

Discussion 03

Recursion

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Announcements

Recursion



Recursion

- What is a recursive function?
 - A function that calls itself
 - Returns a function call of itself, not the object (different than HOF)
- Recursive Leap of Faith
 - The idea that the recursive function will work no matter what/how many test cases are passed in

Example

- The Problem
 - Want to find how many dolls are inside this doll
- What we need to do
 - Create a function that we can repeat until there is no more dolls to count
- Ideas?



Solution

- Remove one layer at a time and one to total, stop when there is no more dolls and add one

Solution in Formal Terms of Recursion

- Base Case
 - smallest problem with guranteed answer, or smallest input
 - **A doll with no other dolls inside of it**
- Recursive Call
 - A method of reducing the current problem into a smaller problem
 - **Removing each layer one by one and adding it to a total**
- Using everything together
 - How can I use solution for smaller problems to solve original problem
 - **Add each layer until you get to the smallest doll**

[ADD PROBLEMS]