

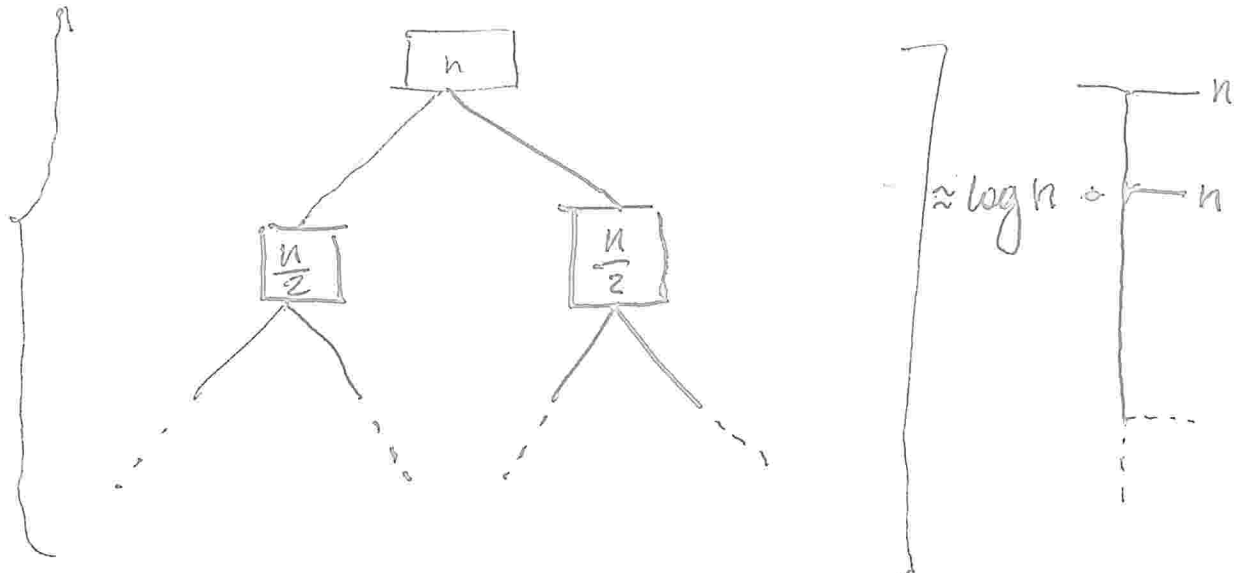
# CSCI48: SORTING II

20161925

A2 TIP

USE OS.LISTBOX, STORE THE OUTPUT  
AND DO NOT REORDER IT.

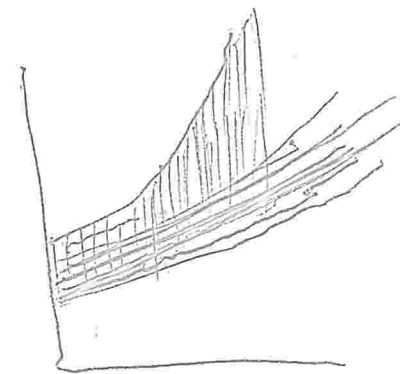
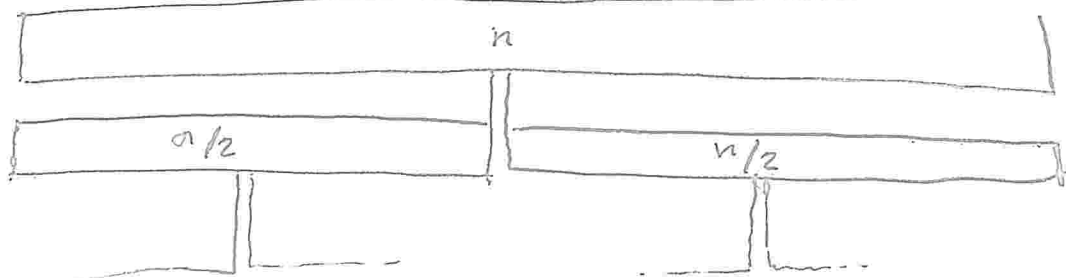
SLICING  
IS LINEAR.



