

BASH PROGRAMS:

1. ARITHMETIC OPERATIONS:

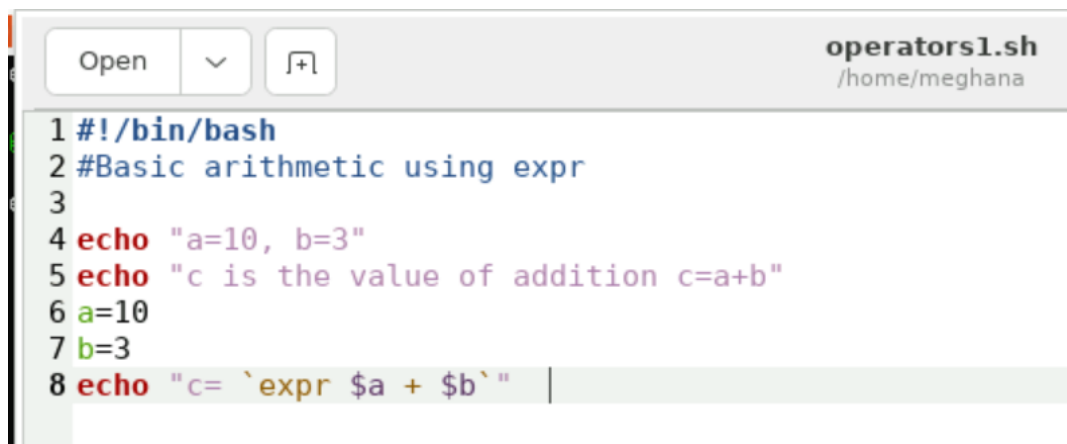
```
meghana@3148c6658f7456b: ~  
meghana@3148c6658f7456b:~$ touch operators.sh  
meghana@3148c6658f7456b:~$ chmod +x operators.sh  
meghana@3148c6658f7456b:~$ gedit operators.sh  
(gedit:2576): IBUS-WARNING **: 10:16:53.124: Failed to mkdir /home/meghana/snap/gedit/684/.config/ibus/bus: Not a directory  
** (gedit:2576): WARNING **: 10:17:22.378: atk-bridge: get_device_events_reply: unknown signature  
^C  
meghana@3148c6658f7456b:~$ ./operators.sh  
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  
0  
Incrementing x by 5, then x=  
13  
Decrementing x by 5, then x=  
3  
Multiply of x by 5, then x=  
40  
Dividing x by 5, x=  
8  
Remainder of Dividing x by 5, x=  
3
```

```
Open  operators.sh  
/home/meghana  
1 #!/bin/bash  
2  
3 x=8  
4 y=2  
5 echo "x=8, y=2"  
6 echo "Addition of x & y"  
7 echo $(( $x + $y ))  
8 echo "Subtraction of x & y"  
9 echo $(( $x - $y ))  
10 echo "Multiplication of x & y"  
11 echo $(( $x * $y ))  
12 echo "Division of x by y"  
13 echo $(( $x / $y ))  
14 echo "Exponentiation of x,y"  
15 echo $(( $x ** $y ))  
16 echo "Modular Division of x,y"  
17 echo $(( $x % $y ))  
18 echo "Incrementing x by 5, then x= "  
19 (( x += 5 ))  
20 echo $x  
21 echo "Decrementing x by 5, then x= "  
22 (( x -= 5 ))  
23 echo $x  
24 echo "Multiply of x by 5, then x="  
25 (( x *= 5 ))  
26 echo $x  
27 echo "Dividing x by 5, x= "  
28 (( x /= 5 ))  
29 echo $x  
30 echo "Remainder of Dividing x by 5, x="  
31 (( x %= 5 ))  
32 echo $x
```

