

Lab Tasks

By

Hajira Imran(44594)



Submitted to: Ma'am Kausar

Subject: Operating System

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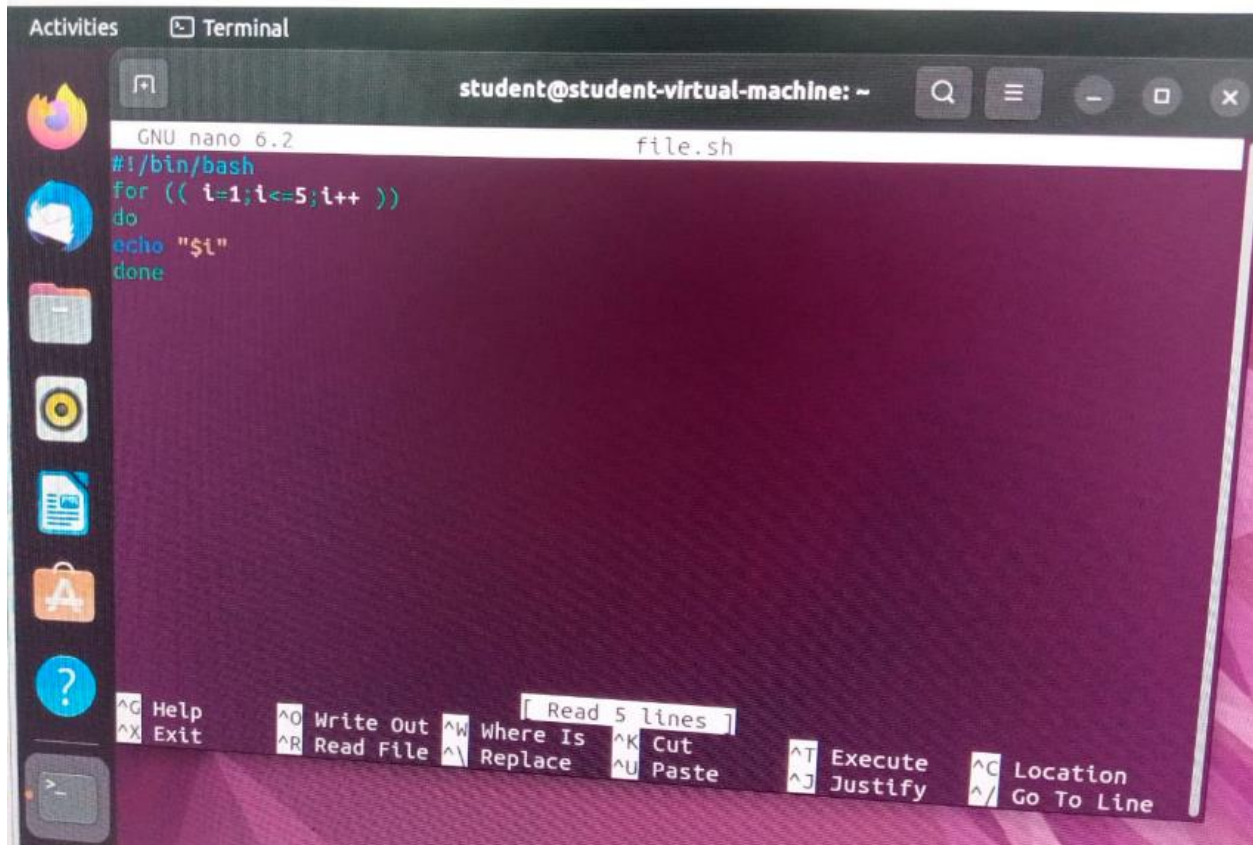
BSCS SEMESTER – 5

