

LEC 05

CSE 123

Linked Nodes w/Loops

Questions during Class?
Raise hand or send here

sli.do #cse123



BEFORE WE START

Talk to your neighbors:

What's the last TV show or movie you finished?

[Respond on sli.do!](#)


Instructor: Miya Natsuhara

TAs:

Arohan	Shiven	Yuntong	Anya
Sreshta	Vrinda	Amiya	Anisha
Rushil	Gavin	Sahana	Trien
Sean B	Shreya	Anirudh	Neal
Chloe	Jonah	Rohan	Evan
Jenny	Renee	Crystal	Rena
Nate	Chris	Eeshani	
Saachi	Ishita	Prakshi	
Hawa	Kuhu	Aidan	
Maggie	Kavya	Cora	
Sean E	Misha	Nhan	

Music:  [CSE 123 26sp Lecture Tunes](#) 

Lecture Outline: Announcements

- **Announcements** 
- ListNode practice
- Iterating over ListNodes

Announcements

- Resubmission Cycle 0 open, closes today
 - Normally resubmissions will be open Mon – Fri each week
- Creative Project 1 due Wednesday, April 22 at 11:59pm!
 - If you want to implement a custom game, make sure to post it on Ed to get approval by **Sunday, April 19 at 11:59pm**
- Quiz 0 next week (Tuesday, April 21)
 - See [Quiz Logistics Ed announcement](#)
 - Practice Quizzes posted, solutions posted later today

Lecture Outline: ListNode practice

- Announcements
- **ListNode practice** ◀
- Iterating over ListNode

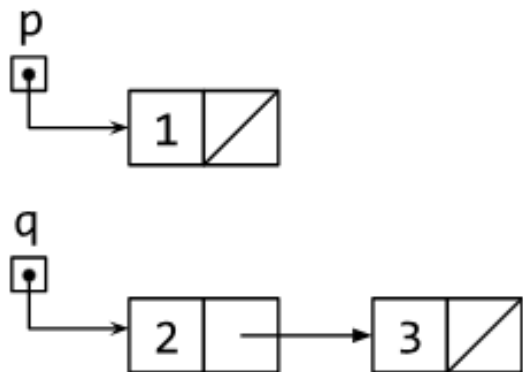


Practice : Think

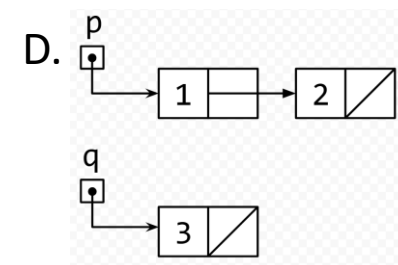
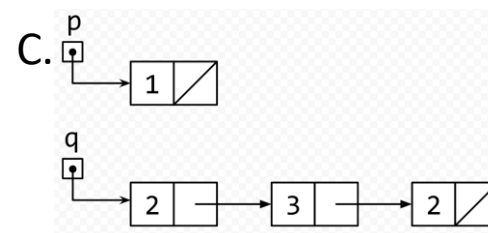
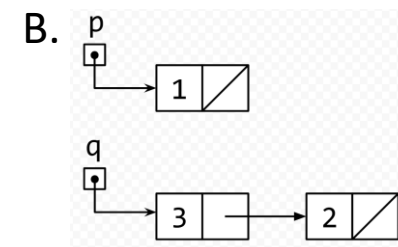
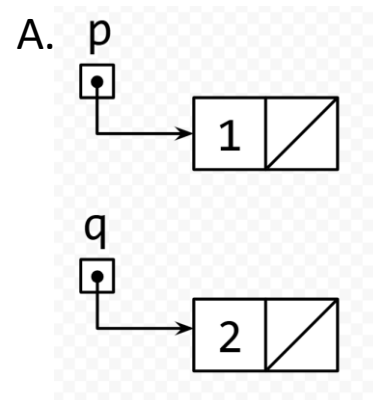


sli.do #cse123

What is the result of running the code on the list shown in the picture?



```
q.next.next = q;
q = q.next;
q.next.next = null;
```