2. BASH SCRIPT PROGRAM USING BACKTICK AND expr:

```
meghana@3148c6658f7456b:~$ touch operators1.sh
meghana@3148c6658f7456b:~$ chmod +x operators1.sh
meghana@3148c6658f7456b:~$ gedit operators1.sh

(gedit:2759): IBUS-WARNING **: 10:21:43.320: Failed to mkdir
meghana@3148c6658f7456b:~$ ./operators1.sh
a=10, b=3
c is the value of addition c=a+b
c= 13
meghana@3148c6658f7456b:~$
```



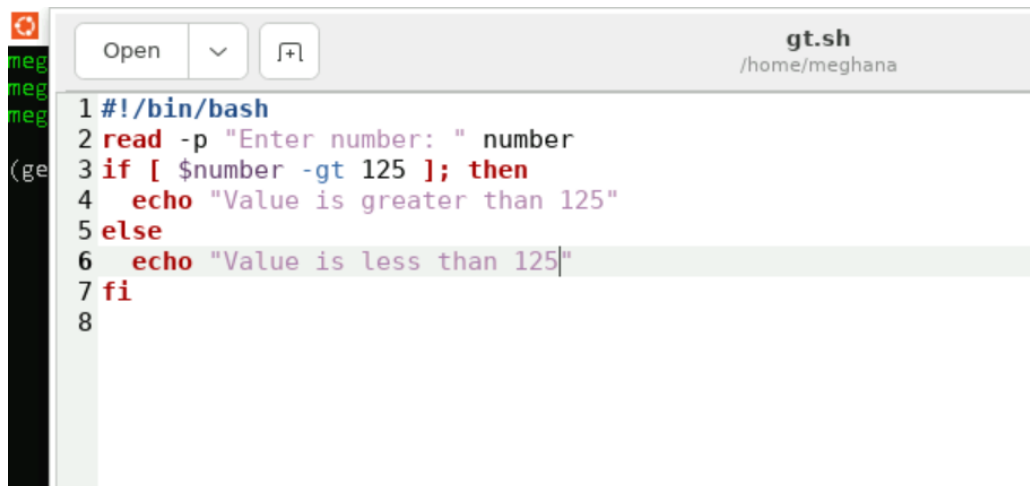
The screenshot shows a code editor window titled "operators1.sh" with the file path "/home/meghana". The editor contains the following code:

```
1 #!/bin/bash
2 #Basic arithmetic using expr
3
4 echo "a=10, b=3"
5 echo "c is the value of addition c=a+b"
6 a=10
7 b=3
8 echo "c= `expr $a + $b`"
```

3. CHECK IF VALUE IS GREATER THEN:

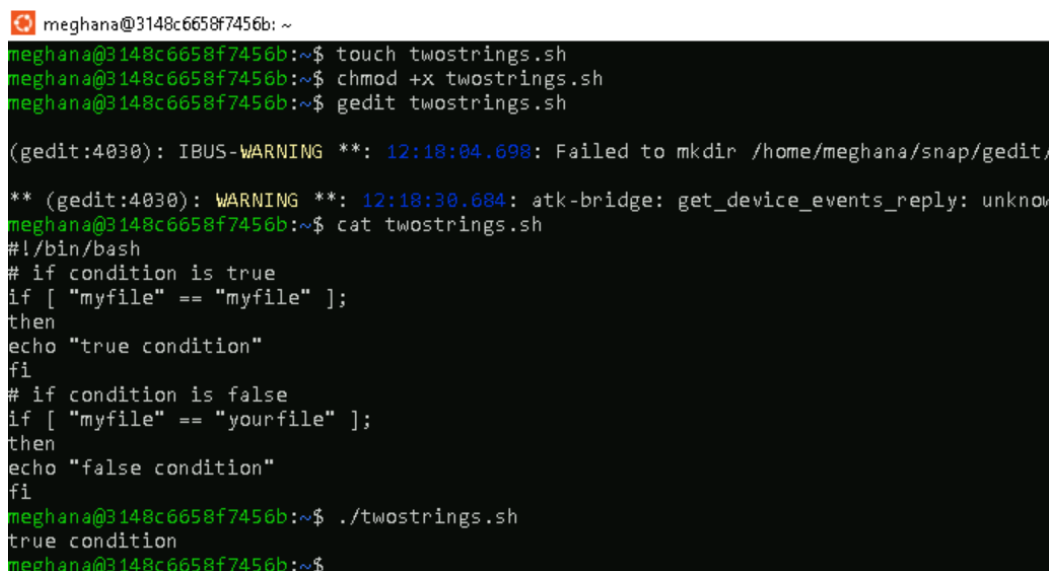
```
meghana@3148c6658f7456b: ~
meghana@3148c6658f7456b:~$ touch gt.sh
meghana@3148c6658f7456b:~$ chmod +x gt.sh
meghana@3148c6658f7456b:~$ gedit gt.sh

(gedit:5810): IBUS-WARNING **: 04:03:30.452: Failed to mkdir
meghana@3148c6658f7456b:~$ ./gt.sh
Enter number: 67
Value is less than 125
meghana@3148c6658f7456b:~$
```



```
1#!/bin/bash
2read -p "Enter number: " number
3if [ $number -gt 125 ]; then
4    echo "Value is greater than 125"
5else
6    echo "Value is less than 125"
7fi
8
```

