**Q1: How to find the middle node of a linked list?**

N1 --> N2 --> N3 --> N4 --> N5 --> N6 --> null

**Q2: 判断一个LinkedList是否有环?**

用快慢指针的方式查找单链表的中间节点，快指针一次走两步，慢指针一次走一步，当快指针走完时，慢指针刚好到达中间节点。

**Q3: How to reverse a listed list?**

**Q4: Insert a node in a sorted linked list(simple)**

1 --> 3 --> 6 --> 9 --> null target == 7

1 --> 3 --> 6 --> 7 –> 9 --> null

**Q5: How to merge two sorted linked list into one long sorted linked list?**

N1 --> N2 --> N5 --> null

N1 --> N3 --> N6 --> N7 --> null

1 --> 1 --> 2 --> 3 --> 5 --> 6 --> 7 --> null

**Q6: Partition List**

Given a linked list and a target value x, partition it such that all nodes less than x are listed before the nodes larger than or equal to target value x. keep the **original relative order** of the nodes in each of the two partitions.

For example

Input: 1 🡪 6 🡪3 🡪 2 🡪 5 🡪 2 and target x = 4

Result: 1 🡪 3 🡪 2 🡪 2 🡪 6🡪 5