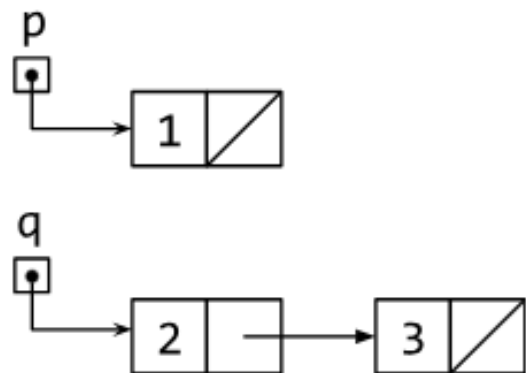


Practice : Pair

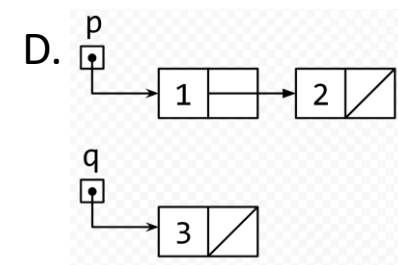
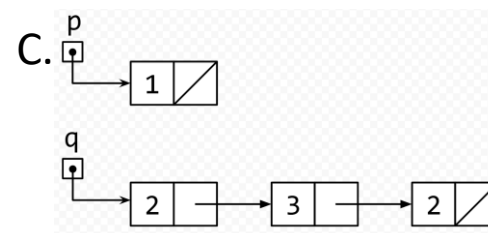
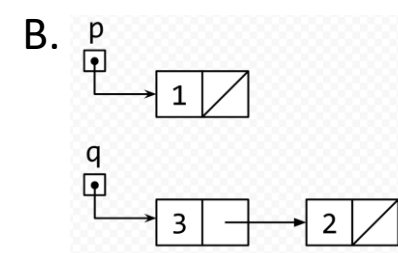
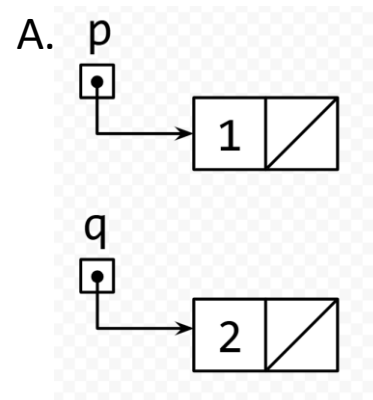


sli.do #cse123

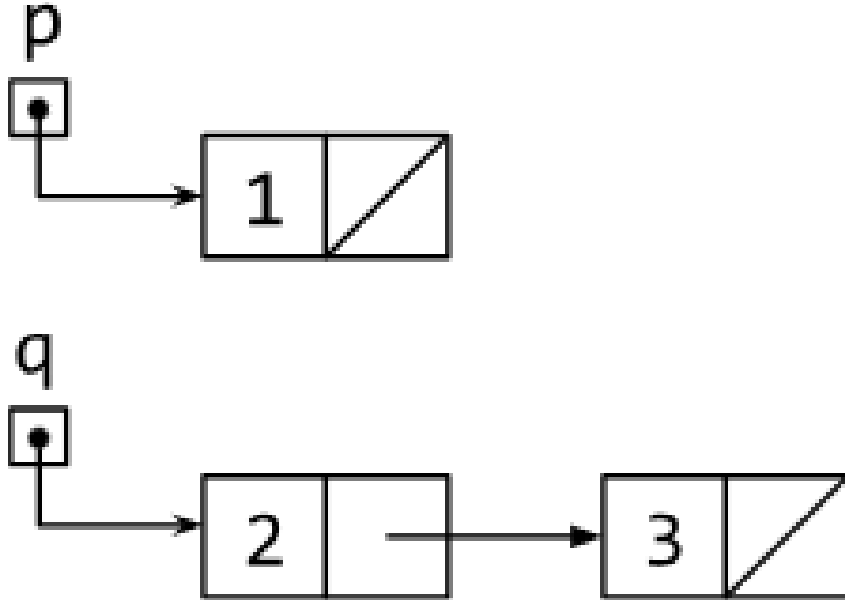
What is the result of running the code on the list shown in the picture?



