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#!/bin/sh
#Question:
# Write a shell script to accept a integer from the terminal and convert to
#   binary number. Number 5 in decimal = 101 in binary(Convert base 10 to base 2).

# Always write assumptions made, either as comment or as description
# and keep the rough work, do not erase it out

#   accept a integer from the terminal
echo "Enter an integer: "
read num

#       Its shell script, use $ to get value of variable ,
#       use calculator bc , to find base 2 representation of entered base 10 number
#       And enclose in backquote `` to imply its command and not just a string

binaryNum=`echo "obase=2; $num" | bc `

echo "$num in base 10 = $binaryNum in base 2"

# OR
# using while loop

temp=$num # save a copy of number
binaryNum="" # initialize binary to empty string
while [ $temp -ne 0 ] #while number not 0, divide by 2, remainder is digit in
do # number's binary representation, append remainder to a binary number
    remainder=`expr $temp % 2 ` # get last digit in remainder
    temp=`expr $temp / 2 ` # then exclude last digit from number
    binaryNum=`echo "$remainder$binaryNum" `
done

echo "$num in base 10 = $binaryNum in base 2"

```