





Struktur Data

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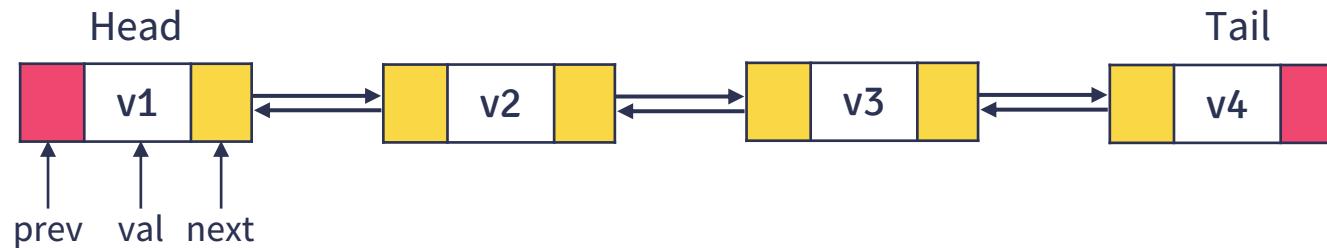
EPISODE 4B

Double Linked List



Double Linked List ?

- Double Linked List merupakan suatu linked list yang memiliki dua variabel pointer. Dimana pointer tersebut menunjuk ke node sebelum dan selanjutnya (prev & next).
- Double Linked List terdiri dari sejumlah elemen (node) dimana setiap node memiliki penunjuk prev (menunjuk node sebelumnya) dan next (menunjuk node selanjutnya).
- Penunjuk prev pada node head menunjuk ke NULL, menandakan bahwa node head (node awal).
- Penunjuk next pada node tail menunjuk ke NULL, menandakan bahwa node tail (node akhir).



Deklarasi & Inisialisasi ?

```
/*
struct LinkListName{
    // komponen / member
    dataTypeData1 dataName1;
    . . .
    LinkListName *prev;
    LinkListName *next;
};
*/
```

```
/*
LinkListName *head, *tail;
head = (LinkListName*) malloc(sizeof(LinkListName));
tail = new LinkListName();
*/
/*
head->dataName1 = valData1;
. . .
head->prev = NULL;
head->next = tail;

tail->dataName1 = valData1;
. . .
tail->prev = head;
tail->next = NULL;
*/
```