RIPHAH INTERNATIONAL UNIVERSITY

ISLAMABAD, PAKISTAN

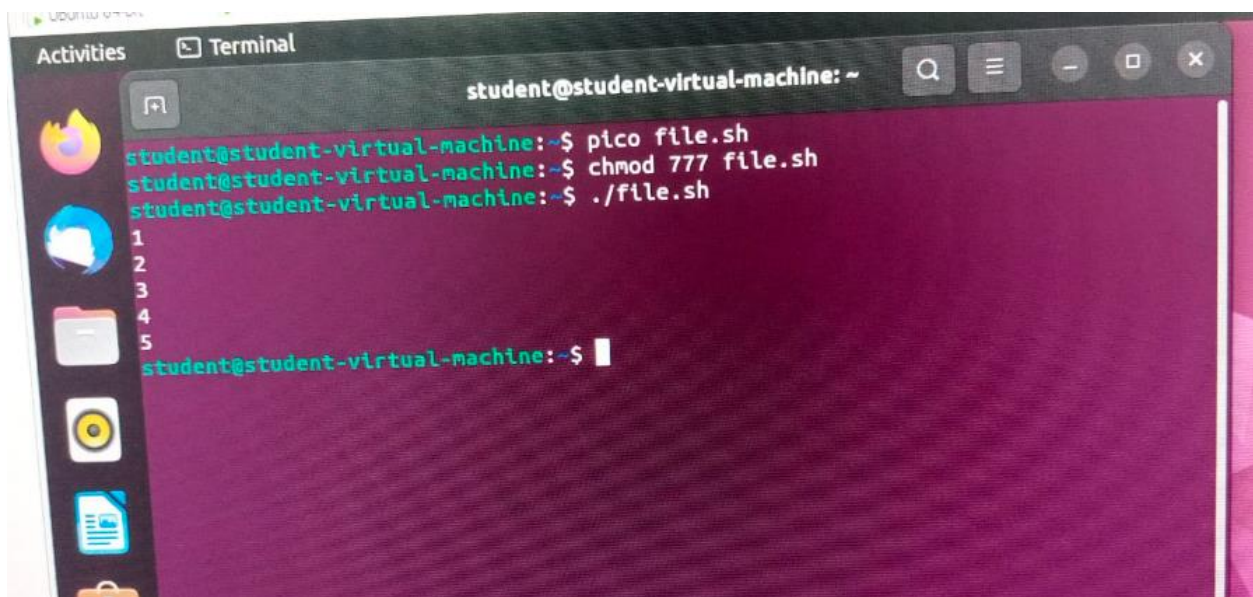
Task 01

Q1. How do you create a basic `for` loop in a shell script to iterate over a list of numbers from 1 to 5?



```
GNU nano 6.2 file.sh
#!/bin/bash
for (( i=1;i<=5;i++ ))
do
echo "$i"
done
```

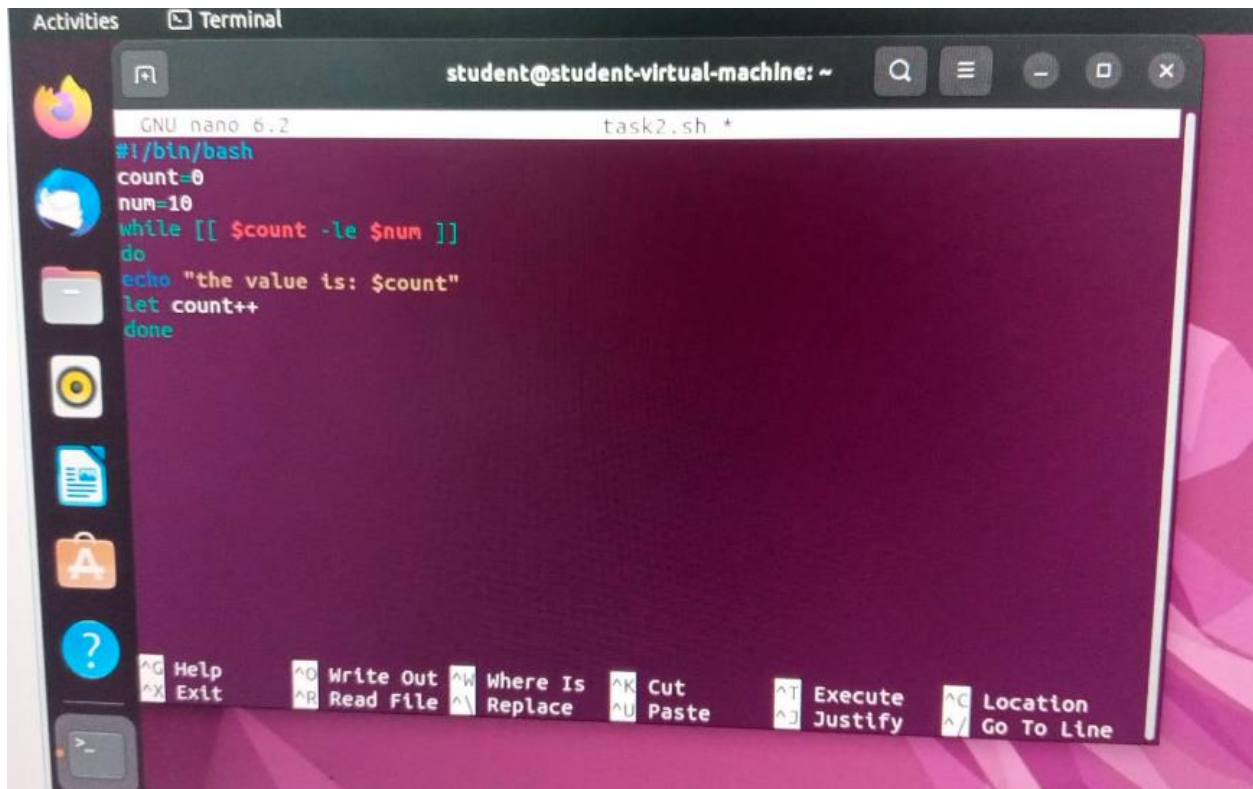
Help Exit Write Out Read File Where Is Replace Read 5 lines Cut Paste Execute Justify Location Go To Line



