

TASK

Arithmetic operator:

```
#!/bin/bash
x=8
y=2
echo "x=8, y=2"

echo "Addition of x & y"
echo $(( x + y ))

echo "Subtraction of x & y"
echo $(( x - y ))

echo "Multiplication of x & y"
echo $(( x * y ))

echo "Division of x by y"
echo $(( x / y ))

echo "Exponentiation of x,y"
echo $(( x ** y ))

echo "Modular Division of x,y"
echo $(( x % y ))

echo "Incrementing x by 5, then x="
(( x += 5 ))
echo $x

echo "Decrementing x by 5, then x="
(( x -= 5 ))
echo $x

echo "Multiply of x by 5, then x="
(( x *= 5 ))
echo $x

echo "Dividing x by 5, x="
```

Read 44 lines

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```
rohith1305@e1d77021d9b0504: ~/new
4
Exponentiation of x,y
64
Modular Division of x,y
8
Incrementing x by 5, then x=
13
Decrementing x by 5, then x=
8
Multiply of x by 5, then x=
40
Dividing x by 5, x=
8
Remainder of Dividing x by 5, x=
3
rohith1305@e1d77021d9b0504:~/new$ nano arithmetic
rohith1305@e1d77021d9b0504:~/new$ ./arithmetic
x=8, y=2
Addition of x & y
10
Subtraction of x & y
6
Multiplication of x & y
16
Division of x by y
4
Exponentiation of x,y
64
Modular Division of x,y
8
Incrementing x by 5, then x=
13
Decrementing x by 5, then x=
8
Multiply of x by 5, then x=
40
Dividing x by 5, x=
8
Remainder of Dividing x by 5, x=
3
rohith1305@e1d77021d9b0504:~/new$
```

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Find the number is greater or not:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2 greater *
#!/bin/bash

read -p "Enter number: " number
if [ "$number" -gt 125 ]; then
    echo "Value is greater than 125"
fi

Save modified buffer? [Y] Yes
```

```
rohith1305@e1d77021d9b0504: ~/new
49
Dividing x by 5, x=
8
Remainder of Dividing x by 5, x=
3
rohith1305@e1d77021d9b0504:~/new$ nano greater
rohith1305@e1d77021d9b0504:~/new$ chmod a+x greater
rohith1305@e1d77021d9b0504:~/new$ ./greater
Enter number: 10
rohith1305@e1d77021d9b0504:~/new$ nano greater
rohith1305@e1d77021d9b0504:~/new$ ./greater
Enter number: 150
Value is greater than 125
rohith1305@e1d77021d9b0504:~/new$
```

Compare two strings:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2
#!/bin/bash

# if condition is true
if [ "myfile" == "myfile" ]; then
    echo "true condition"
fi

# if condition is false
if [ "myfile" == "yourfile" ]; then
    echo "false condition"
fi

Save modified buffer?
Y Yes
N No
Cancel
```

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```
rohith1305@e1d77021d9b0504: ~/new
8
Dividing x by 5, x=
remainder of Dividing x by 5, x=
rohith1305@e1d77021d9b0504:~/new$ nano greater
rohith1305@e1d77021d9b0504:~/new$ chmod a+x greater
rohith1305@e1d77021d9b0504:~/new$ ./greater
Enter number: 10
rohith1305@e1d77021d9b0504:~/new$ nano greater
rohith1305@e1d77021d9b0504:~/new$ ./greater
Enter number: 150
Value is greater than 125
rohith1305@e1d77021d9b0504:~/new$ nano compare
rohith1305@e1d77021d9b0504:~/new$ chmod a+x compare
rohith1305@e1d77021d9b0504:~/new$ ./compare
true condition
rohith1305@e1d77021d9b0504:~/new$
```

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Comparing two number which is greater than other number:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2
comparing *
#!/bin/bash