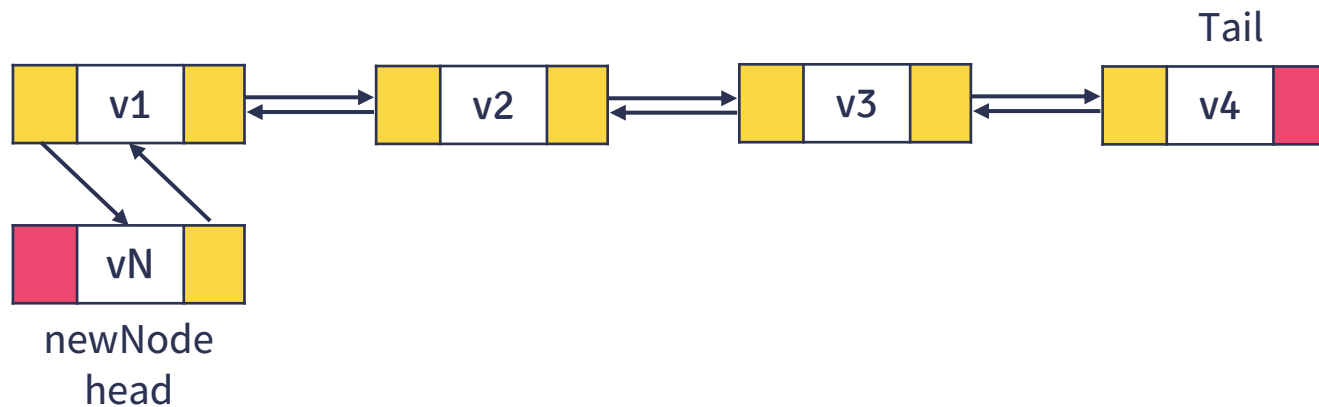
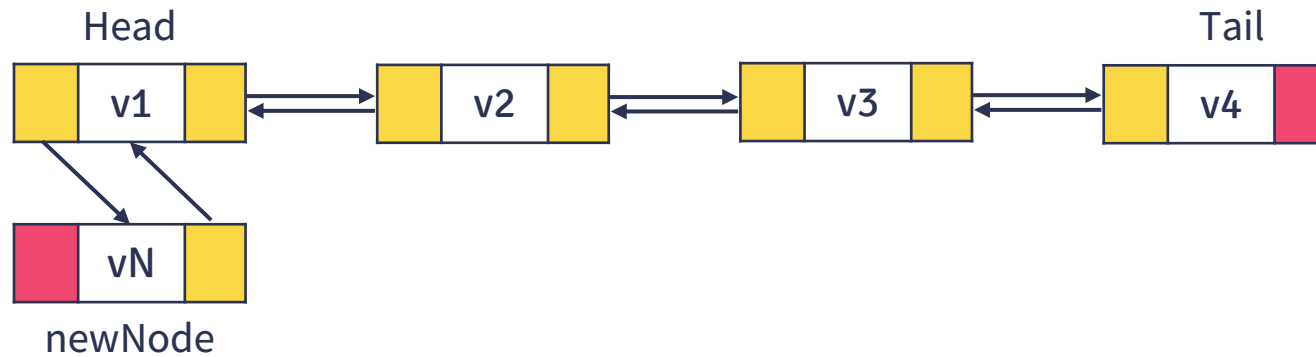
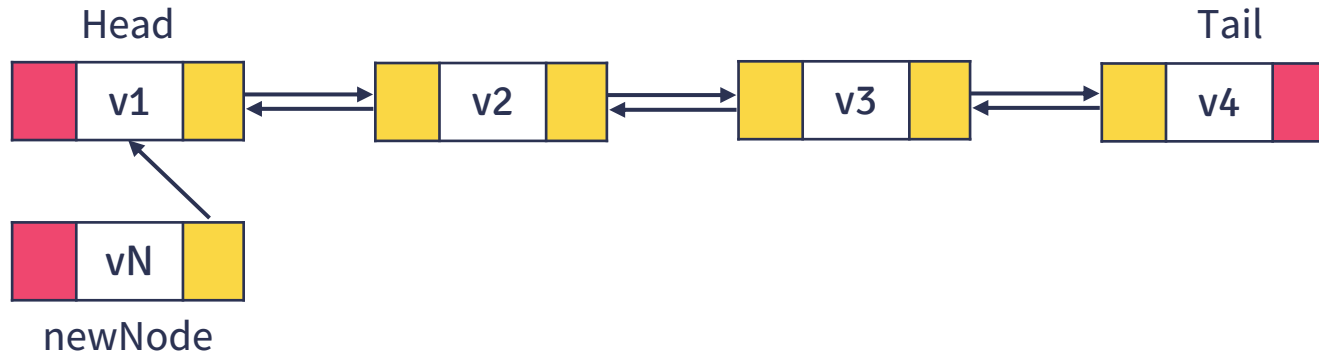


Print Double Linked List ?

```
/*  
LinkListName *cur;  
cur = head;  
while( cur != NULL ){  
    // print  
    cur = cur->next;  
}  
*/
```