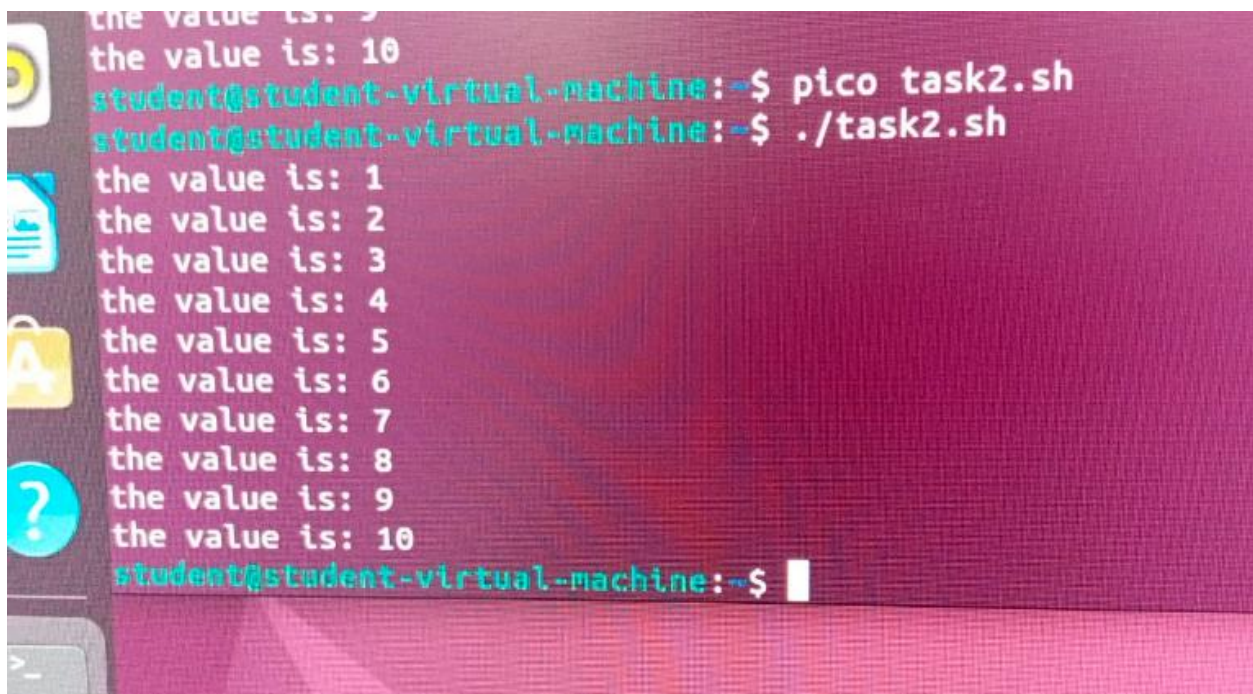
```
student@student-virtual-machine:~$ pico file.sh
student@student-virtual-machine:~$ chmod 777 file.sh
student@student-virtual-machine:~$ ./file.sh
1
2
3
4
5
student@student-virtual-machine:~$
```

Task 02

What is the syntax for a `while` loop that counts from 1 to 10 and prints each number?



