

Linked Lists

Why we need linked lists?,?

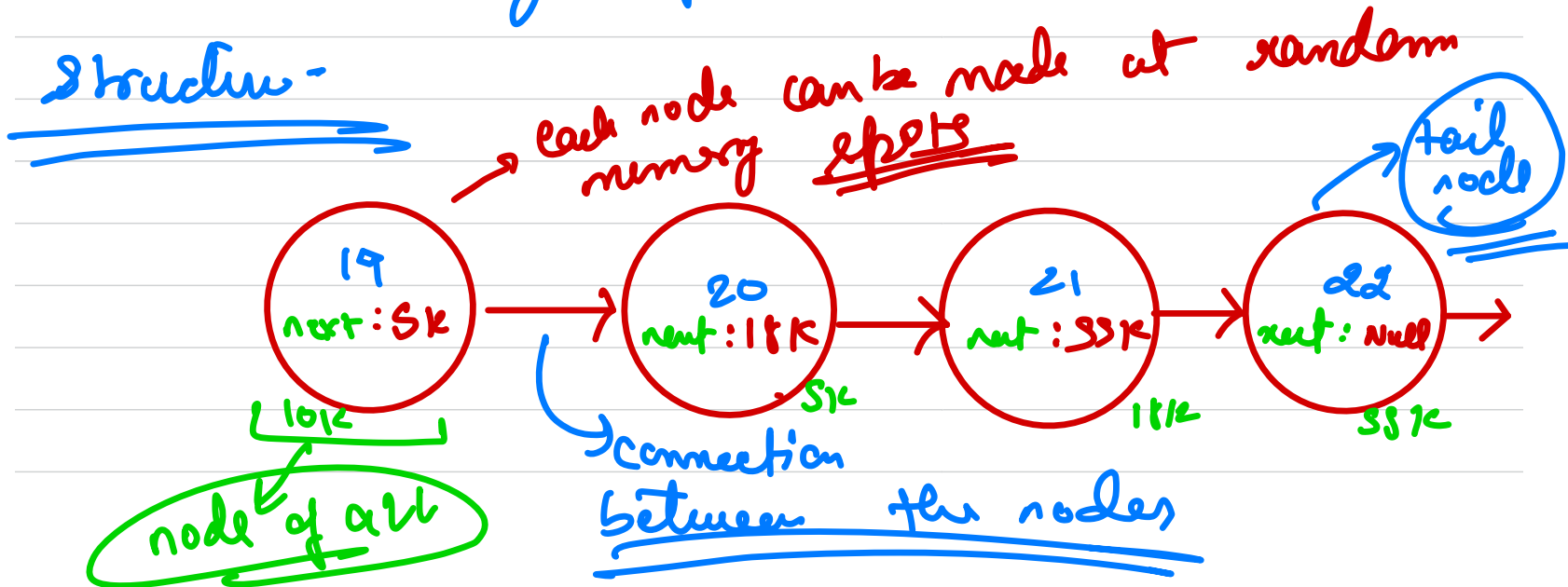
Problem with arrays:

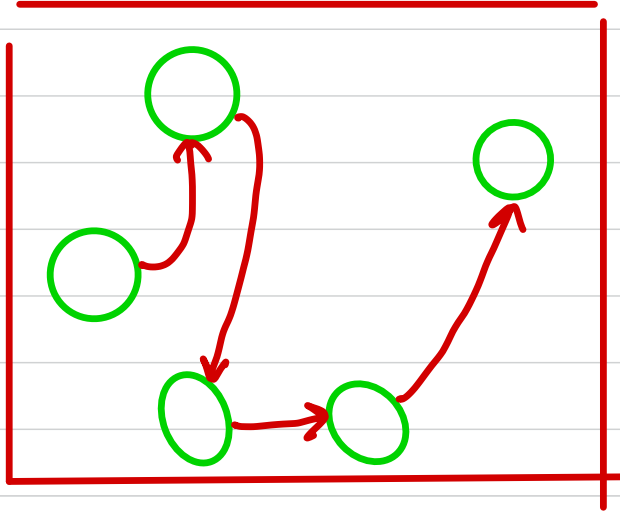
① It always takes contiguous cross-section of memory.

② Difficult to resize arrays.

What are linked lists?

