### Finding middle element in a linked list

Given a singly linked list of **N** nodes.  
The task is to find the **middle** of the linked list. For example, if the linked list is  
**1-> 2->3->4->5**,then the middle node of the list is **3**.  
If there are two middle nodes(in case, when **N** is even), print the **second middle** element.  
For example, if the linked list given is **1->2->3->4->5->6**, then the middle node of the list is **4**.

**Example 1:**

**Input:**

LinkedList: 1->2->3->4->5

**Output:** 3

**Explanation:**

Middle of linked list is 3.

**Example 2:**

**Input:**

LinkedList: 2->4->6->7->5->1

**Output:** 7

**Explanation:**

Middle of linked list is 7.

.

**Expected Time Complexity:**O(N).  
**Expected Auxiliary Space:**O(1).

**Constraints:**  
1 <= N <= 5000

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Java code

//{ Driver Code Starts

import java.util.\*;

import java.io.\*;

class Node{

int data;

Node next;

Node(int x){

data = x;

next = null;

}

}

class CodingMaxima{

static void printList(Node node)

{

while (node != null)

{

System.out.print(node.data + " ");

node = node.next;

}

System.out.println();

}

public static void main(String args[]) throws IOException {

Scanner sc = new Scanner(System.in);

int t = sc.nextInt();

while(t > 0){

int n = sc.nextInt();

Node head = new Node(sc.nextInt());

Node tail = head;

for(int i=0; i<n-1; i++)

{

tail.next = new Node(sc.nextInt());

tail = tail.next;

}

Solution g = new Solution();

int ans = g.getMiddle(head);

System.out.println(ans);

//printList(head);

t--;

}

}

}

// } Driver Code Ends

class Solution

{

int getMiddle(Node head)

{

Node temp=head;

int len=0;

while(temp !=null){

len++;

temp=temp.next;

}

temp=head;

for(int i=1;i<len/2+1;i++){

temp=temp.next;

}

return temp.data;

}

}