SHELL SCRIPT

01)Write a shell script to find the given number is prime or not.

```
#! /bin/bash

read -p "Enter a number : " num;
flag=0
for ((i=2; i<$num; i++)); do
    if [ $(($num % i)) -eq 0 ]; then
        flag=1
        break
    fi
done

if [ $flag -eq 0 ]; then
    echo "$num is prime number"
else
    echo "$num is not a prime number"
fi
```

02)write a script to print all the prime number from 1 to n

```
#! /bin/bash

read -p "Enter a number : " num;
prime() {
    for ((i=2; i<$1; i++)); do
        if [ $(($1 % i)) -eq 0 ]; then
            echo 1
            return
        fi
    done
    echo 0
```

```
}
echo "The prime numbers are : "
for ((j=2; j<=$num; j++)); do
    result=$(prime $j)
    if [ $result -eq 0 ]; then
        echo "$j "
    fi
done
```

03)write a script to find nth fibnacci number

```
#! /bin/bash

fib() {
    if [ $1 == 0 ] || [ $1 == 1 ]; then
        echo $1
        return
    fi

    local temp1=$(($1 - 1))
    local temp2=$(($1 - 2))
    local res1=$(fib $temp1)
    local res2=$(fib $temp2)
    echo $(($res1 + $res2))
}

read -p "Enter a number : " num
result=$(fib $num)
echo "$num th Fibobacci Number is : $result"
```

04)Factorial of the number

```
#! /bin/bash

fact(){
    if [ $1 -eq 0 ]; then
        echo 1
        return
    fi
```

```
    local temp=$(($1 - 1))
    local result=$(fact $temp)
    echo $(($1 * $result))
}

read -p "Enter a number : " num
result=$(fact $num)
echo "Factorial of the $num is : $result"
```

05)palindrome or not

```
#! /bin/bash

read -p "Enter a number : " num
sum=0
temp=$num

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

if [ $sum -eq $num ]; then
    echo "$sum is Palindrome"
else
    echo "$num is not palindrome"
fi
```

06)Maximum of the array

```
#! /bin/bash

read -p "Enter a array of integer : " -a arr

mx=${arr[0]}
n=${#arr[@]}

for ((i=1; i<n; i++)); do
    if [ $mx -lt ${arr[$i]} ]; then
        mx=${arr[$i]}
```

```
    fi
done

echo "The maximam Element in the arrat is : $mx"
```

07)Minimum of the array

```
read -p "Enter a array of integer : " -a arr
n=${#arr[@]}
mn=${arr[0]}
for ((i=1; i<n; i++)); do
    if [ $mn -gt ${arr[$i]} ]; then
        mn=${arr[$i]}
    fi
done

echo "The minimun element is : $mn"
```

08)square of the number

```
#! /bin/bash

read -p "Enter a array of integer : " -a arr
n=${#arr[@]}

for ((i=0; i<n; i++)); do
    arr[$i]=$(( ${arr[$i]} ** 2 ))
done

for ((j=0; j<n; j++)); do
    echo "${arr[$j]}"
done
```

09)Sum of the digit

```
#! /bin/bash
```

```
read -p "Enter a number : " num
sum=0
temp=$num

while [ $temp -gt 0 ]; do
    d=$(($temp % 10))
    temp=$(($temp / 10))
    sum=$(($sum + $d))
done

echo "The sum of the digit is : $sum"
```

10)Check leap year or not

```
#!/bin/bash

read -p "Enter a year : " year

if [ $((year % 4)) -eq 0 ] && [ $((year % 100)) -ne 0 ] || [ $((year % 400)) -
eq 0 ]; then
    echo "Leap Year"
else
    echo "Not a Leap Year"
fi
```

11)Accept a filename as input by displaying approprite message

```
#!/bin/bash

echo "Please enter a filename:"
read filename

if [ -e "$filename" ]; then
    echo "The file '$filename' exists."
else
    echo "The file '$filename' does not exist."
fi
```

12)Display the content of the file otherwise display error message

```
#!/bin/bash

echo "Please enter a filename:"
read filename

if [ -e "$filename" ]; then
    echo "Content of the file '$filename':"
    cat "$filename"
else
    echo "Error: The file '$filename' does not exist."
fi
```

13)Count the no of character, lines, words in a file and display each in a separate line with a msg

```
#!/bin/bash

echo "Please enter a filename:"
read filename

if [ -e "$filename" ]; then
    char_count=$(wc -c < "$filename")
    line_count=$(wc -l < "$filename")
    word_count=$(wc -w < "$filename")

    echo "Number of characters in '$filename': $char_count"
    echo "Number of lines in '$filename': $line_count"
    echo "Number of words in '$filename': $word_count"
else
    echo "Error: The file '$filename' does not exist."
fi
```

14) Modify the above script to accept more the one file as a input in the command line and repeat the above.

```
#!/bin/bash

if [ $# -eq 0 ]; then
    echo "Usage: $0 <file1> [<file2> <file3> ...]"
    exit 1
fi

for filename in "$@"; do
    if [ -e "$filename" ]; then
        char_count=$(wc -c < "$filename")
        line_count=$(wc -l < "$filename")
        word_count=$(wc -w < "$filename")

        echo "Number of characters in '$filename': $char_count"
        echo "Number of lines in '$filename': $line_count"
        echo "Number of words in '$filename': $word_count"
        echo
    else
        echo "Error: The file '$filename' does not exist."
        echo
    fi
done
```

15)Accept a word as input and then count and print the no of times the word append.

```
#!/bin/bash

echo "Please enter a word:"
read word

echo "Please enter a filename:"
read filename

if [ -e "$filename" ]; then
    word_count=$(grep -o -w "$word" "$filename" | wc -l)
    echo "The word '$word' appears $word_count times in the file '$filename'."
```

```
else
    echo "Error: The file '$filename' does not exist."
fi
```

16) write a script to display the path

```
#!/bin/bash

current_path=$(pwd)
echo "Current path: $current_path"
```

17) find the average of an array

```
#!/bin/bash
numbers=(10 20 30 40 50)
sum=0
count=0

for num in "${numbers[@]}"; do
    sum=$((sum + num))
    count=$((count + 1))
done
average=$(echo "scale=2; $sum / $count")
echo "The average of the array is: $average"
```