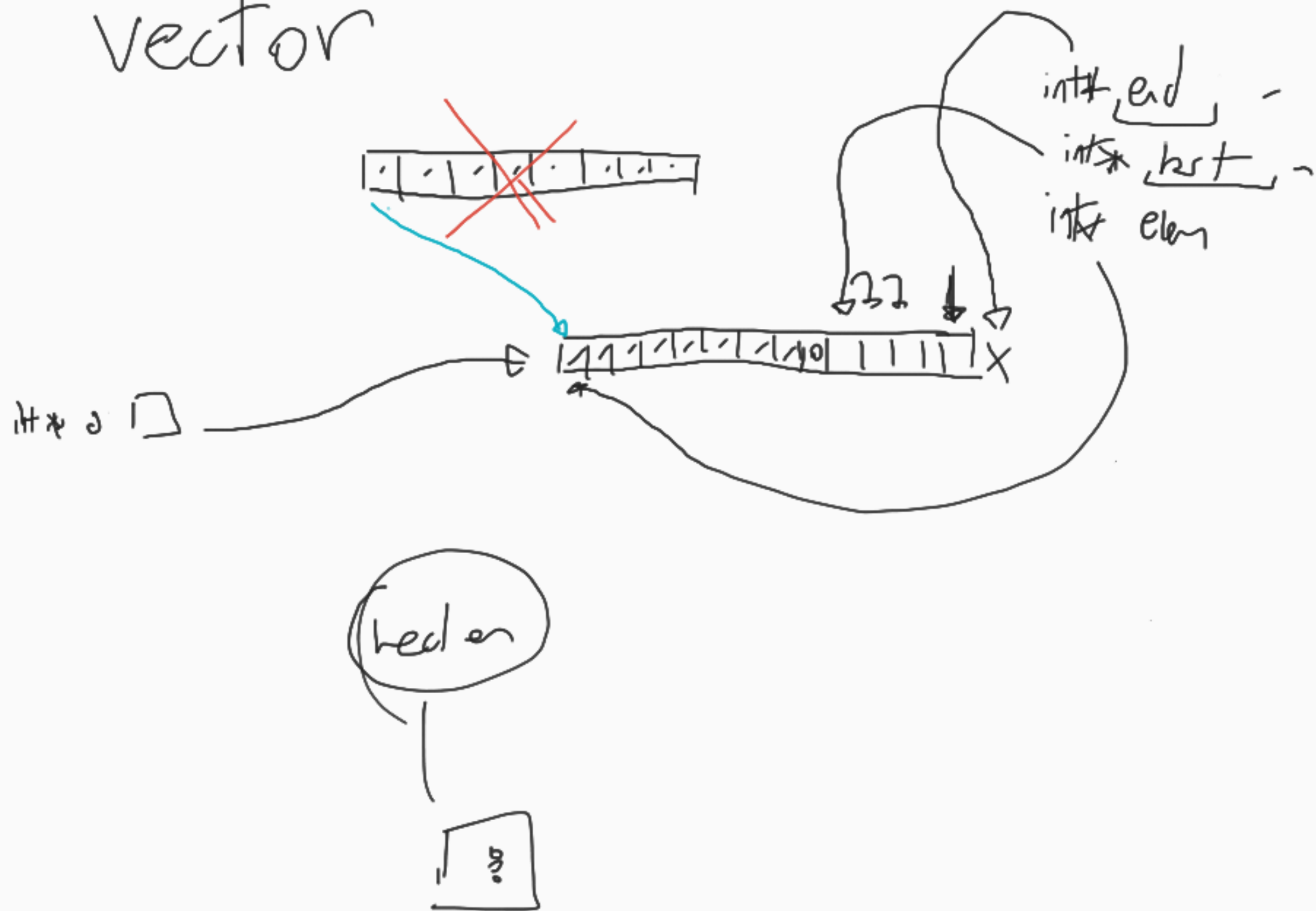
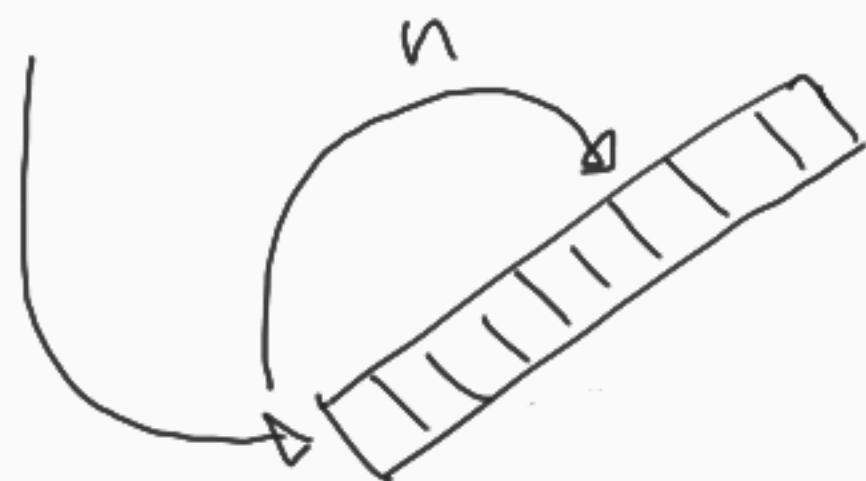


