LAB Manual

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Semester: IV	**Year AY 22-23**
Subject Title: Operating Systems Lab	
EXPERIMENT No: 5	**Assignment No : 7**
TITLE: Conditional Statement	**DoP :**

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*:**

Theory

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Hardware:

- Computer running a linux operating System, Memory & disk space.
- Software
- Linux operating System. Shell interpreter, virtual box.

- if statement: It evaluates the specified condition. if the condition evaluates to true, the associated code block enclosed between 'then' and 'fi' is executed, the condition is written inside square brackets '[ ]'.

Syntax:-

```
if [condition] ; then
    # code to be executed if
    condition is true
fi
```

- if-else statement: The if-else statement provides an alternative code block to execute if the condition in the 'if' statement evaluates to false. If the condition is true, the code block after 'then' is executed, otherwise its code after else is executed

```
if [ condition ]; then
    # code to be executed if condition
    is true.
```

```
else
# Code to executed if condition is false
fi
```

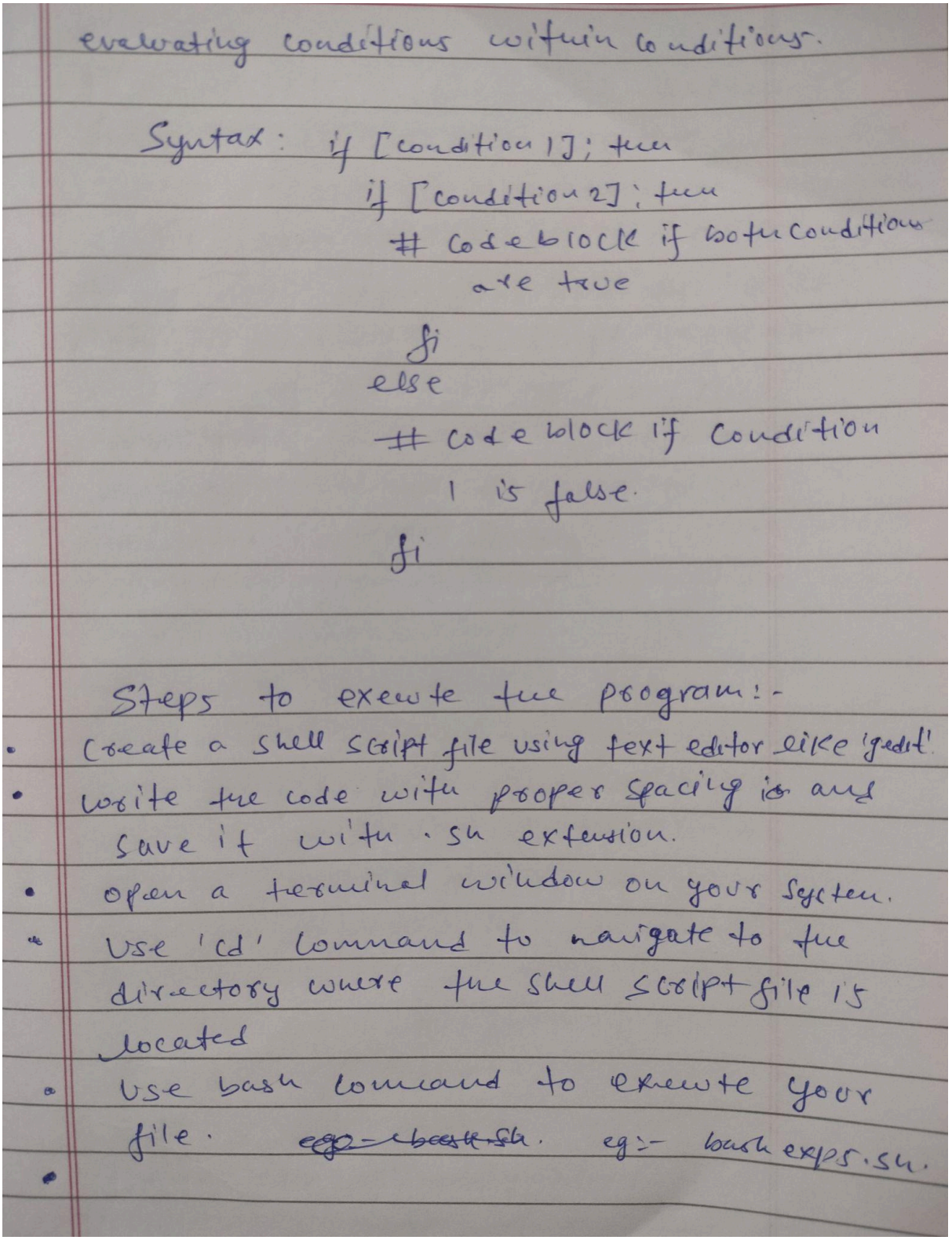
- if -- elif -- else fi statement :- (else if ladder) :-
The 'if -- elif -- else' statement allows testing multiple conditions sequentially. it starts with an if statement followed by zero or more 'elif' statements and then ends with an 'else' statement. Each condition is evaluated in order, and the corresponding code block is executed for the first true condition encountered

