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Loops:-

In Linux, loops can be implemented in **Bash scripting** to execute a block of code multiple times. Here are the common loop types:

For loops:-

```
  GNU nano 7.2
#!/bin/bash
for i in {1..5}
do
    echo "Iteration: $i"
done
```

Output:

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ ./new.sh
Iteration: 1
Iteration: 2
Iteration: 3
Iteration: 4
Iteration: 5
```

While loop:-

```
  GNU nano 7.2
#!/bin/bash
count=1
while [ $count -le 5 ]
do
    echo "Count: $count"
    ((count++))
done
```

Output:-

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ ./new.sh
Count: 1
Count: 2
Count: 3
Count: 4
Count: 5
```

Until:-

```
#!/bin/bash
num=1
until [ $num -gt 5 ]
do
    echo "Number: $num"
    ((num++))
done
```

Output:-

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ ./new.sh
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5
```

If-else:-

```
#!/bin/bash
num=3

if [ $num -gt 5 ]; then
    echo "$num is greater than 5"
else
    echo "$num is not greater than 5"
fi
```

Output:-

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ ./new.sh
3 is not greater than 5
```

Taking input:-

```
read name
echo "$name"
```

Output:-

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ ./new.sh
vaibhav
vaibhav
```

Cases:-

```
read -p "enter the number" sele
case $sele in
        1) ans="correct";
                echo " $ans yes";;
        2) ans="wrong";
                echo "$ans no";;
        *) ans="random";
                echo "$ans anything";;
esac
```

Output:-

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ ./case.sh
enter the number10
random anything
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$
```

Regrex:-

Helps to find the sequence of character resembling the input what we gave.

1) .

   It is called a wild card character, It matches any one character other than the new line.

   If placed at last included any number of character then , or if placed in between like A.S then only it matches the character which have A and one character in between and then B like, ABS,ACS..

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ grep sea. check.txt
searching the
```

2) ^

   It matches the start of the string.

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ grep ^s check.txt
sear
searching the
```

3) *

   It matches up to zero or more occurrences i.e. any number of times of the character of the string.

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ grep s*g check.txt
searching the
```

4) \

It is used for escape following character.

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ grep '\?' check.txt
t?his is the
```

5) Check for the alphabets:

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ grep "[a-zA-Z]" check.txt
sear
t?his is the
file
for
searching the
word
```

6) Check for vowels:

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ grep "[a,e,i,o]" check.txt
4sear
t?his is the
file
for
searching the
word
```

7) ?

It matches exactux ly one character in the string or stream.

```
vaibhav@DESKTOP-AQACSB0:/mnt/c/Users/vaibh/OneDrive/Desktop/linux$ grep -E 'wor?d' check.txt
wod7
word
```