[590023785]Exp5_Scrip\[590023785]Exp5_Scrip.md

Experiment [5]: [Shell Programming]

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AIM:

- [To Learn Basic Conditional Statements in Bash Scripting]

Requirements:

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

Theory:

- [Basic usage of conditions and arrays in bash scripting.]

Procedure & Observations

Exercise 1: [Prime Number Check]

Task Statement:

- [To check if the number given by the user is a prime number or not.]

Explanation:

- [using if else loop wap to check if the number is a prime number or not.]

Command(s):

#!/bin/bash echo “Enter a number: ” read num flag=0

for ((i=2; i<=num/2; i++)) do if [$((num % i)) -eq 0] then flag=1 break fi done

if [$flag -eq 0] then echo ”$num is a prime number.” else echo ”$num is not a prime number.” fi

Output:

```
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ vim primeno.sh
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ bash primeno.sh
Enter a number:
7
7 is a prime number.
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ bash primeno.sh
Enter a number:
4
4 is not a prime number.
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$
```

Exercise 2: [Sum of Digits]

Task Statement:

- [Take input from user and give the sum of two digits.]

Explanation:

- [This script will take input from user and will give the following output.]

Command(s):

#!/bin/bash echo “Enter a number: ” read num sum=0

while [$num -gt 0] do digit=$((num % 10)) sum=$((sum + digit)) num=$((num / 10)) done

echo “Sum of digits: $sum”

Output:

```
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ vim sum.sh
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ bash sum.sh
Enter a number:
567
Sum of digits: 18
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$
```

Exercise 3: [Armstrong Numbers]

Task Statement:

- [Take input user and give the sum of Armstrong number of n digits is a number equal to the sum of its digits raised to the power n. Example: 153 = 13 + 53 + 33]

Explanation:

- [This script will tell if the number entered by the user is an armstrong number or not.]

Command(s):

#!/bin/bash echo “Enter a number: ” read num temp=$num n=${#num} # number of digits sum=0

while [$temp -gt 0] do digit=$((temp % 10)) sum=$((sum + digit**n)) temp=$((temp / 10)) done

if [$sum -eq $num] then echo ”$num is an Armstrong number.” else echo ”$num is not an Armstrong number.” fi

Output:

```
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ vim armstrong.sh
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ bash armstrong.sh
Enter a number:
153
153 is an Armstrong number.
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ vim armstrong.sh
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$ bash armstrong.sh
Enter a number:
876
876 is not an Armstrong number.
gayatri10@LAPTOP-JAMRNMRP:/mnt/c/Users/GAYA1/OneDrive/Desktop/C SEM - 1$
```

Result:

- The Exercises were successfully completed for Basic Shell Scripting.