

# Linked List

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# 陣列

- 存一堆相同形態的資料時，最簡單的方式=> 陣列
- 宣告後長度就固定，沒辦法增減
- 不確定會用多少，太少程式會掛掉，太多記憶體不夠

# 鏈結串列

- 為了解決陣列的不足而生
- 主要利用動態配置記憶體來調控
- 因為這樣.....會變得有點麻煩 & 難寫

# 定義名詞

- 節點 (node) : 鏈結串列中的基本單位
  - 基本上含有 data, next pointer
- 頭 (root) : 串列中的開頭
- 空 (NULL) : 代表沒有東西

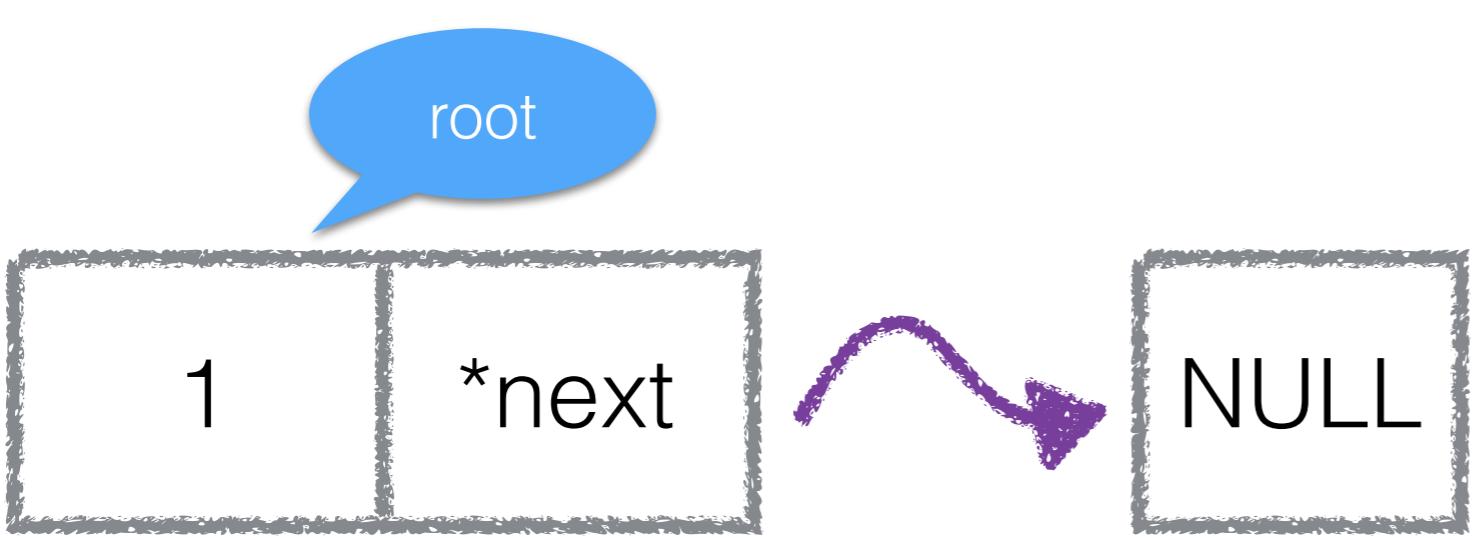
# 單向鏈結串列

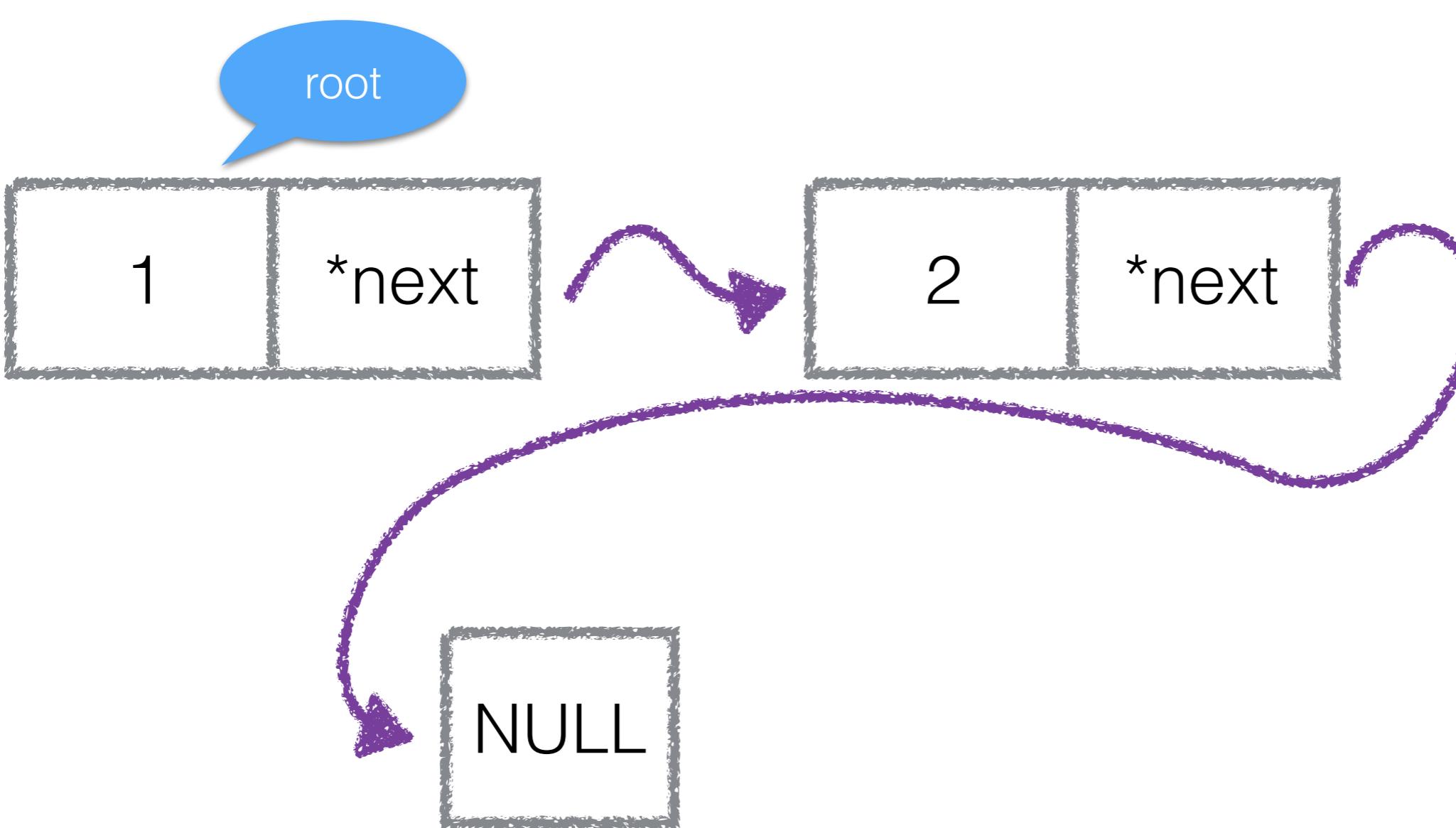
# Node

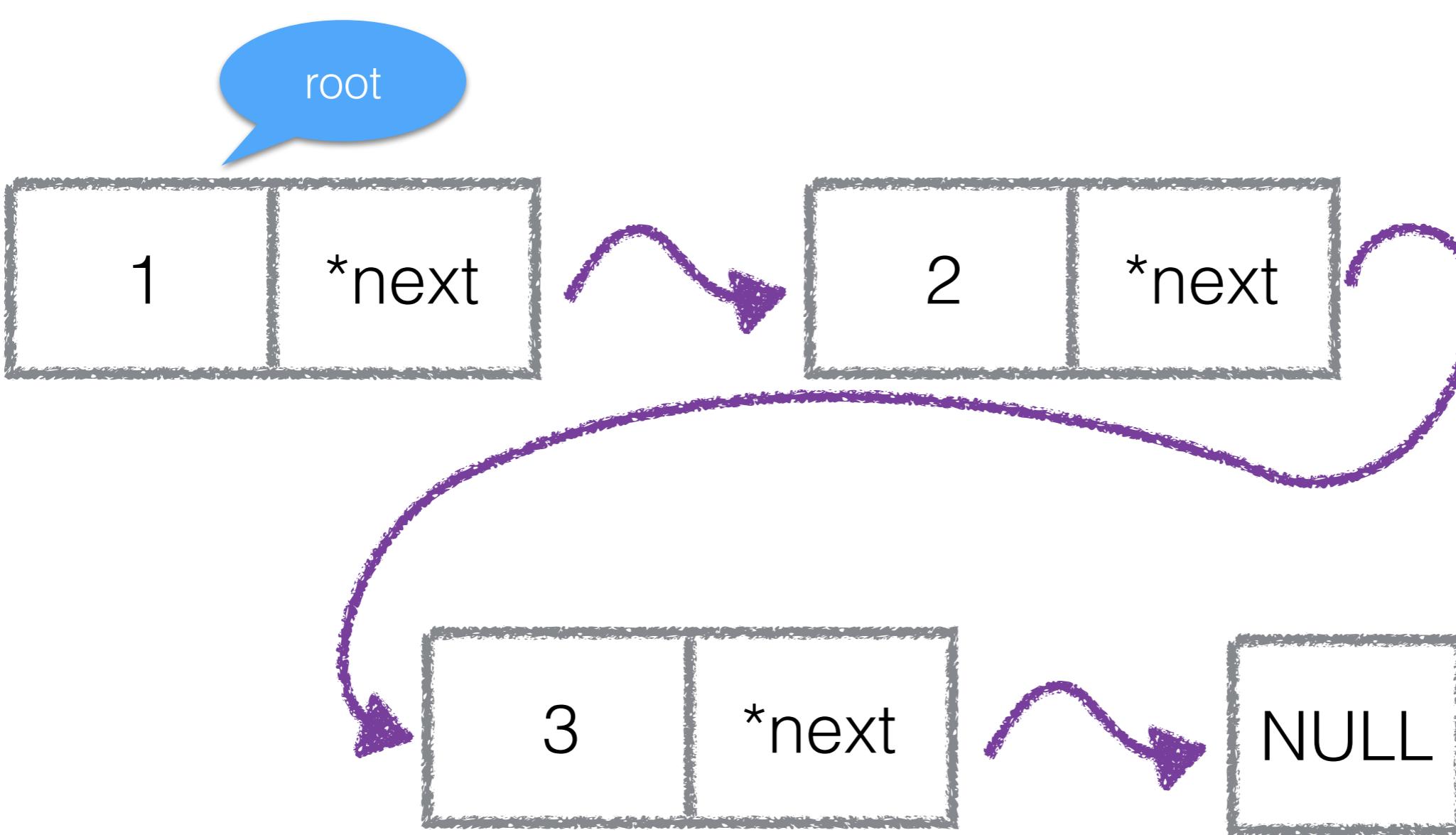


```
struct Node {  
    Data data;  
    Node *next;  
};
```

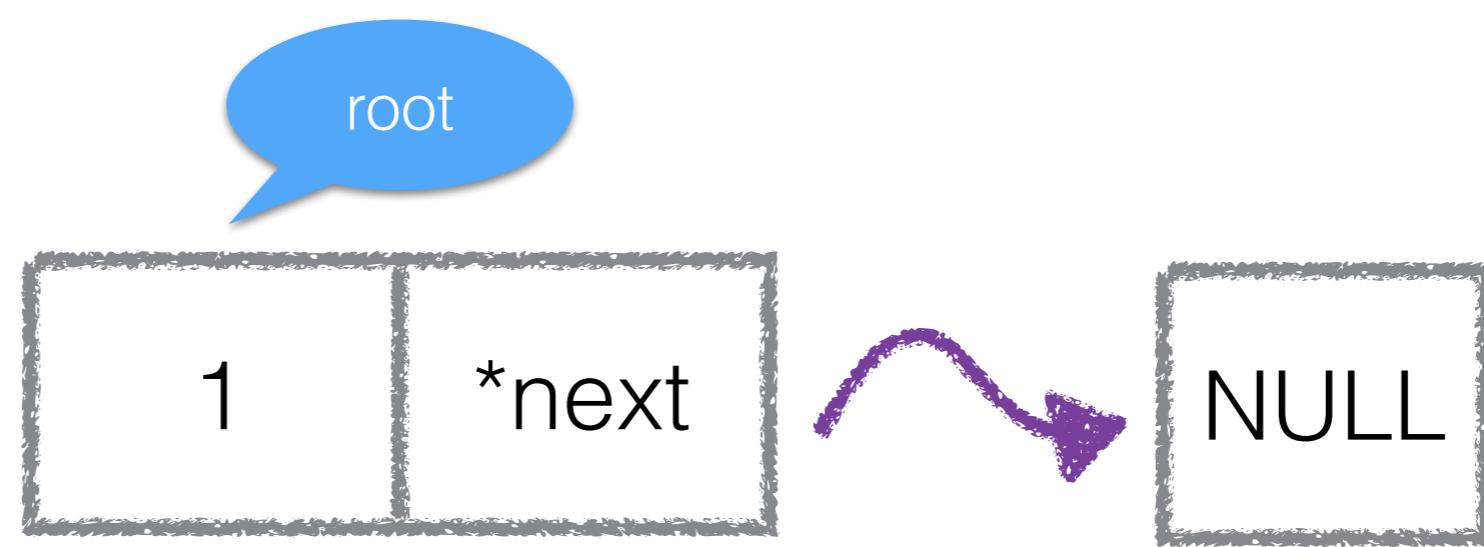
Add node(back)

