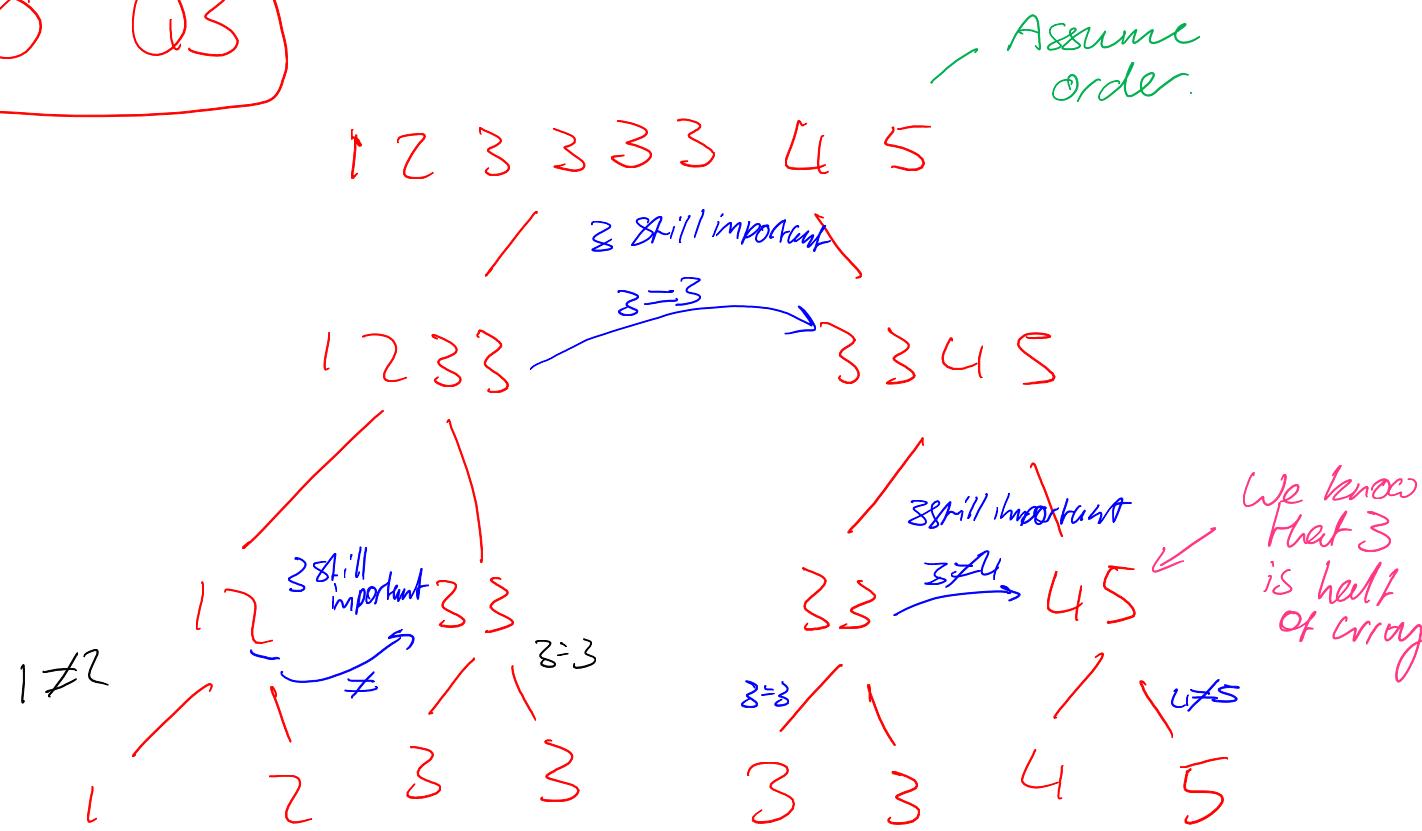


Command factory

FreeCell



250 Q3)



\* This only works with an ordered list.

\* Should only go through each array once

\* Only allowed equality

? Array length  $\Rightarrow \frac{N}{2}$ ?

$$n^2 = 10^2 = 100$$

Steps in play

$$\text{My algorithm} = 25 + 6 + 6$$

$$+ 1 + 1 + 1 + 1 + 2 + 2 + 1$$

$$+ 1$$

$$= 67$$

$$\frac{n=5}{4 \rightarrow 2 \\ 4 \rightarrow 3 \\ 1 \rightarrow 2 \\ 1 \rightarrow 3 \\ 1 \rightarrow 2 \\ 1 \rightarrow 3} \left. \begin{array}{l} \log_2(10) \cdot 10 \leq 32 \end{array} \right\}$$

Superior

Wins :?

Dominant

$$\approx O(n) ? 6$$

4 1 1 2 3 4 4 4 1 4 3

4

4 1 1 2 3

$\neq$

4 1 1

2 3

4 4 4 4 3

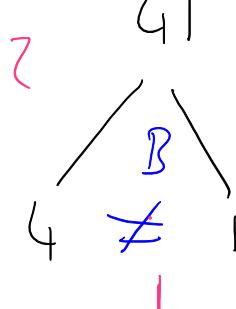
4

4 3

$$n=3$$

$$4 \rightarrow 1 \\ 1 \rightarrow 1$$

$$O(n)$$



'Superior'

Superior



$$\frac{n=3}{4 \rightarrow 4 \\ 4 \rightarrow 4} \approx 7$$

Compare,

B both dominant.

Unless new most significant found,  
Superior wins.

$$\frac{n=10}{4 \rightarrow 4 \\ 4 \rightarrow 4 \\ 4 \rightarrow 4 \\ 4 \rightarrow 4 \\ 4 \rightarrow 3 \\ 1 \rightarrow 3 \\ 1 \rightarrow 4 \\ 1 \rightarrow 4 \\ 2 \rightarrow 4 \\ 2 \rightarrow 4 \\ 2 \rightarrow 4 \\ 1 \rightarrow 3} \left. \begin{array}{l} 3 \rightarrow 4 \\ 3 \rightarrow 4 \\ 3 \rightarrow 4 \\ 3 \rightarrow 4 \\ 3 \rightarrow 3 \end{array} \right\}$$

$$25 \\ 18 \\ 18$$

This  
is  
linear?

4 Wins

$$n=5$$

$$4 \rightarrow 4$$

$$4 \rightarrow 3$$

$$4 \rightarrow 4$$

$$4 \rightarrow 3$$

25  
18  
This  
is  
linear?

4 Wins

frequency of the important unique element may be  $\geq 10/n$   
We can only use equals.

This is

task 4

No restrictions  
is my assumption

4 1 1 2 3 4 4 4 1 4 3

Potentially  
 $n$  times  
each (compared  
with  $\sqrt{n}$ )

4: 1+1+1+1+1  
1: 2+1  
2: 1  
3: 1+1

$\rightarrow n$  through array

$\downarrow$  Potentially  $n$  comparisons

$$\therefore n+n=2n=O(n)$$