# if condition (greater than) is true
if [ 10 -gt 3 ]; then
    echo "10 is greater than 3."
fi

# if condition (greater than) is false
if [ 3 -gt 10 ]; then
    echo "3 is not greater than 10."
fi

# if condition (less than) is true
if [ 3 -lt 10 ]; then
    echo "3 is less than 10."
fi

# if condition (less than) is false
if [ 10 -lt 3 ]; then
    echo "10 is not less than 3."
fi

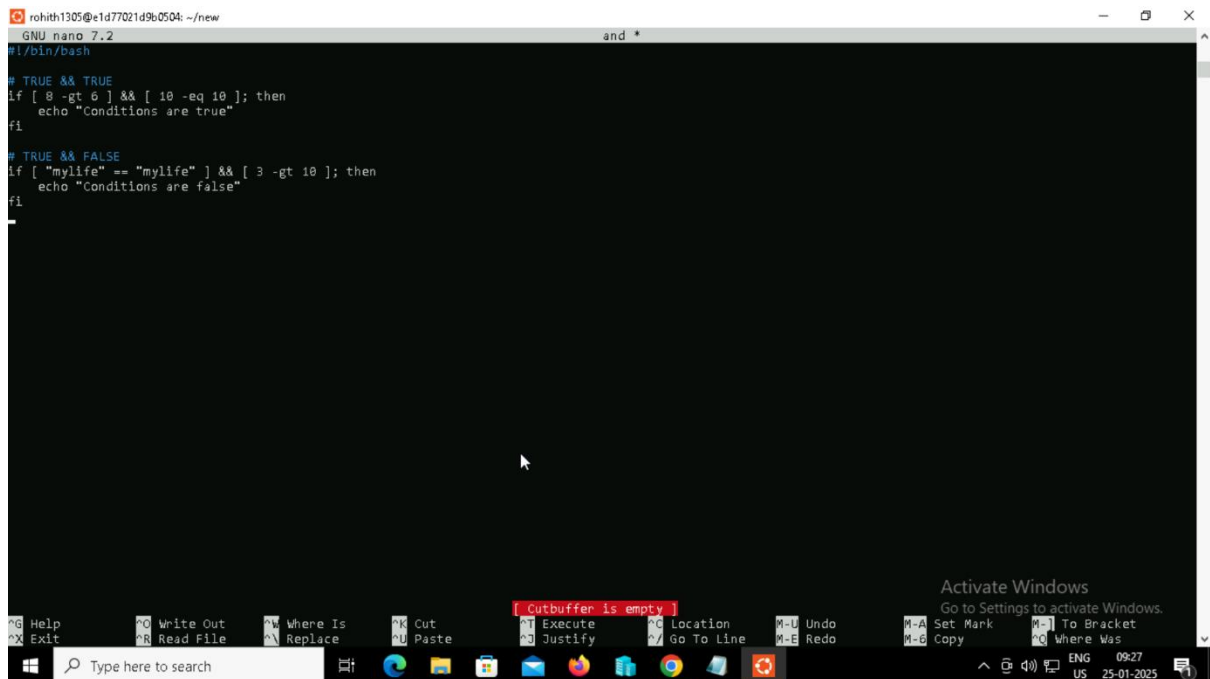
# if condition (equal to) is true
if [ 10 -eq 10 ]; then
    echo "10 is equal to 10."
fi
.
```

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```
rohith1305@e1d77021d9b0504: ~/new
40
Dividing x by 5, x=
8
Remainder of Dividing x by 5, x=
3
rohith1305@e1d77021d9b0504:~/new$ nano greater
rohith1305@e1d77021d9b0504:~/new$ chmod a+x greater
rohith1305@e1d77021d9b0504:~/new$ ./greater
Enter number: 10
rohith1305@e1d77021d9b0504:~/new$ nano greater
rohith1305@e1d77021d9b0504:~/new$ ./greater
Enter number: 150
Value is greater than 125
rohith1305@e1d77021d9b0504:~/new$ nano compare
rohith1305@e1d77021d9b0504:~/new$ chmod a+x compare
rohith1305@e1d77021d9b0504:~/new$ ./compare
true condition
rohith1305@e1d77021d9b0504:~/new$ nano comparing
rohith1305@e1d77021d9b0504:~/new$ chmod a+x comparing
rohith1305@e1d77021d9b0504:~/new$ ./comparing
10 is greater than 3.
3 is less than 10.
10 is equal to 10.
rohith1305@e1d77021d9b0504:~/new$ .
```