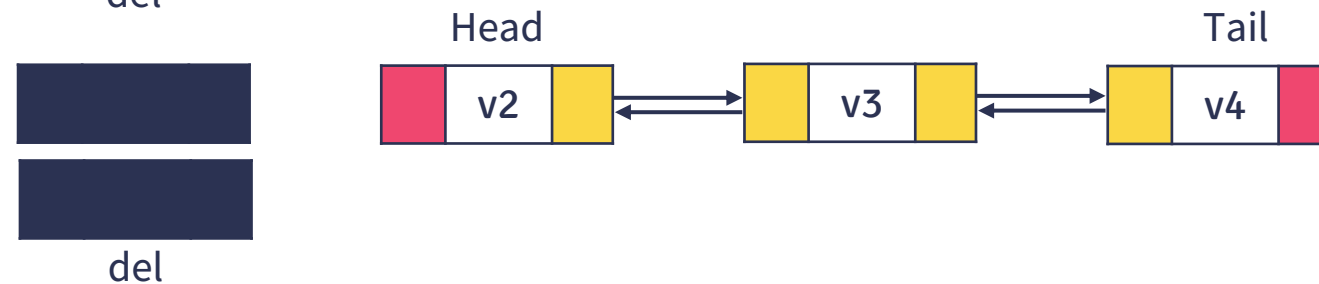
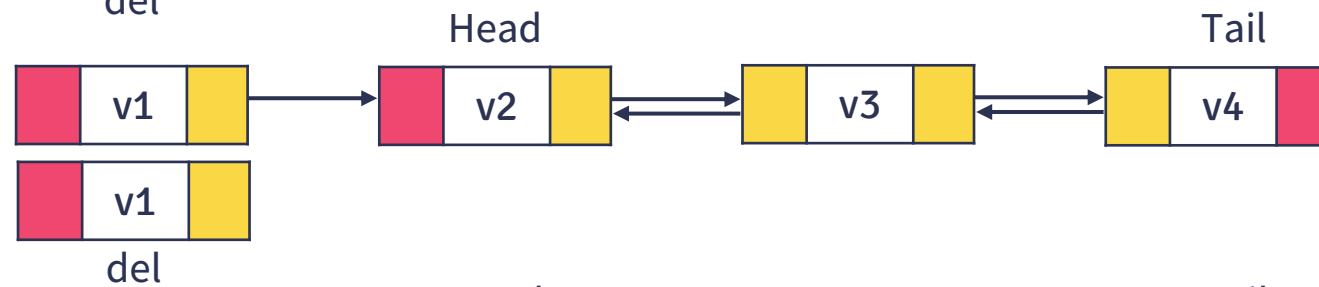
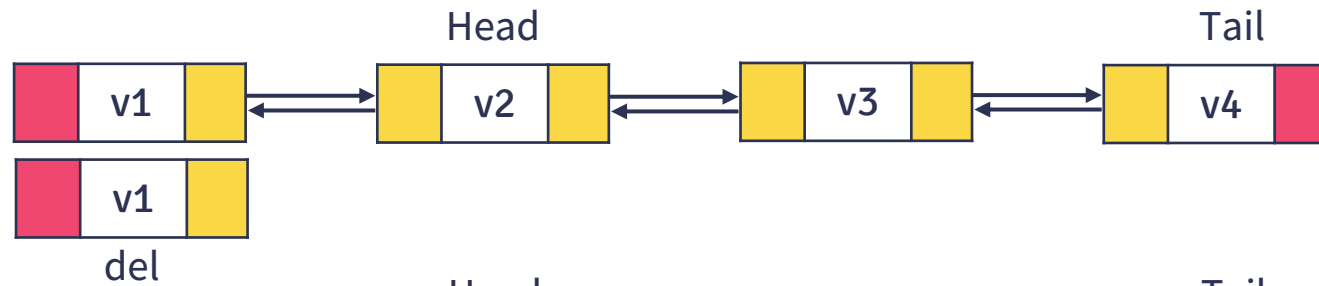
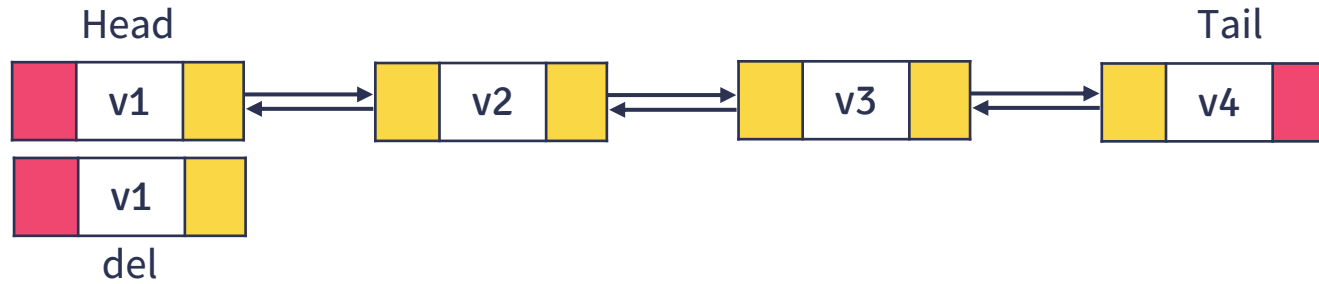


