

# **comp1511 week 08**

# **admin**

- **assignment 2** has been released!

# agenda for today

- malloc revision
- diagramming linked lists
- inserting into linked lists
- assignment 2 walkthrough

# **malloc revision**

what does malloc do?

what are the inputs?

what are the outputs?

# malloc a struct

how do we malloc a struct node?

how do we initialise the fields?

can we turn this into a function?

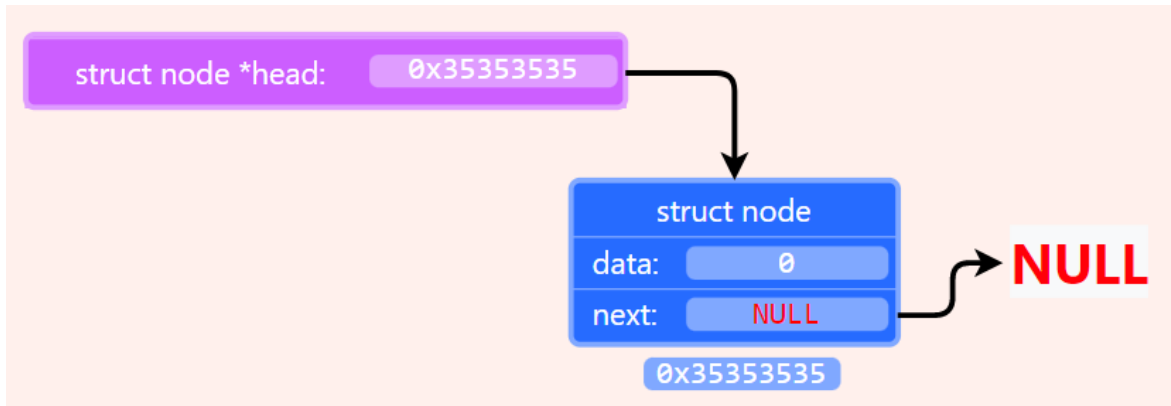
```
struct node {  
    int data;  
    struct node *next;  
};
```

# **demo time!**

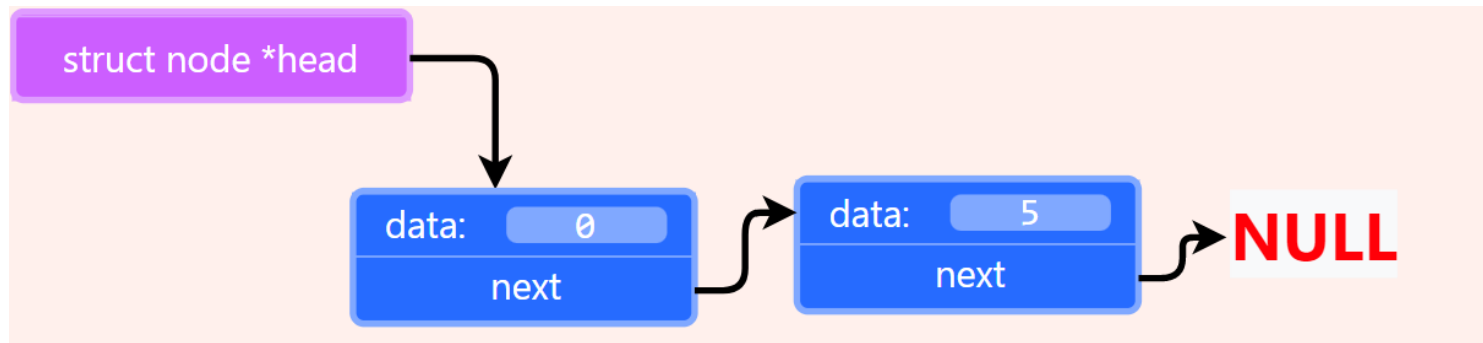
5 volunteers please!

so, what's the point of linked lists?

