**Problems with while loop**

**1. Write a program that takes a command-line argument n and prints a table of the powers of 2 that are less than or equal to 2^n till 256 is reached..**

#!/bin/bash

i=1

while [ $i -le 8 ]

do

poweroftwo=$((2\*\*$i))

echo $i " " $poweroftwo

((i++))

done

output:

AKHIL@DESKTOP-43E18QK MINGW64 ~

$ ./while1.sh

enter an exponent

8

1 2

2 4

3 8

4 16

5 32

6 64

7 128

8 256

**2. Find the Magic Number**

**a. Ask the user to think of a number n between 1 to 100**

**b. Then check with the user if the number is less then n/2 or greater**

**c. Repeat till the Magic Number is reached..**

#!/bin/bash -x

echo "Consider a number between 1 to 100"

isCorrect="False"

minBound=0

maxBound=100

while [ $isCorrect == False ]

do

mid=$(( ( $maxBound + $minBound ) / 2))

read -p "is $mid the correct answer : True of False "

isCorrect

if [ $isCorrect == "True" ]

then

break

else

read -p "is The number Greater or Less than $mid : Enter

greater or less " grtOrLess

if [ $grtOrLess == "Greater" ]

then

minBound=$mid

else

maxBound=$mid

fi

fi

done

magicNumber=$mid

while [ $magicNumber -ne 1 ]

do

firstNumber=$(( $magicNumber / 10 ))

secondNumber=$(( $magicNumber % 10))

magicNumber=$(( $firstNumber + $secondNumber ))

if [ $magicNumber -eq 1 ]

then

echo "The Number is a Magic Number"

break

else

if [ $firstNumber -eq 0 ]

then

echo "The Number is not a magic Number"

break

fi

fi

done

**3. Extend the Flip Coin problem till either Heads or Tails wins 11 times.**

#!/bin/bash -x

Head=0

Tail=0

while [ $Head -lt 11 -a $Tail -lt 11 ]

do

randomvar=$((RANDOM%2))

if [ $randomvar -eq 0 ]

then

((Head++))

else

((Tail++))

fi

echo $Head

echo $Tail

done

output:

AKHIL@DESKTOP-43E18QK MINGW64 ~

$ ./while3.sh

1

0

1

1

2

1

3

1

4

1

4

2

4

3

4

4

5

4

5

5

5

6

5

7

6

7

7

7

7

8

7

9

8

9

8

10

9

10

9

11

**4. Write a Program where a gambler starts with Rs 100 and places Re 1 bet until he/she goes broke i.e. no more money to gamble or reaches the goal of Rs 200. Keeps track of number of times won and number of bets made.**

#!/bin/bash

gambler=100

win=0

loss=0

bet=0

while [ $gambler -lt 200 -a $gambler -gt 0 ]

do

var=$((RANDOM%2))

if [ $var -eq 0 ]

then

((win++))

((gambler++))

else

((loss--))

((gambler--))

fi

((bet++))

done

echo $gambler

echo $win $bet

output:

AKHIL@DESKTOP-43E18QK MINGW64 ~ (master)

$ ./while4.sh

0

4418 8936