

While Loops

What You Will Learn

- While loops
- Infinite loops
- Loop control
 - Explicit number of times
 - User input
 - Command exit status
- Reading files, line-by-line
- `break` and `continue`

While Loop Format

```
while [ CONDITION_IS_TRUE ]  
do  
    command 1  
    command 2  
    command N  
done
```

While Loop Format

```
while [ CONDITION_IS_TRUE ]  
do  
    # Commands change the condition  
    command 1  
    command 2  
    command N  
done
```

Infinite Loops

```
while [ CONDITION_IS_TRUE ]  
do  
    # Commands do NOT change  
    # the condition  
    command N  
done
```

Infinite Loops

```
while [ true ]  
do  
    command N  
    sleep 1  
done
```

Example - Loop 5 Times

```
INDEX=1
while [ $INDEX -lt 6 ]
do
    echo "Creating project-${INDEX}"
    mkdir /usr/local/project-${INDEX}
    ( (INDEX++) )
done
```

Output - Loop 5 Times

Creating project-1

Creating project-2

Creating project-3

Creating project-4

Creating project-5

Example - Checking User Input

```
while [ "$CORRECT" != "y" ]  
do  
    read -p "Enter your name: " NAME  
    read -p "Is ${NAME} correct? " CORRECT  
done
```

Output - Checking User Input

```
Enter your name: Luke Skywalker  
Is Luke Skywalker correct? n  
Enter your name: Jason  
Is Jason correct? y
```

Example - Return Code of Command

```
while ping -c 1 app1 >/dev/null
do
    echo "app1 still up..."
    sleep 5
done

echo "app1 down, continuing."
```

Output - Return Code of Command

```
app1 still up...  
app1 still up...  
app1 still up...  
app1 still up...  
app1 still up...  
app1 down, continuing.
```

Reading a file, line-by-line.

```
LINE_NUM=1
while read LINE
do
    echo "${LINE_NUM} : ${LINE}"
    ((LINE_NUM++))
done < /etc/fstab
```

Output - Reading a file, line-by-line.

```
1: # /etc/fstab
2: #
3: /dev/mapper/centos-root /      xfs      defaults      1 1
4: LABEL=boot /boot            xfs      defaults      1 2
5: /dev/mapper/centos-swap swap swap      defaults      0 0
```

Reading a file, line-by-line.

```
grep xfs /etc/fstab | while read LINE
do
    echo "xfs: ${LINE}"
done
```

Output - Reading a file, line-by-line.

xfstest: /dev/mapper/centos-root /	xfstest	defaults	1	1
xfstest: LABEL=boot /boot	xfstest	defaults	1	2


```
FS_NUM=1
grep xfs /etc/fstab | while read FS MP REST
do
    echo "${FS_NUM}: file system: ${FS}"
    echo "${FS_NUM}: mount point: ${MP}"
    ((FS_NUM++))
done
```

```
1: file system: /dev/mapper/centos-root  
1: mount point: /  
2: file system: LABEL=boot  
2: mount point: /boot
```

```
while [ true ]
do
    read -p "1: Show disk usage. 2: Show uptime. " CHOICE
    case "$CHOICE" in
        1)
            df -h
            ;;
        2)
            uptime
            ;;
        *)
            break
            ;;
    esac
done
```

```
mysql -BNe 'show databases' | while read DB
do
    db-backed-up-recently $DB
    if [ "$?" -eq "0" ]
    then
        continue
    fi
    backup $DB
done
```

Summary

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