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#!/bin/sh
#Question:
# Write a shell script to to accept a integer from the terminal and convert to
#   hexadecimal number. Number 255 in decimal = FF in hexadecimal, that is convert
#   a base 10 number to base 16. In base 10 digits are from 0 to 9. In base 16
#   digits are from 0 to 9 and then followed by A(which represents 10), B(is 11)
#   till F(is 15).

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

hexNum=` echo "obase=16; $num" | bc `

echo "$num in base 10 = $hexNum in base 16"

# OR
# using while loop

temp=$num # save a copy of number
hexNum="" # initialize hexadecimal to empty string
while [ $temp -ne 0 ] #while number not 0, divide by 16, remainder is digit in
do # number's hexadecimal representation, append remainder to a hex number
    remainder=` expr $temp % 16 ` # get last digit in remainder
    temp=` expr $temp / 16 ` # then exclude last digit from number
    case $remainder in # append digit to known hex number so far
        [0-9]) hexNum=` echo "$remainder$hexNum" `;;
        10) hexNum=` echo "A$hexNum" `;;
        11) hexNum=` echo "B$hexNum" `;;
        12) hexNum=` echo "C$hexNum" `;;
        13) hexNum=` echo "D$hexNum" `;;
        14) hexNum=` echo "E$hexNum" `;;
        15) hexNum=` echo "F$hexNum" `;;
    esac
done

echo "$num in base 10 = $hexNum in base 16"

```