Added at Beginning Node ?

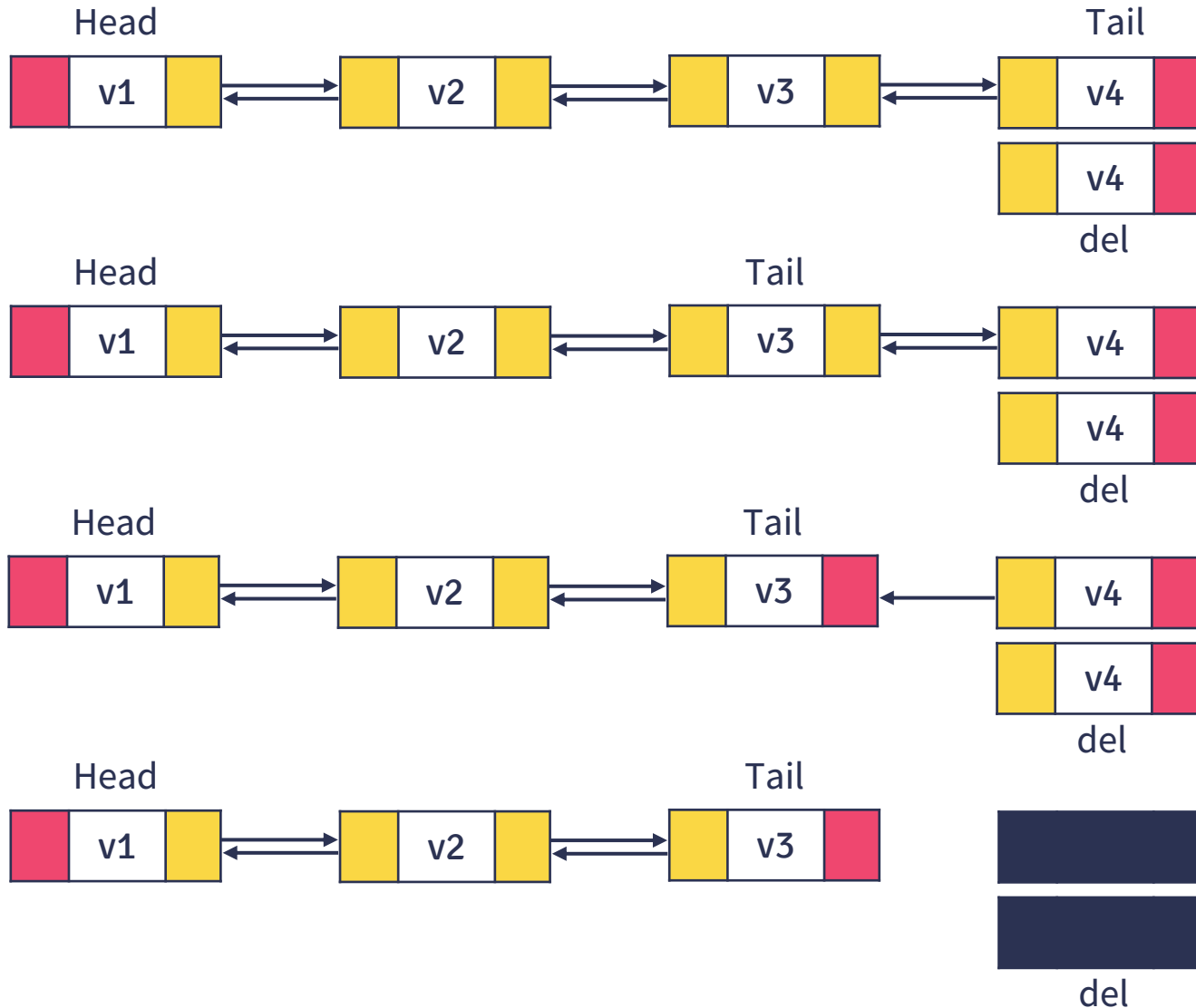


The diagram illustrates a doubly linked list structure. The main list consists of four nodes: v1, v2, v3, and v4. Node v1 is the head, indicated by a red box on its left. Each node is represented as a rectangle divided into three parts: a left yellow box for the previous pointer, a central white box for the value, and a right yellow box for the next pointer. Double-headed arrows connect the next pointer of one node to the previous pointer of the subsequent node. A new node, labeled 'newNode