4. COMPARING TWO STRINGS:



```
meghana@3148c6658f7456b: ~
meghana@3148c6658f7456b:~$ touch twostrings.sh
meghana@3148c6658f7456b:~$ chmod +x twostrings.sh
meghana@3148c6658f7456b:~$ gedit twostrings.sh
(gedit:4030): IBUS-WARNING **: 12:18:04.698: Failed to mkdir /home/meghana/snap/gedit/
** (gedit:4030): WARNING **: 12:18:30.684: atk-bridge: get_device_events_reply: unknown
meghana@3148c6658f7456b:~$ cat twostrings.sh
#!/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
meghana@3148c6658f7456b:~$ ./twostrings.sh
true condition
meghana@3148c6658f7456b:~$
```



```
1#!/bin/bash
2# if condition is true
3if [ "myfile" == "myfile" ];
4then
5    echo "true condition"
6fi
7# if condition is false
8if [ "myfile" == "yourfile" ];
9then
10    echo "false condition"
11fi
```

5. COMPARE TWO NUMBERS USING IF STATEMENT:

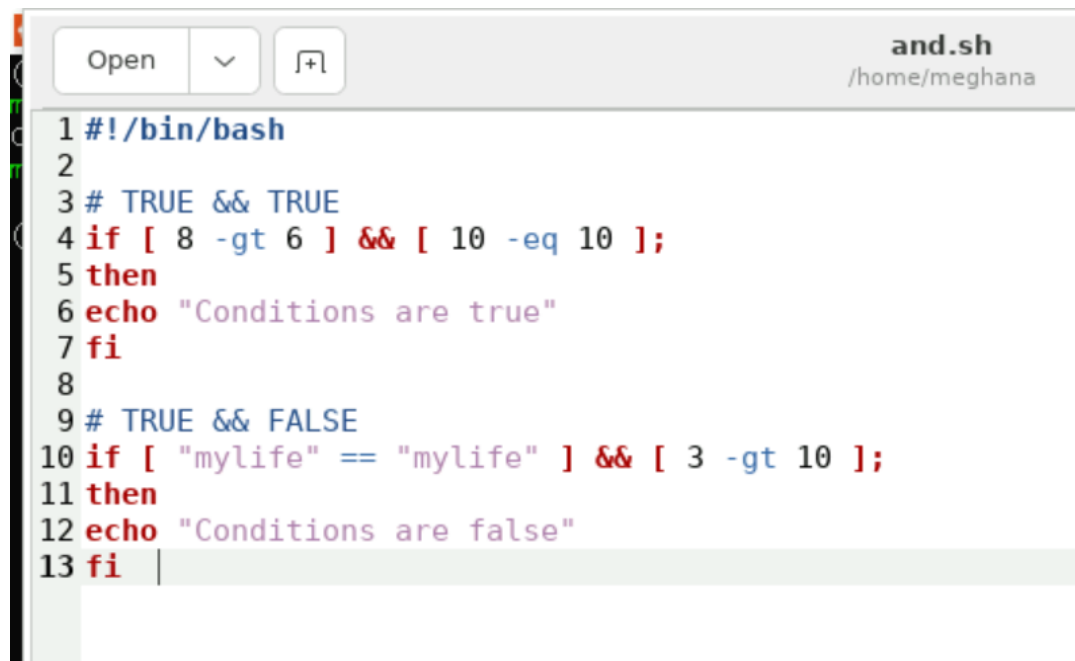
```
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$ touch compare.sh  
meghana@3148c6658f7456b:~$ chmod +x compare.sh  
meghana@3148c6658f7456b:~$ gedit compare.sh  
  
(gedit:4384): IBUS-WARNING **: 12:22:05.591: Failed to mkdir /home  
** (gedit:4384): WARNING **: 12:22:34.519: atk-bridge: get_device_  
^C  
meghana@3148c6658f7456b:~$ ./compare.sh  
10 is greater than 3.  
3 is less than 10.  
10 is equal to 10.  
meghana@3148c6658f7456b:~$
```

```
Open  [v] [F1] *compare.sh /home/meghana Save [≡] [–] [□] [X]  
1#!/bin/bash  
2#if condition (greater than) is true  
3if [ 10 -gt 3 ];  
4then  
5echo "10 is greater than 3."  
6fi  
7#if condition (greater than) is false  
8if [ 3 -gt 10 ];  
9then  
10echo "3 is not greater than 10."  
11fi  
12#if condition (lesser than) is true  
