

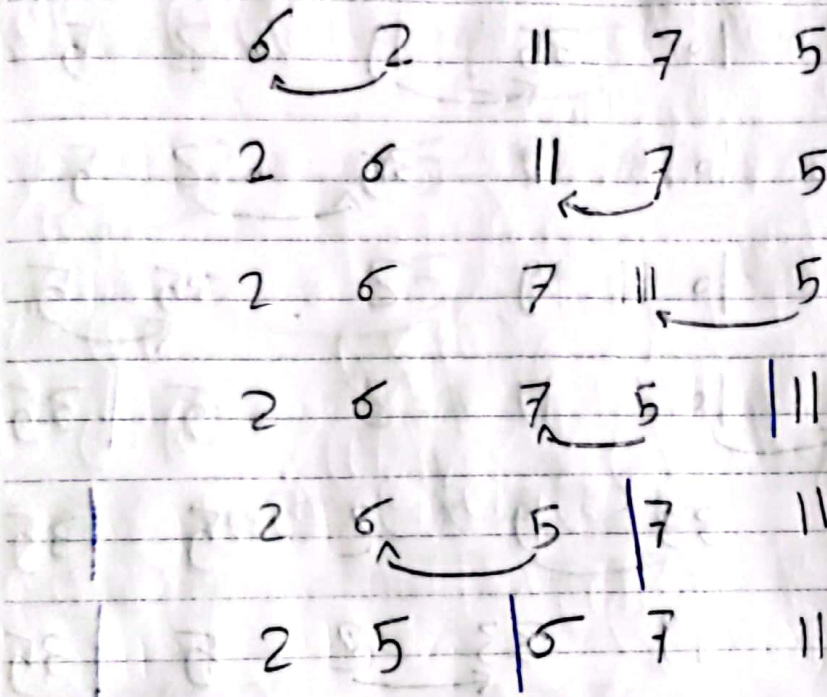
Lab 8

Name: Ahmed Mostafa Bassouny Shokv

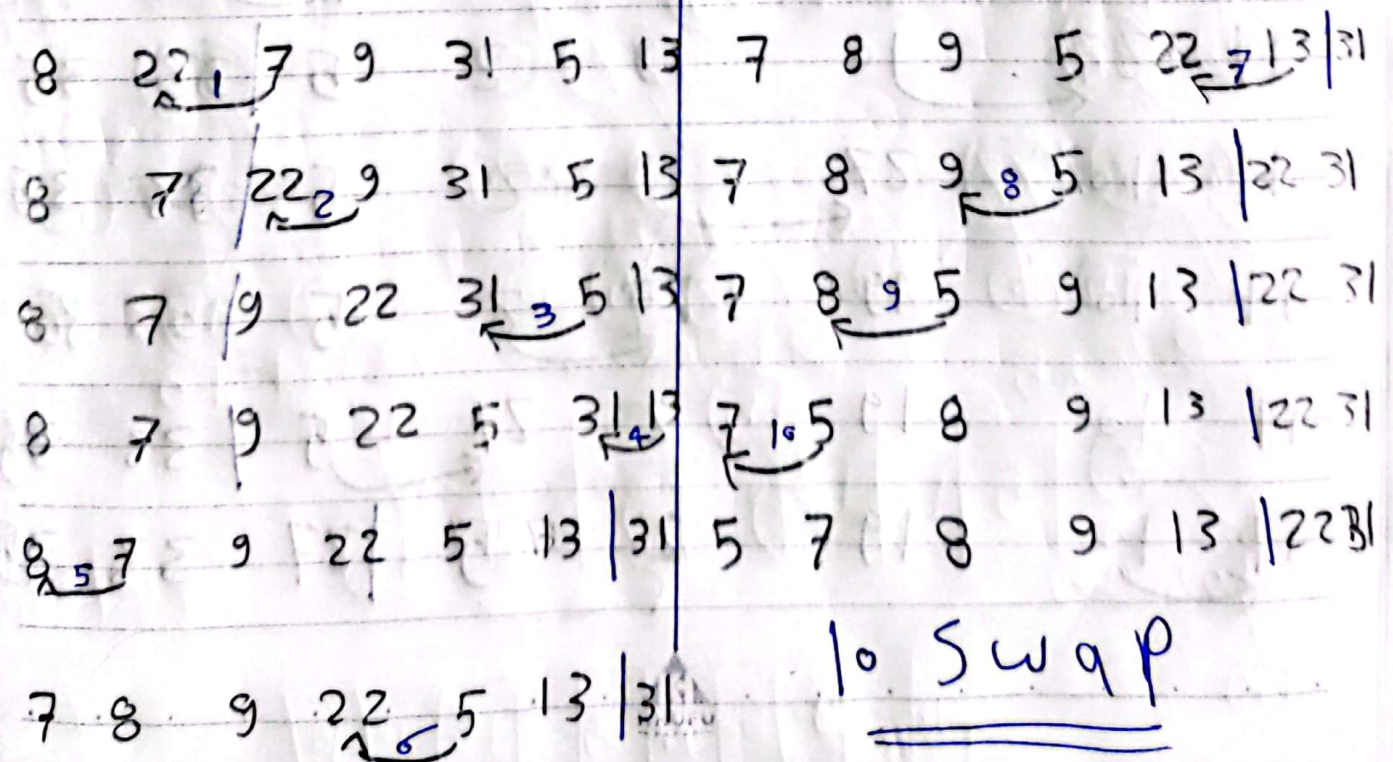
ID: 20100547

Bubble Sort:

① (6, 2, 11, 7, 5)



② (8, 22, 7, 9, 31, 5, 13)



3) (14, 33, 27, 35, 10, 19, 2, 5)

