pd2 hw46 2021-12-06 Ivan Chen
Worked with no one; advised by no one

steps to a recursive solution

An *announce* procedure is invoked inside the invocation of *instructionsForBot*, so the announcement of *steps* will be first displayed. The returned value of the invocation of instructionsForBot, a long string, is stored in the *steps* symbol and the *string-append* procedure concatenates the strings in order such that the *steps* would be in order.

test cases and their answers

smallest case

1 paper

Pass the paper forward.

next to smallest case

2 papers

Pass the paper forward.

Place your paper on top of the pile and pass the pile forward.

larger case(s)

3 papers

Pass the paper forward.

Place your paper on top of the pile and pass the pile forward.

Place your paper on top of the pile and pass the pile forward.

the request that will start the processing

I am asked to calculate the instructions to pass forward a pile of *n* homeworks in order.

base case processing

Pass your paper forward.

decision rule

If n = 1

Recursive case processing in three sub-parts

recursive abstraction

when I am asked to calculate the instructions to pass forward a pile of *n* homeworks in order,

the recursive abstraction can provide the instructions in hand in a pile of *n-1* papers in order.

the leftover piece

place your paper on top of the pile and pass the pile forward.

all the processing for a recursive case

when I am asked to calculate the instructions to pass forward a pile of *n* papers in order

> and the recursive abstraction has calculated the instructions to pass forward a pile of *n-1* papers in order,

then the remaining part of processing recursive cases requires

> using the returned value of the recursive abstraction to hand in a pile of *n-1* papers in order

combined by

> placing your paper on top of the pile and passing the pile forward.