CSC148: 20161121

SORTING

- SELECTION SORT

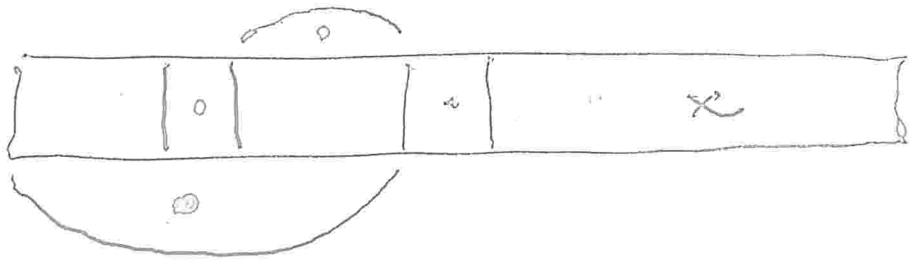
BUILD UP SORTED PART BY FINDING THE MAXIMUM ITEM IN THE UNSORTED PART

- INSERTION SORT

BUILD UP SORTED PART BY INSERTING THE ITEMS IN THE UNSORTED PART ONE BY ONE

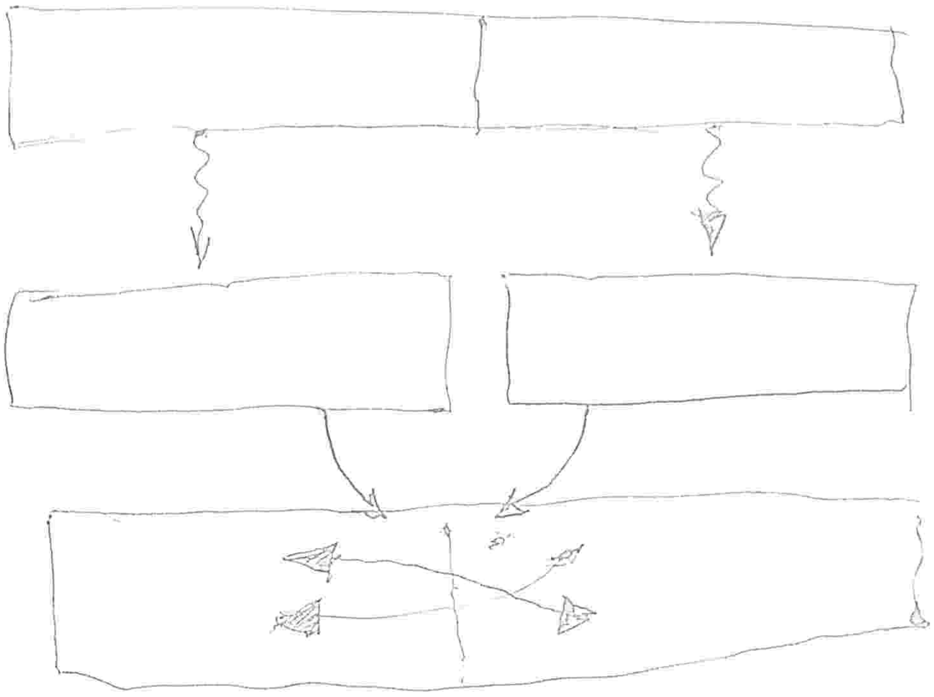
RECURSIVE SORTING ALGORITHMS

- RECURSIVE BINARY SEARCH



- DIVIDE LIST INTO TWO PARTS
- SORT EACH PART (RECURSIVELY)
- COMBINE THE PARTS.