14 33 27 35 10 19 2 5

14 27 33 35 10 19 2 5

14 27 33 10 35 19 2 5

14 27 33 10 19 35 2 5

14 27 33 10 19 2 35 5

14 27 33 10 19 2 5 35

14 27 10 33 19 2 5 35

14 27 10 19 33 2 5 35

14 27 10 19 2 33 5 35

14 27 10 19 2 5 33 35

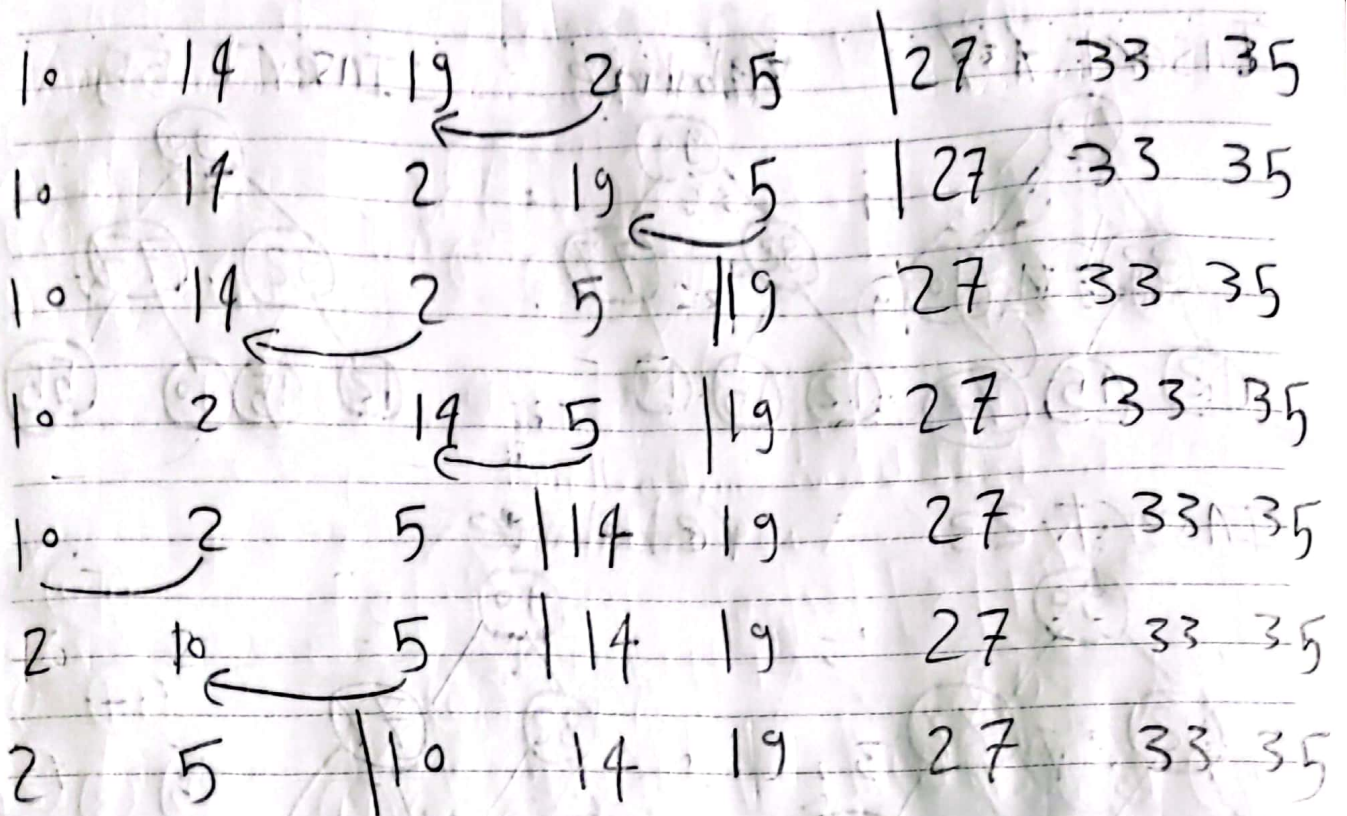
14 10 27 19 2 5 33 35

14 10 19 27 2 5 33 35

14 10 19 2 27 5 33 35

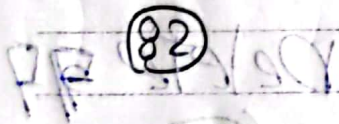
14 10 19 2 5 27 33 35

9 p w c o l

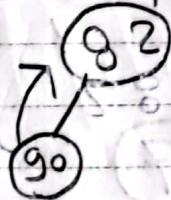


Heap sort: max-heap
(82, 90, 10, 12, 15, 77, 55, 23)