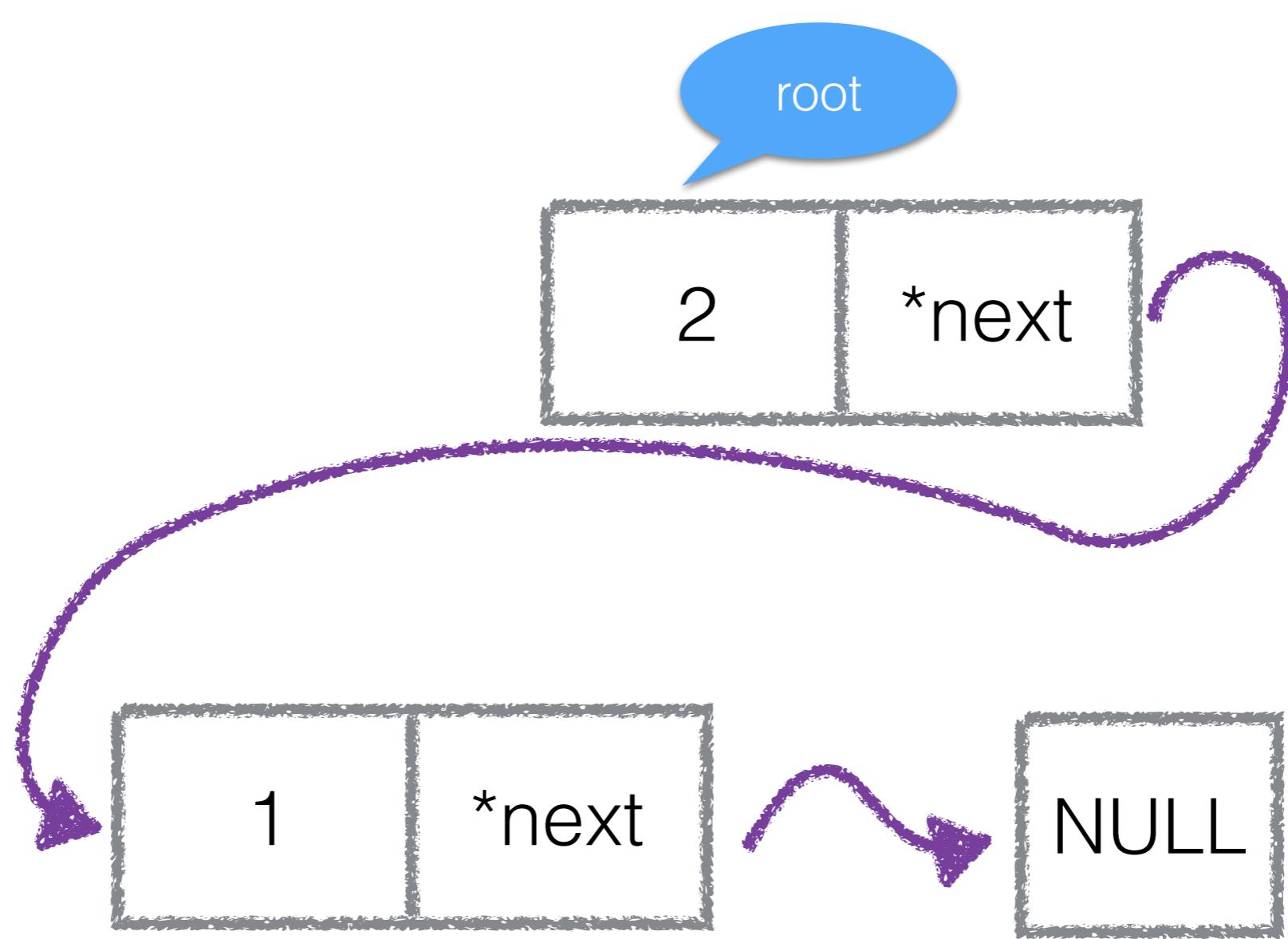


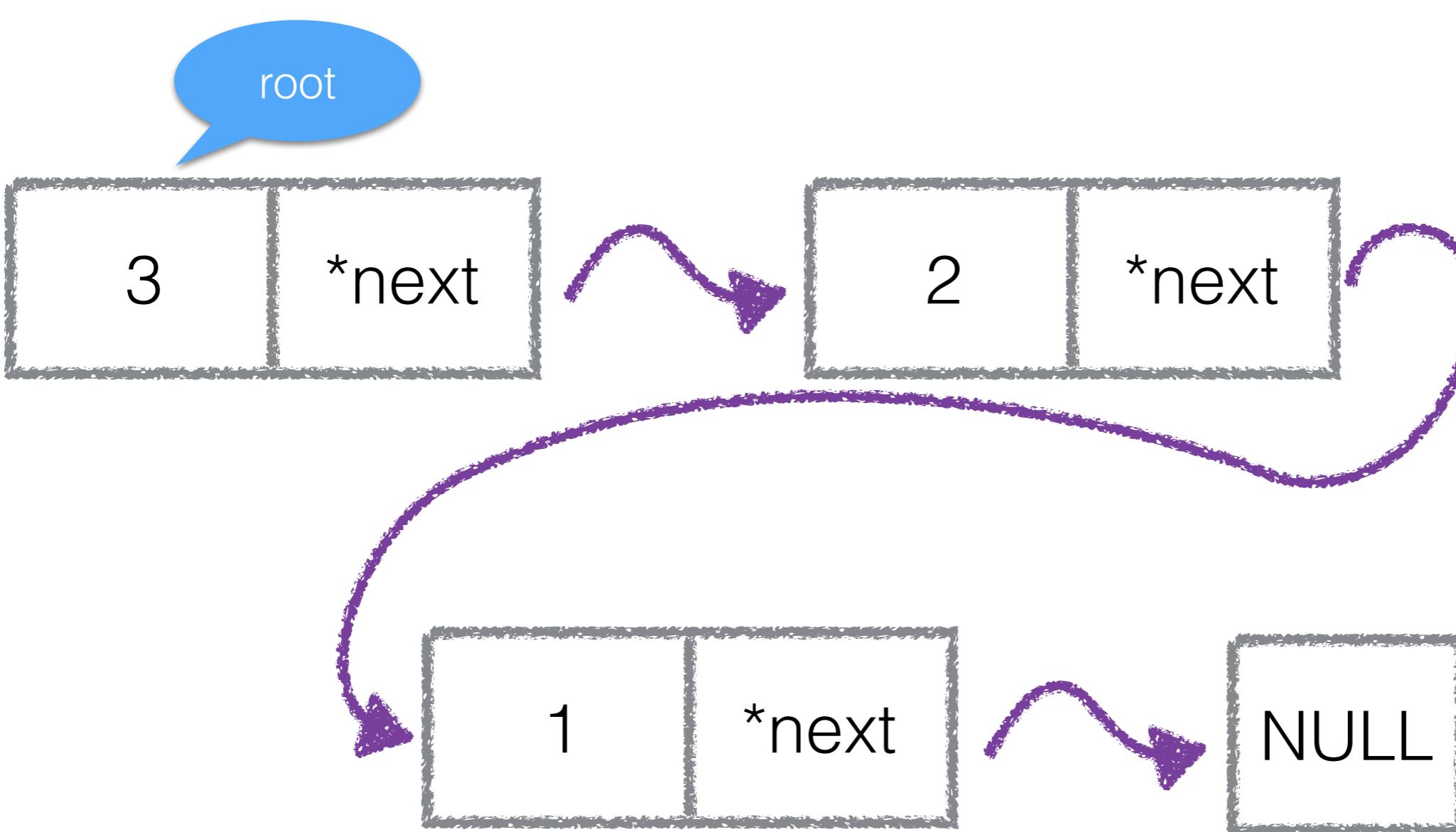




Add node(front)