tail', is shown below v4. It has a yellow left box, a white middle box containing 'vN', and a red right box. Two arrows connect it to v4: one from its left box to v4's right box, and another from v4's left box to its right box, indicating it is being inserted at the end of the list.

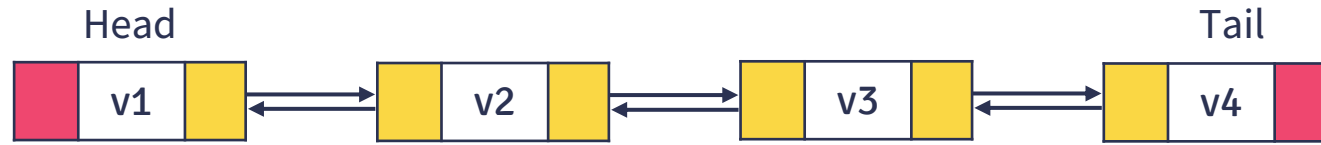
Delete the First Node ?



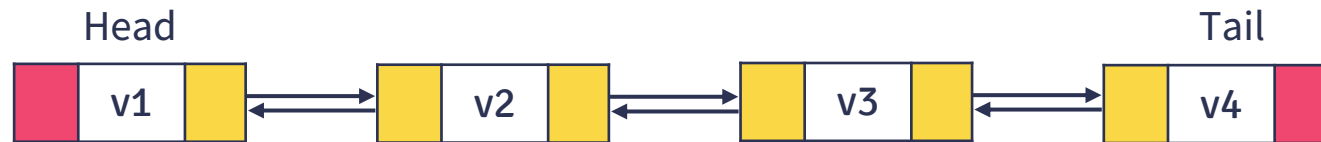
Delete the Last Node ?



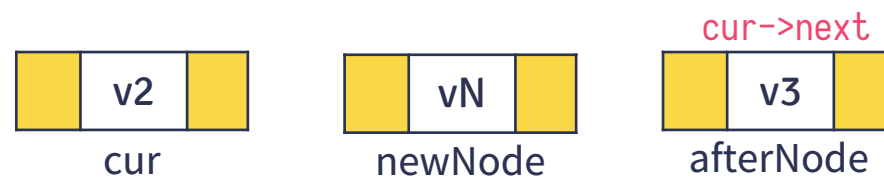
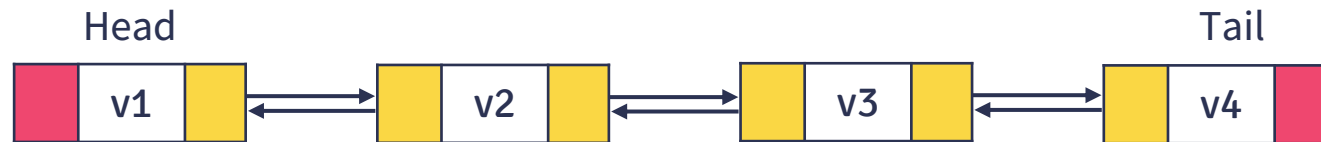
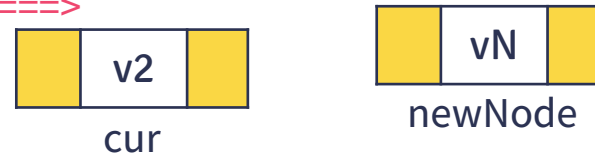
Added at Middle Node ?



