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Performance Comparison:

From the program written and time obtained

Recursive reversal took: 1.708e-06 seconds

Iterative reversal took: 8.34e-07 seconds

This is for a list with size n = 100

Conclusion:

The iterative version is faster because it avoids the overhead of recursive calls – each recursive call adds a new frame to the call stack, consuming more time and memory. In contrast, the iterative approach simply uses a few pointers and runs in constant space O(1), making it more memory-efficient. Both methods have the same time complexity of O(n), but the recursive version uses O(n) space due to call stack usage. For large lists, the iterative method is more efficient overall, both in speed and memory. For large lists, the iterative method is more efficient overall, both in speed and memory. However, both approaches produce correct and equivalent results.