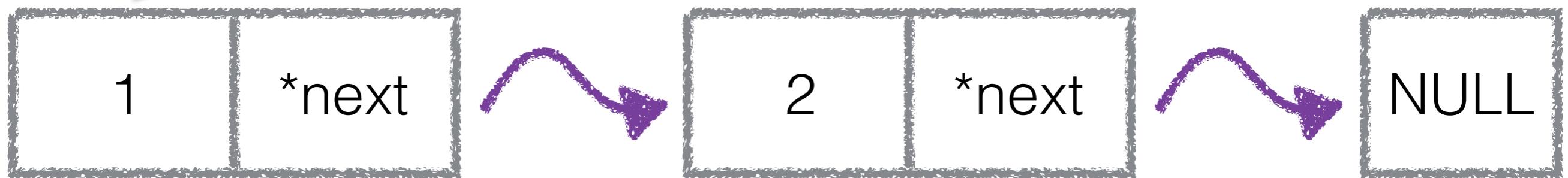


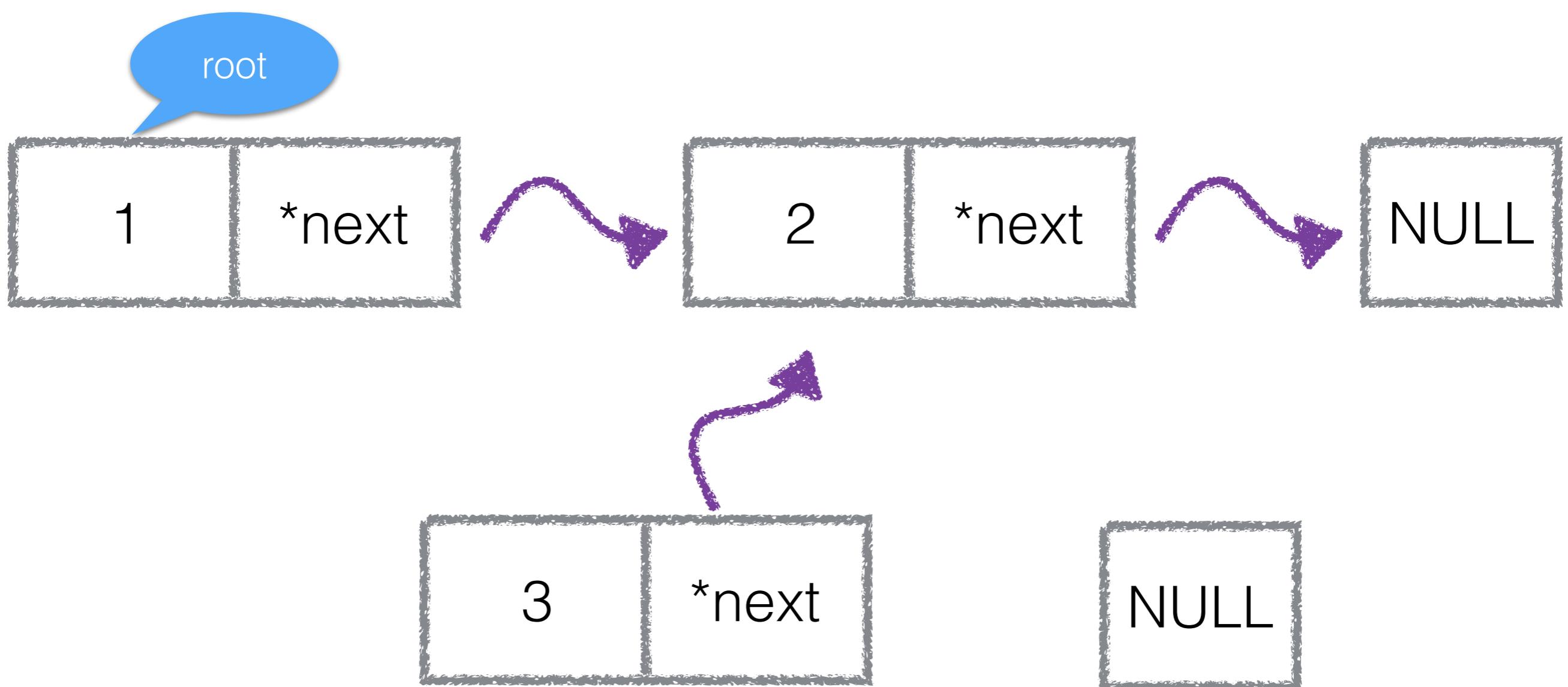




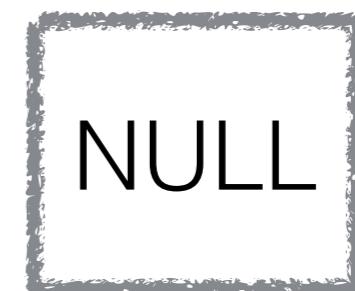
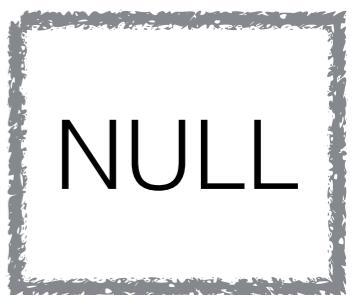
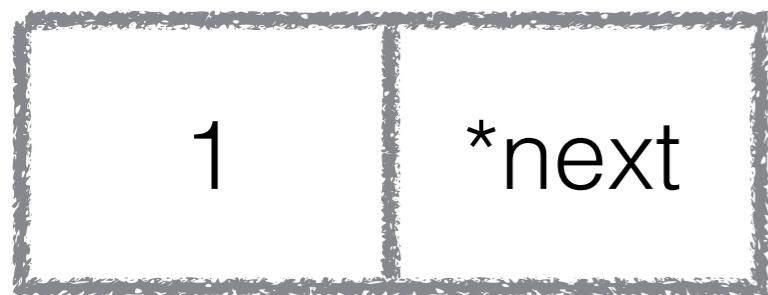
Add node(mid)

