Question 4

Figure 1 shows a row of black and white discs with their position numbers shown under each square. There are only two ways to move a disc:

1. Move into an empty square one position to the left or right, for example 1 → 2 means move the disc from square 1 to square 2.
2. Jump in either direction over a single adjacent disc into an empty space immediately beyond, for example 3 → 1 means move the disc from square 3 to square 1, jumping over a disc in square 2.

Figure 1 (start state)

Write a sequence of steps, or an algorithm, that swaps all the white discs with the black discs so that the row looks like that shown in **Figure 2**. You can only move a single disc in each step.

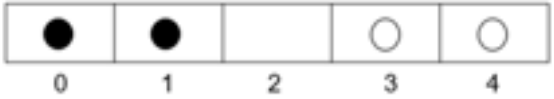

Figure 2 (end state)