

## LAB Manual

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<b>Semester: IV</b>	<b>Year AY 22-23</b>
<b>Subject Title: Operating Systems Lab</b>	
<b>EXPERIMENT No: 5</b>	<b>Assignment No : 5</b>
<b>TITLE: Conditional Statement</b>	<b>DoP : 18-03-2024</b>

**Aim:** Implement shell script to demonstrate conditional statements

**Learning Outcomes:** 1. To understand the conditional statements

2. To Demonstrate the shell script to demonstrate conditional statements using Linux command.

**Hardware/Software: handwritten**

Problem Definition:

- a) Shell script to print whether the number entered by the user is even or odd
- b) Shell script to print the largest of three numbers
- c) Shell script to print whether the year entered by the user is leap year or not
- d) Shell script to calculate balance of the account based on the following conditions:
  - i. Accept the account balance from the user
  - ii. Accept withdrawal amount from the user
  - iii. If withdrawal amount < 1500 then calculate the tax as 3% of the withdrawal amount
  - iv. If withdrawal amount >1500 and less than 3000 then calculate the tax as 4% of the withdrawal amount
  - v. If withdrawal amount > 3000 then calculate the tax as 5% of the withdrawal amount
  - vi. If balance is less than withdrawal amount then print insufficient balance
  - vii. Print amount withdrawn along with tax deducted

**Theory:** Write theory about Conditional statements:

- if statement •

if-else statement

- if..elif..else..fi statement (Else If ladder)
- if..then..else..if..then..fi..fi..(Nested)

### **Algorithm:-**

Q1)-

1. Input two numbers.
2. Check whether the number is even or odd (dividing the number by 2 and checking the remainder).

Q2)-

1. Input 3 integers.
2. Check which one is the greatest by comparing them to the other two.

Q3)-

1. Take input of a year.
2. Check whether the year is a leap year or not.

Q4)-

1. Take input for account balance and withdrawal money.
2. Calculate the amount of tax and deduct the money accordingly.
3. Also if there is insufficient balance , then print the message, insufficient balance.

### **Program: softcopy**

```

1 #!/bin/sh
2
3 echo "Enter the number:"
4 read num
5 if [ `expr $num % 2` == 0 ]
6 then
7 echo "$num is an even number."
8 else
9 echo "$num is an odd number."
10 fi
11 echo "Question 1 completed."
12 echo
13 echo "Enter 1st integer: "
14 read num1
15 echo "Enter 2nd integer: "
16 read num2
17 echo "Enter 3rd integer: "
18 read num3
19 if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
20 then
21 echo "$num1 is the largest number."
22 elif [ $num2 -gt $num1 ] && [ $num2 -gt $num3 ]
23 then
24 echo "$num2 is the largest number."
25 else
26 echo "$num3 is the largest number."
27 fi

```

```

29
30 echo "Question 3"
31 echo "Enter a year in yyyy format:"
32 read yyyy
33 if [ `expr $yyyy % 400` == 0 ] && [ `expr $yyyy % 100` == 0 ]
34 then
35 echo "$yyyy is a leap year"
36 elif [ `expr $yyyy % 4` == 0 ] && [ `expr $yyyy % 100` != 0 ]
37 then

43
44 echo "Question 4"
45 l=3
46 m=4
47 h=5
48 echo "Enter account balance:"
49 read balance
50 echo "Enter withdrawal ammount:"
51 read withdraw
52 if [ $balance -lt $withdraw ]
53 then
54 echo "Insufficient balance"
55 elif [ $withdraw -lt 1500 ]
56 then
57 tax=`echo "scale=2;$l*$withdraw/100" | bc -l`
58 fa=`expr "scale=2;$withdraw - $tax" | bc -l`
59 echo -e "Total withdraw amount: $fa\nDeducted Tax: $tax"
60 elif [ $withdraw -gt 1500 ] && [ $withdraw -lt 3000 ]

61 then
62 tax=`echo "scale=2;$m*$withdraw/100" | bc -l`
63 fa=`expr "scale=2;$withdraw - $tax" | bc -l`
64 echo -e "Total withdraw amount: $fa\nDeducted Tax: $tax"
65 elif [ $withdraw -gt 3000 ]
66 then
67 tax=`echo "scale=2;$h*$withdraw/100" | bc -l`
68 fa=`expr "scale=2;$withdraw - $tax" | bc -l`
69 echo -e "Total withdraw amount: $fa\nDeducted Tax: $tax"
70 echo -e "Total withdraw amount: $fa\nDeducted Tax: $tax"
71 fi

```

**Output:** snapshots of the demonstration softcopy

```

student@ubuntu:~/priyanka$ bash assign_5.sh
Enter the number:
8
8 is an even number.
Question 1 completed.

```

```

student@ubuntu:~/priyanka$ bash assign_5.sh
Enter the number:
6
6 is an even number.
Question 1 completed.

Enter 1st integer:
4
Enter 2nd integer:
8
Enter 3rd integer:
9
9 is the largest number.

```

```
Enter any year:
2004
2004 is a leap year.
```

```
Question 4
Enter account balance:
5000
Enter withdrawal ammount:
6000
Insufficient balance
```

```
Question 4
Enter account balance:
5000
Enter withdrawal ammount:
1700
Total withdraw amount: 1632.00
Deducted Tax: 68.00
```

***assessment schemes.***

Attendance	Discipline	Short oral	Correctness of Lab Report	Timely completion of Lab Report	Total marks (10)	Signature of Teacher with Date