Experiment [4] : [Bash Scrpting]

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AIM:

- [To Learn Basics of Bash Scripting.]

Requirements:

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

Theory:

- Bash (Bourne Again SHell) is a command-line shell and scripting language for Unix-based operating systems.

- A shell script is a file containing commands.

- TYPES OF SHELL VARIABLES

1- user-defined

2- system variables

- KEYWORDS

Reserved words like- if, then, fi, while,etc.

- OPERATORS

1- Arithmetic operators

+, -, *, %

2- Comparision operators

-eq -ne -lt -le -gt -ge

- POSITINAL PARAMETERS

It is used to send inputs as arguments while executing a script.

command syntax- ./script.sh arg1 arg2

$0- script name, $1- first argument, $2- second argument

Task 1: [Hello World Script]

Task Statement:

- [Basic Usage of Shell Scripts]

Explanation:

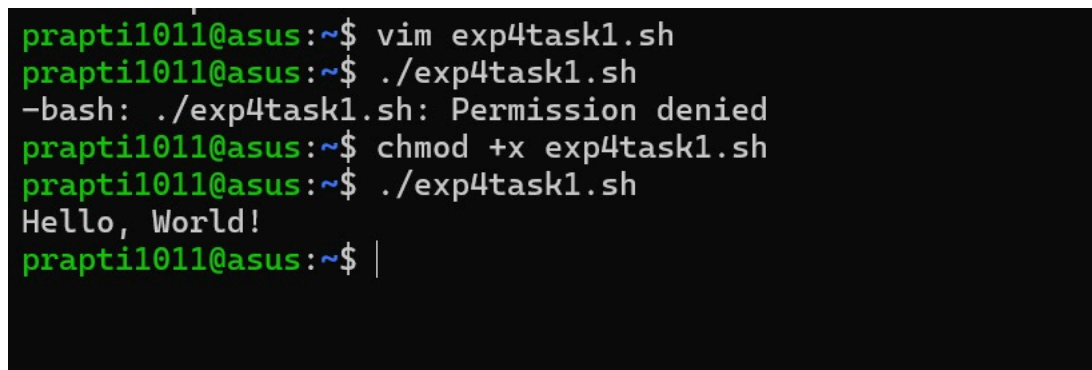- [Writing Begginer level Shell Scripts]

Command(s):

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

Output:

Task 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 "What is your name?"
read name
echo "Hello, $name! Welcome to Shell Scripting."
```

Output:

```
prapti1011@asus:~$ vim exp4task2.sh
prapti1011@asus:~$ ./exp4task2.sh
-bash: ./exp4task2.sh: Permission denied
prapti1011@asus:~$ chmod +x exp4task2.sh
prapti1011@asus:~$ ./exp4task2.sh
Enter your name:
Prapti
Hello, Prapti! Welcome to Shell Scripting.
prapti1011@asus:~$
```

Task 3: [Arithmetic Operations in Shell Scripting]

Task Statement:

- [Using Basic Arithmetic Operations in Shell Scripts]

Command(s):

```bash
#!/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:

```
prapti1011@asus:~$ vim exp4task3.sh
prapti1011@asus:~$ ./exp4task3.sh
-bash: ./exp4task3.sh: Permission denied
prapti1011@asus:~$ chmod +x exp4task3.sh
prapti1011@asus:~$ ./exp4task3.sh
enter first number:
8
enter second number:
9
Addition: 17
Subtraction: -1
Multiplication: 72
Division: 0
prapti1011@asus:~$
```

Task 4: [Voting Eligibility]

Task Statement:

