

Experiment 4: BASH or SHELL scripting

Experiment [4]: [Bash Scripting]

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AIM:

- [To Learn Basics of Bash Scripting.]

Requirements:

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

Theory:

- [Learning the basics of bash scripting.]

Procedure & Observations

Exercise 1: [Hello World Script]

Task Statement:

- [Basic Usage of Shell Scripts]

Explanation:

- [Writing Begginer level Shell Scripts]

Command(s):

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

Output:

```
retr0@Retr0:~/Linux Lab$ ls
Arithmetic.sh  greeting.sh  hello.sh  vote.sh
retr0@Retr0:~/Linux Lab$ ./hello.sh
Hello World
retr0@Retr0:~/Linux Lab$
```

Exercise 2: [Personalized Greeting Script]

Task Statement:

- [Basic Shell Script to callout user defined function.]

Explanation:

- [This Shell script will take input from user and store it in a variable and then call the variable which will output 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:

```
retr0@Retr0:~/Linux Lab$ ls
Arithmetic.sh  greeting.sh  hello.sh  vote.sh
retr0@Retr0:~/Linux Lab$ ./greeting.sh
Enter your name:
Hrithvik
Hello, Hrithvik! Welcome to Shell Scripting.
retr0@Retr0:~/Linux Lab$
```

Exercise 3: [Arithmetic Operations in Shell Scripting]

Task Statement:

- [Using Basic Arithmetic Operations in Shell Scripts]

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:

```
retr0@Retr0:~/Linux Lab$ ls
Arithmetic.sh  greeting.sh  hello.sh  vote.sh
retr0@Retr0:~/Linux Lab$ ./Arithmetic.sh
Enter first number:
5
Enter second number:
6
Addition: 11
Subscription: -1
Multiplication: 30
Division: 0
retr0@Retr0:~/Linux Lab$
```

Exercise 4:

- [Voting Eligibility]

Task Statement:

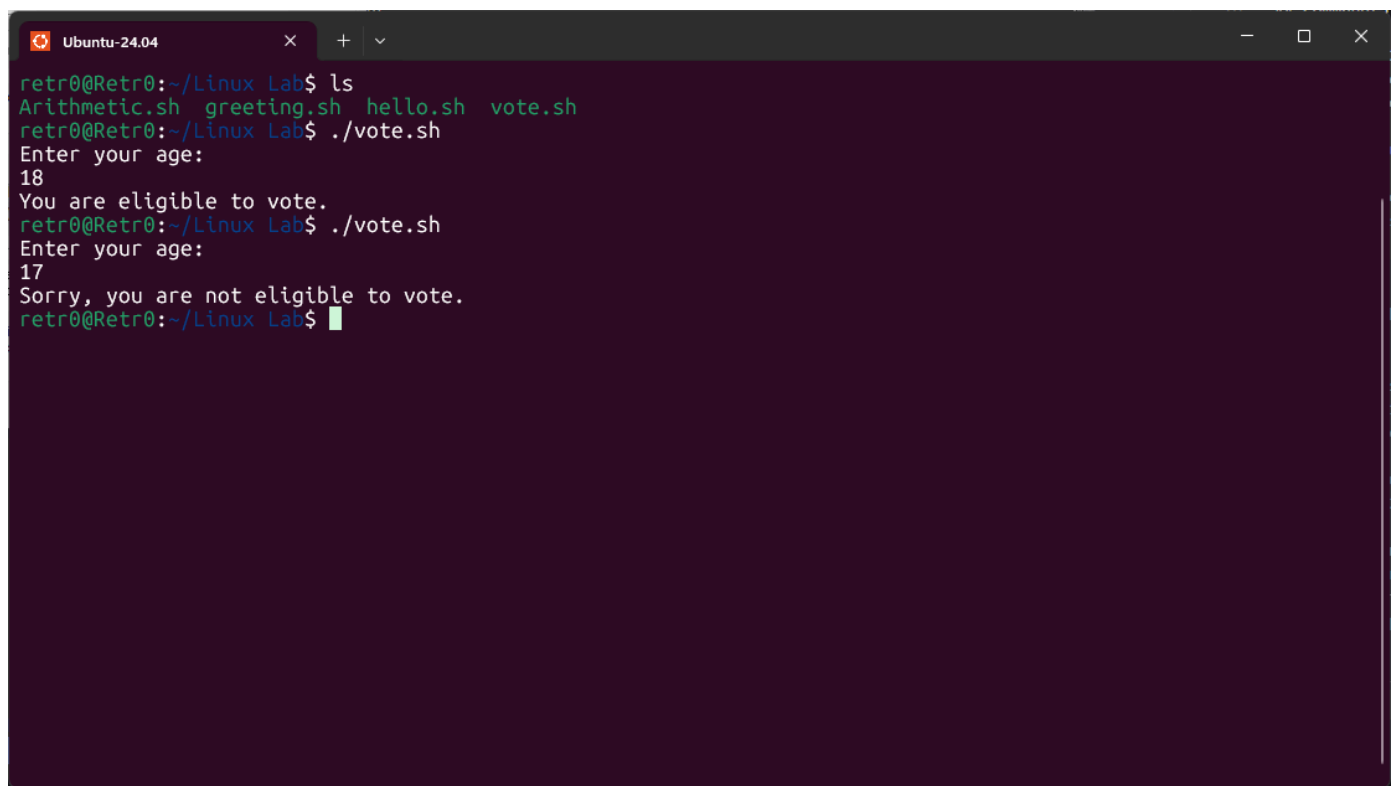
- [Using if else loop check if the user is eligible to vote or not.]

Command(s):

```
#!/bin/bash
echo "Enter your age: "
read age

if [ $age -ge 18 ]
then
    echo "You are eligible to vote."
else
    echo "Sorry, you are not eligible to vote."
fi
```

Output:

A terminal window titled 'Ubuntu-24.04' with standard window controls. The prompt is 'retr0@Retr0:~/Linux Lab\$'. The user runs 'ls', showing files 'Arithmetic.sh', 'greeting.sh', 'hello.sh', and 'vote.sh'. Then they run './vote.sh', which prompts 'Enter your age:'. They enter '18', and the script outputs 'You are eligible to vote.'. They run './vote.sh' again, enter '17', and the script outputs 'Sorry, you are not eligible to vote.'. The prompt returns to 'retr0@Retr0:~/Linux Lab\$' with a cursor.

```
retr0@Retr0:~/Linux Lab$ ls
Arithmetic.sh  greeting.sh  hello.sh  vote.sh
retr0@Retr0:~/Linux Lab$ ./vote.sh
Enter your age:
18
You are eligible to vote.
retr0@Retr0:~/Linux Lab$ ./vote.sh
Enter your age:
17
Sorry, you are not eligible to vote.
retr0@Retr0:~/Linux Lab$
```

Result

- The Exercises were successfully completed for Basic Shell Scripting.

Challenges Faced & Learning Outcomes

- Challenge 1: [it wasn't that hard.]

Learning: [What new concept or command did you learn?]

Conclusion

- [This was somewhat of a practice on how to use bash scripts.]