13if [ 3 -lt 10 ];  
14then  
15echo "3 is less than 10."  
16fi  
17#if condition (lesser than) is false  
18if [ 10 -lt 3 ];  
19then  
20echo "10 is not less than 3."  
21fi  
22#if condition (equal to) is true  
23if [ 10 -eq 10 ];  
24then  
25echo "10 is equal to 10."  
26fi  
27#if condition (equal to) is false  
28if [ 10 -eq 9 ];  
29then  
30echo "10 is not equal to 9"  
31fi
```

6. USING 'AND' OPERATOR:

```
meghana@3148c6658f7456b: ~$ touch and.sh
meghana@3148c6658f7456b: ~$ chmod +x and.sh
meghana@3148c6658f7456b: ~$ gedit and.sh

(gedit:4616): IBUS-WARNING **: 12:26:19.591: Failed to mkdir
meghana@3148c6658f7456b: ~$ ./and.sh
Conditions are true
meghana@3148c6658f7456b: ~$
```



The screenshot shows a code editor window titled 'and.sh' with the file path '/home/meghana'. The script content is as follows:

```
1 #!/bin/bash
2
3 # TRUE && TRUE
4 if [ 8 -gt 6 ] && [ 10 -eq 10 ];
5 then
6 echo "Conditions are true"
7 fi
8
9 # TRUE && FALSE
10 if [ "mylife" == "mylife" ] && [ 3 -gt 10 ];
11 then
12 echo "Conditions are false"
13 fi
```

7. USING OR OPERATOR:

```
meghana@3148c6658f7456b: ~$ touch or.sh
meghana@3148c6658f7456b: ~$ chmod +x or.sh
meghana@3148c6658f7456b: ~$ gedit or.sh

(gedit:4839): IBUS-WARNING **: 12:28:11.413: Failed to mkdir
meghana@3148c6658f7456b: ~$ ./or.sh
Condition is true.
meghana@3148c6658f7456b: ~$
```

```
Open  ▾  [icon]  or.sh
/home/meghana

1 #!/bin/bash
2
3 # TRUE || FALSE
4 if [ 8 -gt 7 ] || [ 10 -eq 3 ];
5 then
6 echo " Condition is true. "
7 fi
8
9 # FALSE || FALSE
10 if [ "mylife" == "yourlife" ] || [ 3 -gt 10 ];
11 then
12 echo " Condition is false. "
13 fi
```