LL is a linear data structure, which utilizes random memory spots to create the whole structure -





node

data :

next :

Pointer to a node

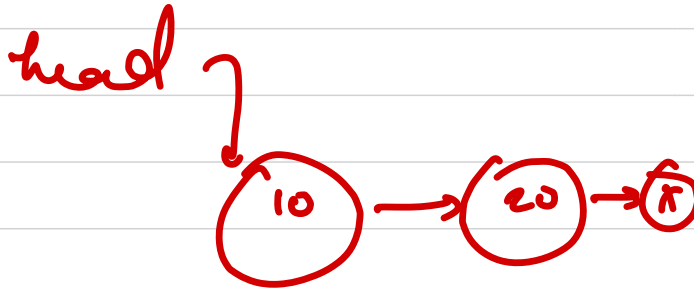
Initially

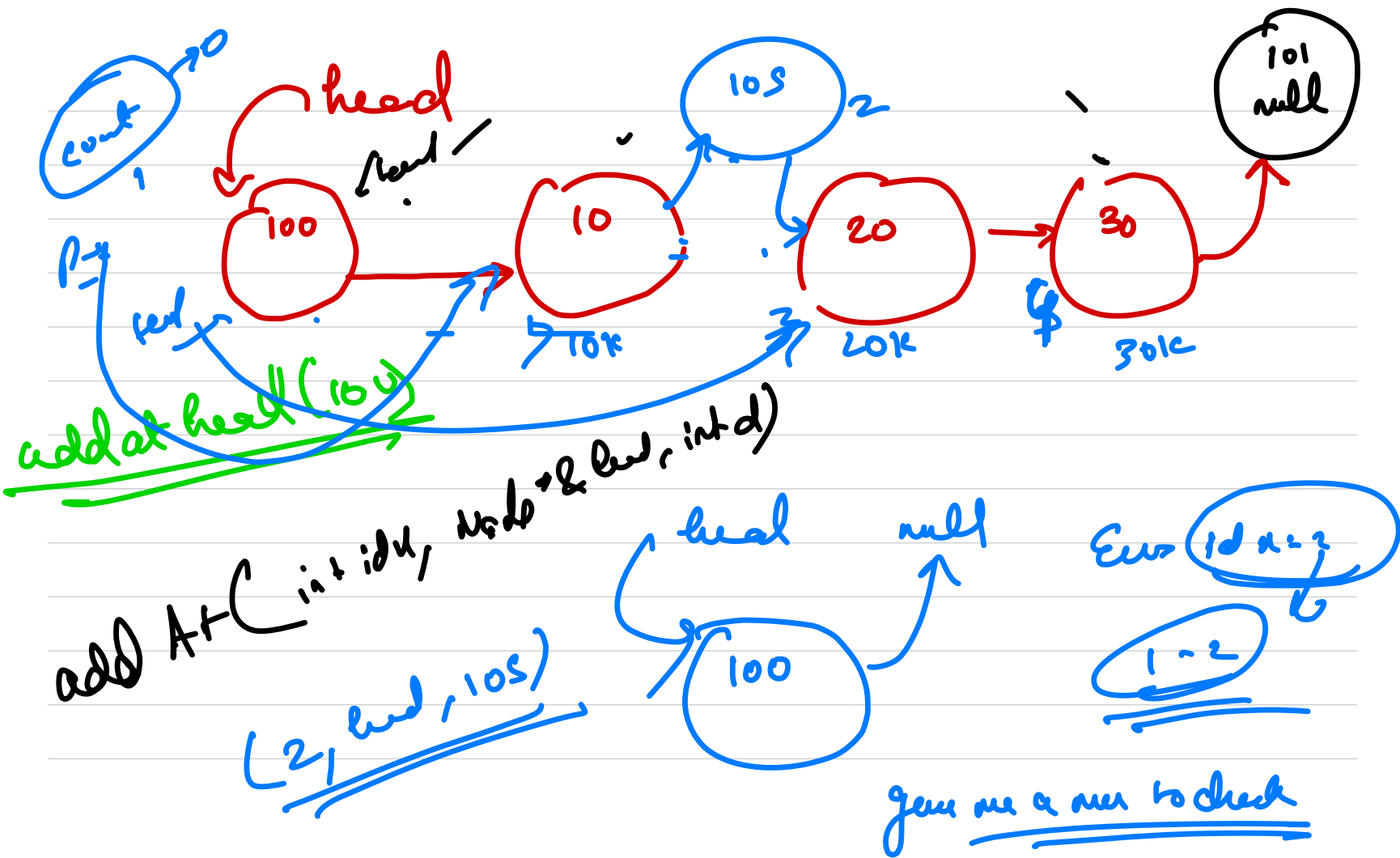
head \rightarrow null

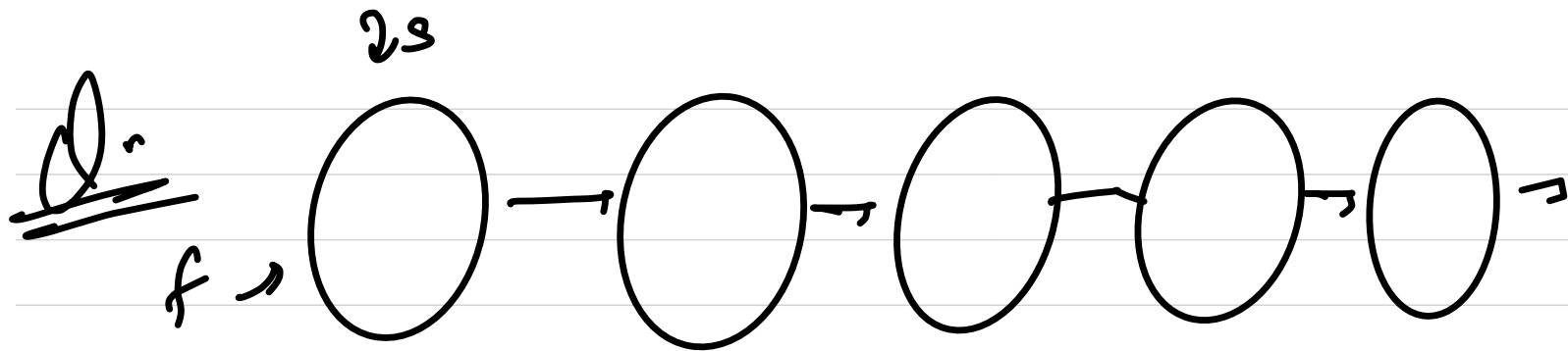


add at head

$n \rightarrow \text{next} = \text{head}$