vector



vector

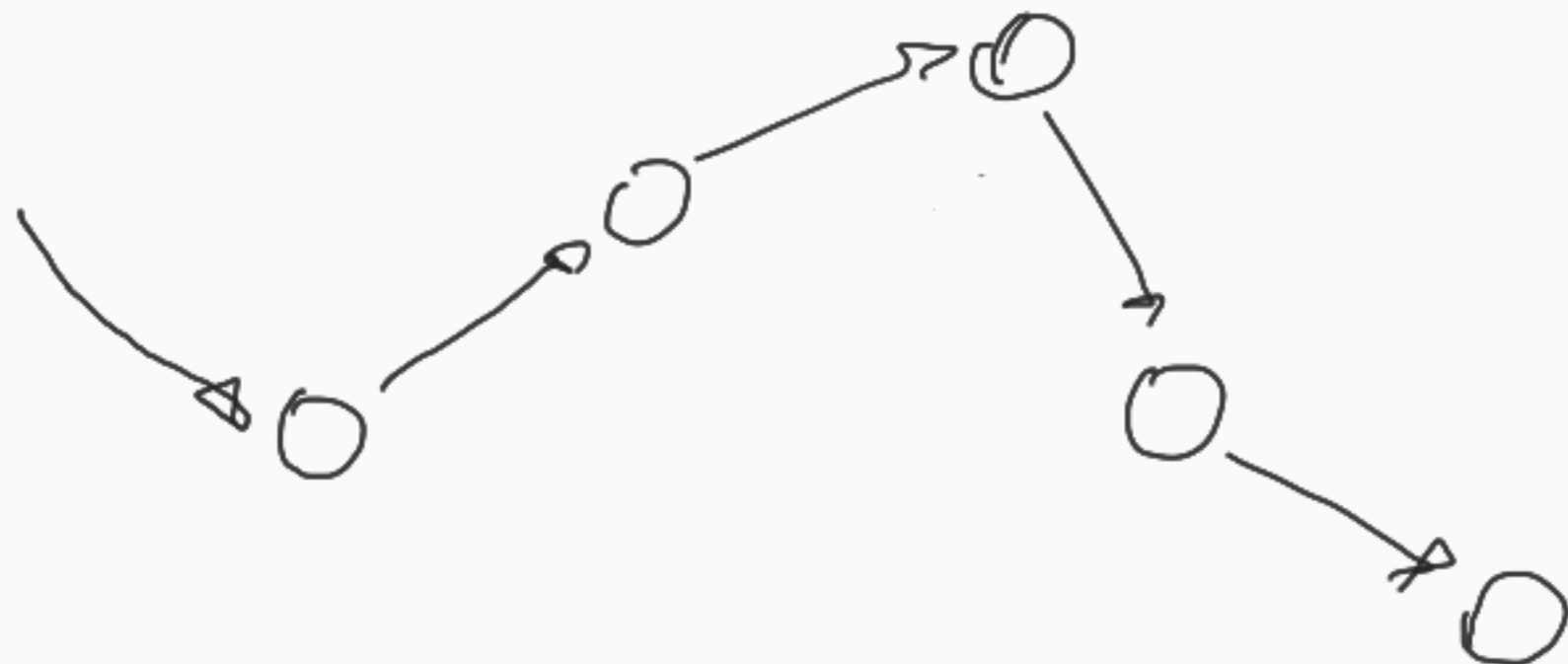


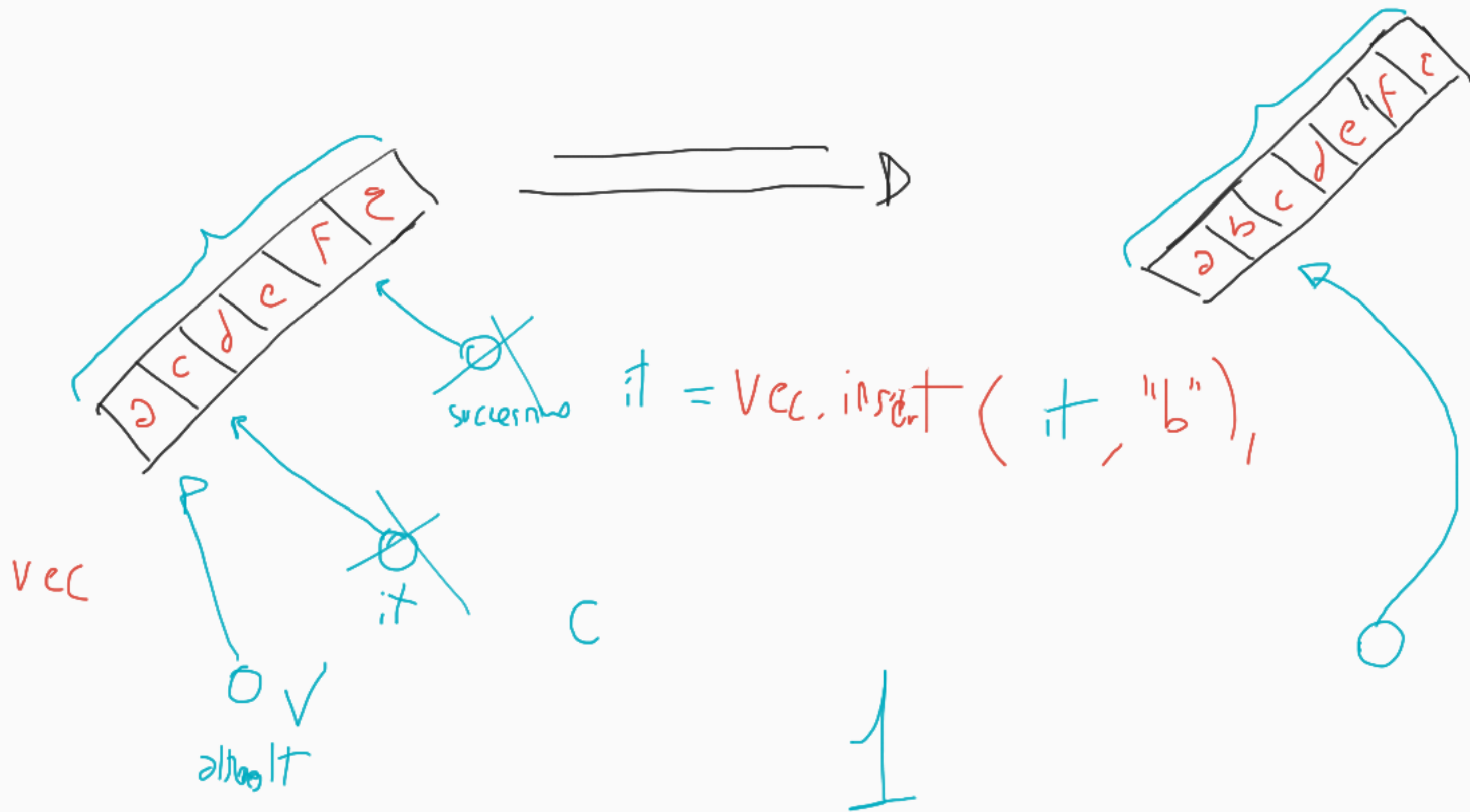