8. USING AND & OR OPERATOR:

```
meghana@3148c6658f7456b: ~
meghana@3148c6658f7456b:~$ touch andor.sh
meghana@3148c6658f7456b:~$ chmod +x andor.sh
meghana@3148c6658f7456b:~$ gedit andor.sh

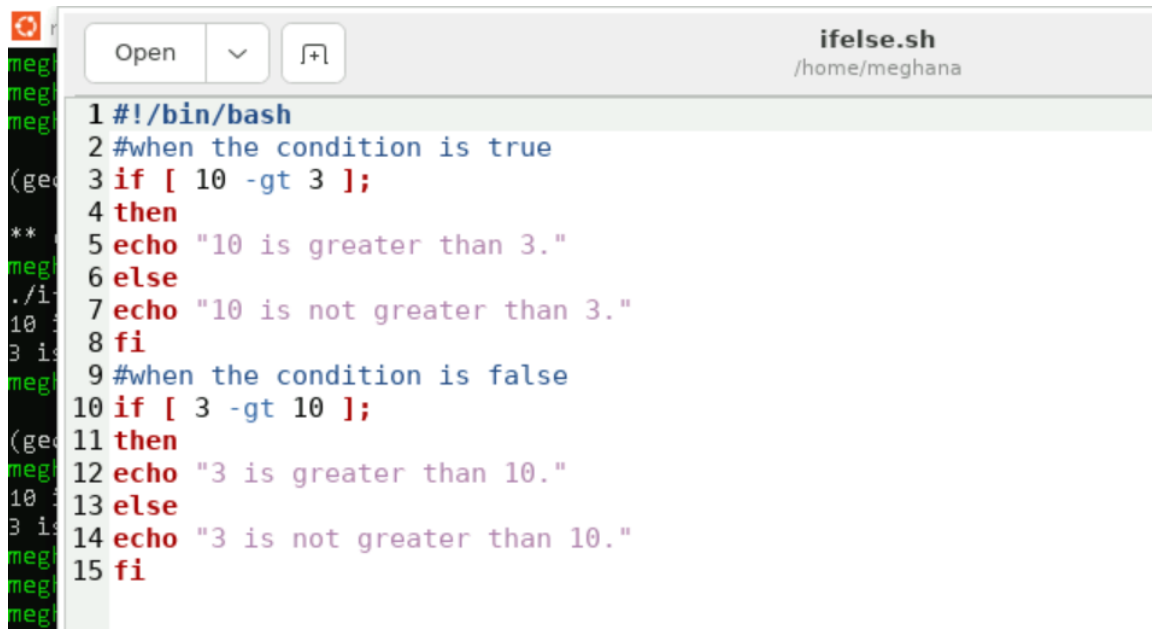
(gedit:5061): IBUS-WARNING **: 12:30:08.695: Failed to mkdir
meghana@3148c6658f7456b:~$ ./andor.sh
Condition is true.
meghana@3148c6658f7456b:~$ _
```

```
Open  ▾  [icon]  andor.sh
/home/meghana

1 #!/bin/bash
2
3 # TRUE && FALSE || FALSE || TRUE
4 if [[ 10 -eq 10 && 5 -gt 4 || 3 -eq 4 || 3 -lt 6 ]];
5 then
6 echo "Condition is true."
7 fi
8
9 # TRUE && FALSE || FALSE
10 if [[ 8 -eq 8 && 8 -gt 10 || 9 -lt 5 ]];
11 then
12 echo "Condition is false"
13 fi
```

9. IF-ELSE:

```
meghana@3148c6658f7456b: ~  
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$  
meghana@3148c6658f7456b:~$ touch ifelse.sh  
meghana@3148c6658f7456b:~$ chmod +x ifelse.sh  
meghana@3148c6658f7456b:~$ gedit ifelse.sh  
  
(gedit:6157): IBUS-WARNING **: 04:43:46.624: Failed to mkdir /home/meghana/snap/gedit/684/.config/ibus/bus: Not a directory  
meghana@3148c6658f7456b:~$ ./ifelse.sh  
10 is greater than 3.  
3 is not greater than 10.  
meghana@3148c6658f7456b:~$ _
```

