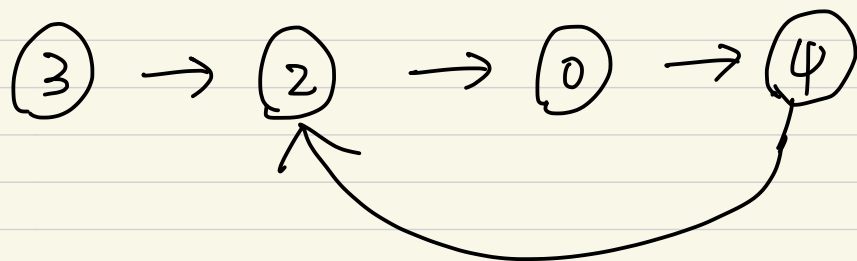




Analysis

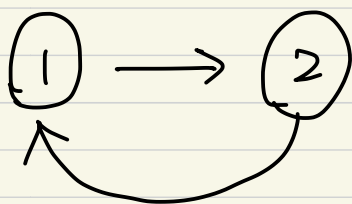
Find the position where the cycle starts

Input



Output

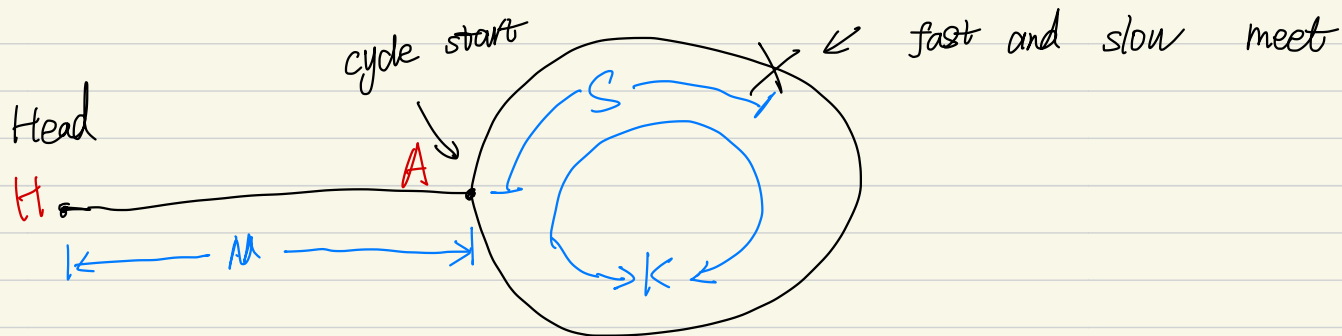
Node (2)



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