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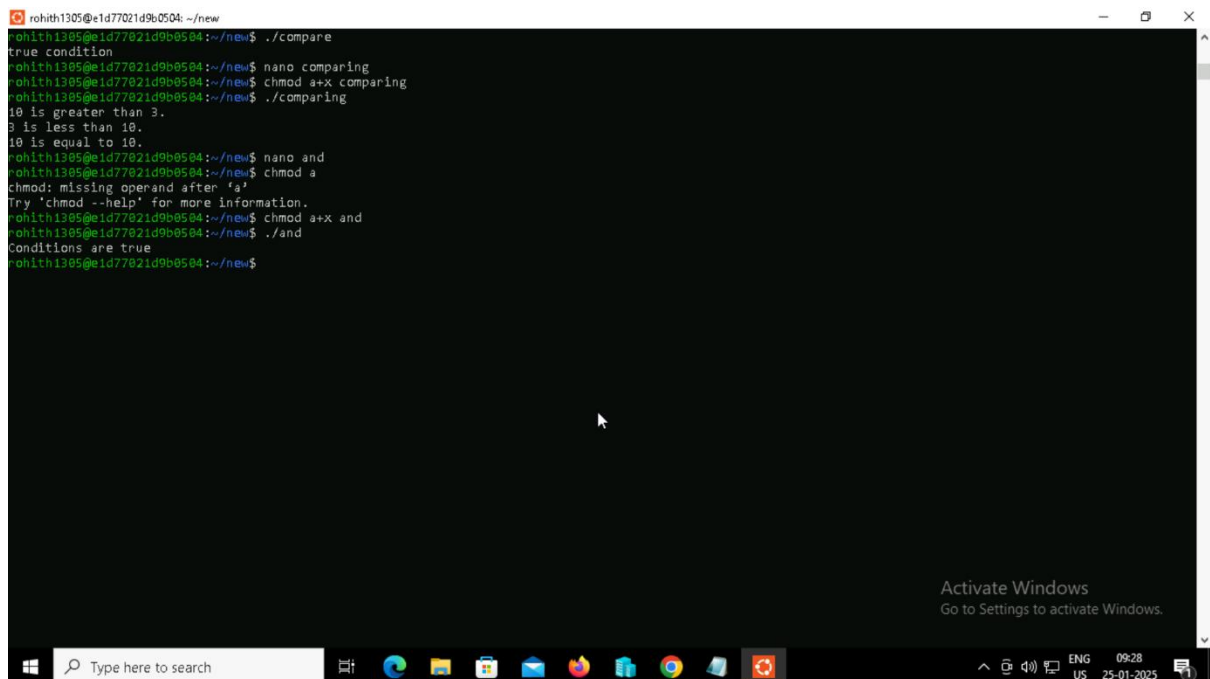
Using and operator:



```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2                                and *
#!/bin/bash

# TRUE && TRUE
if [ 8 -gt 6 ] && [ 10 -eq 10 ]; then
    echo "Conditions are true"
fi

# TRUE && FALSE
if [ "mylife" == "mylife" ] && [ 3 -gt 10 ]; then
    echo "Conditions are false"
fi
```



```
rohith1305@e1d77021d9b0504: ~/new
rohith1305@e1d77021d9b0504:~/new$ ./compare
true condition
rohith1305@e1d77021d9b0504:~/new$ nano comparing
rohith1305@e1d77021d9b0504:~/new$ chmod a+x comparing
rohith1305@e1d77021d9b0504:~/new$ ./comparing
10 is greater than 3.
3 is less than 10.
10 is equal to 10.
rohith1305@e1d77021d9b0504:~/new$ nano and
rohith1305@e1d77021d9b0504:~/new$ chmod a
chmod: missing operand after 'a'
Try 'chmod --help' for more information.
rohith1305@e1d77021d9b0504:~/new$ chmod a+x and
rohith1305@e1d77021d9b0504:~/new$ ./and
Conditions are true
rohith1305@e1d77021d9b0504:~/new$
```

Using or operator:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2 or *
#!/bin/bash

# TRUE || FALSE
if [ 8 -gt 7 ] || [ 10 -eq 3 ];
then
echo " Condition is true. "
fi

# FALSE || FALSE
if [ "mylife" == "yourlife" ] || [ 3 -gt 10 ];
then
echo " Condition is false. "
fi
```

U

```
rohith1305@e1d77021d9b0504: ~/new
rohith1305@e1d77021d9b0504:~/new$ chmod a+x and
rohith1305@e1d77021d9b0504:~/new$ ./and
Conditions are true
rohith1305@e1d77021d9b0504:~/new$ nano or
rohith1305@e1d77021d9b0504:~/new$ chmod a+x or
rohith1305@e1d77021d9b0504:~/new$ ./or
Condition is true.
rohith1305@e1d77021d9b0504:~/new$
```

using and & or operator:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2                                and/or *
#!/bin/bash

# TRUE && FALSE || FALSE || TRUE
if [[ 10 -eq 10 && 5 -gt 4 || 3 -eq 4 || 3 -lt 6 ]]; then
    echo "Condition is true."
fi

# TRUE && FALSE || FALSE
if [[ 8 -eq 8 && 8 -gt 10 || 9 -lt 5 ]]; then
    echo "Condition is false"
fi
```

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```
rohith1305@e1d77021d9b0504: ~/new
rohith1305@e1d77021d9b0504:~/new$ nano and-or
rohith1305@e1d77021d9b0504:~/new$ chmod a+x and-or
rohith1305@e1d77021d9b0504:~/new$ ./and-or
Condition is true.
rohith1305@e1d77021d9b0504:~/new$
```

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IF ELSE example1:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2 if else example1.sh
#!/bin/bash

if [ 10 -gt 3 ]; then
    echo "10 is greater than 3."
else
    echo "10 is not greater than 3."
fi

if [ 3 -gt 10 ]; then
    echo "3 is greater than 10."
else
    echo "3 is not greater than 10."
fi
```