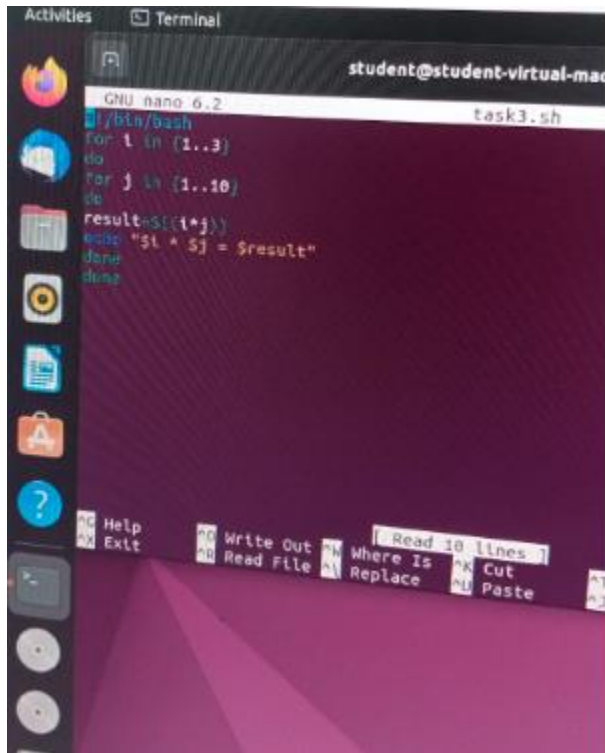
```
student@student-virtual-machine: ~  
GNU nano 6.2 task2.sh *  
#!/bin/bash  
count=0  
num=10  
while [[ $count -le $num ]]  
do  
echo "the value is: $count"  
let count++  
done
```



```
the value is: 1  
the value is: 2  
the value is: 3  
the value is: 4  
the value is: 5  
the value is: 6  
the value is: 7  
the value is: 8  
the value is: 9  
the value is: 10  
student@student-virtual-machine:~$ pico task2.sh  
student@student-virtual-machine:~$ ./task2.sh  
the value is: 1  
the value is: 2  
the value is: 3  
the value is: 4  
the value is: 5  
the value is: 6  
the value is: 7  
the value is: 8  
the value is: 9  
the value is: 10  
student@student-virtual-machine:~$
```

Task 03

- How would you write a nested loop in shell scripting to print a multiplication table from 1 to 3?



The image shows a terminal window with a dark purple background. The title bar at the top reads "Activities" and "Terminal". The prompt is "student@student-virtual-mac". The script being edited is "task3.sh" using "GNU nano 6.2". The script content is as follows:

```
#!/bin/bash
for i in {1..3}
do
  for j in {1..10}
  do
    result=$((i*j))
    echo "$i * $j = $result"
  done
done
```

At the bottom of the terminal, there is a menu bar with the following options: Help, Exit, Write Out, Read File, Read 10 lines, Where Is, Replace, Cut, and Paste.



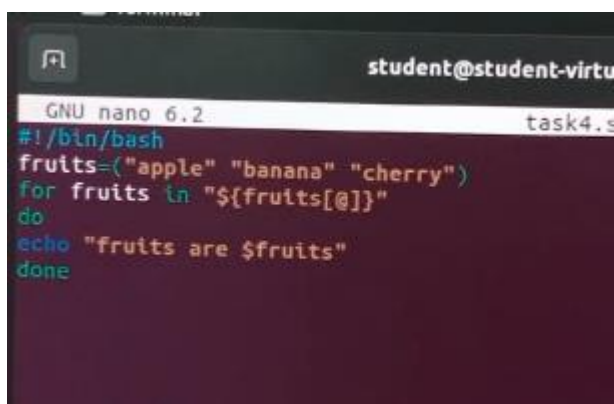
```
student@student-virtual-machine:~$ task3.sh
task3.sh: command not found
student@student-virtual-machine:~$ pico task3.sh
student@student-virtual-machine:~$ chmod 777 task3.sh
student@student-virtual-machine:~$ ./task3.sh
1 * 1 = 1
1 * 2 = 2
1 * 3 = 3
1 * 4 = 4
1 * 5 = 5
1 * 6 = 6
1 * 7 = 7
1 * 8 = 8
1 * 9 = 9
1 * 10 = 10
2 * 1 = 2
2 * 2 = 4
2 * 3 = 6
2 * 4 = 8
2 * 5 = 10
2 * 6 = 12
2 * 7 = 14
2 * 8 = 16
2 * 9 = 18
```

A terminal window with a pink background. It displays multiplication tables for 1, 2, and 3. The prompt is 'student@student-'.

```
student@student-
1 * 8 = 8
1 * 9 = 9
1 * 10 = 10
2 * 1 = 2
2 * 2 = 4
2 * 3 = 6
2 * 4 = 8
2 * 5 = 10
2 * 6 = 12
2 * 7 = 14
2 * 8 = 16
2 * 9 = 18
2 * 10 = 20
3 * 1 = 3
3 * 2 = 6
3 * 3 = 9
3 * 4 = 12
3 * 5 = 15
3 * 6 = 18
3 * 7 = 21
3 * 8 = 24
3 * 9 = 27
3 * 10 = 30
student@student-virtual-machine:~$
```

Task 04

Write a `for-in` loop that iterates over the items in an array named `fruits` containing `apple`, `banana`, and `cherry`.

