

Ordenamientos

① Bubble Sort

arr: 6 5 3 1 8 7 2 4

i) comparamos los elementos 1 a 1 y si el de la izquierda es mayor que la derecha, cambiamos

$6 > 5?$

5 6 3 1 8 7 2 4

$6 > 3?$

5 3 6 1 8 7 2 4

$6 > 1?$

5 3 1 6 8 7 2 4

$6 > 8?$

5 3 1 6 8 7 2 4

$7 > 8?$

5 3 1 6 7 8 2 4

°

°

°

5 3 1 6 7 2 4 8

ii) Repetimos lo mismo

$5 > 3$

3 5 1 6 7 2 4 8

°

°

°

3 1 5 6 2 4 7 8

iii) como aun no están ordenados repetimos

$3 > 1$

1 3 5 6 2 4 7 8

°

°

°

1 3 5 2 4 6 7 8

iv) Repetimos

1 2 3 4 5 6 7 8

② **Select sort**: escogemos el menor y lo intercambiamos por la 1ª, 2da, 3ra posición.

i) 8 5 2 6 9 3 1 4

min = 1

ii) ~~8~~ 5 2 6 9 3 8 4

min = 2

iii) ~~8~~ ~~5~~ 6 9 3 8 4

min = 3

iv) ~~8~~ ~~5~~ ~~6~~ 9 5 8 4

min = 4

v) ~~8~~ ~~5~~ ~~6~~ ~~9~~ 5 8 6

min = 5

vi) ~~8~~ ~~5~~ ~~6~~ ~~9~~ ~~5~~ 9 8 6

min = 6

vii) 1 2 3 4 5 6 8 9 11

③ **Insert sort**: va comparando la posición i con respecto a las anteriores

6 (5) 3 1 8 7 2 4

i = 2

5 6 (3) 1 8 7 2 4

i = 3

5 (3) 6 1 8 7 2 4

i = 3

3 5 6 (1) 8 7 2 4

i = 4

1 3 5 6 (8) 7 2 4

i = 5

1 3 5 6 8 (7) 2 4

i = 6

1 3 5 6 7 8 (2) 4

i = 7

1 2 3 5 6 7 8 (9)

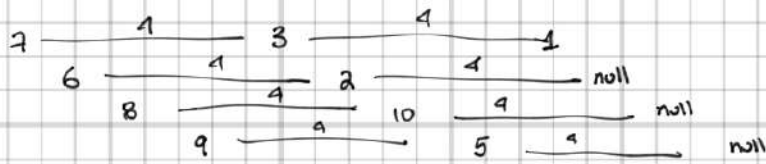
i = 8

1 2 3 4 5 6 7 8

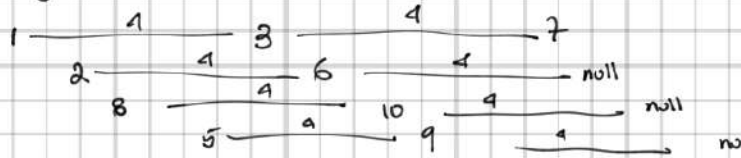
④ Shell sort: variation de insert.

⑦ 6 8 9 ③ 2 10 5 ①
 1 2 3 4 1 2 3 1

$$\text{gap} = \text{A.length} / 2 = 4.5 \approx 4$$



organizamos esos valores



1 2 8 5 3 6 10 9 7

$$\text{gap} = \text{gap} / 2 = 2$$

1 — 8 — 3 — 10 — 7
 2 — 5 — 6 — 9

1 2 3 5 7 6 8 9 10
 1 2 3 5 7 6 8 9 10
 $\text{gap} = \text{gap} / 2 = 1$

1 2 3 5 6 7 8 9 10

⑤ Radix sort

325 418 128 56 1465

contenedores

0	i	ii	56	325	418
1		418	128	1465	
2		325 128			
3			325		
4			418 1465		
5	325 1465	56			
6	56	1465			
7					
8	418 128				
9					

