COL100 Minor 1 Bonus Question

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The Question

> In an ancient village, there were some green-eyed and blue-eyed persons. One fine day, God instructed them, "the day on which you come to know that you are a green-eyed, you should commit suicide ..." He also assured them that there was at least one green-eyed among them. Well, all the villagers were very intelligent and strict followers of God. But, no one knew colour of his own eyes! They didn't have mirrors. They couldn't even communicate with each other. All that they could do is to see colour of other's eyes. It happened that on 20th day, all the green-eyed people committed suicide. So, how many green-eyed were there?

To prove: If there are n green-eyed people, they all will commit suicide on the n^{th} day.

Base Case: If there is just 1 green-eyed person, they will see that all the other people are blue-eyed. Since they know atleast one of them is green-eyed, he'll conclude that his eyes are green. Therefore, he will commit suicide on the 1^{st} day itself.

Induction Hypothesis: For $1 \leq k \leq n$, it is true that if there are k green-eyed people, they will commit suicide suicide on the k^{th} day.