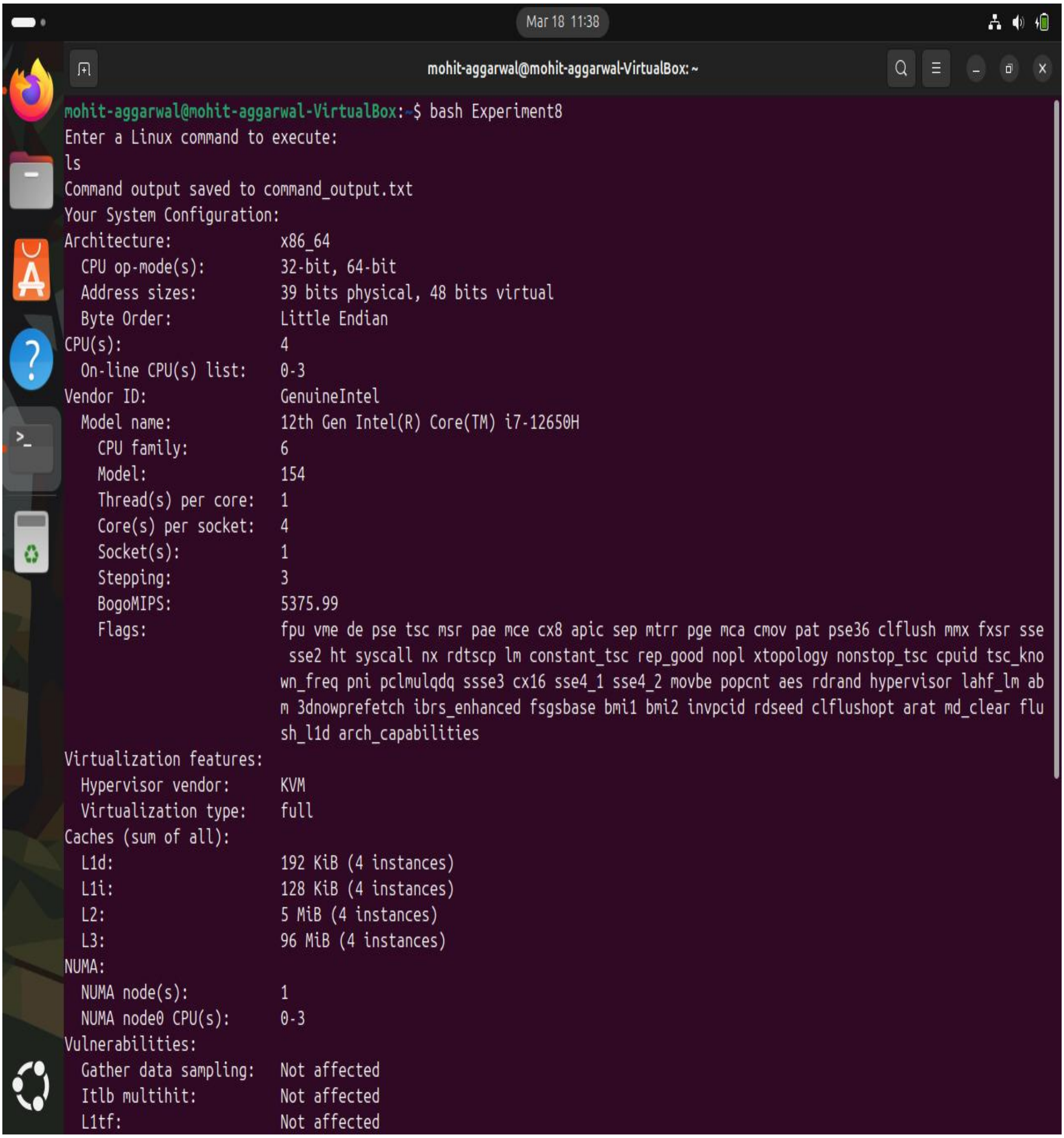


```
#!/bin/bash

# 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----
            ;;
        "exit")
            echo "Exiting..."
            exit 0
            ;;
        *) echo "Invalid input. Please enter a valid operation." ;;
    esac
done
```