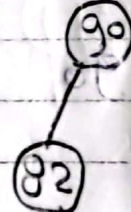
Insert 82



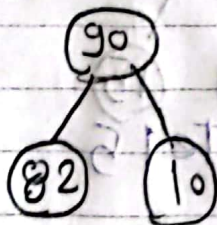
Insert 90



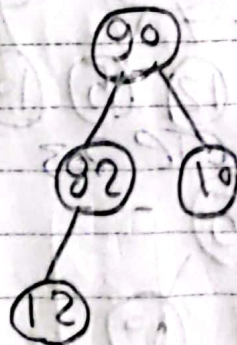
Rebalance



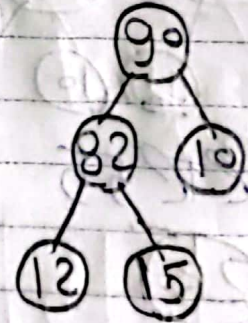
Insert 10



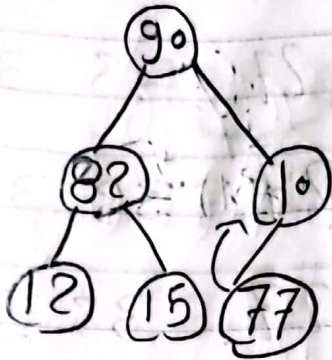
Insert 12



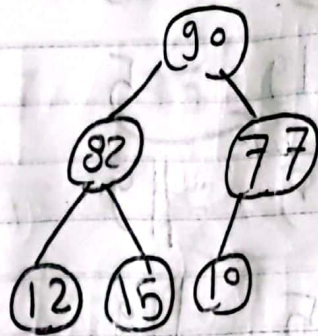
Insert 15



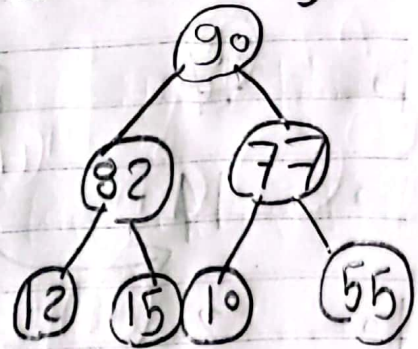
Insert 77



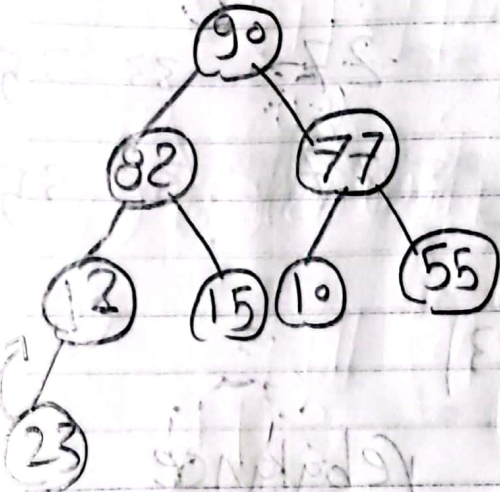
Rebalance



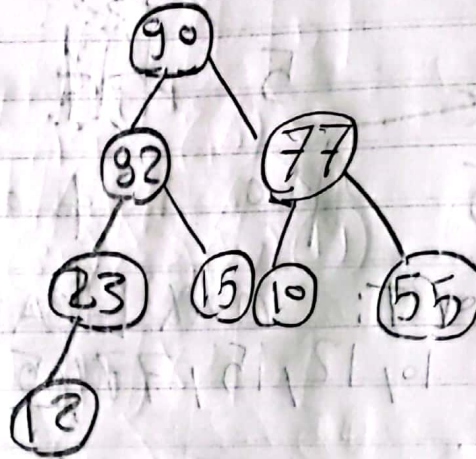