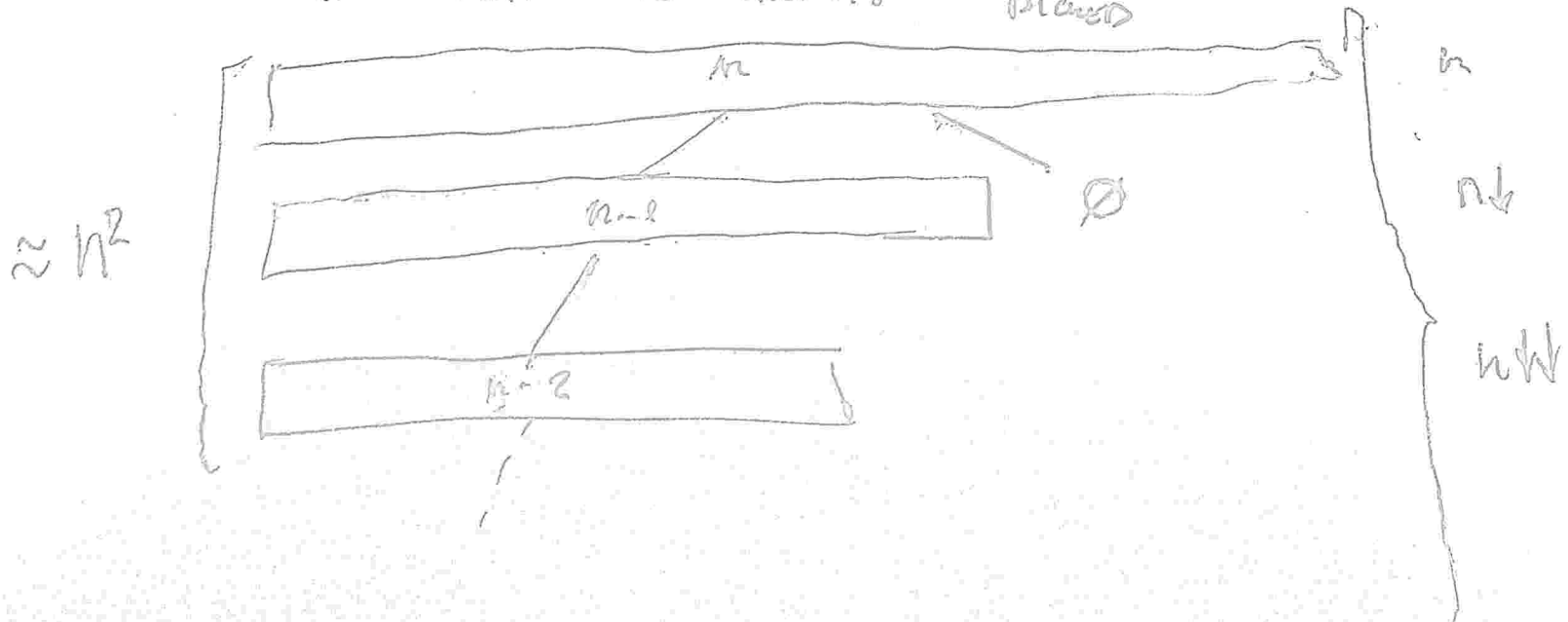
$$O(n \log(n))$$

## QUICKSORT

PICK THE MEDIAN THEN  $O(n \log n)$



IF MAX IS ALWAYS PICKED



## RECURSION WRAP UP

→ RECURSIVE DESIGN RECIPE:

- IDENTIFY THE RECURSIVE STRUCTURE

- ASSUME RECURSIVE CASES ARE CORRECT

... AS LONG AS THE CALLS ARE ON SMALLER INPUTS

: SMALLER  $\approx$  CLOSER TO THE BASE CASE

→ STRUCTURAL AND NON-STRUCTURAL RECURSION

• THINK ABOUT HOW TO IMPOSE A RECURSIVE STRUCTURE

→ LOCAL VARIABLES VS EXTRA