**DAY 5 Assignment Solutions**

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**SEQUENCE PRACTICE PROBLEMS:-**

**1.Use Random Function (( RANDOM )) to get single digit.**

#! /bin/bash

digit=$(( RANDOM%10 ))

echo $digit

OP:-

4

**2. Use Random to get Dice number b/w 1 to 6.**

#! /bin/bash

num=$(( RANDOM%6+1 ))

echo "Dice number is: "$num

OP:-

Dice number is: 6

**3. Add two Random Dice number and Print Result.**

#! /bin/bash

num1=$(( RANDOM%6+1 ))

num2=$(( RANDOM%6+1 ))

sum=$(( $num1+$num2 ))

echo "Sum of both dice numbers is: "$sum

OP:-

Sum of both dice numbers is: 6

**4. Write a Program that reads 5 Random 2 digit values , then find their sum and the average.**

#! /bin/bash

for i in {1..5}

do

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

sum=$(( sum+$digit ))

done

echo "Sum of 5 Random Two Digits Number is: "$sum

echo "Average is: "$(( sum/5 ))

OP:-

Sum of 5 Random Two Digits Number is: 194

Average is: 38

**5. Unit Conversion**

#! /bin/bash

#a

inch=42

feet=`echo $inch | awk '{print$1/12}'`

echo $inch" Inches = "$feet

#b

rectArea=$(( 60\*40 ))

meters=`echo $rectArea | awk '{print$1/3.28}'`

echo "Rectangular plot in m is: "$meters

#c

totalArea=$(( rectArea\*25 ))

acre=`echo $totalArea | awk '{print$1/43560}'`

echo "Area of 25 such Plots in Acres is: "$acre

OP:-

42 Inches = 3.5

Rectangular plot in m is: 731.707

Area of 25 such Plots in Acres is: 1.37741

**SELECTION PRACTICE PROBLEMS**

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

#! /bin/bash

num1=$(( RANDOM%900+100 ))

num2=$(( RANDOM%900+100 ))

num3=$(( RANDOM%900+100 ))

echo $num1 $num2 $num3

if [ $num1 -lt $num2 ] && [ $num1 -lt $num3 ]

then

echo "Num1 is Smallest"

elif [ $num2 -lt $num3 ]

then

echo "Num2 is Smallest"

else

echo "Num3 is Smallest"

fi

echo "and"

if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]

then

echo "Num1 is Greatest"

elif [ $num2 -gt $num3 ]

then

echo "Num2 is Greatest"

else

echo "Num3 is Greatest"

fi

OP:-

221 978 880

Num1 is Smallest

and

Num2 is Greatest

2. WAP that takes day and month from cmd line and prints True if day of month is b/w March 20 and June 20 , False otherwise.

#! /bin/bash

read -p "Enter the day: " day

read -p "Enter the month: " month

if [ $day -ge 1 -a $day -le 31 ] && [ $month -ge 1 -a $month -le 12 ]

then

if [ $month -eq 3 -a $day -ge 20 ]

then

echo "True"

elif [ $month -eq 4 -a $day -le 30 ]

then

echo "True"

elif [ $month -eq 5 ]

then

echo "True"

elif [ $month -eq 6 -a $day -le 20 ]

then

echo "True"

else

echo "False"

fi

else

echo "Invalid Date / Month"

fi

OP:-

Enter the day: 23

Enter the month: 3

True

Enter the day: 2

Enter the month: 2

False

**3. Leap Year Program**

#! /bin/bash

read -p "Enter Year: " year

check400=$(( $year%400 ))

check4=$(( $year%4 ))

check100=$(( $year%100 ))

if [ $check4 -eq 0 -a $check100 -gt 0 ] || [ $check400 -eq 0 ]

then

echo $year" is a Leap Year"

else

echo $year" is not a Leap Year"

fi

OP:-

Enter Year: 2020

2020 is a Leap Year

**4. WAP to simulate a coin flip and prints out “Heads” or “Tails” accordingly.**

#! /bin/bash

flip=$(( RANDOM%2 ))

if [ $flip -eq 0 ]

then

echo "HEAD"

else

echo "TAIL"

fi

OP:-

HEAD

**5. Read single digit number and write it in words.**

#! /bin/bash

read -p "Enter the single digit number: " num

if [ $num -eq 0 ]

then

echo "Zero"

elif [ $num -eq 1 ]

then

echo "One"

elif [ $num -eq 2 ]

then

echo "Two"

elif [ $num -eq 3 ]

then

echo "Three"

elif [ $num -eq 4 ]

then

echo "Four"

elif [ $num -eq 5 ]

then

echo "Five"

elif [ $num -eq 6 ]

then

echo "Six"

elif [ $num -eq 7 ]

then

echo "Seven"

elif [ $num -eq 8 ]

then

echo "Eight"

elif [ $num -eq 9 ]

then

echo "Nine"

else

echo "Entered number is not a single digit"

fi

OP:-

Enter the single digit number: 6

Six

**6. Read a number and display weekday.**

#! /bin/bash

read -p "Enter a number from 1 to 7: " num

if [ $num -eq 1 ]

then

echo "Monday"

elif [ $num -eq 2 ]

then

echo "Tuesday"

elif [ $num -eq 3 ]

then

echo "Wednesday"

elif [ $num -eq 4 ]

then

echo "Thursday"

elif [ $num -eq 5 ]

then

echo "Friday"

elif [ $num -eq 6 ]