i) ordenamos las unidades

325 1465 56 418 128

ii) ordenamos las decenas

418 325 128 56 1465

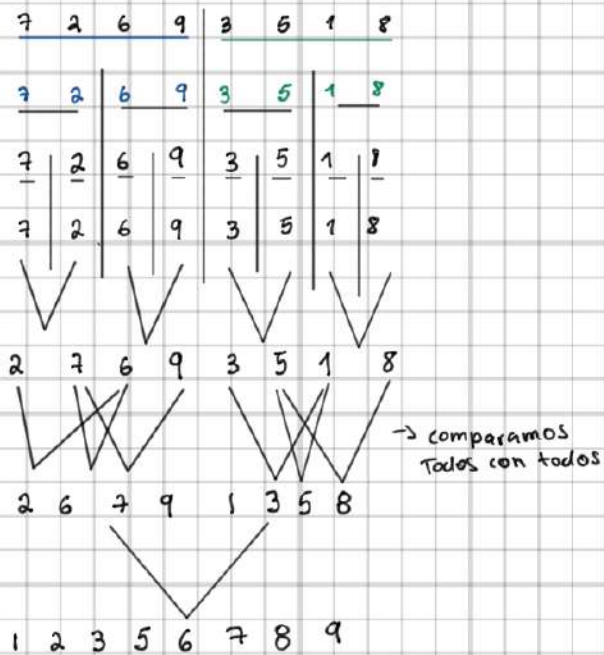
iii) centenas

56 128 325 418 1465

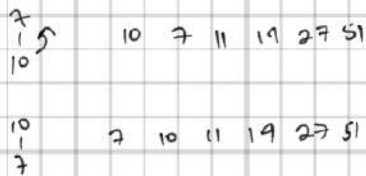
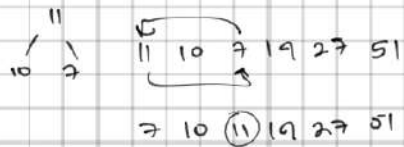
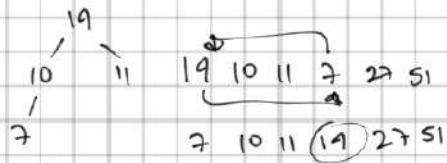
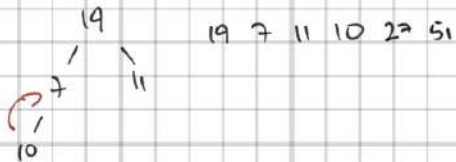
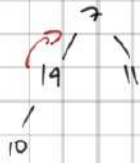
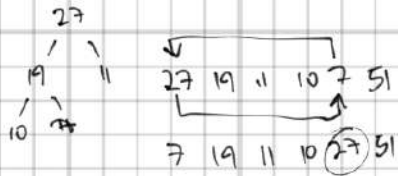
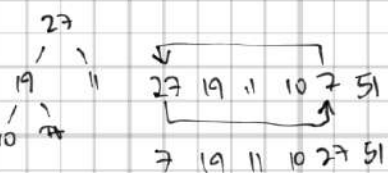
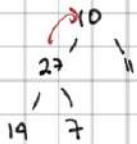
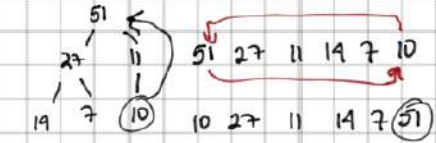
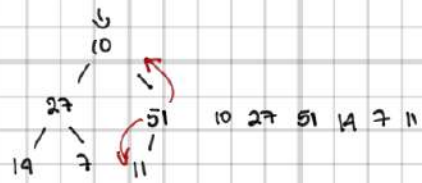
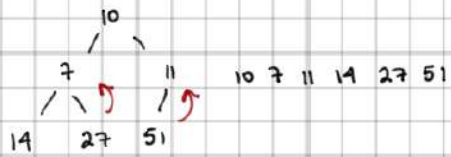
iv) millenas

56 128 325 418 1465

⑥ Merge sort



⑦ Heap sort:



8 Quicksort

4	10	5	7	<u>6</u>	5	3	12	14	2	Pivot
1	<u>5</u>	3	2	<u>6</u>	10	<u>8</u>	7	12	14	6
4	<u>3</u>	2	<u>5</u>	<u>6</u>	7	<u>8</u>	<u>10</u>	12	14	5
2	3	4	<u>5</u>	<u>6</u>	7	<u>8</u>	<u>10</u>	12	14	3
										8
										10

10 7 12 6 3 2 8