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#!/bin/sh
#Question:
# Write a shell script to accept a integer from the terminal and convert to
#   octal number. Number 21 in decimal = 25 in octal(Convert base 10 to base 8).

# 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 8 representation of entered base 10 number
#       And enclose in backquote `` to imply its command and not just a string

octalNum=` echo "obase=8; $num" | bc `

echo "$num in base 10 = $octalNum in base 8"

# OR
# using while loop

temp=$num # save a copy of number
octalNum="" # initialize octal to empty string
while [ $temp -ne 0 ] #while number not 0, divide by 8, remainder is digit in
do # number's octal representation, append remainder to a octal number
    remainder=` expr $temp % 8 ` # get last digit in remainder
    temp=` expr $temp / 8 `      # then exclude last digit from number
    octalNum=` echo "$remainder$octalNum" `
done

echo "$num in base 10 = $octalNum in base 8"

```