

Experiment [4]: [Bash Scripting]}

Name:Biswabandya Mohanty, Roll No.590029274, Date: 2025-09-05

Aim:

- [To learn basics of bash scripting]

Requirements

- [Any Linux Distro, any kind of text editor (vs code, vim, notepad, nano, etc)]

Theory

- [To learn how to use bash scripting]

procedure & Observations

Exercise 1: [Hello world script]

Task Statement: [Basic Usage of Shell Scripts]

Explanation: [I learnt how to do the basic shell scripting]

Command(s):

```
#!/bin/bash  
echo "Hello, World!"
```

Output:

The screenshot shows a terminal window titled "Mint - VMware Workstation 17 Player". The terminal is running a Linux session on a virtual machine named "biswa@biswa-virtual-machine". The user has run several commands to test a script named "armstrong.sh". The output indicates that the number 5 is an Armstrong number, while 33 is not. The user also runs "ls" to list files in the directory, "cat" to view files, and "exp1.sh" which outputs "Hello World". The terminal window includes standard Linux navigation keys like F1-F12 and a scroll bar.

```
5 is a armstrong number
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ./armstrong.sh
enter number
33
33 is not a armstrong number
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ls
arithmetic.sh armstrong.sh expl.sh greeting.sh prime.sh sum.sh vote.sh
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ cat expl
cat: expl: No such file or directory
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ cat exp1.sh
cat: exp1.sh: No such file or directory
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ cat expl.sh
#!/bin/bash
echo "Hello World"
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ^C
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ./exp1.sh
Hello World
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ls
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ arithmetic.sh armstrong.sh expl.sh greeting.sh prime.sh sum.sh vote.sh
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ./expl.sh
Hello World
biswa@biswa-virtual-machine:~/Desktop/Linux lab$
```

Exercise 2: [Personalized Greeting Script]

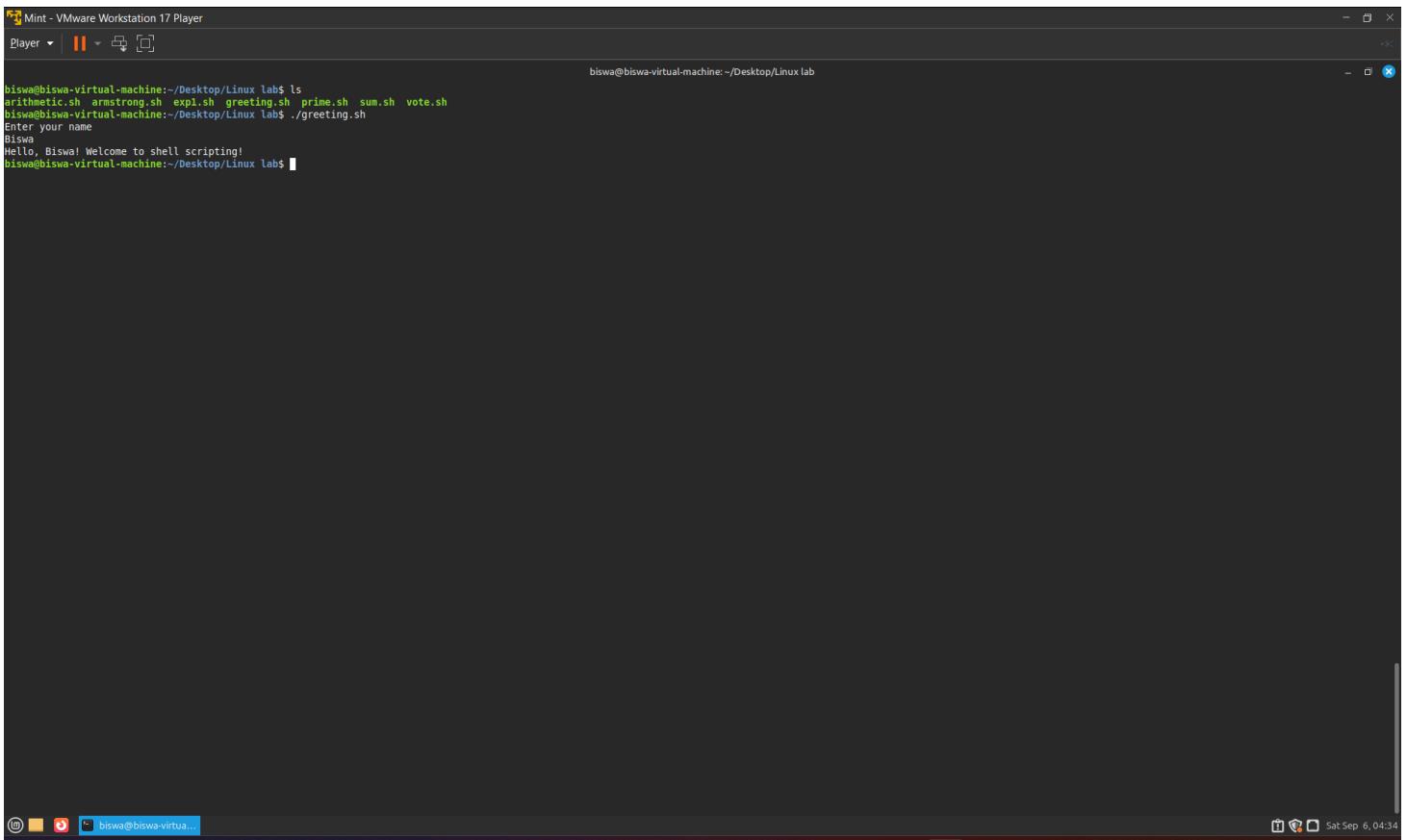
Task Statement: [Basic Shell Script to callout user defined function.]

