

OPERATING SYSTEM

Lab – 3 Bash Scripting

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Experiment 1: Hello World Script

Aim: To create and execute a basic Bash script that displays 'Hello, World!'.

Input -

```
#!/bin/bash
echo "Hello, world....."
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./one.sh
Hello, world.....
```

Experiment 2: Basic Calculator

Aim: To perform addition, subtraction, multiplication, and division of two numbers using a Bash script.

Input -

```
#!/bin/bash

read -p "Enter first number : " a
read -p "Enter second number : " b

echo "Addition: $((a+b))"
echo "Subtraction: $((a-b))"
echo "Multiplication: $((a*b))"
echo "Division: $((a/b))"
~
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./two.sh
Enter first number : 1232
Enter second number : 345
Addition: 1577
Subtraction: 887
Multiplication: 425040
Division: 3
24ca018@server2:~/Documents/OS_LAB/lab3$ ./two.sh
Enter first number : 10
Enter second number : 0
Addition: 10
Subtraction: 10
Multiplication: 0
./two.sh: line 9: a/b: division by 0 (error token is "b")
```

Experiment 3: Odd or Even Checker

Aim: To check whether a given number is odd or even.

Input -

```
#!/bin/bash
read -p "Enter the number : " num

if (( num % 2 == 0 ));
then
    echo "$num is EVEN"
else
    echo "$num is ODD"
fi
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./three.sh
Enter the number : 7
7 is ODD
24ca018@server2:~/Documents/OS_LAB/lab3$ ./three.sh
Enter the number : 8
8 is EVEN
```

Experiment 4: File Existence Checker

Aim: To check if a file exists in the current directory.

Input -

```
#!/bin/bash

read -p "Enter filename : " file

if [ -f "$file" ];
then
    echo "File exists"
else
    echo "File doesn't exist"
fi

~
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./four.sh
Enter filename : test.txt
File exists
```

Experiment 5: Current Date and Time

Aim: To display the current system date and time.

Input -

```
#!/bin/bash
echo -e "Current Date and Time:\n$(date)"

~
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./fifth.sh
Current Date and Time:
Wednesday 13 August 2025 02:58:09 PM IST
```

Experiment 6: Directory Size Monitor

Aim: To display the size of a given directory using du command.

Input -

```
#!/bin/bash

read -p "Enter Directory path: " dir
du -sh "$dir"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./sixth.sh
Enter Directory path: /home/24ca018/Documents
2.5M    /home/24ca018/Documents
```

Experiment 7: Backup Script

Aim: To copy all .txt files from one folder to another with a timestamp.

Input -

```
#!/bin/bash

read -p "Enter source directory: " src
read -p "Enter destination directory: " dest
timestamp=$(date +%Y%m%d_%H%M%S)
mkdir -p "$dest/backup_$timestamp"
cp "$src"/*.txt "$dest/backup_$timestamp"
echo "Backup Completed"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./seven.sh
Enter source directory: .
Enter destination directory: .
Backup Completed
```

Experiment 8: Simple Login Simulation

Aim: To simulate login by verifying username and password.

Input -

```
#!/bin/bash

username="admin"
pass="123"

read -p "Enter username : " u
read -sp "Enter password : " p
echo
if [[ $u == $username && $p == $pass ]];
then
    echo "Login Successfully"
else
    echo "Invalid credentials"
fi
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./eight.sh
Enter username : admin
Enter password :
Invalid credentials
24ca018@server2:~/Documents/OS_LAB/lab3$ ./eight.sh
Enter username : admin
Enter password :
Login Successfully
```

Experiment 9: Countdown Timer

Aim: To accept seconds from user and perform a countdown.

Input -

```
#!/bin/bash

read -p "Enter seconds : " s
while [ $s -gt 0 ];
do
    echo "$s"
    sleep 1
    let s--
done
echo "Time's up!!!"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./nine.sh
Enter seconds : 5
5
4
3
2
1
Time's up!!!
```

Experiment 10: Batch File Renamer

Aim: To rename all .jpg files in a folder by adding a prefix.

Input -

```
#!/bin/bash

read -p "Enter folder path : " folder
read -p "Enter prefix : " pre
cd "$folder" || exit
for file in *.txt;
do
    mv "$file" "${pre}_${file}"
done
echo "Renamin Complete!!!!"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./ten.sh
Enter folder path : .
Enter prefix : test
Renamin Complete!!!!
```

Experiment 11: Word Count Tool

Aim: To count the number of words, lines, and characters in a given file.

Input -

```
#!/bin/bash

read -p "Enter filename : " file
wc "$file"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./eleven.sh
Enter filename : test_test.txt
1 6 31 test_test.txt
```

Experiment 12: Search and Replace in Files

Aim: To find and replace text in all .txt files using sed.

Input -

```
#!/bin/bash

read -p "Enter search term : " se
read -p "Enter replacement : " rp
for file in *.txt;
do
    sed -i "s/$se/$rp/g" "$file"
done

echo "Replacement Done !!!"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./twelve.sh
Enter search term : there
Enter replacement : all
Replacement Done !!!
```

Experiment 13: Log File Filter

Aim: To extract lines containing a keyword from a log file.

Input -

```
#!/bin/bash

read -p "Enter log filename : " log
read -p "Enter keyword : " key
grep "$key" "$log"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./thirteen.sh
Enter log filename : test_test.txt
Enter keyword : NITK
Hello all, I am from NITK!!!
```

Experiment 14: Remove Duplicate Lines

Aim: To sort a file and remove duplicate lines.

Input -

```
#!/bin/bash

read -p "Enter filename : " file
sort "$file" | uniq
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./fourteen.sh
Enter filename : test.txt
Apple
Banana
Mango
```

Experiment 15: Merge Multiple Files

Aim: To combine multiple text files into one.

Input -

```
#!/bin/bash

read -p "Enter output filename : " out
cat *.txt > "$out"
echo "Files merged into $out"
```

Output -

```
24ca018@server2:~/Documents/OS_LAB/lab3$ ./fifteen.sh  
Enter output filename : merged.txt  
Files merged into merged.txt
```