root

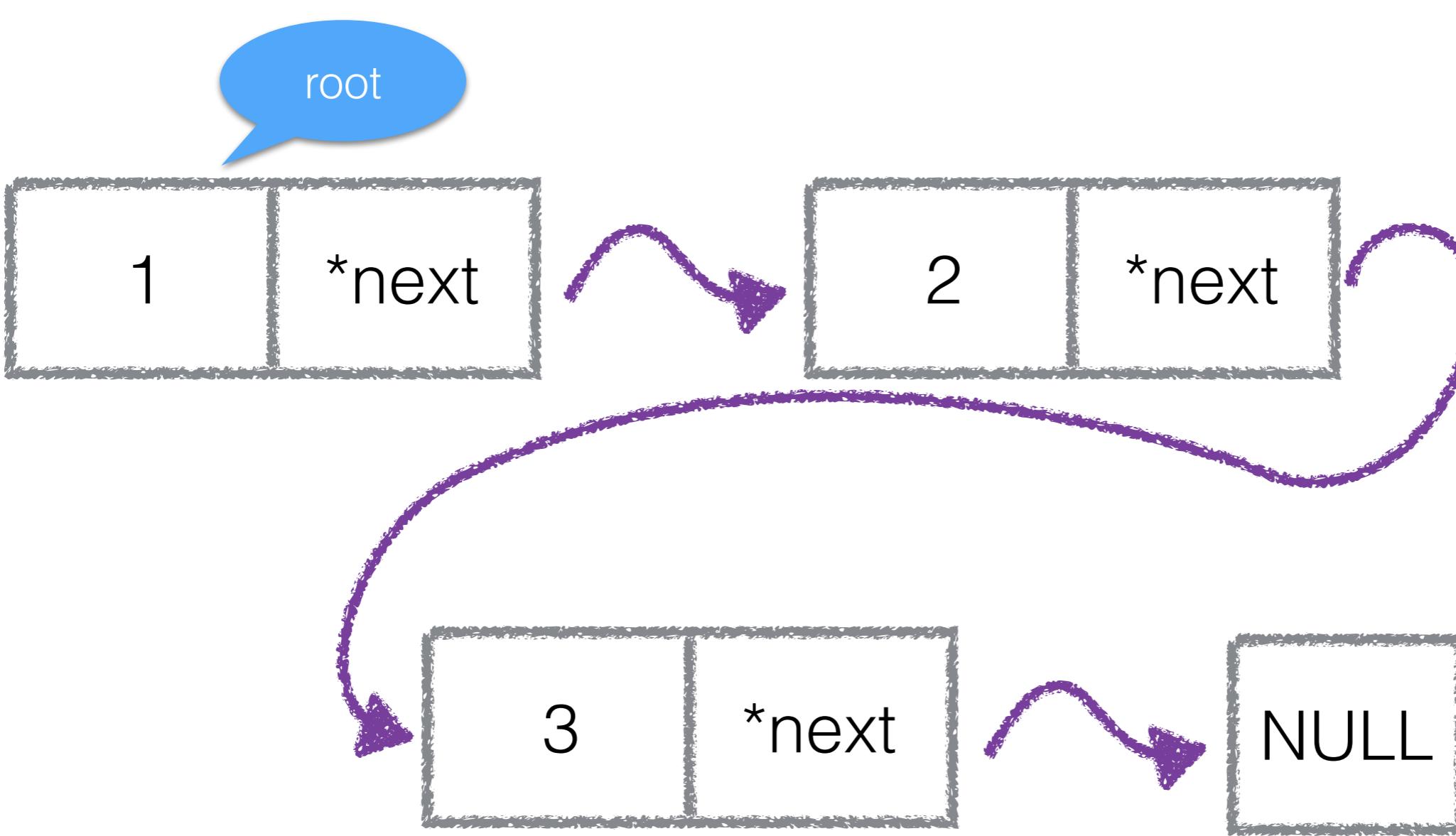


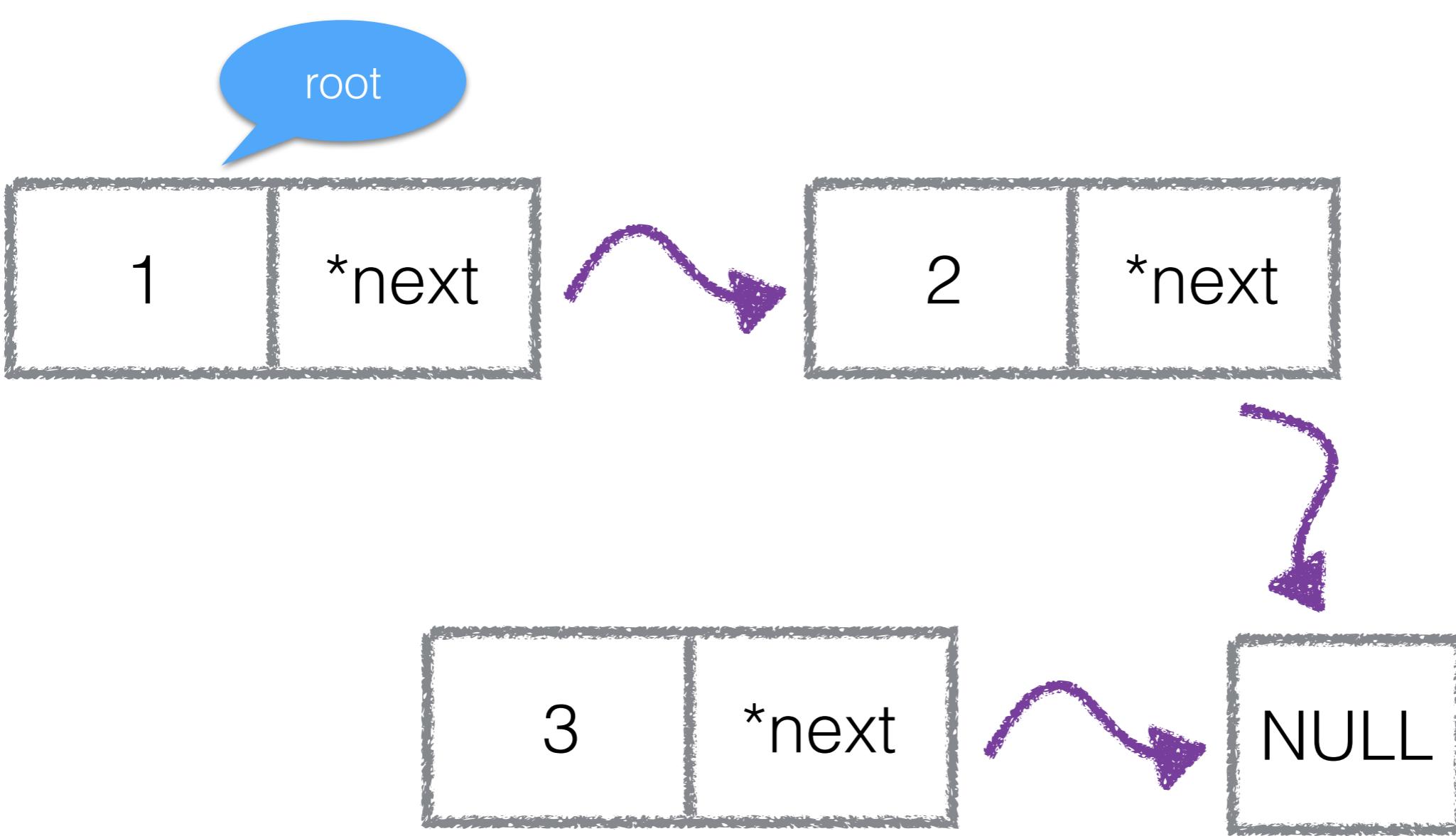


