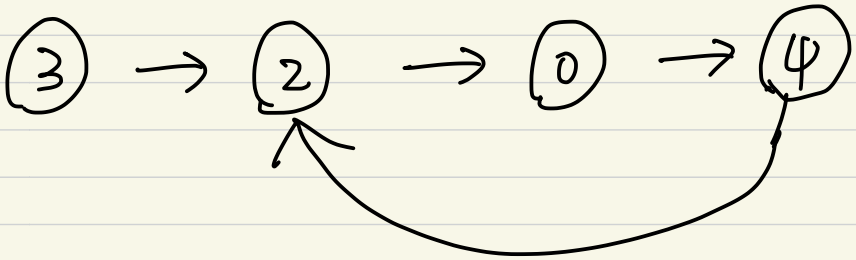
Analysis

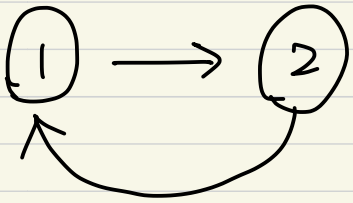
Find the position where the cycle starts

Input

Output

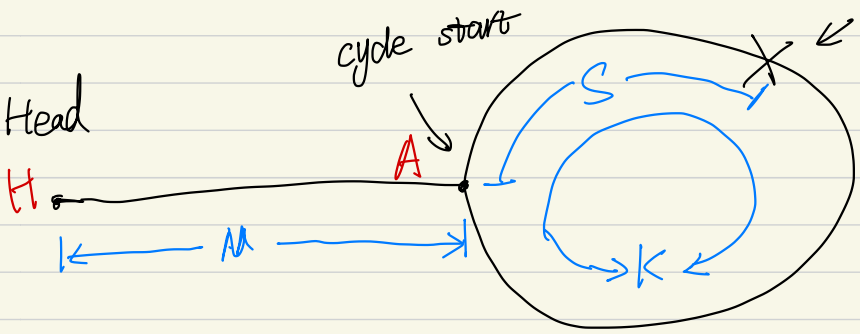


Node 2



Node 1

null



$$(M+S) * 2 = M + S * aK, \quad a \in \mathbb{N}, a \geq 1$$

$$\Rightarrow M + S = aK$$

$$\Rightarrow M = aK - S = a'K + (K - S), \quad a' \in \mathbb{N}$$

After fast and slow pointers meet

Let slow back to head, set both pointer speed to 1, and the place they meet again is the start of the cycle