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```
rohith1305@e1d77021d9b0504: ~/new
rohith1305@e1d77021d9b0504:~/new$ nano and-or
rohith1305@e1d77021d9b0504:~/new$ chmod a+x and-or
rohith1305@e1d77021d9b0504:~/new$ ./and-or
Condition is true.
rohith1305@e1d77021d9b0504:~/new$ nano if_else_example1.sh
rohith1305@e1d77021d9b0504:~/new$ chmod a+x if_else_example1.sh
rohith1305@e1d77021d9b0504:~/new$ ./if_else_example1.sh
10 is greater than 3.
3 is not greater than 10.
rohith1305@e1d77021d9b0504:~/new$
```

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Multiple conditions if else:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2      multiple_conditions_if_else.sh *
#!/bin/bash

if [[ 10 -gt 9 && 10 == 9 || 2 -lt 1 || 25 -gt 20 ]]; then
    echo "Given condition is true."
else
    echo "Given condition is false."
fi

if [[ 10 -gt 9 && 10 == 8 || 3 -gt 4 || 8 -gt 8 ]]; then
    echo "Given condition is true."
else
    echo "Given condition is not true."
fi
```

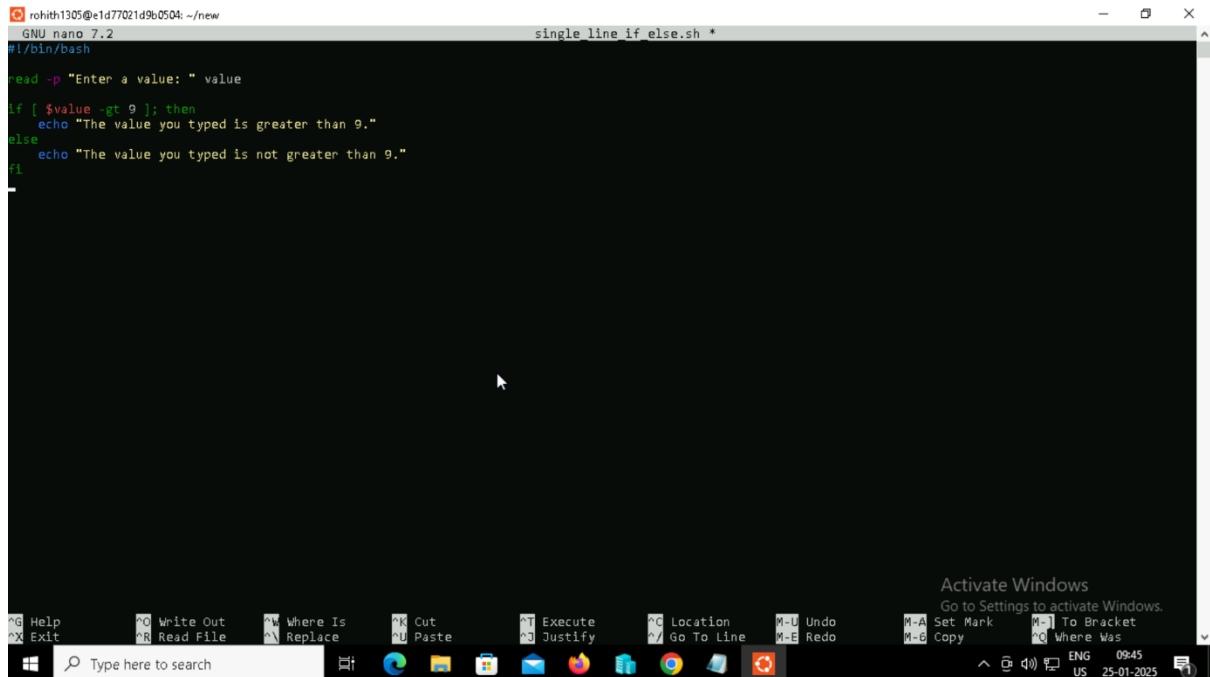
File Name to Write: multiple_conditions_if_else.sh