Explanation: [The script will take input from the user and store it in a variable then give output of the stored value]

Command(s):

```
#!/bin/bash
echo "Enter your name: "
read name      # 'read' takes user input
echo "Hello, $name! Welcome to Shell Scripting."
```

Output:



The screenshot shows a terminal window titled "Mint - VMware Workstation 17 Player". The terminal displays a shell session where the user runs an "ls" command to list files, enters their name ("Biswa"), and runs a script ("greeting.sh") which prints a welcome message.

```
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ls
arithmetic.sh armstrong.sh expl.sh greeting.sh prime.sh sum.sh vote.sh
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ./greeting.sh
Enter your name
Biswa
Hello, Biswa! Welcome to shell scripting!
biswa@biswa-Virtual-machine:~/Desktop/Linux lab$
```

Result

- [I learnt how to use the basic bash scripting.]

Challenges Faced & Learning Outcomes

- Challenge 1: [I was facing issues in remembering how to call a variable].
- Challenge 2: [I was forgetting how to do looping and take input from users].
- Challenge 3: [I was forgetting how to do proper formatting in bash scripting.]

Learning:

- How to take input from user
- Learnt proper way to use formatting in bash script

Conclusion

- I learnt how to do bash scripting.

Exercise 3: [Arithmetic Operations in Shell Scripting]

Task Statement:

- [Using Basic Arithmetic Operations in Shell Scripts]

Explanation:

- I learnt how to run arithmetic bash script

Command(s):

```
#!/bin/bash
echo "Enter first number: "
read num1
echo "Enter second number: "
read num2

echo "Addition: $((num1 + num2))"
echo "Subtraction: $((num1 - num2))"
echo "Multiplication: $((num1 * num2))"
echo "Division: $((num1 / num2))"
```

Output:

```
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ls
arithmetic.sh armstrong.sh expl.sh greeting.sh prime.sh sum.sh vote.sh
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ./arithmetic.sh
enter first number
2
enter second number
3
Addition: 5
Multiply: 6
Divide: 0
Subtract: -1
biswa@biswa-virtual-machine:~/Desktop/Linux lab$
```

Exercise 4:

- [Voting Eligibility]