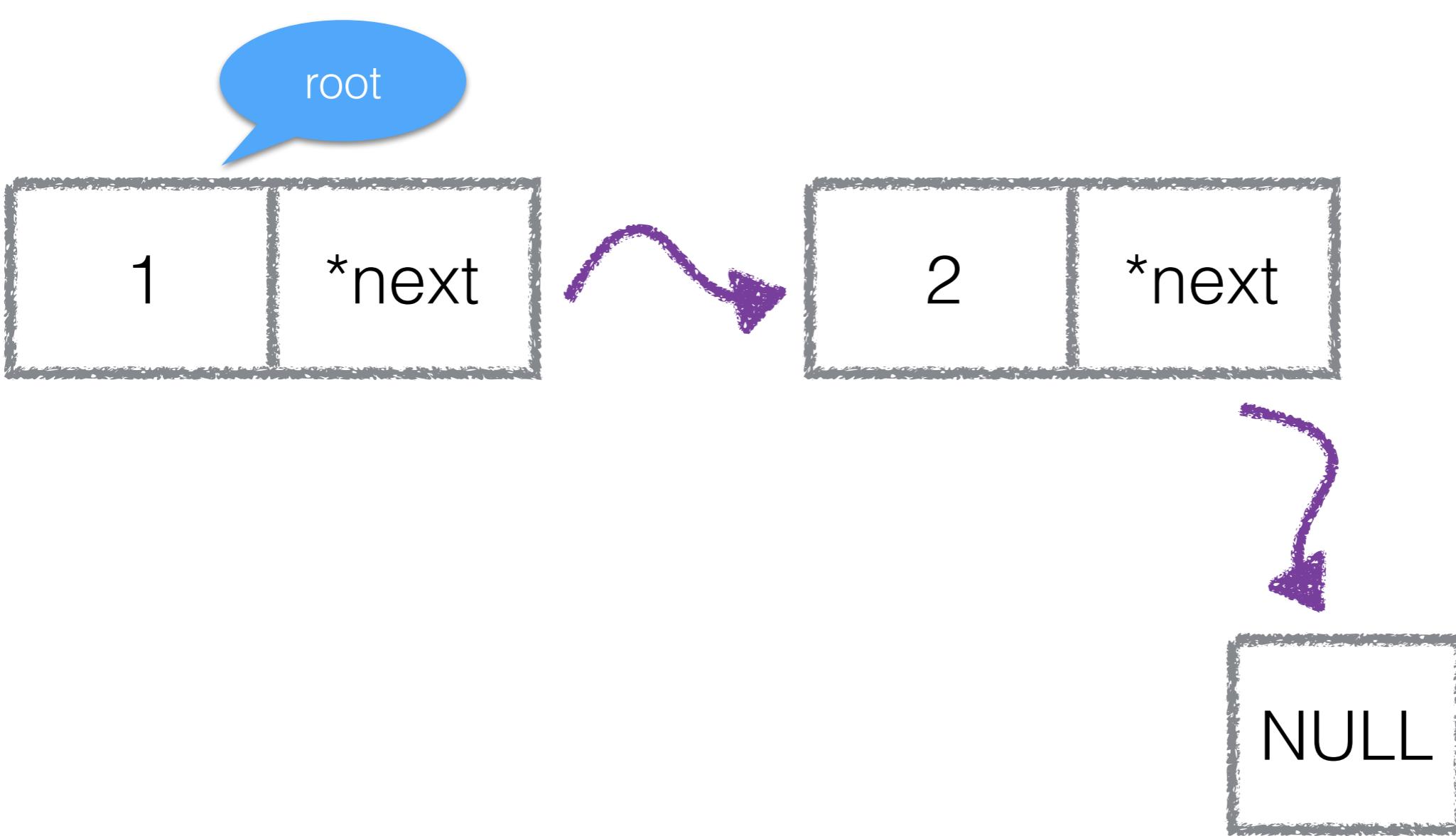
root

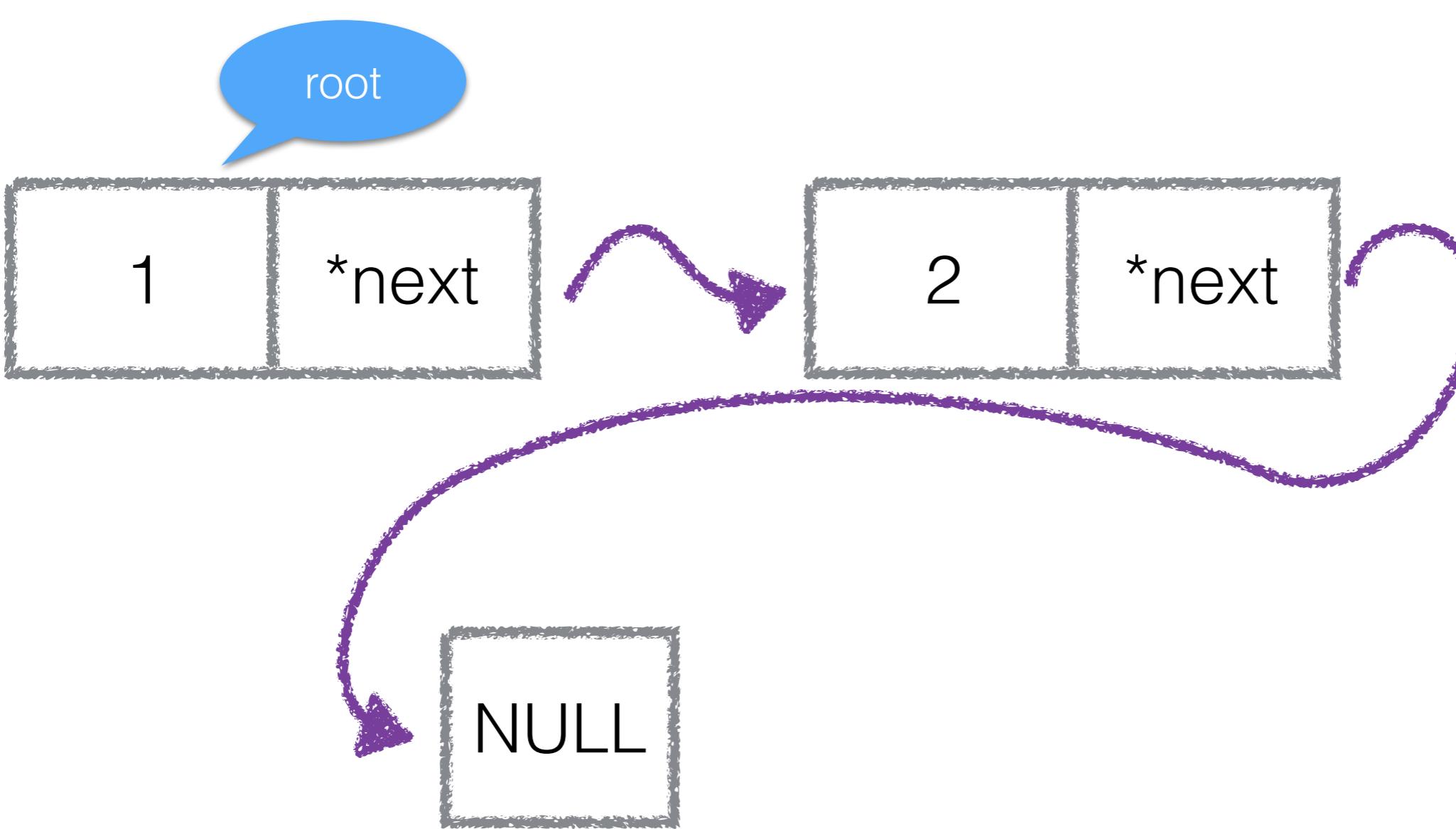


Delete node(back)