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```
rohith1305@e1d77021d9b0504: ~/new
rohith1305@e1d77021d9b0504:~/new$ nano and-or
rohith1305@e1d77021d9b0504:~/new$ chmod a+x and-or
rohith1305@e1d77021d9b0504:~/new$ ./and-or
Condition is true.
rohith1305@e1d77021d9b0504:~/new$ nano if_else_example1.sh
rohith1305@e1d77021d9b0504:~/new$ chmod a+x if_else_example1.sh
rohith1305@e1d77021d9b0504:~/new$ ./if_else_example1.sh
10 is greater than 3.
3 is not greater than 10.
rohith1305@e1d77021d9b0504:~/new$ nano multiple_conditions_if_else.sh
rohith1305@e1d77021d9b0504:~/new$ chmod a+x multiple_conditions_if_else.sh
rohith1305@e1d77021d9b0504:~/new$ ./multiple_conditions_if_else.sh
Given condition is true.
Given condition is not true.
rohith1305@e1d77021d9b0504:~/new$
```

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Single line if else:

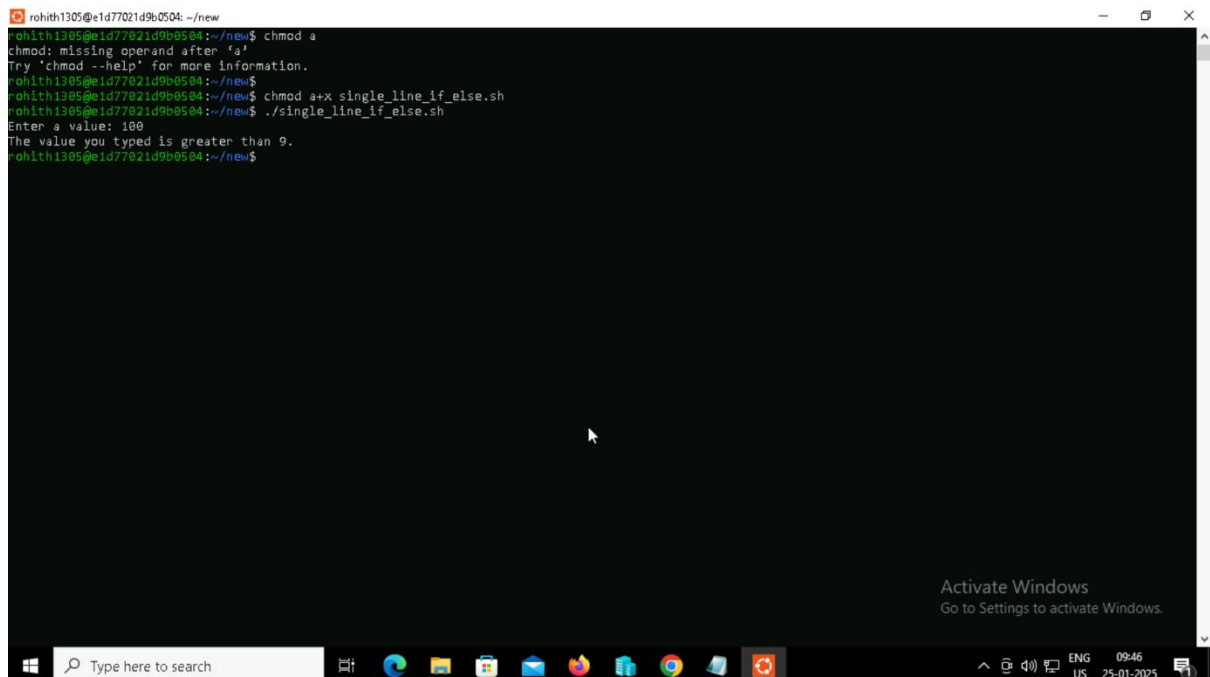


The screenshot shows a terminal window with the nano text editor open. The editor is editing a file named 'single_line_if_else.sh'. The script content is as follows:

```
GNU nano 7.2 single_line_if_else.sh *
#!/bin/bash

read -p "Enter a value: " value
if [ $value -gt 9 ]; then
    echo "The value you typed is greater than 9."
else
    echo "The value you typed is not greater than 9."
fi
```

The terminal window has a Windows taskbar at the bottom with various application icons and a system tray showing the date and time as 09:45 on 25-01-2025.

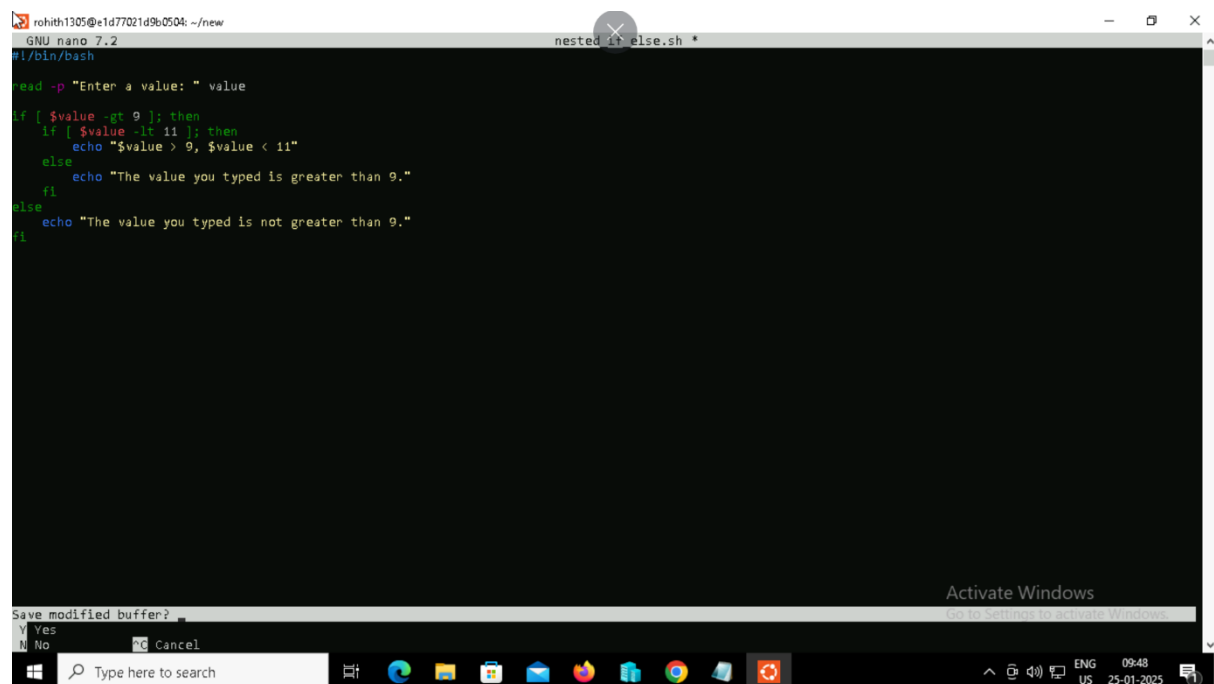


The screenshot shows a terminal window where the 'single_line_if_else.sh' script has been executed. The output is as follows:

```
rohith1305@e1d77021d9b0504: ~/new
rohith1305@e1d77021d9b0504:~/new$ chmod a
chmod: missing operand after 'a'
Try 'chmod --help' for more information.
rohith1305@e1d77021d9b0504:~/new$
rohith1305@e1d77021d9b0504:~/new$ chmod +x single_line_if_else.sh
rohith1305@e1d77021d9b0504:~/new$ ./single_line_if_else.sh
Enter a value: 100
The value you typed is greater than 9.
rohith1305@e1d77021d9b0504:~/new$
```

The terminal window shows the Windows taskbar at the bottom, similar to the first screenshot, with the date and time as 09:46 on 25-01-2025.

Nested if else:

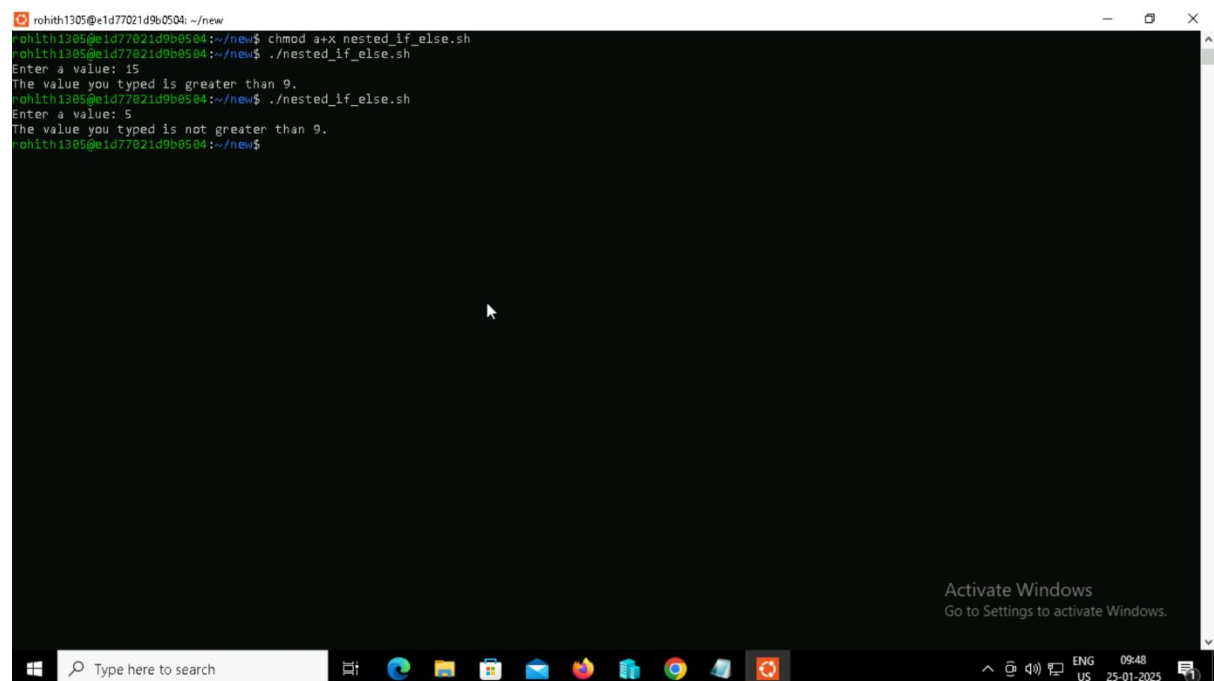