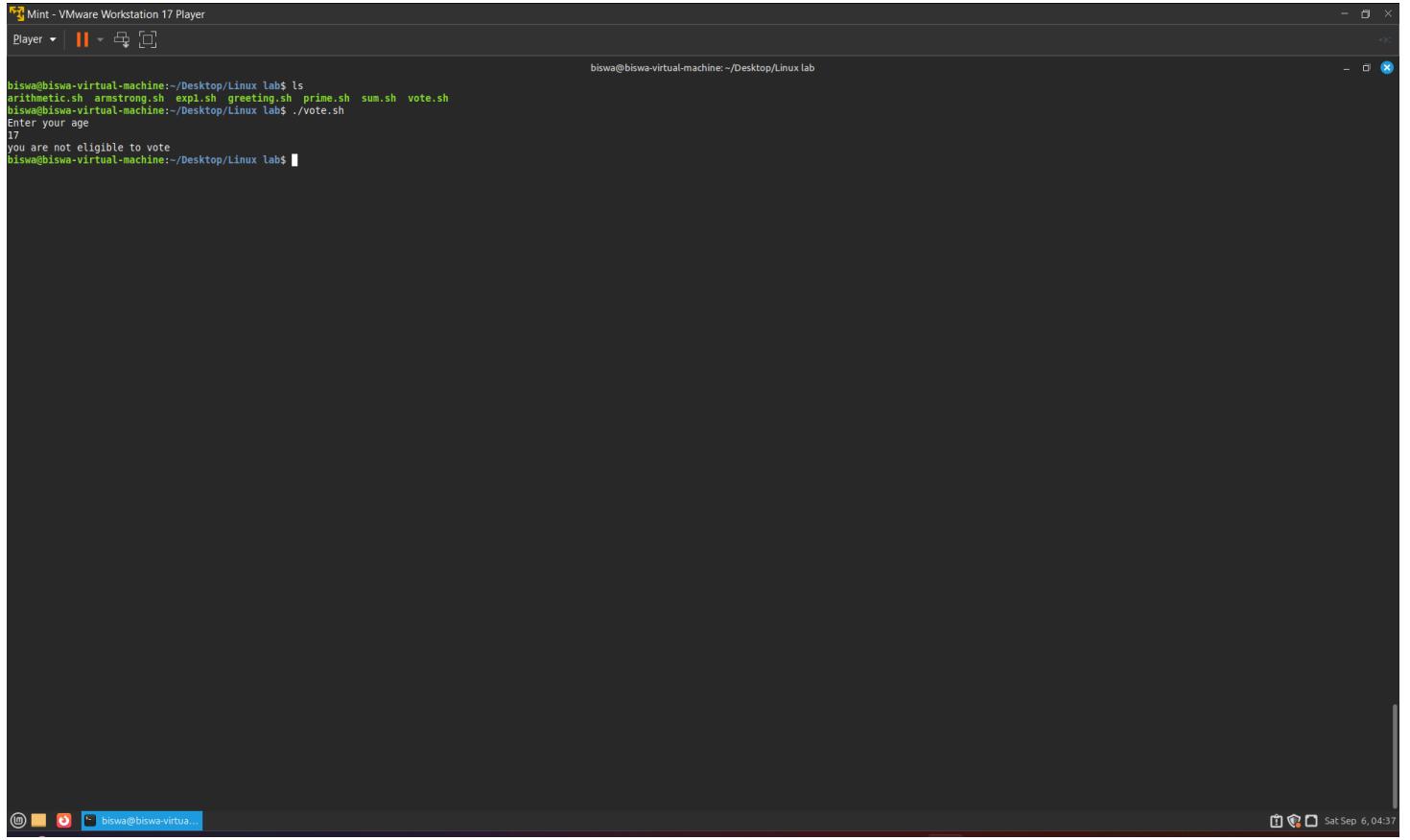
Task Statement:

- [Using if else loop check if the user is eligible to vote or not.]

Command(s):

```
#!/bin/bash
echo "Enter your age"
read Biswa
if [ Biswa -ge 18 ]
then
echo "you are eligible to vote"
else
echo "you are not eligible to vote"
fi
```

Output:



The screenshot shows a terminal window titled 'Mint - VMware Workstation 17 Player'. The terminal is running a shell script named 'vote.sh' which checks if the user's age is greater than or equal to 18. The user enters their age as 17, and the script outputs that they are not eligible to vote.

```
Mint - VMware Workstation 17 Player
Player | ||| □
Mint - VMware Workstation 17 Player
Player | ||| □
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ls
arithmetic.sh armstrong.sh exp.sh greeting.sh prime.sh sum.sh vote.sh
biswa@biswa-virtual-machine:~/Desktop/Linux lab$ ./vote.sh
Enter your age
17
you are not eligible to vote
biswa@biswa-virtual-machine:~/Desktop/Linux lab$
```

Result

- The Exercises were successfully completed for Basic Shell Scripting.