#!/bin/bash

echo "welcome to Flip Coin Combination "

#uc1 ((RANDOM)) to find heads or tails

if [[ $((RANDOM%2)) -eq 1 ]]

then

echo heads

else

echo tails

fi

#uc2 singlet shows heads or tails

#! /bin/bash

singleDict=(["heads"]=0 ["tails"]=0)

headcount=0

tailcount=0

no\_of\_flips=10

function head\_or\_tails()

{

if [[ $((RANDOM%2)) -eq 1 ]]

then

echo heads

coin="heads"

else

echo tails

coin="tails"

fi

}

function SingleCombination()

{

for (( i=0; i<$no\_of\_flips; i++ ))

do

head\_or\_tails

if [[ $coin == heads ]]

then

singleDict[heads]=$(( ${singleDist[heads]}+1 ))

((headcount++))

else

singleDict[tails]=$(( ${singleDict[tails]}+1 ))

((tailscount++))

fi

done

headpercentage=$(( ($headcount \* 100) / $no\_of\_flips ))

tailpercentage=$(( ($tailcount \* 100) / $no\_of\_flips ))

}

SingleCombination

echo

#uc3 Doublet Combination are HH,TT,HT and TH

declare -A Combination

Combination=(["h"]=0 ["t"]=0 ["hh"]=0 ["tt"]=0 ["ht"]=0 ["th"]=0)

coin=0

no\_of\_flips=30

flip=0

function head\_or\_tails()

{

if [[ $((RANDOM%2)) -eq 1 ]]

then

coin=h

else

coin=t

fi

}

function SingleCombination()

{

for (( i=0; i<$no\_of\_flips; i++ ))

do

head\_or\_tails

if [[ $coin == heads ]]

then

Combination[h]=$((${Combination[h]}+1 ))

else

Combination[t]=$((${Combination[t]}+1 ))

fi

((flip++))

done

headpercentage=$(( ( ${Combination[h]}\*100 )/$flip ))

tailpercentage=$(( ( ${Combination[t]}\*100 )/$flip ))

flip=0

}

function doubleCombination()

{

while [[ $flip -lt $no\_of\_flips ]]

do

head\_or\_tails

output1=$coin

head\_or\_tails

output2=$coin

if [[ $output1$output2 == hh ]]

then

Combination[hh]=$(( ${Combination[hh]}+1 ))

elif [[ $output1$output2 == ht ]]

then

Combination[ht]=$(( ${Combination[ht]}+1 ))

elif [[ $output1$output2 == tt ]]

then

Combination[tt]=$(( ${Combination[tt]}+1 ))

elif [[ $output1$output2 == th ]]

then

Combination[th]=$(( ${Combination[th]}+1 ))

fi

((flip++))

done

hhpercentage=$(( (${Combination[hh]} \* 100) / $flip ))

htpercentage=$(( (${Combination[ht]} \* 100) / $flip ))

ttpercentage=$(( (${Combination[tt]} \* 100) / $flip ))

thpercentage=$(( (${Combination[th]} \* 100) / $flip ))

flip=0

}

SingleCombination

echo h t

echo ${Combination["h"]} ${Comination["t"]}

doubleCombination

echo hh ht th tt

echo ${Combination["hh"]} ${Comination["ht"]} ${Combination["th"]} ${Comination["tt"]}

echo

#uc4 as a simulator,do the same for triplet combination

function tripletCombination()

{

while [[ $flip -lt $no\_of\_flips ]]

do

head\_or\_tails

output1=$coin

head\_or\_tails

output2=$coin

head\_or\_tails

output3=$coin

if [[ $output1$output2$output3 == hhh ]]

then

Combination[hhh]=$(( ${Combination[hhh]}+1 ))

elif [[ $output1$output2$output3 == hht ]]

then

Combination[hht]=$(( ${Combination[hht]}+1 ))

elif [[ $output1$output2$output3 == htt ]]

then

Combination[htt]=$(( ${Combination[htt]}+1 ))

elif [[ $output1$output2$output3 == hth ]]

then

Combination[hth]=$(( ${Combination[hth]}+1 ))

elif [[ $output1$output2$output3 == thh ]]

then

Combination[thh]=$(( ${Combination[thh]}+1 ))

elif [[ $output1$output2$output3 == tth ]]

then

Combination[tth]=$(( ${Combination[tth]}+1 ))

elif [[ $output1$output2$output3 == tht ]]

then

Combination[tht]=$(( ${Combination[tht]}+1 ))

elif [[ $output1$output2$output3 == ttt ]]

then

Combination[ttt]=$(( ${Combination[ttt]}+1 ))

fi

((flip++))

done

HHHpercentage=$(( (${Combination[hhh]} \* 100) / $flip ))

HHTpercentage=$(( (${Combination[hht]} \* 100) / $flip ))

HTTpercentage=$(( (${Combination[htt]} \* 100) / $flip ))

HTHpercentage=$(( (${Combination[hth]} \* 100) / $flip ))

THHpercentage=$(( (${Combination[thh]} \* 100) / $flip ))

TTHpercentage=$(( (${Combination[tth]} \* 100) / $flip ))

TTTpercentage=$(( (${Combination[ttt]} \* 100) / $flip ))

THTpercentage=$(( (${Combination[tht]} \* 100) / $flip ))

flip=0

}

SingleCombination

echo h t

echo ${Combination["h"]} ${Comination["t"]}

doubleCombination

echo hh ht th tt

echo ${Combination["hh"]} ${Comination["ht"]} ${Combination["th"]} ${Comination["tt"]}

tripletCombination

echo HHH HHT HTH HTT THH THT TTH TTT

echo ${Combination["hhh"]} ${Combination["hht"]} ${Combination["hth"]} ${Combination["htt"]} ${Combination["thh"]} ${Combination["tht"]} ${Combination["tth"]} ${Combination["ttt"]}

echo

function Result()

{

SingleCombination

echo h t

echo ${Combination["h"]} ${Comination["t"]}

doubleCombination

echo hh ht th tt

echo ${Combination["hh"]} ${Comination["ht"]} ${Combination["th"]} ${Comination["tt"]}

tripletCombination

echo HHH HHT HTH HTT THH THT TTH TTT

echo ${Combination["hhh"]} ${Combination["hht"]} ${Combination["hth"]} ${Combination["htt"]} ${Combination["thh"]} ${Combination["tht"]} ${Combination["tth"]} ${Combination["ttt"]}

}

Result