```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2
nested_if_else.sh *
#!/bin/bash

read -p "Enter a value: " value

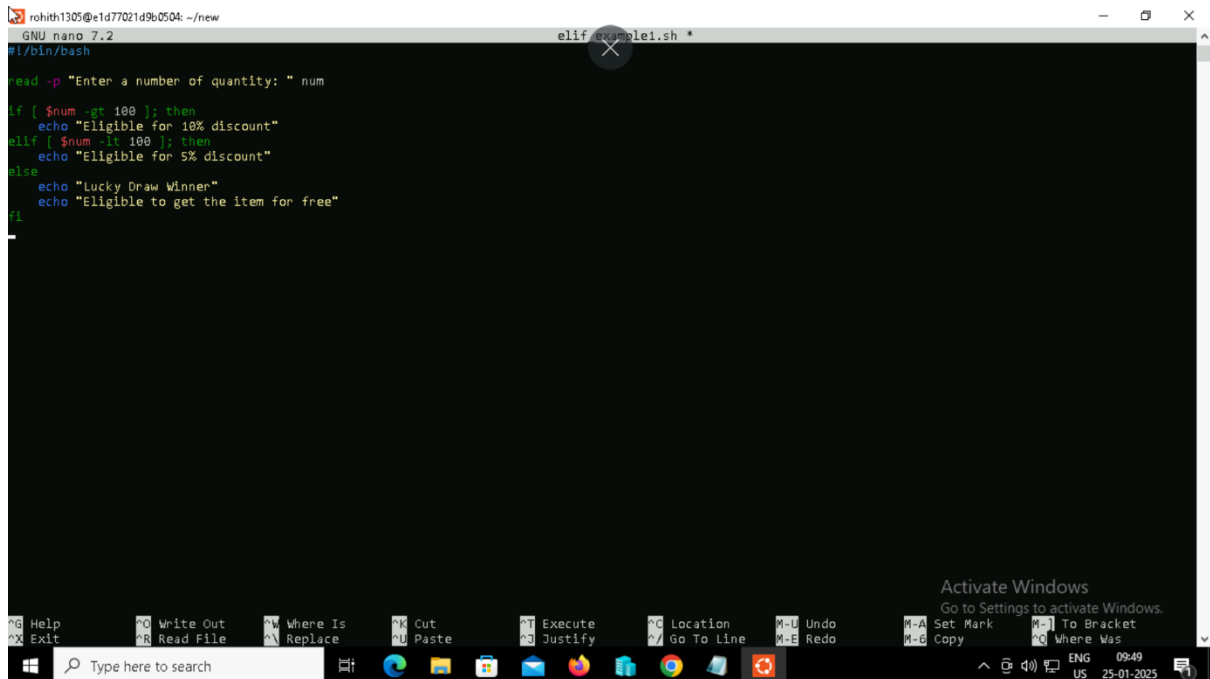
if [ $value -gt 9 ]; then
    if [ $value -lt 11 ]; then
        echo "$value > 9, $value < 11"
    else
        echo "The value you typed is greater than 9."
    fi
else
    echo "The value you typed is not greater than 9."
fi
fi