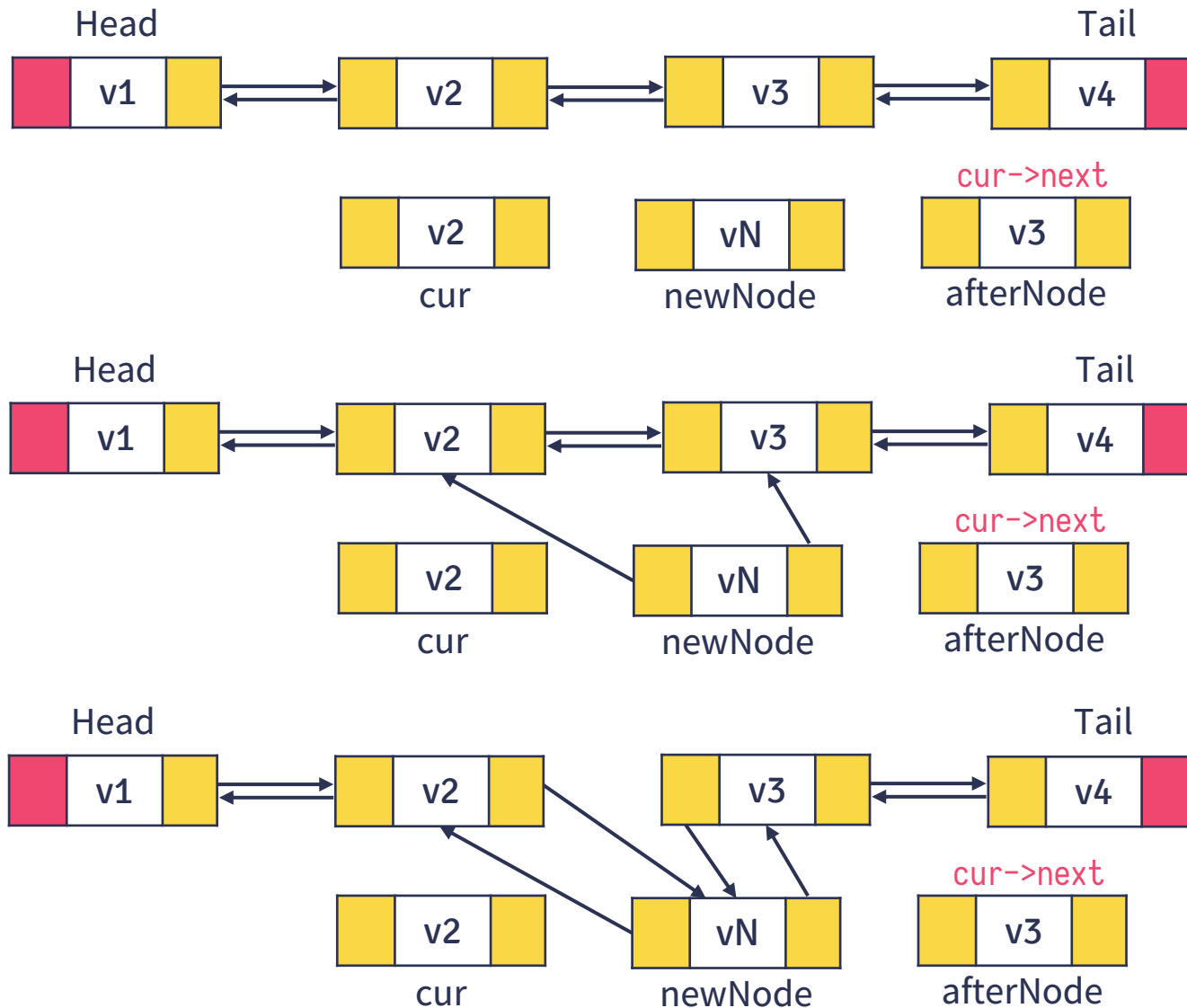
Tambah vN ke posisi 3



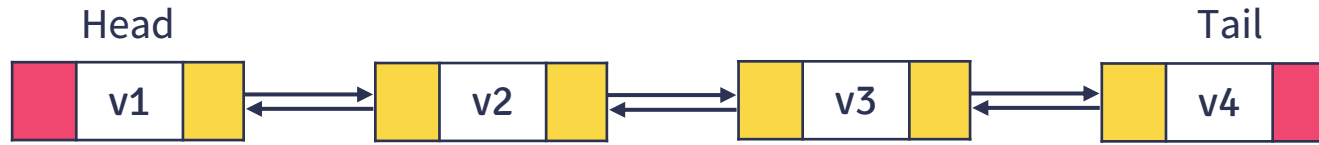
$cur == (1 < posisi - 1) ==>$



