Sequence Practice Problems

1.Use Random Function (( RANDOM )) to get single Digit

$ cat random0.sh

#!/bin/bash

Z=$(( $RANDOM % 10 ))

echo "Your number $Z"

$ ./random0.sh

+ Z=6

+ echo 'Your number 6'

Your number 6

2.Use Random to get Number between 1 to 6

$ cat random.sh

#!/bin/bash

Z=$(( $RANDOM % 6 ))

echo "Your number $Z"

$ ./random.sh

+ Z=4

+ echo 'Your number 4'

Your number 4

3.Add two Random Dice Number and Print the Result

$ cat random2.sh

#!/bin/bash -x

z1=$(( $RANDOM % 6 ))

z2=$(( $RANDOM % 6 ))

echo "$z1"

echo "$z2"

echo "Your number $((z1+z2))"

$ ./random2.sh

+ z1=2

+ z2=3

+ echo 2

2

+ echo 3

3

+ echo 'Your number 5'

Your number 5

4.Write a program that reads 5 Random 2 Digit value, then find their sum and average

$ cat random5.sh

#!/bin/bash -x

z1=$(( $RANDOM % 90 + 10 ))

z2=$(( $RANDOM % 90 + 10 ))

z3=$(( $RANDOM % 90 + 10 ))

z4=$(( $RANDOM % 90 + 10 ))

z5=$(( $RANDOM % 90 + 10 ))

z=$(($z1 + $z2 + $z3 + $z4 + $z5))

echo "1st No : $z1 "

echo "2nd No : $z2 "

echo "3rd No : $z3 "

echo "4th No : $z4 "

echo "5th No : $z5 "

echo "Addition of the random number is : "$z

avg=$(($z/5))

echo "Average of the random number is : " $avg

$ ./random5.sh

+ z1=96

+ z2=85

+ z3=94

+ z4=79

+ z5=44

+ z=398

+ echo '1st No : 96 '

1st No : 96

+ echo '2nd No : 85 '

2nd No : 85

+ echo '3rd No : 94 '

3rd No : 94

+ echo '4th No : 79 '

4th No : 79

+ echo '5th No : 44 '

5th No : 44

+ echo 'Addition of the random number is : 398'

Addition of the random number is : 398

+ avg=79

+ echo 'Average of the random number is : ' 79

Average of the random number is : 79

5.Unit Conversion

$ cat unitconv.sh

#!/bin/bash -x

#inch=12

#feet=42

#floatfeet=$(echo $feet 12 | awk '{print $1/$2}')

#echo "feet:$((feet/inch))"

feet=12

meter=3

acre=4047

plot=$(( 60 \* 40 ))

total=$(( $plot/$meter ))

echo "total:$total"

total1=$(( 25 \* $total/4047 ))

echo "ans:$total"

$ ./unitconv.sh

+ feet=12

+ meter=3

+ acre=4047

+ plot=2400

+ total=800

+ echo total:800

total:800

+ total1=4

+ echo ans:800

ans:800

Selection Practice Problems with if & else

1.Write a program that reads 5 Randoms 3 Digit values and then outputs the minimum and the maximum value.

$ cat random\_maxmin.sh

#!/bin/bash -x

a=$(( RANDOM % 900 +100 ))

b=$(( RANDOM % 900 +100 ))

c=$(( RANDOM % 900 +100 ))

d=$(( RANDOM % 900 +100 ))

e=$(( RANDOM % 900 +100 ))

echo "a:$a"

echo "b:$b"

echo "c:$c"

echo "d:$d"

echo "e:$e"

if [ $a -gt $b ] && [ $a -gt $c ] && [ $a -gt $d ] && [ $a -gt $e ]

then

echo "a is max"

elif [ $b -gt $c ] && [ $b -gt $d ] && [ $b -gt $e ]

then

echo "b is max"

elif [ $c -gt $d ] && [ $d -gt $e ]

then

echo "c is max"

elif [ $d -gt $e ]

then

echo "d is max"

else

echo "e is max"

fi

if [ $a -lt $b ] && [ $a -lt $c ] && [ $a -lt $d ] && [ $a -lt $e ]

then

echo "a is min"

elif [ $b -lt $c ] && [ $b -lt $d ] && [ $b -lt $e ]

then

echo "b is min"

elif [ $c -lt $d ] && [ $d -lt $e ]

then

echo "c is min"

elif [ $d -lt $e ]

then

echo "d is min"

else

echo "e is min"

fi

$ ./random\_maxmin.sh

+ a=612

+ b=225

+ c=349

+ d=145

+ e=316

+ echo a:612

a:612

+ echo b:225

b:225

+ echo c:349

c:349

+ echo d:145

d:145

+ echo e:316

e:316

+ '[' 612 -gt 225 ']'

