**Aim:**Write a shell script to

a.      Check given number is prime or not

b.      Check given number is palindrome number

c.       Check given number is Armstrong number

d.      Convert decimal to binary

e.      Convert decimal to base 5

f.        Convert base 5 to decimal

**Program:**

**a)**      **A Program to check given number is prime or not**

**PROGRAM:**

echo -n "Enter Number : "

read n

for((i=2; i<=$n/2; i++))

do

  ans=$(( n%i ))

  if [ $ans -eq 0 ]

  then

    echo "$n is not a prime number."

    exit 0

  fi

done

echo "$n is a prime number."

**OUTPUT:**

**a)**      **A Program to check given number is palindrome number**

**Program:**

echo "Enter Number: "

read n

num=$n

rev=0

while [ $num -gt 0 ]

do

    rev=$((rev\*10 + num%10))

    num=$((num/10))

done

if [ $rev -eq $n ]

then

    echo "$n is a Palindrome"

    exit 0

fi

echo "$n is not a Palindrome"

**OUTPUT:**

**b)**      **A Program to check given number is Armstrong number**

**Program:**

echo -n "Enter a number: "

read n

t=$n

sum=0

while [ $n -gt 0 ]

do

    rem=$((n%10))

    cube=$((rem\*rem\*rem))

    sum=$((sum+cube))

    n=$((n/10))

done

if [ $sum == $t ]

then

    echo "$t is a Armstrong Number"

else

    echo "$t is not a Armstrong Number"

fi

**OUTPUT:**

**c)**      **A Program to convert decimal to binary**

**Program:**

echo "Enter any decimal no:"

read num

rem=1

bno=" "

while [ $num -gt 0 ]

do

rem=`expr $num % 2 `

bno=$bno$rem

num=`expr $num / 2 `

done

i=${#bno}

final=" "

while [ $i -gt 0 ]

do

rev=`echo $bno | awk '{ printf substr( $0,'$i',1 ) }'`

final=$final$rev

i=$(( $i - 1 ))

done

echo "Equivalent Binary no:" $final

**OUTPUT:**

**a)**      **A Program to convert decimal to base 5**

**Program:**

echo -n "Enter any decimal no: "

read num

rem=1

bno=""

while [ $num -gt 0 ]

do

rem=$((num%5))

bno=$rem$bno

num=$((num/5))

done

echo "The converted base 5 number: $bno"

**a)**      **A Program to convert base 5 to decimal**

**Program:**

echo -n "Enter Base 5 number: "

read bno

dec=0

pow=1

while [ $bno -gt 0 ]

do

val=$((bno%10))

dec=$((dec+val\*pow))

bno=$((bno/10))

pow=$((pow\*5))

done

echo "The Decimal number is: $dec"

**OUTPUT:**