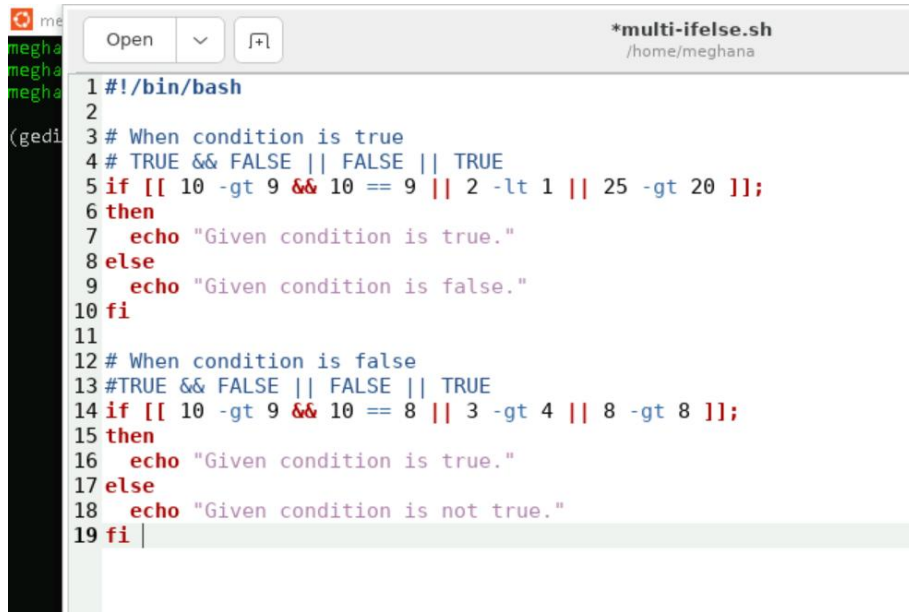


The screenshot shows a code editor window titled 'ifelse.sh' with the file path '/home/meghana'. The code inside the editor is as follows:

```
1 #!/bin/bash  
2 #when the condition is true  
3 if [ 10 -gt 3 ];  
4 then  
5 echo "10 is greater than 3."  
6 else  
7 echo "10 is not greater than 3."  
8 fi  
9 #when the condition is false  
10 if [ 3 -gt 10 ];  
11 then  
12 echo "3 is greater than 10."  
13 else  
14 echo "3 is not greater than 10."  
15 fi
```

10. MULTIPLE CONDITIONS WITH IF-ELSE STATEMENT:

```
meghana@3148c6658f7456b: ~  
meghana@3148c6658f7456b:~$ touch multi-ifelse.sh  
meghana@3148c6658f7456b:~$ chmod +x multi-ifelse.sh  
meghana@3148c6658f7456b:~$ gedit multi-ifelse.sh  
  
(gedit:6272): IBUS-WARNING **: 04:48:10.390: Failed to mkdir /home/meghana/snap/gedit/684/.config/ibus/bus: Not a directory  
meghana@3148c6658f7456b:~$ ./multi-ifelse.sh  
Given condition is true.  
Given condition is not true.  
meghana@3148c6658f7456b:~$ _
```



```
1#!/bin/bash
2
3# When condition is true
4# TRUE && FALSE || FALSE || TRUE
5if [[ 10 -gt 9 && 10 == 9 || 2 -lt 1 || 25 -gt 20 ]];
6then
7    echo "Given condition is true."
8else
9    echo "Given condition is false."
10fi
11
12# When condition is false
13#TRUE && FALSE || FALSE || TRUE
14if [[ 10 -gt 9 && 10 == 8 || 3 -gt 4 || 8 -gt 8 ]];
15then
16    echo "Given condition is true."
17else
18    echo "Given condition is not true."
19fi |
```