$O[n]$

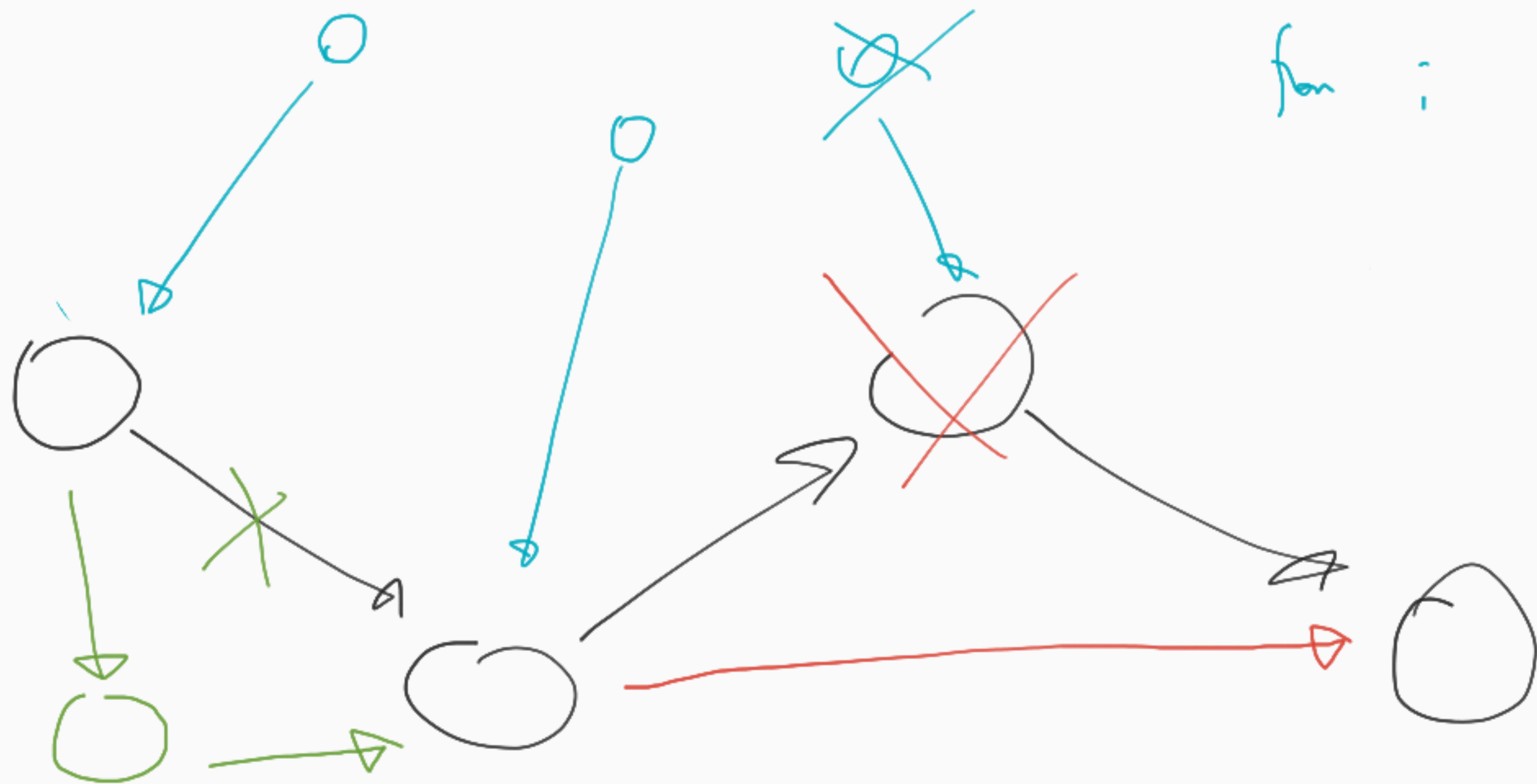


list

list



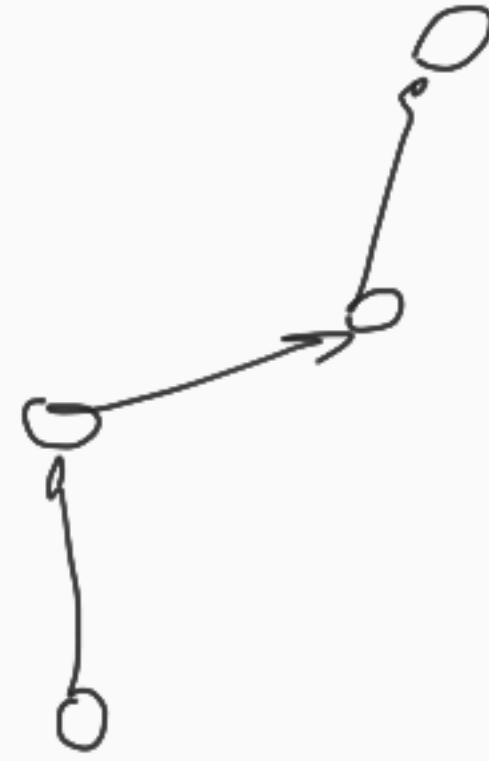
