Online bash shell :

https://www.jdoodle.com/test-bash-shell-script-online/

While :

The **while** loop enables you to execute a set of commands repeatedly until some condition occurs. It is usually used when you need to manipulate the value of a variable repeatedly.

How it works

The while loop is a restricted entry loop. It means that the condition is checked before executing the commands of the while loop. If the condition evaluates to true, the set of commands following that condition are executed. Otherwise, the loop is terminated, and the program control is given to the other command following the 'done' statement.

Syntax:

```
Initialization
while condition/command
do
   Statement(s) to be executed if command is true(body)
   Increment/decrement
done
```

Here the Shell *command* is evaluated. If the resulting value is *true*, given *statement(s)* are executed. If *command* is *false* then no statement will be executed and the program will jump to the next line after the done statement.

Example:

Here is a simple example that uses the while loop to display the numbers one to five −

```
#print 1 to 5

#!/bin/bash

i=1
while [ $i -le 5 ]
do
      echo  $i
      i=`expr $i + 1`

done
echo
output:
debasis@LAPTOP-H3N6JCNE:~/BCA$ sh wh.sh
1
2
3
4
5
```

```
#Find factorial of given input integer number

#!/bin/bash
```

```
echo -n "Enter the value of n : "
read n
i=1
f=1
while [ $i -le $n ]
do
	f=`expr $f \* $i`
	i=`expr $i + 1`
done
echo "Factorial of $n is $f"
echo "job over"
echo
output:
Enter the value of n : 5
Factorial of 5 is 120
job over
```

```
#Find sum of digits and total no of digits
#!/bin/bash

read -p "Enter number:" num
echo "Number is = " $num
s=0
cnt=0
while [ $num -ne 0 ]
do
	r=`expr $num % 10`
	echo "Remainder= " $r
	s=`expr $s + $r`
	cnt=`expr $cnt + 1`
	num=`expr $num / 10`
done
echo -n "sum of digits= " $s
echo
echo -n "Total no of digits= " $cnt
echo
output:
debasis@LAPTOP-H3N6JCNE:~/BCA$ sh smdgt.sh
Enter number:1234
Number is =  1234
Remainder=  4
Remainder=  3
Remainder=  2
Remainder=  1
sum of digits=  10
Total no of digits=  4
```

```
#Input a number , reverse it and check whether the no is palindrome or NOT
#!/bin/bash
echo "Enter a number : "
read n
temp=$n
rev=0
while [ $n -ne 0 ]
do
      r=`expr $n % 10`
      rev=`expr $rev \* 10 + $r`
      n=`expr $n / 10`
done
echo "Reverse no= " $rev

if [ $temp -eq $rev ]
then
      echo "$temp is a PALINDROME number."
      else
      echo "$temp Is NOT a Palindrome."
Fi
Output:
debasis@LAPTOP-H3N6JCNE:~/BCA$ sh rev.sh
Enter a number :
123
Reverse no=  321
123 Is NOT a Palindrome.
debasis@LAPTOP-H3N6JCNE:~/BCA$ sh rev.sh
Enter a number :
121
Reverse no=  121
121 is a PALINDROME number.
```

HOME Assignment:

1.Check whether the input integer number is PRIME or NOT

2.Display FIBONACCI Series from user input range with starting value 0 and 1.

```
#!/bin/bash
echo -n  "Convert temperture from f to cel : "

f=94
echo
while [ $f -le 105 ]
do
val=`echo 5 \* $f - 160  | bc`
```

```
cel_res=`echo "scale=2; $val / 9" | bc`
echo -n " $f  = $cel_res"
echo
f=`expr $f + 1`
done
echo
```

<u>output:</u>

```
debasis@LAPTOP-H3N6JCNE:~/BCA$ sh cnv_tmp.sh
Convert temperture from f to cel :
 94  = 34.44
 95  = 35.00
 96  = 35.55
 97  = 36.11
 98  = 36.66
 99  = 37.22
 100  = 37.77
 101  = 38.33
 102  = 38.88
 103  = 39.44
 104  = 40.00
 105  = 40.55
```

```
#/bin/bash

echo "Convert temperture from f to cel from 95 to 105 : "
f=95
while [ $f -le 105 ]
do

cel_res=$( (echo "scale=2; ( ( 5 * $f -160 ) / 9 )" ) | bc )
echo -n " fer_value: $f  => cel_value: $cel_res"
echo

f=`expr $f + 1`
done
echo
```

<u>output:</u>

```
debasis@LAPTOP-H3N6JCNE:~/BCA$ sh tmp.sh
Convert temperture from f to cel from 94 to 105 :
 fer_value: 95  => cel_value: 35.00
 fer_value: 96  => cel_value: 35.55
 fer_value: 97  => cel_value: 36.11
 fer_value: 98  => cel_value: 36.66
 fer_value: 99  => cel_value: 37.22
 fer_value: 100  => cel_value: 37.77
 fer_value: 101  => cel_value: 38.33
 fer_value: 102  => cel_value: 38.88
 fer_value: 103  => cel_value: 39.44
```

```
fer_value: 104  => cel_value: 40.00
fer_value: 105  => cel_value: 40.55
```