~~Syntax~~ Syntax :-

```
if [condition 1]: then
    # code if condition is true
    elif [condition 2] ; then
    # code block
    else
    # code block if all conditions
    are false.
```

- 'if...then...else...if...then (nested): it allows conditional structures within other conditional structures. The inner 'if' statement is evaluated only if the outer 'if' statement condition holds true. this enables more complex decision making by

Steps to execute the program: handwritten



evaluating conditions within conditions.

Syntax: if [condition 1]; then
if [condition 2]; then
# code block if both conditions are true
fi
else
# code block if condition 1 is false.
fi

Steps to execute the program:-

- Create a shell script file using text editor like 'gedit'
- Write the code with proper spacing in and save it with .sh extension.
- Open a terminal window on your system.
- Use 'cd' command to navigate to the directory where the shell script file is located
- Use bash command to execute your file. ~~eg:- bash~~ eg:- bash exp5.sh.

Program:

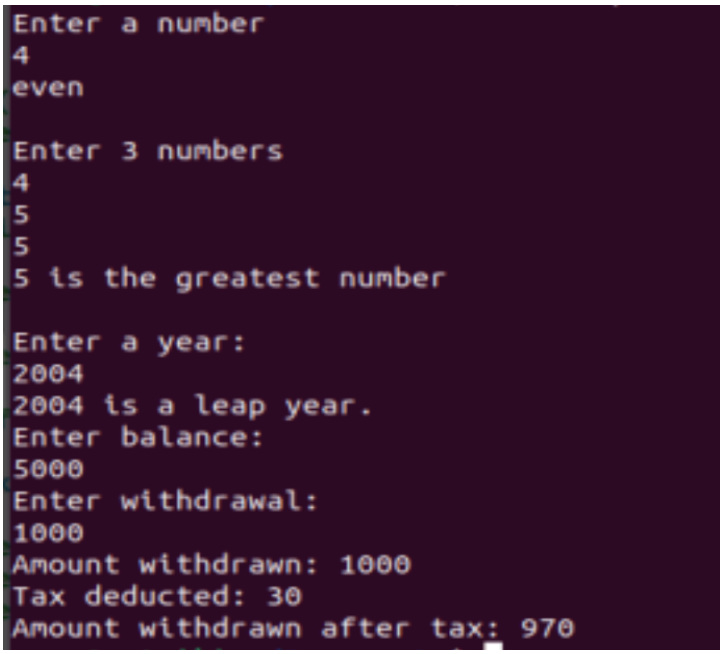
a) Shell script to print whether the number entered by the user is even or odd

b) Shell script to print the largest of three numbers

```
#odd or even
echo "Enter a number"
read n
if [ $n -eq 0 ]
then
echo "neither odd nor even"
elif [ `expr $n % 2` -eq 0 ]
then
echo "even"
else
echo "odd"
fi
echo " "

#largest of 3 numbers
echo "Enter 3 numbers"
read a
read b
read c
if [ $a -ge $b ]
then
if [ $a -ge $c ]
then
echo "$a is the greatest number"
else
echo "$c is the greatest number"
fi
else
if [ $b -ge $c ]
then
echo "$b is the greatest number"
else
echo "$c is the greatest number"
fi
fi
echo " "

```

```bash
#leap year or not
echo "Enter a year:"
read y

if [ $((y % 4)) -eq 0 ] && [ $((y % 100)) -ne 0 ]; then
    echo "$y is a leap year."
elif [ $((y % 400)) -eq 0 ]; then
    echo "$y is a leap year."
else
    echo "$y is not a leap year."
fi

#tax
echo "Enter balance: "
read bal

echo "Enter withdrawal: "
read wd

if (( wd > bal )); then
    echo "Insufficient balance"
else
    tax=0
    if (( wd < 1500 )); then
        tax=$(( wd * 3 / 100 ))
    elif (( wd >= 1500 && wd < 3000 )); then
        tax=$(( wd * 4 / 100 ))
    else
        tax=$(( wd * 5 / 100 ))
    fi

    k=$(( wd - tax ))

    echo "Amount withdrawn: $wd"
    echo "Tax deducted: $tax"
    echo "Amount withdrawn after tax: $k"
fi
```

Output:



assessment schemes.

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