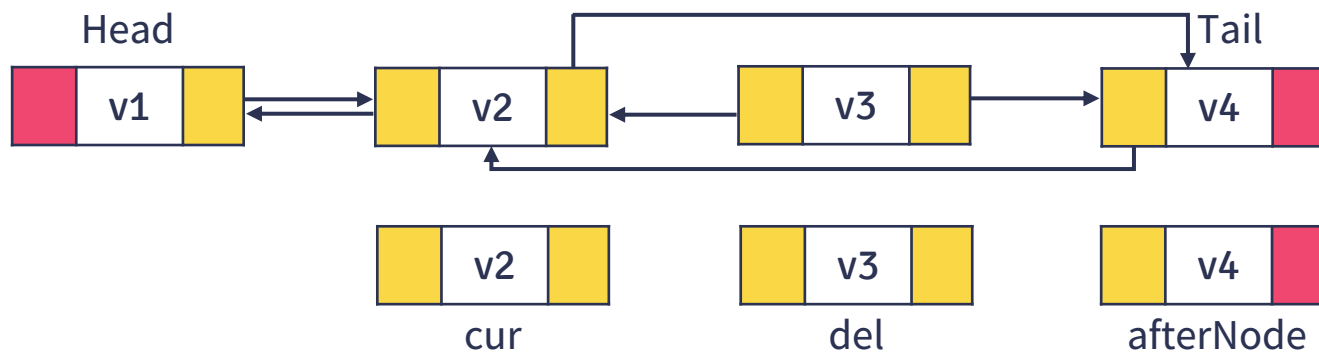
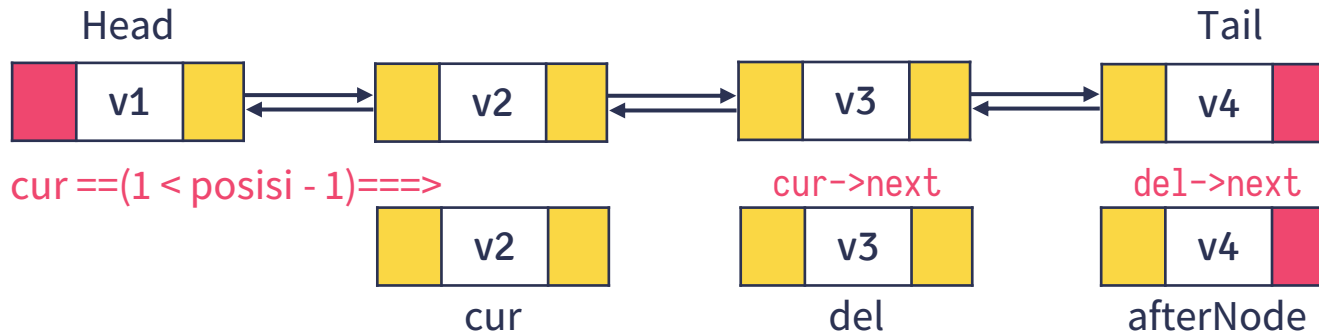
Added at Middle Node ?