11. IF-ELSE STATEMENT IN SINGLE LINE:



```
meghana@3148c6658f7456b: ~
meghana@3148c6658f7456b:~$ touch ifelse-single.sh
meghana@3148c6658f7456b:~$ chmod +x ifelse-single.sh
meghana@3148c6658f7456b:~$ gedit ifelse-single.sh

(gedit:6878): IBUS-WARNING **: 05:43:49.570: Failed to mkdir /ho
meghana@3148c6658f7456b:~$ ./ifelse-single.sh
Enter a value:67
The value you typed is greater than 9.
meghana@3148c6658f7456b:~$
```



```
1#!/bin/bash
2
3read -p "Enter a value:" value
4if [ $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 |
```

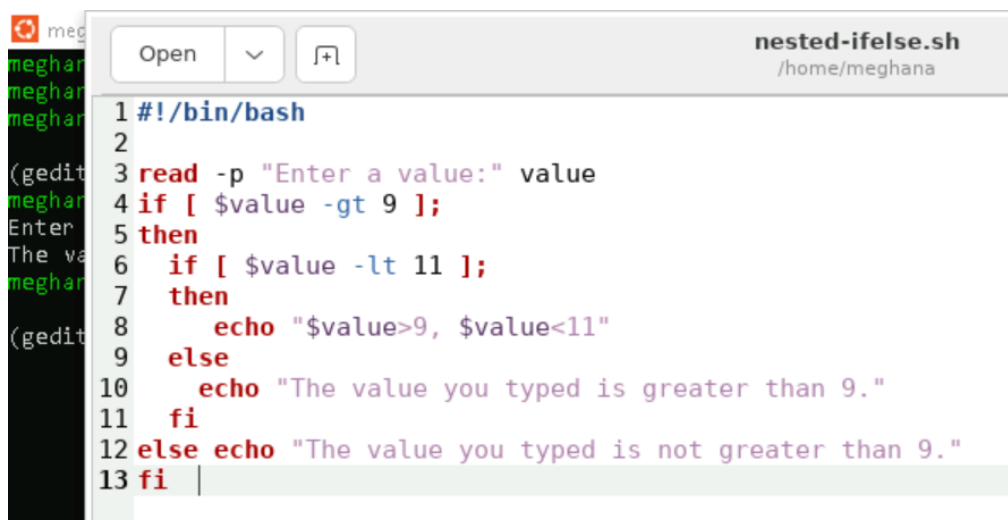
12. NESTED IF-ELSE STATEMENT:


```

meghana@3148c6658f7456b: ~
meghana@3148c6658f7456b:~$ touch nested-iffelse.sh
meghana@3148c6658f7456b:~$ chmod +x nested-iffelse.sh
meghana@3148c6658f7456b:~$ gedit nested-iffelse.sh

(gedit:6412): IBUS-WARNING **: 05:28:38.924: Failed to mkdir /
meghana@3148c6658f7456b:~$ ./nested-iffelse.sh
Enter a value:67
The value you typed is greater than 9.
meghana@3148c6658f7456b:~$ _

```



```

1 #!/bin/bash
2
3 read -p "Enter a value:" value
4 if [ $value -gt 9 ];
5 then
6     if [ $value -lt 11 ];
7     then
8         echo "$value>9, $value<11"
9     else
10        echo "The value you typed is greater than 9."
11    fi
12 else echo "The value you typed is not greater than 9."
13 fi

