Bash Scripting Part 3

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Loops

A loop is a block of code that iterates (repeats) a list of commands as long as the loop control condition is true.

Bash loop types:

- for
- while
- until

for Loop

for loop

This is the basic loop.

Syntax:

```
for arg in [list]
do
   command(s)
done
```

Example:

```
for color in Red Blue Purple "Light Green"
do
    echo $color
done
```

While Loop

While Loop

This loop type tests for a condition at the top of the loop and keeps looping as long as that condition is true, where true is an exit status of 0.

Syntax

```
while [ condition ]
do
   command(s)
done
```

Example:

```
loopvar=1
while [ "$loopvar" -lt "3" ]
do
   echo "$loopvar"
   let "loopvar += 1"
done
```

Until Loop

until Loop

This loop type tests for a condition at the top of a loop and keeps looping as long as that condition is false which is the opposite of a while loop.

Syntax:

```
until [ condition-is-true ]
do
   command(s)
done
```

Example:

```
loopvar=1
until [ "$loopvar" -gt "3" ]
do
   echo "$loopvar"
   let "loopvar += 1"
done
```

Loop Control - break

The break command exits out of a loop.

Example:

```
#/bin/bash

echo "Counting 1 to 3 using a while loop"

loopvar=1
while [ "$loopvar" -lt "4" ]
do
  echo "$loopvar"
  let "loopvar += 1"
done
```

Loop Control - continue

The continue command skips to the next loop iteration.

Example:

```
#/bin/bash

echo "Counting 1 to 3 Monty Python style using while and continue"

loopvar=0
while [ "$loopvar" -lt "5" ]
do
   let "loopvar += 1"
   if [ "$loopvar" -eq 3 ] || [ "$loopvar" -eq 4 ] # skip 3 and 4
   then
      continue      # Skip rest of this particular loop iteration.
   fi
   echo "$loopvar"
done
```

case

The case command tests a condition and then branches to the appropriate code block.

Syntax:

```
case "$variable" in

   "$condition1" )
   command(s)
   ;;

   "$condition2" )
   command(s)
   ;;

esac
```

case Example

```
while [ 1 ] # loop forever
do
     echo "Menu"
     echo "Option 1"
     echo "Option 2"

     echo -n "Enter your choice (q to quit):"
     read input

     case "$input" in

          "1" )
          echo
          echo "You entered 1"
          ;;

          "2" )
          echo
          echo "You entered 2"
          ;;

          "q" | "Q" )
          break
          ;;

     esac
done
```

Putting it all together

```
#/bin/bash

# demoscript3.sh
# Script to demo use of while loop, for loop, and case statement
# P. TenHoopen, 01/29/08

clear

while [ 1 ]  # loop forever
do
          echo
          echo "Menu"
          echo
          echo "Option 1 - List temp files"
          echo "Option 2 - Delete temp files"
          echo

          echo -n "Enter your choice (q to quit): "

          read input

          case "$input" in

                    "1" )
                    echo
                    echo "Listing temp files in current directory"
                    echo
                    ls *.tmp
                    ;;

                    "2" )
                    echo
                    echo "Preparing to delete temp files in current directory"
                    echo
                    echo -n "OK to continue? (y/n): "
                    read ans
                    if [[ $ans = "Y" || $ans = "y" ]]
                    then
                              echo "Deleting temp files in current directory..."
                              for filename in *.tmp
                              do
                                        echo "Deleting file $filename"
                                        rm -f $filename
                              done
                    fi
                    ;;

                    "q" | "Q" )
                    echo
                    break
                    ;;

                    * )
                    echo
                    echo "Invalid option"
                    ;;

          esac
done
```