then

echo "Saturday"

elif [ $num -eq 7 ]

then

echo "Sunday"

else

echo "Entered number is not in range 1 to 7"

fi

OP:-

Enter a number from 1 to 7: 5

Friday

**7. Read a number 1,10,100 and display unit ,ten ,hundred…**

#! /bin/bash

read -p "Enter a number: " num

len=`echo ${#num}`

if [ $len -eq 1 ]

then

echo "Unit"

elif [ $len -eq 2 ]

then

echo "Ten"

elif [ $len -eq 3 ]

then

echo "Hundred"

elif [ $len -eq 4 ]

then

echo "Thousand"

elif [ $len -eq 5 ]

then

echo "Ten Thousand"

elif [ $len -eq 6 ]

then

echo "Lakh"

elif [ $len -eq 7 ]

then

echo "Million"

fi

OP:-

Enter a number: 10000

Ten Thousand

**8. Enter 3 number and do arithmetic operations and find the one that is maximum and minimum**

#! /bin/bash

read -p "Enter 1 number: " num1

read -p "Enter 2 number: " num2

read -p "Enter 3 number: " num3

val1=$(( $num1+$num2\*$num3 ))

val2=$(( $num1%$num2+$num3 ))

val3=$(( $num3+$num1/$num2 ))

val4=$(( $num1\*$num2+$num3 ))

echo "val1= "$val1 "val2= "$val2 "val3="$val3 "val4= "$val4

#Maximum

if [ $val1 -gt $val2 -a $val1 -gt $val3 -a $val1 -gt $val4 ]

then

echo $val1" is Maximum"

elif [ $val2 -gt $val3 -a $val2 -gt $val4 ]

then

echo $val2" is Maximum"

elif [ $val3 -gt $val4 ]

then

echo $val3" is Maximum"

else

echo $val4" is Maximum"

fi

#Minimum

if [ $val1 -lt $val2 -a $val1 -lt $val3 -a $val1 -lt $val4 ]

then

echo $val1" is Minimum"

elif [ $val2 -lt $val3 -a $val2 -lt $val4 ]

then

echo $val2" is Minimum"

elif [ $val3 -lt $val4 ]

then

echo $val3" is Minimum"

else

echo $val4" is Minimum"

fi

OP:-

Enter 1 number: 5

Enter 2 number: 7

Enter 3 number: 9

val1= 68 val2= 14 val3=9 val4= 44

68 is Maximum

9 is Minimum

**Switch Case Problems**

**9. Read single digit number and write it in words using case.**

#! /bin/bash

read -p "Enter the single digit number: " num

case ${num} in

0) echo "Zero" ;;

1) echo "One" ;;

2) echo "Two" ;;

3) echo "Three" ;;

4) echo "Four" ;;

5) echo "Five" ;;

6) echo "Six" ;;

7) echo "Seven" ;;

8) echo "Eight" ;;

9) echo "Nine" ;;

\*) echo "Entered number is not a single digit" ;;

esac

OP:-

Enter the single digit number: 8

Eight

**10. Read a number and display weekday using case.**

#! /bin/bash

read -p "Enter a num from 1 to 7: " num

case ${num} in

1) echo "Monday" ;;

2) echo "Tuesday" ;;

3) echo "Wednesday" ;;

4) echo "Thursday" ;;

5) echo "Friday" ;;

6) echo "Saturday" ;;

7) echo "Sunday" ;;

\*) echo "Entered number is not in range 1 to 7" ;;

esac

OP:-

Enter a num from 1 to 7: 6

Saturday

**11. Read a number 1,10,100 and display unit ,ten ,hundred…**

#! /bin/bash

read -p "Enter a number: " num

len=`echo ${#num}`

case ${len} in

1) echo "Unit" ;;

2) echo "Ten" ;;

3) echo "Hundred" ;;

4) echo "Thousand";;

5) echo "Ten Thousand" ;;

6) echo "Lakh" ;;

7) echo "Million" ;;

\*) echo "Calculation available only till Million" ;;

esac

OP:-

Enter a number: 67

Ten

**12. WAP that takes user inputs and does unit conversion of different length units.**

#! /bin/bash

echo "### UNIT CONVERTER ###"

echo "## 1.Feet to Inch ##"

echo "## 2.Feet to Meter ##"

echo "## 3.Inch to Feet ##"

echo "## 4.Meter to Feet ##"

echo "######################"

read -p "Choose from 1 to 4: " val

case ${val} in

1)

read -p "Enter Feet: " feet

inch=`echo $feet | awk '{print$1\*12}'`

echo $feet" Feet = "$inch" Inches"

;;

2)

read -p "Enter Feet: " feet

meter=`echo $feet | awk '{print$1\*0.3048}'`

echo $feet" Feet = "$meter" Meters"

;;

3)

read -p "Enter Inches: " inch

feet=`echo $inch | awk '{print$1/12}'`

echo $inch" Inches = "$feet" Feet"

;;

4)

read -p "Enter Meter: " meter

feet=`echo $meter | awk '{print$1/0.3048}'`

echo $meter" Meter = "$feet" Feet"

;;

5)

echo "Please choose from 1 to 4"

;;

esac

OP:-

### UNIT CONVERTER ###

## 1.Feet to Inch ##

## 2.Feet to Meter ##

## 3.Inch to Feet ##

## 4.Meter to Feet ##

######################

Choose from 1 to 4: 1

Enter Feet: 5.5

5.5 Feet = 66 Inches