```

13. ELIF STATEMENT:

```

meghana@3148c6658f7456b: ~
meghana@3148c6658f7456b:~$ touch elif.sh
meghana@3148c6658f7456b:~$ chmod +x elif.sh
meghana@3148c6658f7456b:~$ gedit elif.sh

(gedit:6638): IBUS-WARNING **: 05:32:22.305: Failed to mkdir
meghana@3148c6658f7456b:~$ ./elif.sh
Enter a number of quantity:78
Eligible for 5% discount
meghana@3148c6658f7456b:~$ _

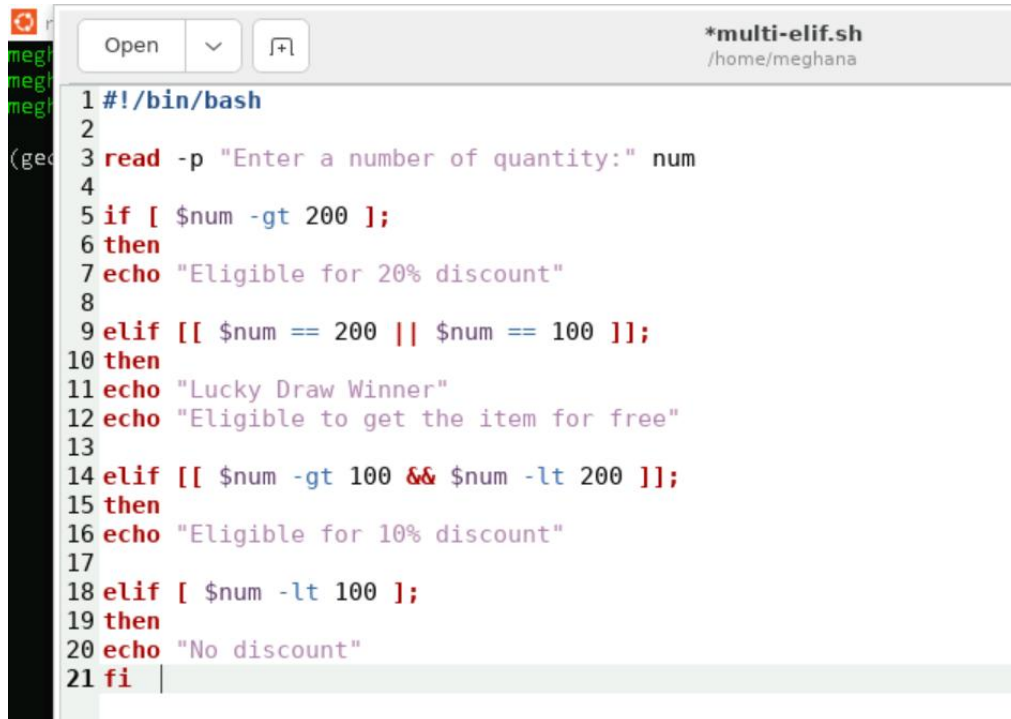
```

```
1 #!/bin/bash
2
3 read -p "Enter a number of quantity:" num
4
5 if [ $num -gt 100 ];
6 then
7 echo "Eligible for 10% discount"
8 elif [ $num -lt 100 ];
9 then
10 echo "Eligible for 5% discount"
11 else
12 echo "Lucky Draw Winner"
13 echo "Eligible to get the item for free"
14 fi
```

14. MULTIPLE CONDITIONS WITH ELIF STATEMENT:

```
meghana@3148c6658f7456b:~$ touch multi-elif.sh
meghana@3148c6658f7456b:~$ chmod +x multi-elif.sh
meghana@3148c6658f7456b:~$ gedit multi-elif.sh

(gedit:6758): IBUS-WARNING **: 05:35:47.315: Failed to mkdir /
meghana@3148c6658f7456b:~$ ./multi-elif.sh
Enter a number of quantity:67
No discount
meghana@3148c6658f7456b:~$ ./multi-elif.sh
Enter a number of quantity:88
No discount
meghana@3148c6658f7456b:~$ ./multi-elif.sh
Enter a number of quantity:23
No discount
meghana@3148c6658f7456b:~$
```



```
1#!/bin/bash
2
3read -p "Enter a number of quantity:" num
4
5if [ $num -gt 200 ];
6then
7echo "Eligible for 20% discount"
8
9elif [[ $num == 200 || $num == 100 ]];
10then
11echo "Lucky Draw Winner"
12echo "Eligible to get the item for free"
13
14elif [[ $num -gt 100 && $num -lt 200 ]];
15then
16echo "Eligible for 10% discount"
17
18elif [ $num -lt 100 ];
19then
20echo "No discount"
21fi
```