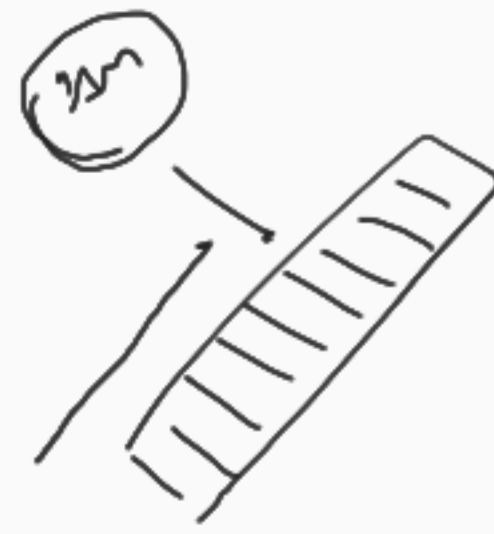




han :

0

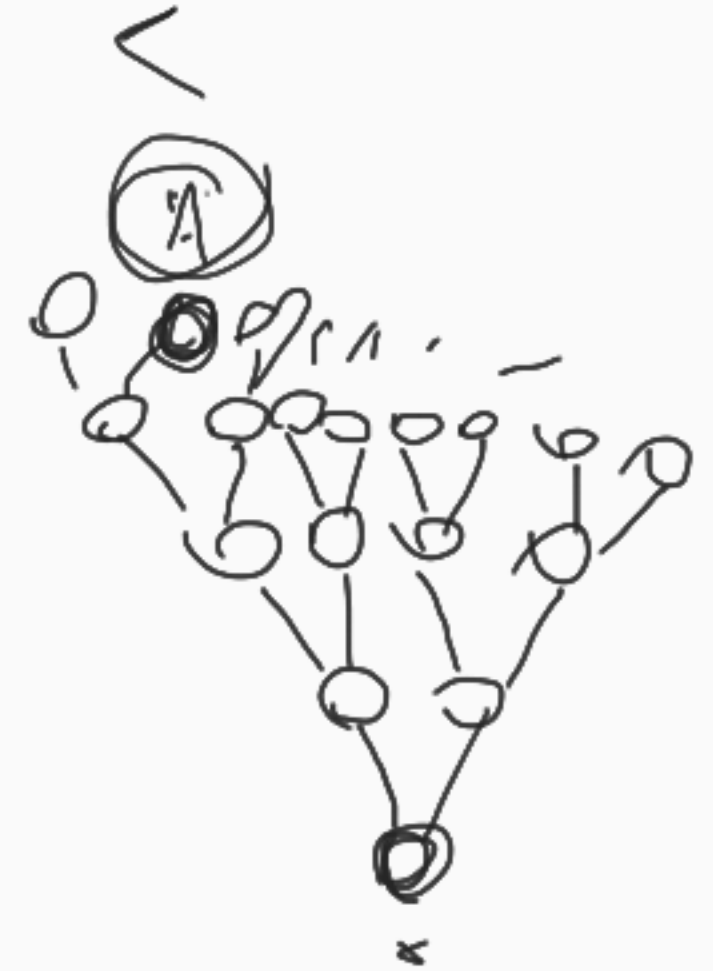