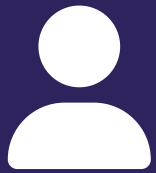
```
q.next.next = q;
q = q.next;
q.next.next = null;
```



TPS: run code on example lists



```
q.next.next = q;  
q = q.next;  
q.next.next = null;
```

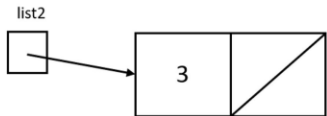
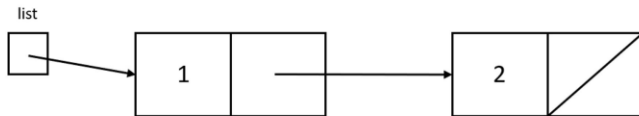
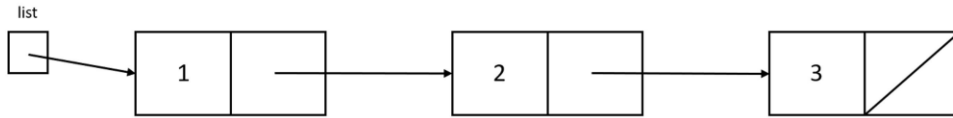


Practice : Think

[sli.do](#)

#cse123

Which code will turn the top picture into the bottom picture?



A. `ListNode list2 = list.next.next;`

B. `list.next.next = null;`
`ListNode list2 = list.next.next;`

C. `ListNode list2 = list.next.next;`
`list.next.next = null;`

D. `ListNode list2 = list.next;`
`list.next = null;`

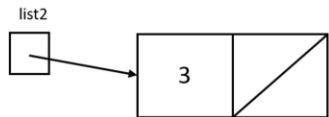
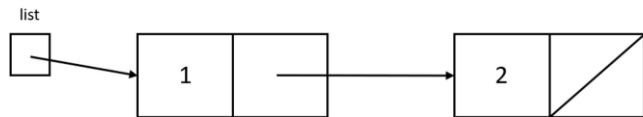
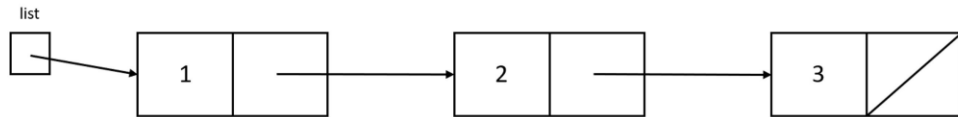


Practice : Pair



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Which code will turn the top picture into the bottom picture?



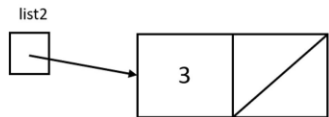
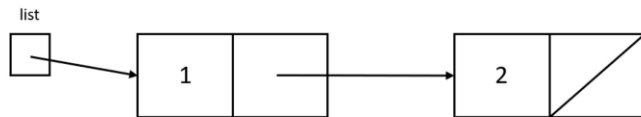
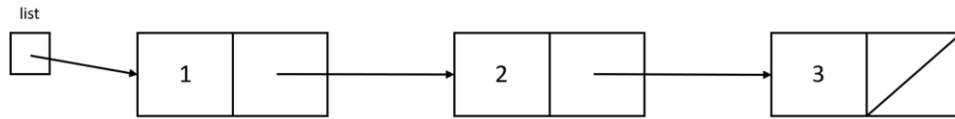
A. `ListNode list2 = list.next.next;`

B. `list.next.next = null;`
`ListNode list2 = list.next.next;`

C. `ListNode list2 = list.next.next;`
`list.next.next = null;`

D. `ListNode list2 = list.next;`
`list.next = null;`

TPS: from top pic to bottom pic



Lecture Outline: Iterating over ListNodes

- Announcements
- ListNode practice
- **Iterating over ListNodes** ◀

ListNode chains

- Recall the ListNode class:

```
public class ListNode {  
    public int data;  
    public ListNode next;  
}
```

- How would we find the fourth value in a chain?

```
node.next.next.next.data
```



Longer ListNode chains

- Recall the ListNode class:

```
public class ListNode {  
    public int data;  
    public ListNode next;  
}
```

- How would we find the 100th value in a chain?

```
node.next.next.next.next.next.next.next...
```



Iterating over ListNodes

- General pattern iteration code will follow:

```
ListNode curr = front;
while (curr != null) {
    // Do something

    curr = curr.next;
}
```