Save modified buffer?
Y Yes
N No
Cancel
```



```
rohith1305@e1d77021d9b0504: ~/new
rohith1305@e1d77021d9b0504:~/new$ chmod a+x nested_if_else.sh
rohith1305@e1d77021d9b0504:~/new$ ./nested_if_else.sh
Enter a value: 15
The value you typed is greater than 9.
rohith1305@e1d77021d9b0504:~/new$ ./nested_if_else.sh
Enter a value: 5
The value you typed is not greater than 9.
rohith1305@e1d77021d9b0504:~/new$
```

Elif example:

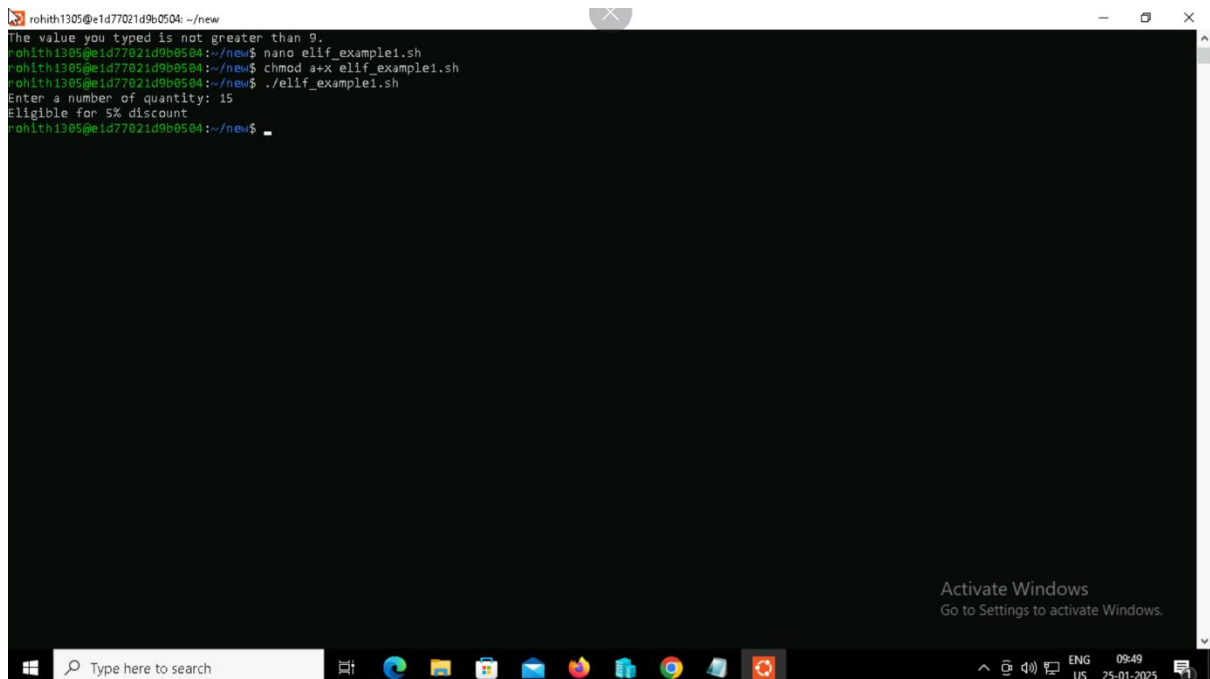


```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2
elif_example1.sh
#!/bin/bash

read -p "Enter a number of quantity: " num

if [ $num -gt 100 ]; then
    echo "Eligible for 10% discount"
elif [ $num -lt 100 ]; then
    echo "Eligible for 5% discount"
else
    echo "Lucky Draw Winner"
    echo "Eligible to get the item for free"
fi
```

The screenshot shows a terminal window with the nano text editor open. The file being edited is 'elif_example1.sh'. The script contains a bash shebang, a prompt for a number, and an if-elif-else structure to provide different messages based on the input. The Windows taskbar is visible at the bottom.



```
rohith1305@e1d77021d9b0504: ~/new
The value you typed is not greater than 9.
rohith1305@e1d77021d9b0504: ~/new$ nano elif_example1.sh
rohith1305@e1d77021d9b0504: ~/new$ chmod +x elif_example1.sh
rohith1305@e1d77021d9b0504: ~/new$ ./elif_example1.sh
Enter a number of quantity: 15
Eligible for 5% discount
rohith1305@e1d77021d9b0504: ~/new$
```

The screenshot shows the terminal after running the script. It displays the error message from the previous run, the commands to edit the file, make it executable, and run it. The script prompts for a number, and the user enters '15', resulting in the output 'Eligible for 5% discount'.

Multiple conditions elif:

```
rohith1305@e1d77021d9b0504: ~/new
GNU nano 7.2 multiple_conditions_elif.sh *
#!/bin/bash

read -p "Enter a number of quantity: " num

if [ $num -gt 200 ]; then
    echo "Eligible for 20% discount"
elif [ ( $num == 200 || $num == 100 ) ]; then
    echo "Lucky Draw Winner"
    echo "Eligible to get the item for free"
elif [ ( $num -gt 100 && $num -lt 200 ) ]; then
    echo "Eligible for 10% discount"
elif [ $num -lt 100 ]; then
    echo "No discount"
fi
```

```
rohith1305@e1d77021d9b0504: ~/new
The value you typed is not greater than 9.
rohith1305@e1d77021d9b0504:~/new$ nano elif_example1.sh
rohith1305@e1d77021d9b0504:~/new$ chmod +x elif_example1.sh
rohith1305@e1d77021d9b0504:~/new$ ./elif_example1.sh
Enter a number of quantity: 15
Eligible for 5% discount
rohith1305@e1d77021d9b0504:~/new$ nano multiple_conditions_elif.sh
rohith1305@e1d77021d9b0504:~/new$ chmod +x multiple_conditions_elif.sh
rohith1305@e1d77021d9b0504:~/new$ ./multiple_conditions_elif.sh
Enter a number of quantity: 155
Eligible for 10% discount
rohith1305@e1d77021d9b0504:~/new$
```