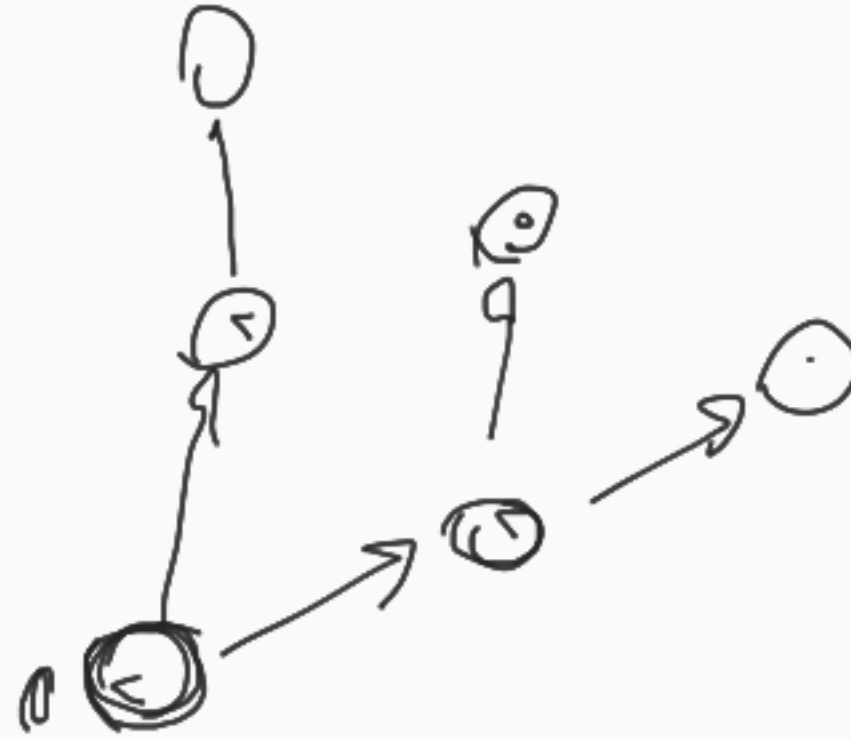
KEY		VALUE
string		int
"A"	→	7
"B"	→	3