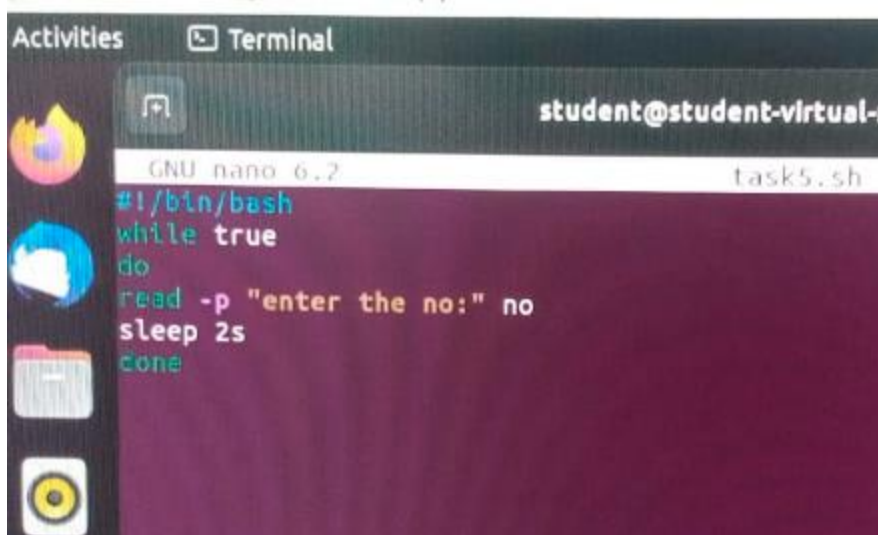
A terminal window showing the GNU nano 6.2 editor. The prompt is 'student@student-virtual-machine:~\$'. The script defines an array 'fruits' and uses a 'for' loop to iterate over its elements.

```
student@student-virtual-machine:~$
GNU nano 6.2 task4.s
#!/bin/bash
fruits=("apple" "banana" "cherry")
for fruits in "${fruits[@]}"
do
echo "fruits are $fruits"
done
```

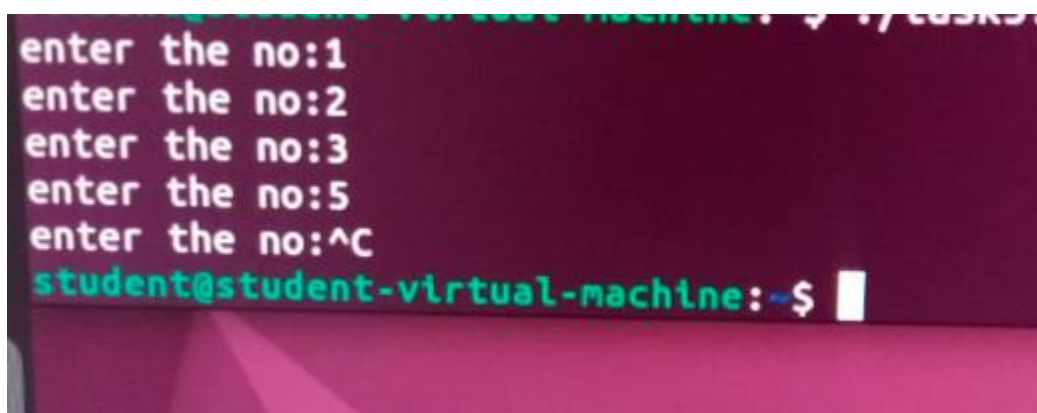
```
student@student-virtual-machine:~$ pico task4.sh
fruits are apple
fruits are banana
fruits are cherry
student@student-virtual-machine:~$
```

Task 05

Write a `while` loop that reads user input until the user types "exit".



```
student@student-virtual-machine:~$ nano task5.sh
GNU nano 6.7 task5.sh
#!/bin/bash
while true
do
read -p "enter the no:" no
sleep 2s
done
```



```
enter the no:1
enter the no:2
enter the no:3
enter the no:5
enter the no:^C
student@student-virtual-machine:~$
```

```
student@student-virtual-machine:~$ pico task5.sh
student@student-virtual-machine:~$ ./task5.sh
enter the no:1
enter the no:2
enter the no:5
enter the no:6^Z
[1]+  Stopped                  ./task5.sh
student@student-virtual-machine:~$
```