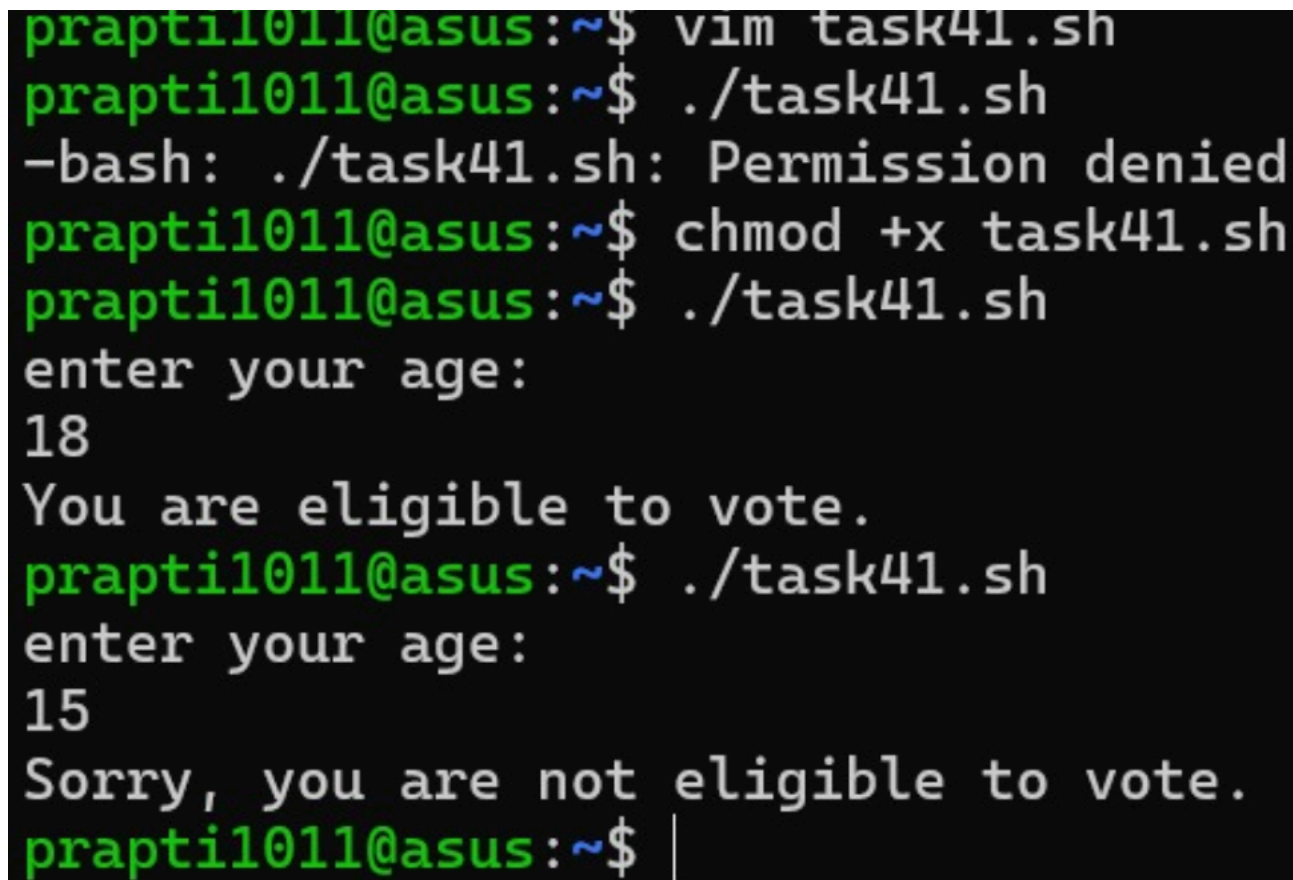- [Using Conditionals in Shell script]

Command(s):

```bash
#!/bin/bash
echo "What is your age?"
read age
if [ $age -ge 18 ]; then

    echo "You are eligible to vote!"

else
    echo "You are not eligible to vote!"

fi
```

Output:

```
prapti1011@asus:~$ vim task41.sh
prapti1011@asus:~$ ./task41.sh
-bash: ./task41.sh: Permission denied
prapti1011@asus:~$ chmod +x task41.sh
prapti1011@asus:~$ ./task41.sh
enter your age:
18
You are eligible to vote.
prapti1011@asus:~$ ./task41.sh
enter your age:
15
Sorry, you are not eligible to vote.
prapti1011@asus:~$
```

Challenges faced and learning outcomes:

- Did not face any challenge as just, just need to practice.

Result

- The tasks were successfully completed for Basic Shell Scripting.