+ '[' 612 -gt 349 ']'

+ '[' 612 -gt 145 ']'

+ '[' 612 -gt 316 ']'

+ echo 'a is max'

a is max

+ '[' 612 -lt 225 ']'

+ '[' 225 -lt 349 ']'

+ '[' 225 -lt 145 ']'

+ '[' 349 -lt 145 ']'

+ '[' 145 -lt 316 ']'

+ echo 'd is min'

d is min

4.Write a program to simulate a coin flip and print out “Heads” or “Tails” accordimgly

$ cat headtail.sh

#!/bin/bash -x

#Head & Tails

Flip=$(( $(( $RANDOM%10 )) %2))

if [ $Flip -eq 1 ]

then

echo "heads"

else

echo "tails"

fi

$ ./headtail.sh

+ Flip=1

+ '[' 1 -eq 1 ']'

+ echo heads

heads

$ ./headtail.sh

+ Flip=0

+ '[' 0 -eq 1 ']'

+ echo tails

tails

Selection Practice Priblems with if, elif and else

1.Read a single digit number and write the number in word

$ cat numberinword.sh

#! /bin/bash -x

#Number in word

read -p "Enter numbers:" n

echo "Your number $n in word:"

if [[ $n -eq 0 ]]

then

echo "zero"

elif [[ $n -eq 1 ]]

then

echo "one"

elif [[ $n -eq 2 ]]

then

echo "two"

elif [[ $n -eq 3 ]]

then

echo "three"

elif [[ $n -eq 4 ]]

then

echo "four"

elif [[ $n -eq 5 ]]

then

echo "five"

elif [[ $n -eq 6 ]]

then

echo "six"

elif [[ $n -eq 7 ]]

then

echo "seven"

elif [[ $n -eq 8 ]]

then

echo "eight"

elif [[ $n -eq 9 ]]

then

echo "nine"

else

echo "value is not single digit"

fi

$ ./numberinword.sh

+ read -p 'Enter numbers:' n

Enter numbers:1

+ echo 'Your number 1 in word:'

Your number 1 in word:

+ [[ 1 -eq 0 ]]

+ [[ 1 -eq 1 ]]

+ echo one

one

$ ./numberinword.sh

+ read -p 'Enter numbers:' n

Enter numbers:3

+ echo 'Your number 3 in word:'

Your number 3 in word:

+ [[ 3 -eq 0 ]]

+ [[ 3 -eq 1 ]]

+ [[ 3 -eq 2 ]]

+ [[ 3 -eq 3 ]]

+ echo three

three

2. Read a Number and Display the week day (Sunday,Monday….)

$ cat numberinweekday.sh

#!/bin/bash -x

read -p "Enter The Number:" n

echo "Your $n as a week day:"

if [[ $n -eq 1 ]]

then

echo "Monday"

elif [[ $n -eq 2 ]]

then

echo "Tuesday"

elif [[ $n -eq 3 ]]

then

echo "Wednesday"

elif [[ $n -eq 4 ]]

then

echo "Thursday"

elif [[ $n -eq 5 ]]

then

echo "Friday"

elif [[ $n -eq 6 ]]

then

echo "Saturday"

else

echo "Sunday"

fi

$ ./numberinweekday.sh

+ read -p 'Enter The Number:' n

Enter The Number:5

+ echo 'Your 5 as a week day:'

Your 5 as a week day:

+ [[ 5 -eq 1 ]]

+ [[ 5 -eq 2 ]]

+ [[ 5 -eq 3 ]]

+ [[ 5 -eq 4 ]]

+ [[ 5 -eq 5 ]]

+ echo Friday

Friday

$ ./numberinweekday.sh

+ read -p 'Enter The Number:' n

Enter The Number:18

+ echo 'Your 18 as a week day:'

Your 18 as a week day:

+ [[ 18 -eq 1 ]]

+ [[ 18 -eq 2 ]]

+ [[ 18 -eq 3 ]]

+ [[ 18 -eq 4 ]]

+ [[ 18 -eq 5 ]]

+ [[ 18 -eq 6 ]]

+ echo Sunday

Sunday

3.Read a Number 1,10,100,1000,etc and display unit,ten,hundrded,….

