**Lab Exercise – 5**

* AIM ::

WAP in Shell Scripting to implement various Basic Operations

Source\_Code ::

### #!/bin/bash

### # 1. Greatest of Three Numbers

### echo "Program 1: Greatest of Three Numbers"

### echo "Enter three numbers:"

### read a b c

### if [ $a -ge $b ] && [ $a -ge $c ]; then

### echo "$a is the greatest"

### elif [ $b -ge $a ] && [ $b -ge $c ]; then

### echo "$b is the greatest"

### else

### echo "$c is the greatest"

### fi

### echo

### # 2. Even or Odd Number

### echo "Program 2: Even or Odd Number"

### echo "Enter a number:"

### read num

### if [ $((num % 2)) -eq 0 ]; then

### echo "$num is Even"

### else

### echo "$num is Odd"

### fi

### echo

### # 3. Average of Three Numbers

### echo "Program 3: Average of Three Numbers"

### echo "Enter three numbers:"

### read a b c

### avg=$(echo "scale=2; ($a + $b + $c) / 3" | bc)

### echo "The average is $avg"

### echo

### # 4. Prime or Not

### echo "Program 4: Prime or Not"

### 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 [ $num -eq 1 ]; then

### echo "1 is neither prime nor composite"

### elif [ $flag -eq 0 ]; then

### echo "$num is a prime number"

### else

### echo "$num is not a prime number"

### fi

### echo

### # 5. Factorial of a Number

### echo "Program 5: Factorial of a Number"

### echo "Enter a number:"

### read num

### fact=1

### for ((i=1; i<=num; i++)); do

### fact=$((fact \* i))

### done

### echo "Factorial of $num is $fact"

### echo

### # 6. Fibonacci Sequence

### echo "Program 6: Fibonacci Sequence"

### echo "Enter the number of terms:"

### read terms

### a=0

### b=1

### echo "Fibonacci sequence up to $terms terms:"

### for ((i=0; i<terms; i++)); do

### echo -n "$a "

### fib=$((a + b))

### a=$b

### b=$fib

### done

### echo

### echo

### # 7. Sum of Digits

### echo "Program 7: Sum of Digits"

### 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 is $sum"

### echo

### # 8. String Validation (Empty or Not)

### echo "Program 8: String Validation (Empty or Not)"

### echo "Enter a string:"

### read str

### if [ -z "$str" ]; then

### echo "String is not valid (empty)"

### else

### echo "String is valid"

### fi

### echo

### # 9. Count Number of Words and Characters in a String

### echo "Program 9: Count Number of Words and Characters in a String"

### echo "Enter a string:"

### read str

### word\_count=$(echo $str | wc -w)

### char\_count=$(echo $str | wc -c)

### echo "Number of words: $word\_count"

### echo "Number of characters: $char\_count"

### echo

### # 10. Palindrome or Not (String)

### echo "Program 10: Palindrome or Not (String)"

### echo "Enter a string:"

### read str

### rev=$(echo $str | rev)

### if [ "$str" == "$rev" ]; then

### echo "$str is a palindrome"

### else

### echo "$str is not a palindrome"

### fi

### Echo

### 

Output ::