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**3.34 A:**

Design an O(N) algorithm to determine if the list contains a cycle. You may use O(N) extra space.

In order to check to see if the list contains a cycle you should have a reference to the original node, use next and then compare the original to the results. If they match then there is a loop.

**3.34. B:**

Repeat part (a), but use only O(1) extra space. (Hint: Use two iterators that are initially at the start of the list but advance at different speeds.)

In order to check to see if a list contains a cycle using two iterators iter1 and iter2 that start at the front of the list. Start incrementing iter1 by 1 and iter2 by 2. If iter1 catches up to iter2 then there should be a loop which returns. If iter2 reaches the end of the list then there is no cycle.