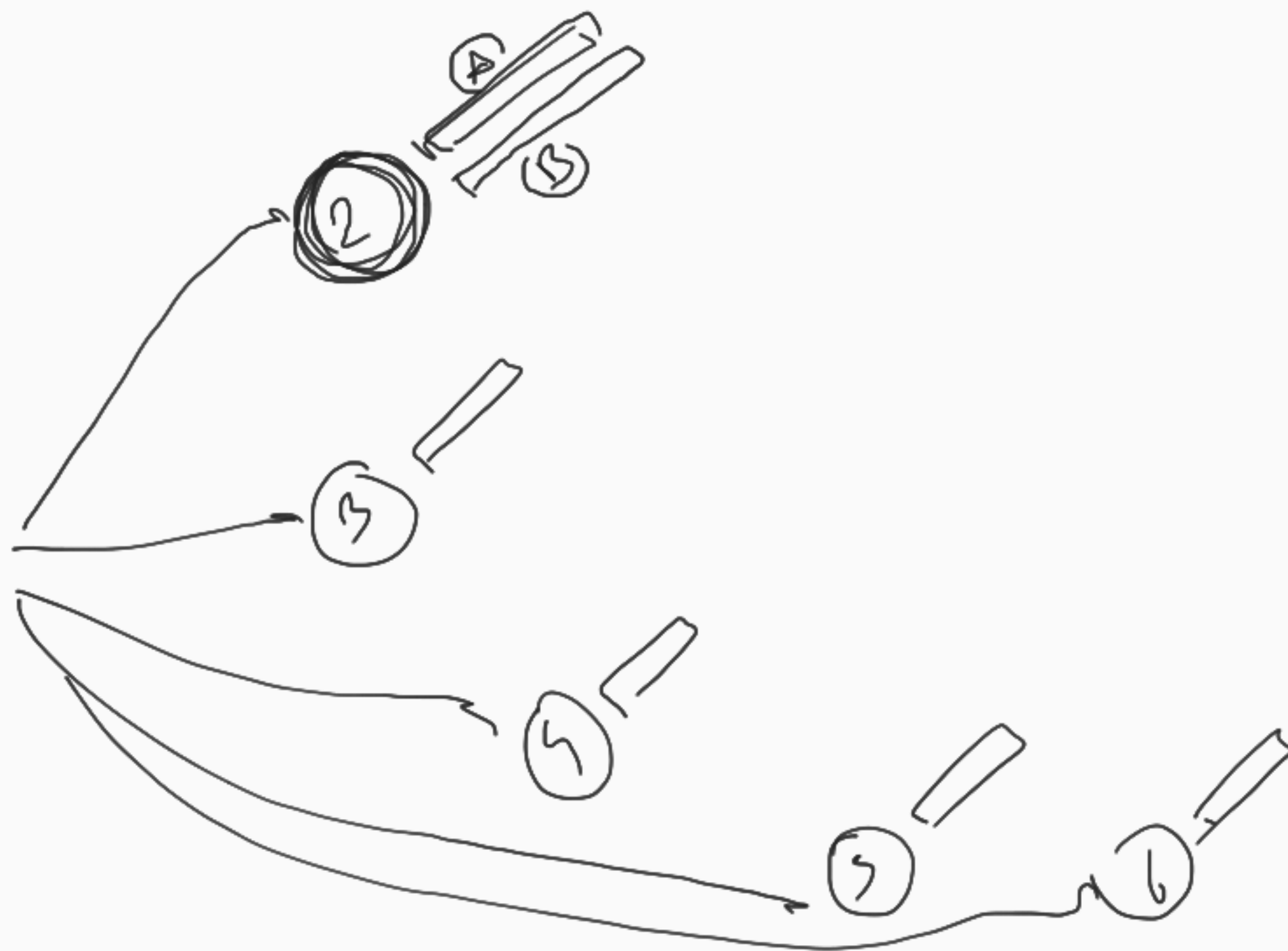
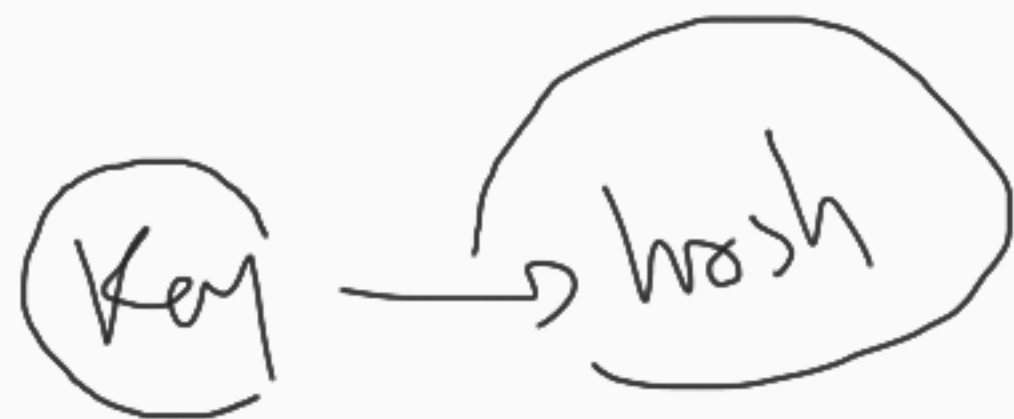


