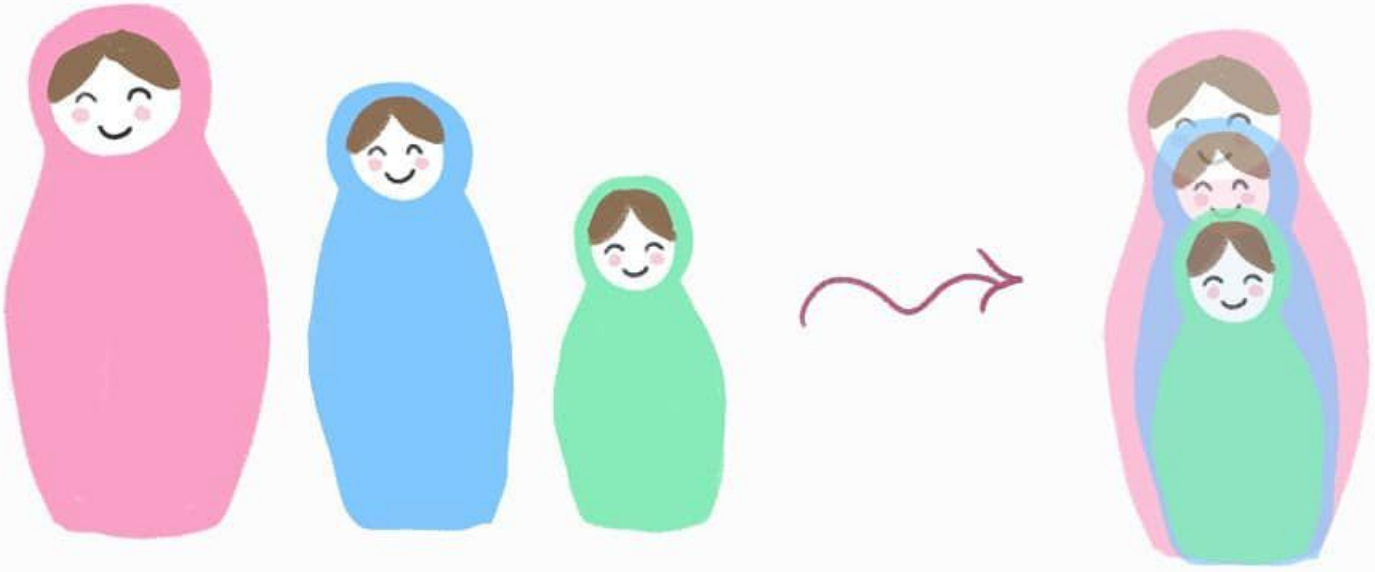

EXPLAIN LIKE I'M FIVE
Recursion

Jen just bought a set of Russian nesting dolls online.



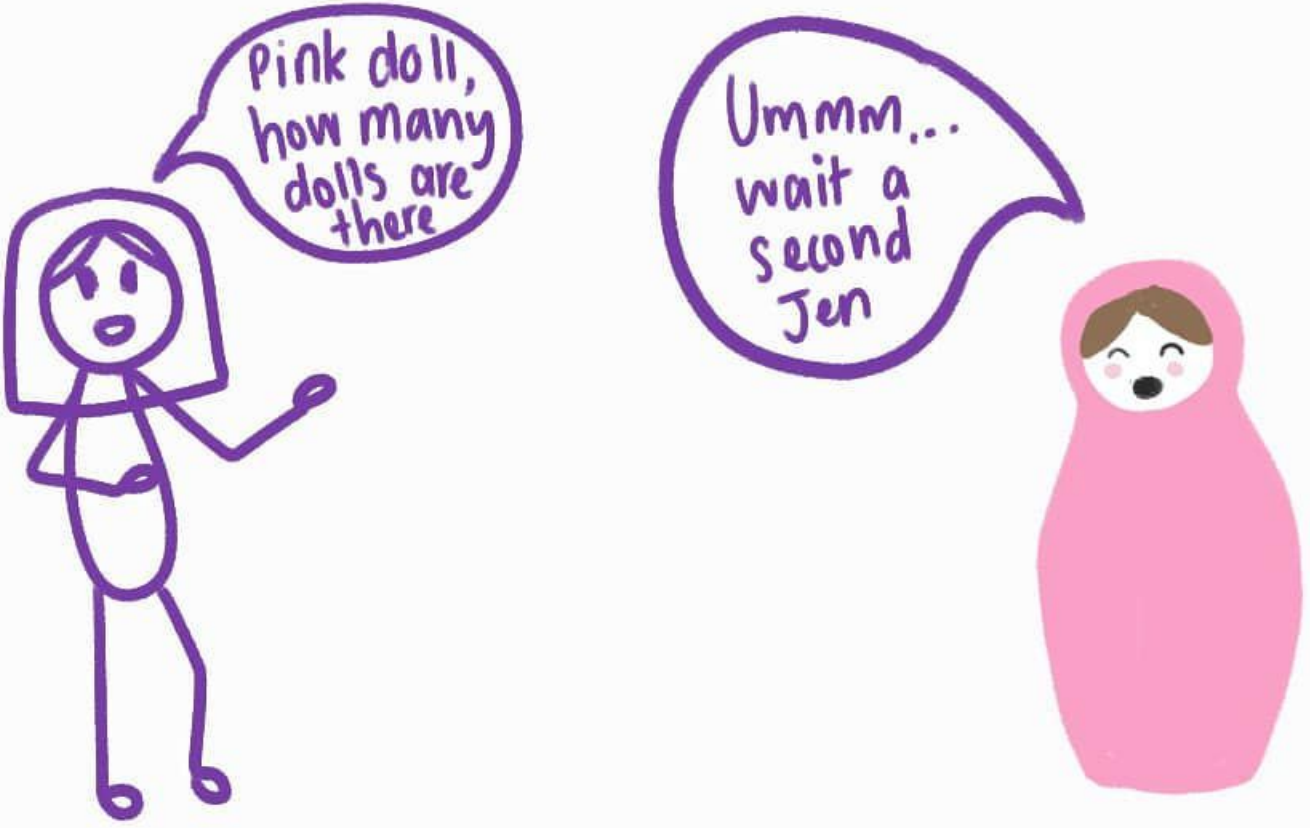
Russian nesting dolls are a set of wooden dolls of decreasing size placed one inside another.

