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Scalable Data Infrastructures: Problem Solving

Predicting Fingers

A little girl counts using the fingers of her left hand as follows: She starts by calling her thumb 1, the first finger 2, middle finder 3, ring finger 4, and little finger 5. Then she reverses direction, calling the ring finger 6, middle finger 7, first finger 8 and thumb 9, after which she calls her first finger 10 and so on. If she continues to count in this manner, on which finger will she stop?

1) Define the problem:

A. The girl wants to figure out which finger she will stop counting on for the number 10, 100, and 100
B. Assumption is she starts on her thumb and works backwards from her pinky finger until she reaches 1000.

The goal is to figure out which fingers she will land on without counting to 1000.

2) Break the problem apart
A. The girl needs to figure out which finger will be the 10^{th} when she beings with her thumb. She will then need to figure out where she will land for 100 and then 1000.

3) Identify potential solutions
Count to ten from the thumb and see where it stops. Figure out the multiple of 100 and divide.

4) **Evaluate each solution**
A. The solution will work once you figure out the multiples and division.
B. to figure out the multiple, take the 8 and divide into 1000. The multiple of 8 is from each time you land on the thumb in your count.

5) Choose solution and implement it
A. The solution I will implement is to count to fifty and figure out the multiple of which number lands on my thumb. I will then add the 1^{st} number and the number of which my thumb lands on and multiply by 125, subtract one and you have your answer.