



APEX Institute of Technology Artificial Intelligence & Machine Learning

Experiment No. 7

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Branch: CSE AIML

Semester: 3RD

Subject Name: OPERATING SYSTEM

UID: 21BCS8935

Section/Group: 21AML-12(A)

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Subject Code: 21CSH-242

Aim of the practical :

To implement a shell scripting program to demonstrate the working of the Logical Operators.

TOOL USED :

VMWare Workstation is a desktop hypervisor allows users to set up & operate virtual machines, containers or clusters. It works by mapping physical hardware resources to a virtual machines' virtual resources to create a fully isolated & secure VMs encapsulating OS & applications.

Inside the VMWare Workstation, **GNU Nano Editor** will be used for creating & editing the shell script program which will help with the syntax highlighting, spell checking & other basic features.

BASIC CONCEPT

In this experiment, we are going to implement logical operators also called Boolean operators which are quite similar to the operators offered in the programming languages like C & C++ & are used to



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perform logical operations, i.e., make decisions based on the Boolean logic & returns true or false.

- 1- **Logical OR:** The OR operator represented by || is a binary operator which returns true if either of the inputs is true.
- 2- **Logical AND:** The AND operator represented by && is a binary operator which returns true if both of the inputs are true.
- 3- **Logical NOT:** The NOT operator represented by ! is a binary operator which negates the input.

Shell Script as Programming Language: A Unix shell is both a command interpreter & a programming language. The programming language features allow the rich set of GNU utilities to be combined.

STEPS FOR THE EXPERIMENT :

- 1.START
- 2.Open the VMware Workstation & run the Ubuntu virtual machine
- 3.Enter the GNU nano, using command nano <filename>.sh.
4. Inside the editor, code for taking two inputs from the user as true (0) or false (1).

Note: In shell scripting, unlike from C or C++, true is represented by 0 which represents success & false is represented by 1 which represents failure.



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Program code:

```
read -p 'Enter a: ' a read -p 'Enter b: ' b if
(($a == "True" && $b == "True")) then
echo "a as well as b is true" else echo "Either a
or b is false" fi if (( $a == "True" )) || (( $b ==
"True" )) then echo "Either a or b
is true" else echo "Neither a
nor b is true" fi if ((!$a ==
"True" )) then echo "a is false"
else echo "a is true" fi
```

SCREENSHOTS OF EXPERIMENT :

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```
cameron@ubuntu: ~  
cameron@ubuntu:~$ nano exp7.sh  
cameron@ubuntu:~$
```

```
GNU nano 2.4.2 File: exp7.sh  
  
read -p 'Enter a: ' a  
read -p 'Enter b: ' b  
if (( $a == "True" && $b == "True" ))  
then  
echo "a as well as b is true"  
else  
echo "Either a or b is false"  
fi  
if (( $a == "True" )) || (( $b == "True" ))  
then  
echo "Either a or b is true"  
else  
echo "Neither a nor b is true"  
fi  
if (( ! $a == "True" ))  
then  
echo "a is false"  
else  
echo "a is true"  
fi
```

```
cameron@ubuntu: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
cameron@ubuntu:~$ nano exp7.sh  
cameron@ubuntu:~$ chmod +x exp7.sh  
cameron@ubuntu:~$ ./exp7.sh  
Enter a: 1  
Enter b: 1  
Either a or b is false  
Neither a nor b is true  
a is false  
cameron@ubuntu:~$ ./exp7.sh  
Enter a: 0  
Enter b: 0  
a as well as b is true  
Either a or b is true  
a is true  
cameron@ubuntu:~$ ./exp7.sh  
Enter a: 1  
Enter b: 0  
Either a or b is false  
Either a or b is true  
a is false  
cameron@ubuntu:~$ ./exp7.sh  
Enter a: 0  
Enter b: 1  
Either a or b is false  
Either a or b is true  
a is true  
cameron@ubuntu:~$
```



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Learning Outcomes

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1. To implement & understand the Logical Operators offered by shell scripting.
2. To implement the bash commands in Linux using command-line interface.
3. To create, compile & run a shell program in Ubuntu System terminal.
4. To understand the working of nano editor in the Linux OS.
5. To design a decision-making program with two numbers as input for the user.

Evaluation Grid (Created as per the Assessment Model):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion		8
2.	Conduct of Experiment		12
3.	Quiz/Viva Voce		10



	Total		30
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