She wants to know how many dolls are there in the set. But since Jen is too lazy, she doesn't want to open the dolls.

Fortunately, the dolls are magical and they can speak!

Jen asks the biggest doll how many dolls are there.

But the biggest doll doesn't know as well and has to think about it.

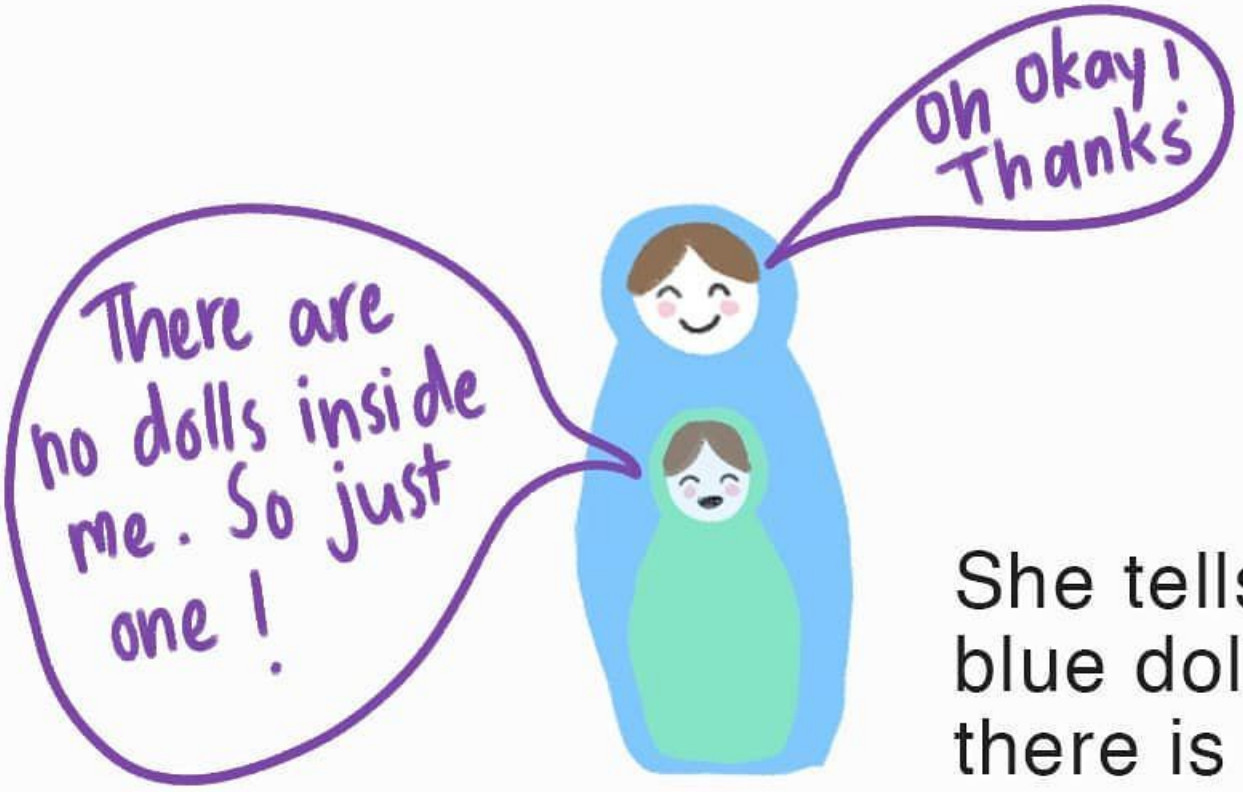


The pink doll thinks that she only needs to know how many dolls are inside her. She could simply add 1 to that and tell Jen the answer!

Again, the blue doll has no idea, so she asks the pink doll to wait.

She asks the same question to the green doll inside her.

Finally, the green doll doesn't need to think much since she doesn't have anyone inside her.



She tells the blue doll that there is only 1 doll.

The blue doll after getting her answer immediately tells the waiting pink doll that there are only 2 dolls including her.

Now the pink doll can finally tell Jen that there are 3 dolls in total including her!

In the previous slides, the dolls recursively asked the same problem to the dolls inside them to find the answer to the main problem.

```
function Jen() {
  PinkDoll.FindTotalDolls()
}

FindTotalDolls() {
  if self.noDollsInside return 1;
  return self.insideDoll.FindTotalDolls() + 1;
}
```

Recursion is a method of solving a problem where the solution depends on solutions to smaller instances of the same problem.