 $\text{head} = n$







given all, return the middle node, u

do it in single traversal.

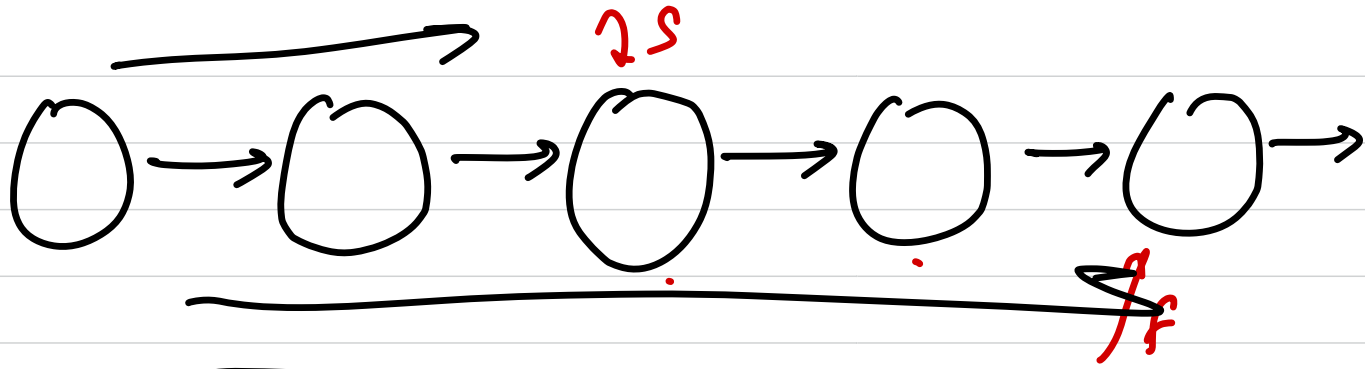
$$v_1 = 2v_2$$

$$\frac{d_1}{d_2} = \frac{v_1}{v_2} \Rightarrow \frac{2\cancel{v_2}}{\cancel{v_2}}$$

$$\frac{d_1 = v_1/t}{d_2 = v_2/t}$$

$$d_1 = v_1/t$$

$$\boxed{d_1 = 2d_2}$$



have/ tortoise