Insert 55



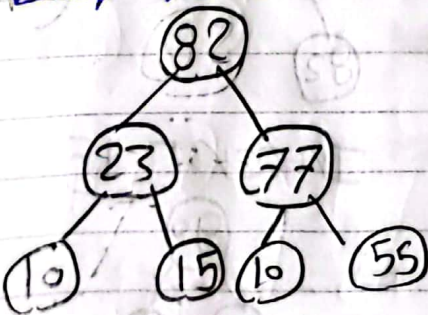
Insert 23



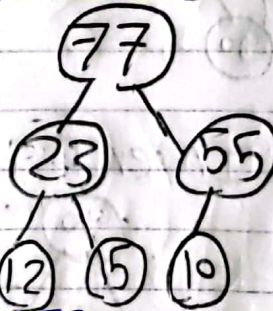
Rebalance



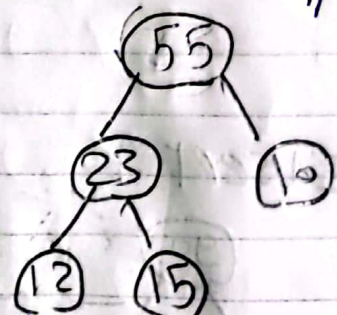
Delete 90



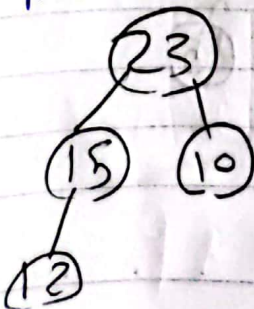
Delete 82



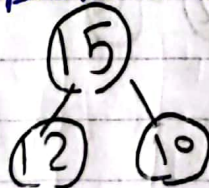
Delete 77



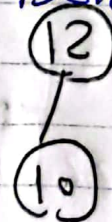
Delete 55



Delete 23



Delete 15



Delete 10

90	82	77	55	23	15	12	10
----	----	----	----	----	----	----	----

min HEAP

(13) (14, 33, 27, 35, 10, 19, 2, 5)