$ cat unitTen.sh

#!/bin/bash -x

read -p "Enter the Number" n

echo "Enter $n in range"

if [[ $n -eq 1 ]]

then

echo "unit"

elif [[ $n -eq 10 ]]

then

echo "ten"

elif [[ $n -eq 100 ]]

then

echo "hundred"

elif [[ $n -eq 1000 ]]

then

echo "thausand"

elif [[ $n -eq 10000 ]]

then

echo "ten thausand"

else

echo "lakh"

fi

$ ./unitTen.sh

+ read -p 'Enter the Number' n

Enter the Number100

+ echo 'Enter 100 in range'

Enter 100 in range

+ [[ 100 -eq 1 ]]

+ [[ 100 -eq 10 ]]

+ [[ 100 -eq 100 ]]

+ echo hundred

hundred

$ ./unitTen.sh

+ read -p 'Enter the Number' n

Enter the Number10

+ echo 'Enter 10 in range'

Enter 10 in range

+ [[ 10 -eq 1 ]]

+ [[ 10 -eq 10 ]]

+ echo ten

ten

4. Enter 3 Number do following arithmetic operation and find the one that is maximum and minimum

1. a+b\*c 3. c+a/b

2. a%b+c 4. a\*b+c

$ cat max\_min\_equation.sh

#!/bin/bash -x

a=2

b=3

c=5

max=0

min=0

p="$(( a+b\*c ))"

q="$(( a%b+c ))"

r="$(( c+a/b ))"

s="$(( a\*b+c ))"

echo p:"$(( a+b\*c ))"

echo q:"$(( a%b+c ))"

echo r:"$(( c+a/b ))"

echo s:"$(( a\*b+c ))"

if [ $p -gt $q ] & [ $p -gt $r ] & [ $p -gt $s ]

then

echo "max:$p"

elif [ $q -gt $r ] & [ $q -gt $s ]

then

echo "max:$q"

elif [ $r -gt $s ]

then

echo "max:$r"

else

echo "max:$s"

fi

if [ $p -lt $q ] & [ $p -lt $r ] & [ $p -lt $s ]

then

echo "min:$p"

elif [ $q -lt $r ] & [ $q -lt $s ]

then

echo "min:$q"

elif [ $r -lt $s ]

then

echo "min:$r"

else

echo "min:$s"

fi

$ ./max\_min\_equation.sh

+ a=2

+ b=3

+ c=5

+ max=0

+ min=0

+ p=17

+ q=7

+ r=5

+ s=11

+ echo p:17

p:17

+ echo q:7

q:7

+ echo r:5

r:5

+ echo s:11

s:11

+ '[' 17 -gt 7 ']'

+ '[' 17 -gt 11 ']'

+ echo max:17

max:17

+ '[' 17 -gt 5 ']'

+ '[' 17 -lt 7 ']'

+ '[' 17 -lt 11 ']'

+ '[' 17 -lt 5 ']'

+ '[' 7 -lt 11 ']'

+ echo min:7

min:7

+ '[' 7 -lt 5 ']'

Selection Practice Problems with case statement

1.Read a single digit number and write the number in word using Case

$ cat numberinword\_case.sh

#!/bin/bash

read -p "choose between 1-9:" choice

case $choice in

1) echo "you choose one";;

2) echo "you choose two";;

3) echo "you choose three";;

4) echo "you choose four";;

5) echo "you choose five";;

6) echo "you choose six";;

7) echo "you choose seven";;

8) echo "you choose eight";;

9) echo "you choose nine";;

esac

$ ./numberinword\_case.sh

+ read -p 'choose between 1-9:' choice

choose between 1-9:5

+ case $choice in

+ echo 'you choose five'

you choose five

2. Read a Number and Display the week day (Sunday,Monday,…)

$ cat numberinweekday\_case.sh

#!/bin/bash -x

read -p "choose between 1-7:" choice

case $choice in

1) echo "you choose Sunday";;

2) echo "you choose Monday";;

3) echo "you choose Tuesday";;

4) echo "you choose Wednesday";;

5) echo "you choose Thursday";;

6) echo "you choose Friday";;

7) echo "you choose Saturday";;

esac

$ ./numberinweekday\_case.sh

+ read -p 'choose between 1-7:' choice

choose between 1-7:5

+ case $choice in

+ echo 'you choose Thursday'

you choose Thursday

3. Read a Number 1,10,100,1000,etc and dislay unit,ten,huindred,…

$ cat unitTenetc\_case.sh

#!/bin/bash

read -p "choose between 1-1000:" choice

case $choice in

1) echo "you choose unit";;

10) echo "you choose ten";;

100) echo "you choose hundred";;

1000) echo "you choose thousand";;

esac

$ ./unitTenetc\_case.sh

+ read -p 'choose between 1-1000:' choice

choose between 1-1000:10

+ case $choice in

+ echo 'you choose ten'

you choose ten