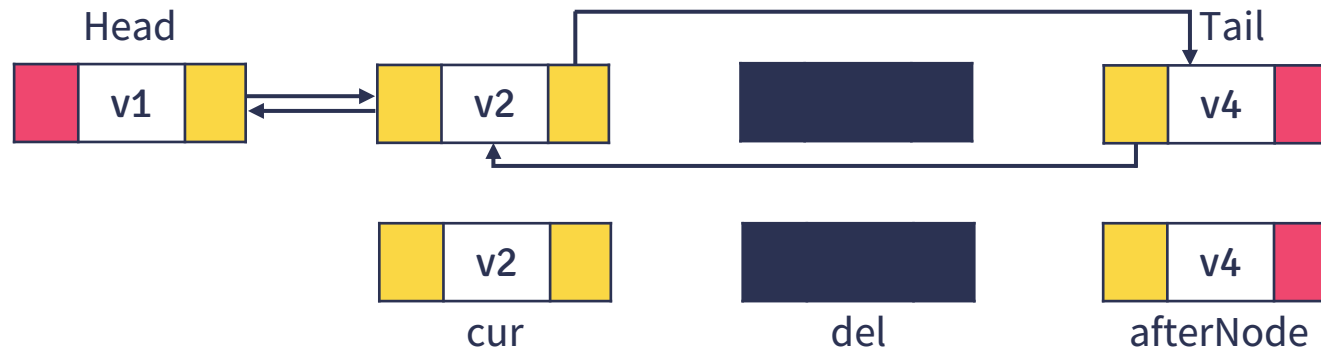
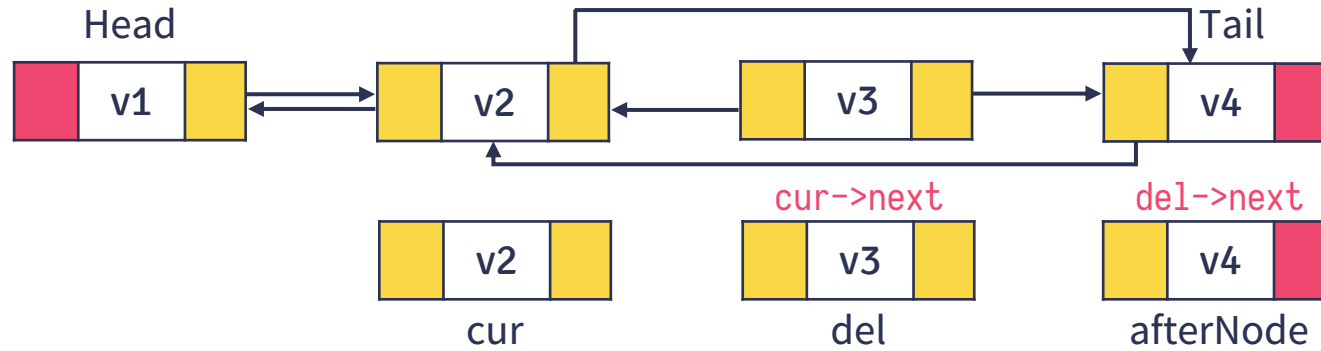
Delete at Middle Node ?



Hapus posisi ke-3



Delete at Middle Node ?





Video Selanjutnya

Circular Single Linked List





Thank you

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#KEEPSPIRITS**