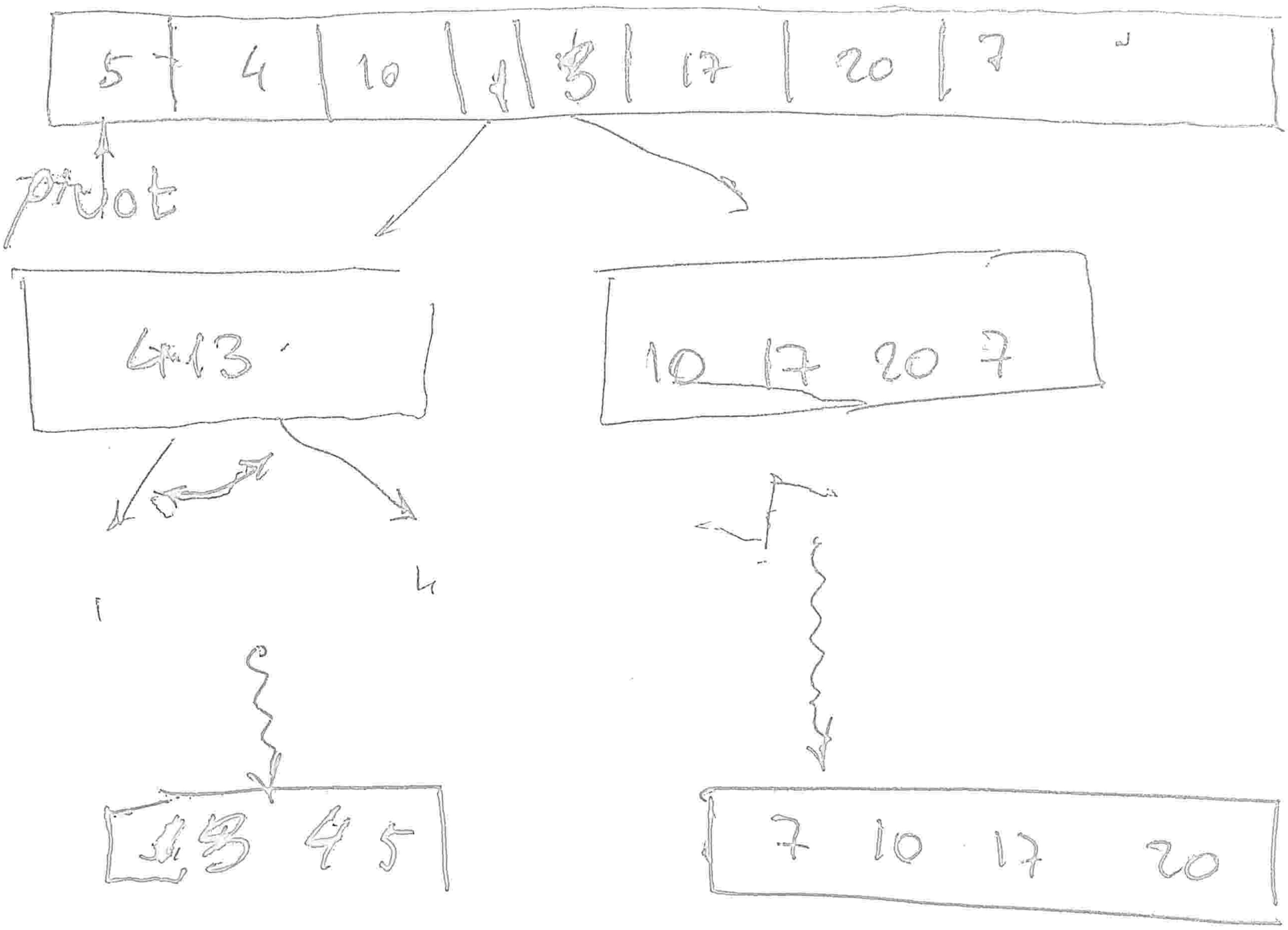
MERGESORT



DIVIDE, RECURSE AND MERGE,

```
ELSE:
DEF    MERGESORT ( LST):
→ MID  = LEN( LST)//2
    →  LEFT_HALF = LST[:mid]
    →  RIGHT_HALF= LST[MID:]
    →  SORTED_LEFT = MERSORT ( LEFT_HALF)
    →  SORTED_RIGHT = MERGESORT(RIGHT_HALF)
    →  RETURN  MERGE (SORTED_LEFT , SORTED_RIGHT)
  IF     LEN(LST)==0:
         RETURN []
  ELIF   LEN (LST)==1:
         RETURN [LST[0]]
```

QUICKSORT


5
4
10
1
3
17
20
7
pivot
4 1 3
10 17 20 7
1
4
1 3 4 5
7 10 17 20