unordered map



map





11010001101101

101
101

<< 1

>> 1

byte
10110011011011
bit

→ ~~0~~

→ 1

0 1 2 3 4 5 6 7 8 9

1 1

0

$$1 = 1 \times 10^0$$

9

$$10 = 1 \times 10^1$$

11

19

$$20 = 2 \times 10^2$$

99

$$100 = 1 \times 10^3$$

$$1989 = 1 \times 10^3 + 9 \times 10^2 + 8 \times 10^1 + 9 \times 10^0$$

0 1

8 6 3 2 6 4 2 1 0 = 0

$$1 = 1 = 1 \times 2^0$$

$$10 = 2 = 1 \times 2^1$$

$$11 = 3$$

$$100 = 7 = 1 \times 2^2$$

$$101 = 5$$

$$110 = 6$$

$$111 = 7$$

$$1000 = 8 = 1 \times 2^3$$

$$2 \Rightarrow 0010$$

$$2 \gg 1 \Rightarrow 0001$$

$$2 \ll 1 \Rightarrow 0100$$

$$\begin{array}{cccc} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \\ \hline 1 & 1 & 0 & 0 \end{array}$$

XOR
↙
exclusive-OR

$$\begin{array}{cccc} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \\ \hline 0 & 0 & 1 & 0 \end{array}$$

& AND

$$\begin{array}{cccc} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \\ \hline 1 & 1 & 1 & 0 \end{array}$$

| OR