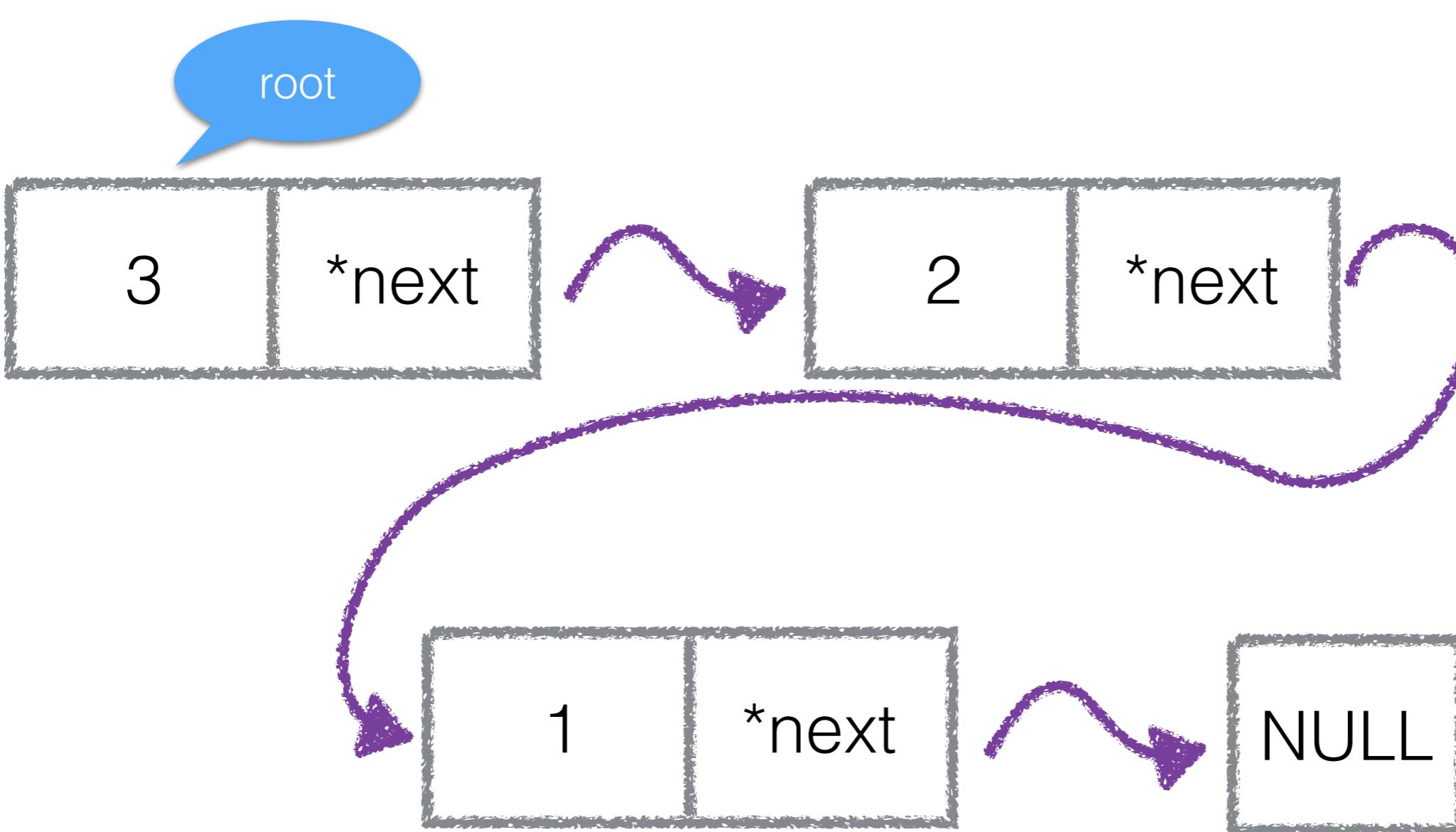


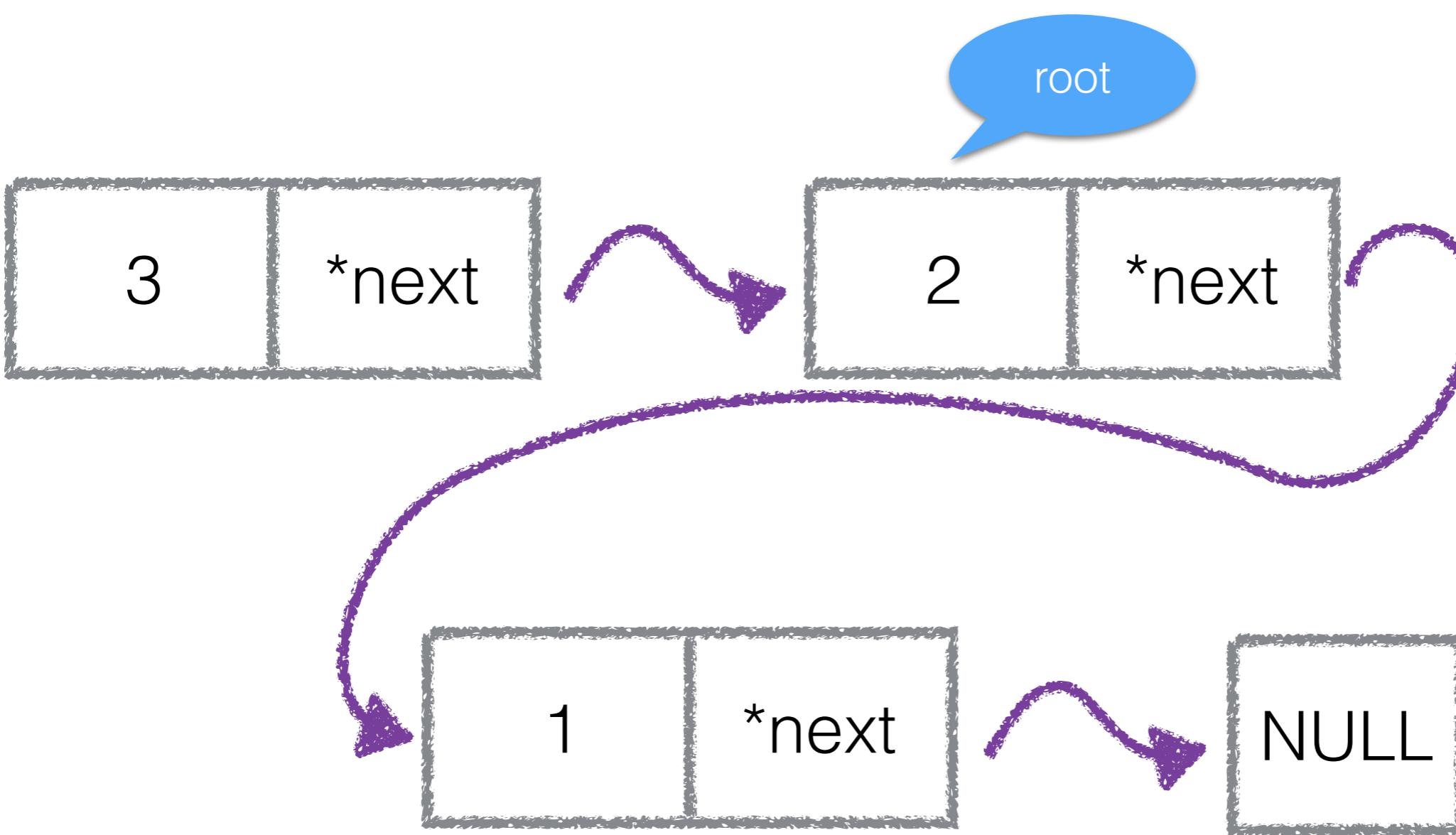


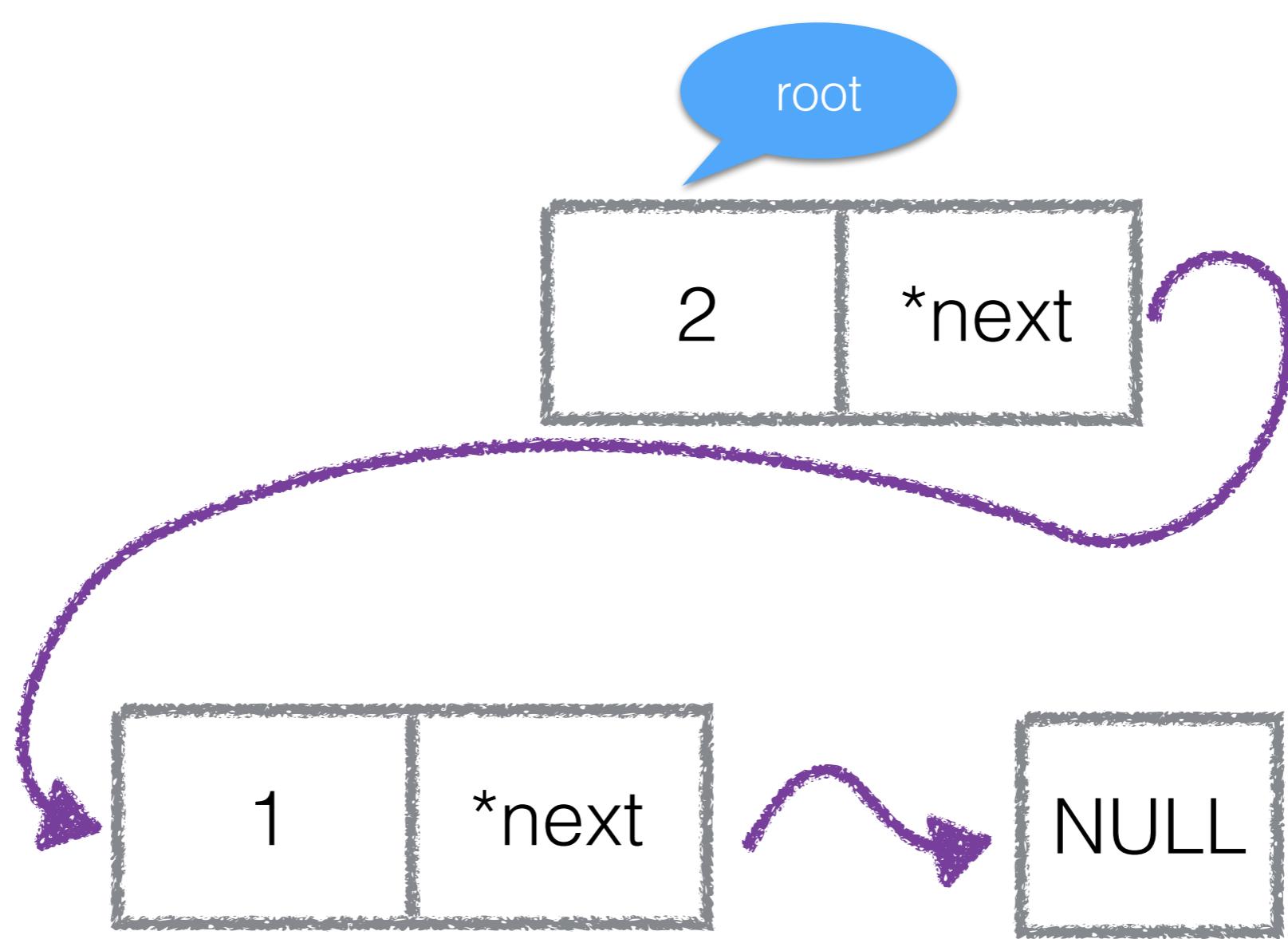




Delete node(front)