5. Save and exit the editor.

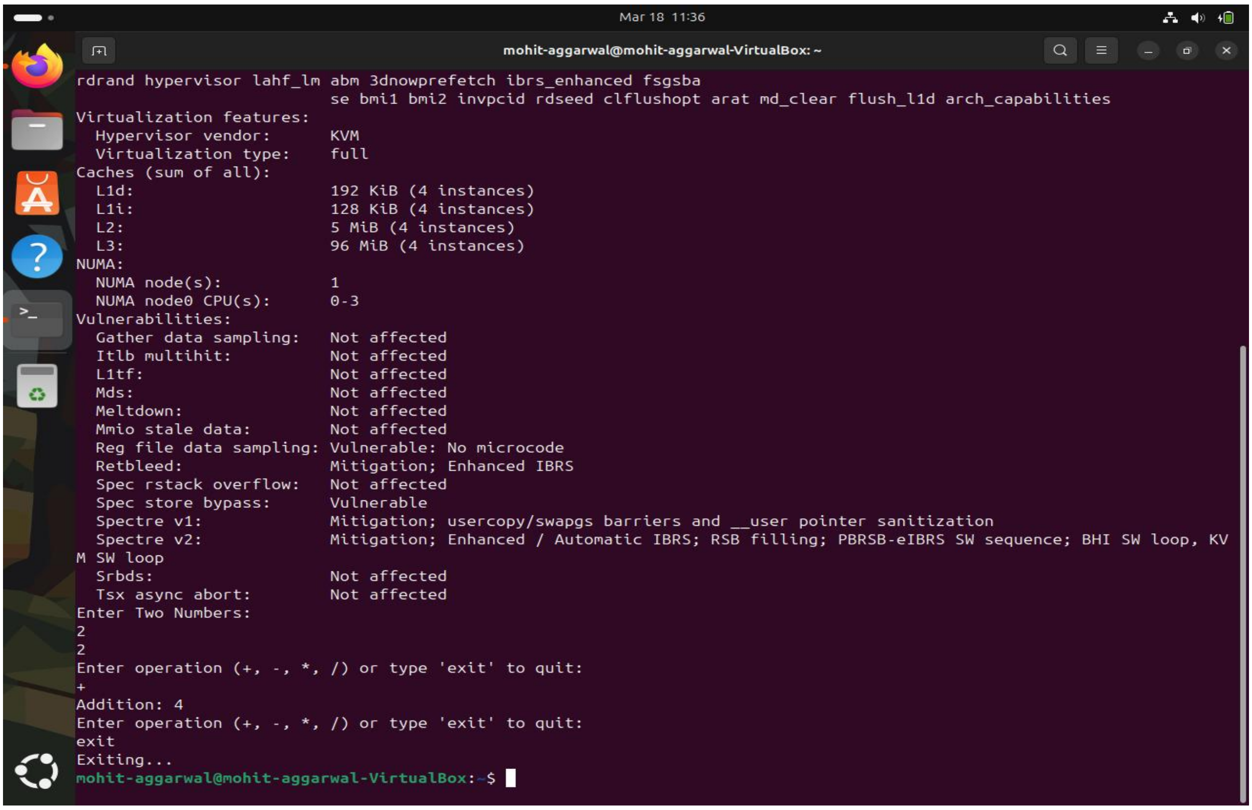
6. Give execution permissions to the script.

7. Run the script.



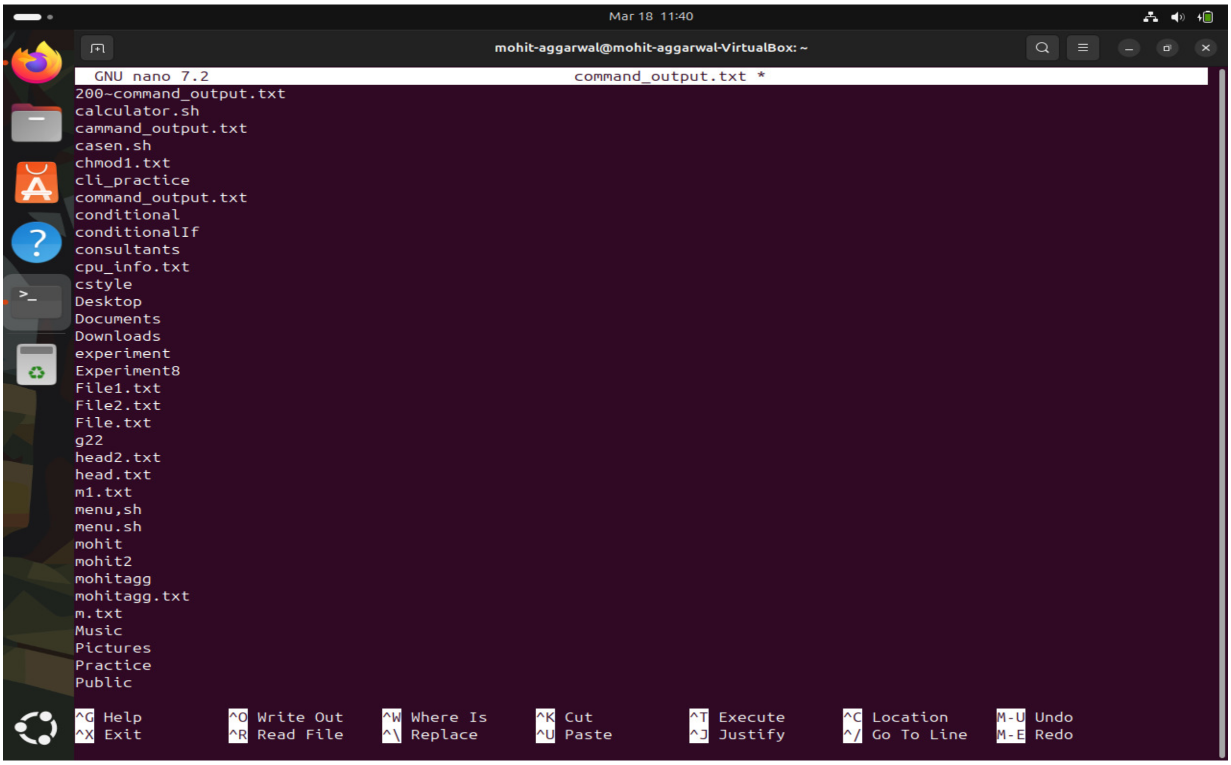
```
mohit-aggarwal@mohit-aggarwal-VirtualBox:~$ bash Experiment8
Enter a Linux command to execute:
ls
Command output saved to command_output.txt
Your System Configuration:
Architecture:             x86_64
  CPU op-mode(s):         32-bit, 64-bit
  Address sizes:          39 bits physical, 48 bits virtual
  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.



```
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; PBRSB-eIBRS 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
cammand_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   ^\ Replace     ^U Paste       ^J Justify     ^/ Go To Line  M-E Redo
```