pd2 hw50 2021-12-10 **Ivan Chen**

worked with no one; advised by no one

recurse solo

test cases and their answers

smallest case
2 * 0 = 0
0 * 2 = 0
-2 * 0 = 0
0 * -2 = 0

next-to-smallest case
2 * 1 = 2
2 * -1 = -2

larger case(s)
2 * 2 = 4
2 * -2 = -4
2 * 3 = 6
2 * -3 = -6

the request that will start the processing
I am asked to calculate the product of the *multiplicand* and *multiplier* using repeated addition.

base case processing
Return 0 because of the zero property of multiplication as stated that the product with any number and 0 is 0.

decision rule
if multiplicand = 0 | multiplier = 0

recursive case processing, in three sub-parts

recursive abstraction

When asked to calculate the product of the *multiplicand* and *multiplier* using repeated addition,

The recursive abstraction will calculate the product of the *multiplicand* and *multiplier* using repeated addition.

the leftover piece

void

all the processing for a recursive case

when I am asked to calculate the product of the *multiplicand* and *multiplier* using repeated addition

and the recursive abstraction has provided the product of *multiplicand* and *multiplier – 1* using repeated addition then the remaining part of processing recursive cases requires the calculation of the sum of the *multiplicand* and the product of *multiplicand* and the *multiplier – 1*.