# linked lists



# adding nodes to linked lists



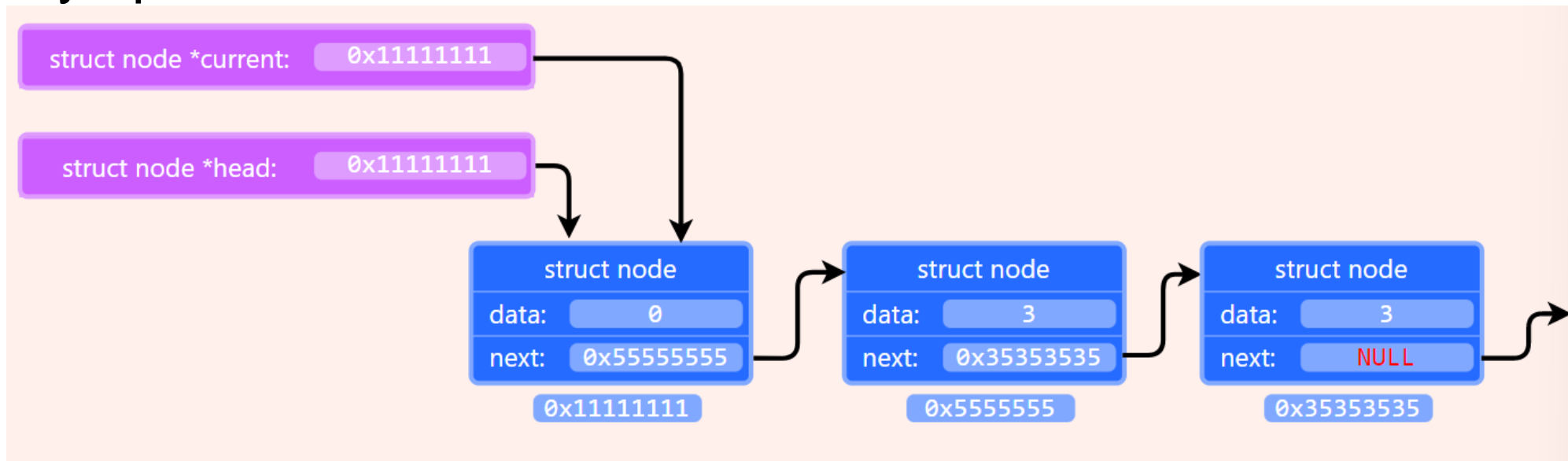


# iterating through a linked list?

how do we iterate through a linked list?

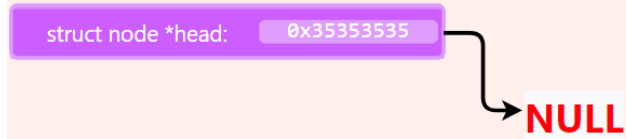
how do we stop one before the end of the linked list?

any special cases to consider?

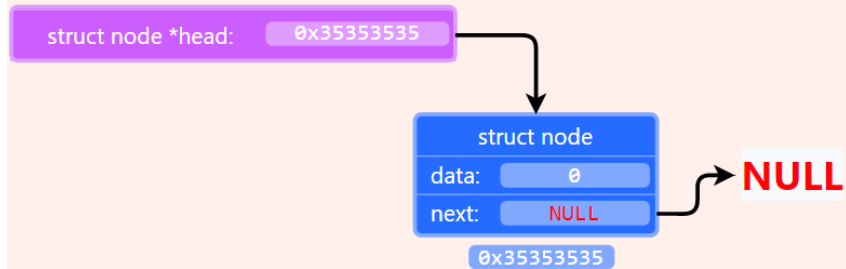


# cases to consider

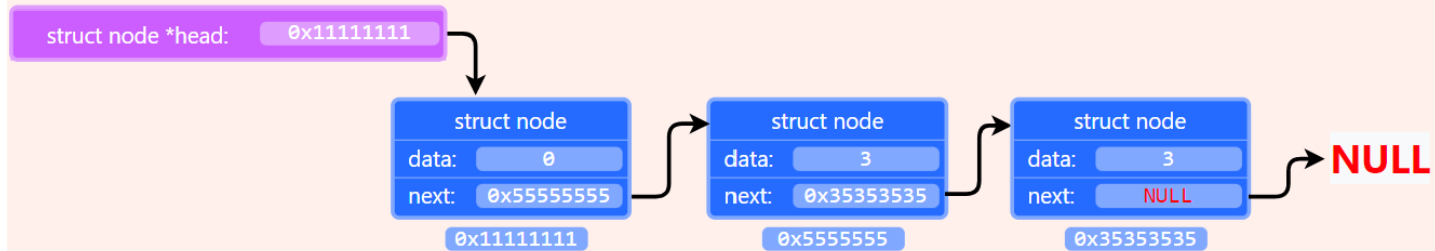
1. An empty list:



2. A list of length 1:



3. A longer list:



# inserting into a linked list

given a linked list, how can we write a function to:

1. adding to the head of a list
2. adding to the end of a list
3. adding in the middle of a list

**any questions?**