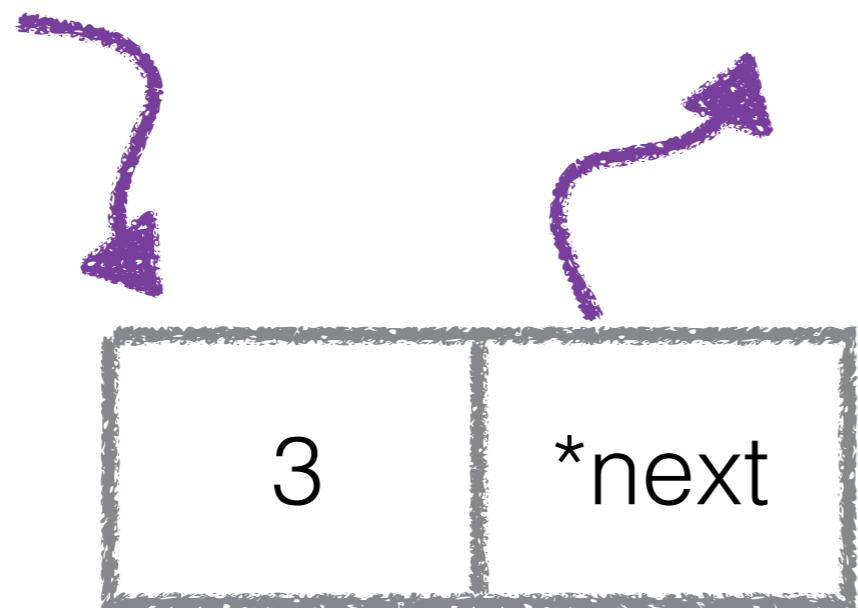
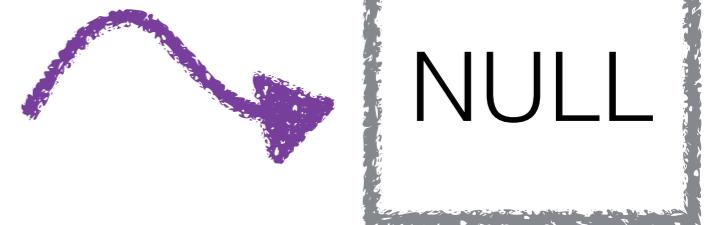
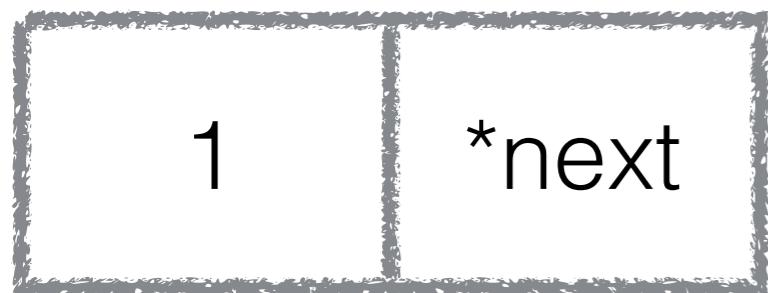


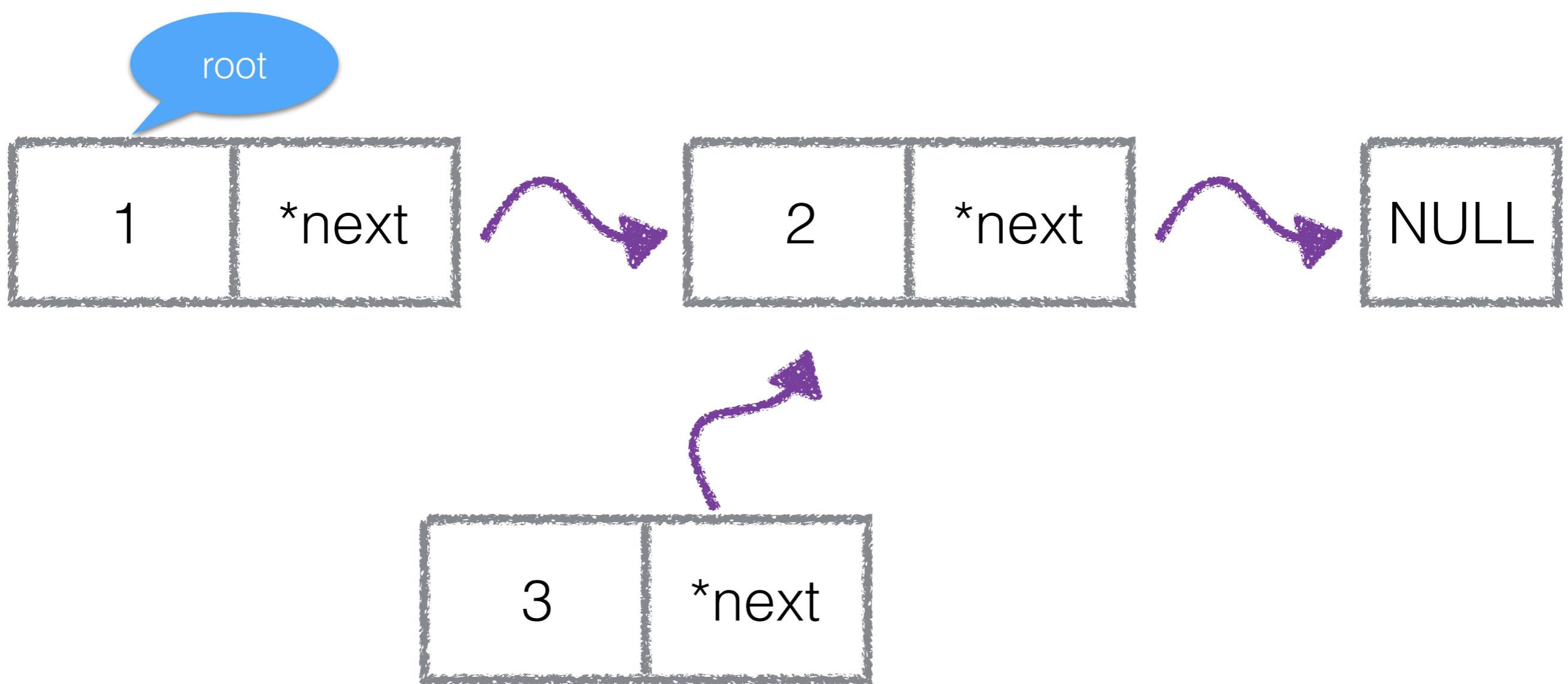




Delete node(mid)

root





root

