1. Arithmetic Operations:

#!/bin/bash echo "Enter first number:" read num1 echo "Enter second number" read num2 sum=$[$num1+$num2] difference=$[$num1-$num2] product=$[$num1\*$num2] division=$[$num1/$num2] echo "Sum:$sum"

echo "Diffference:$difference" echo "Product:$product" echo "Division:$division"

1. If-else-then:

Code: #!/bin/bash echo "Enter first number:" read num1 echo "Enter second number:" read num2 if [ $num1 == $num2 ] then echo "Both

are equal." elif [ $num1 -gt $num2 ] then echo "$num1 is greater than

$num2"

else echo "$num1 is less than

$num2"

fi

1. Loops:

#!/bin/bash echo "Enter the number of rows:" read num

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

for (( j=1;j<=i;j++ )) do echo -ne "\*" done echo done

1. CLA:

#!/bin/bash

is\_prime() {

num=$1

if [ $num -lt 2 ]; then return

1

fi

for ((i = 2; i \* i <= num; i++)); do if [ $((num % i)) -eq 0 ]; then return

1

fi

done

return 0

}

is\_prime "$1" if [ $? -eq 0 ]; then echo "$1 is a prime number." else echo "$1 is not a prime number." Fi

5. Functions: #!/bin/bash addition() { result=$((num1

+ num2)) echo "Result:

$result"

}

subtraction() {

result=$((num1 - num2)) echo "Result: $result"

}

multiplication() {

result=$((num1 \* num2))

echo "Result: $result"

}

division() { if [ $num2 -eq 0 ]; then echo "Error: Cannot divide by zero!"

else

result=$((num1 / num2 |bc)) echo "Result: $result"

fi

}

echo "Enter first number: " read num1 echo "Enter second number: " read num2 echo "Select an operation:" read choice case $choice in

+) addition ;;

-) subtraction ;;

"\*") multiplication ;;

/) division ;;

\*) echo "Invalid operator." ;;

Esac

6. Array:

#!/bin/bash array\_sum() { local sum=0 for element in "${array[@]}"; do sum=$((sum + element)) done echo $sum

}

echo "Enter the number of elements in the array: " read n echo "Enter the array elements: "

for ((i = 0; i < n; i++)); do

read num array[i]=$num done result=$(array\_sum) echo "Sum of elements

in the array: $result"

7. String:

i) Length:

#!/bin/bash echo "Enter a

string: " read str len=${#str} echo "Length of the string: $len"

ii) Concatenation:

#!/bin/bash echo "Enter the

first string: " read string1 echo "Enter the second

string: " read string2 string1+=${string2} echo

"Concatenated string:

$string1"

iii) Substring:

#!/bin/bash echo "Enter a string: " read str echo "Enter start index :" read si

echo "Enter number of charecter :" read ch endin=$((si

+ ch)) echo "Substring from index $si to $endin:

${str:$si:$ch}"

iv) Compare:

#!/bin/bash

echo "Enter the first string: " read string1 echo "Enter the second string: " read string2 if [ "$string1" = "$string2" ]; then echo "Both strings are equal." else echo "The strings are not equal."

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