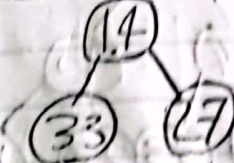
INSERT 14



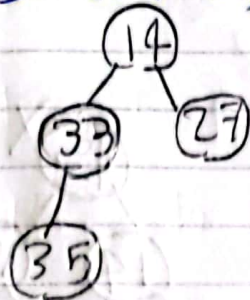
INSERT 33



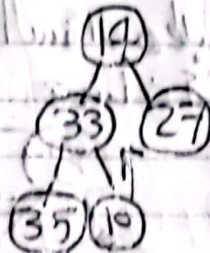
INSERT 27



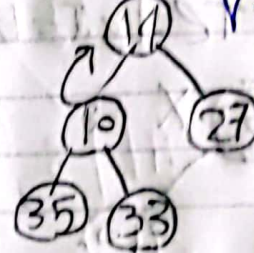
INSERT 35



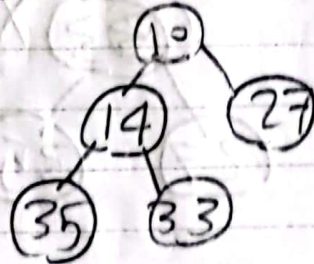
INSERT 10



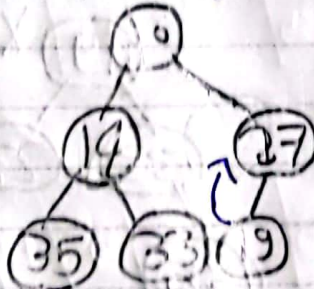
~~INSERT~~ Rebalance



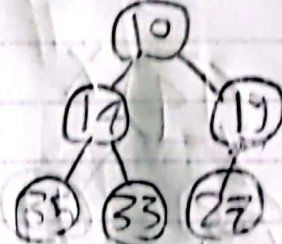
~~INSERT~~ Rebalance



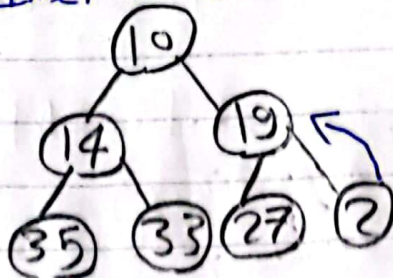
INSERT 19



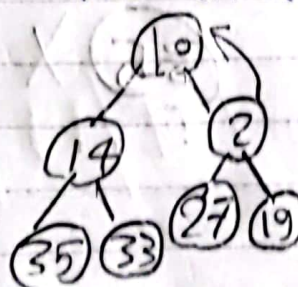
rebalance
~~INSERT~~



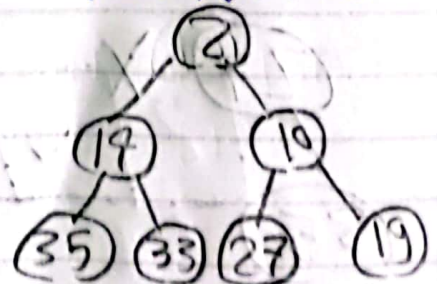
INSERT 2



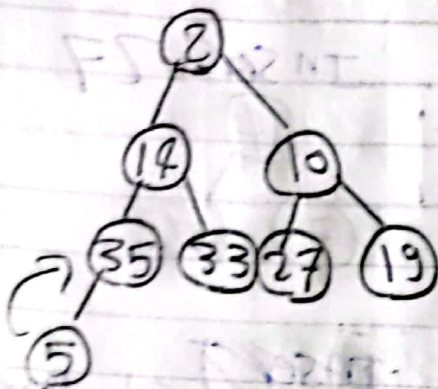
~~INSERT~~ Rebalance



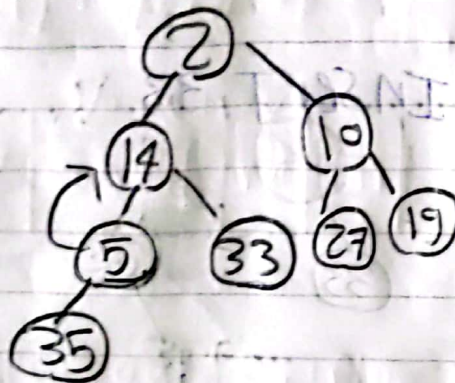
rebalance



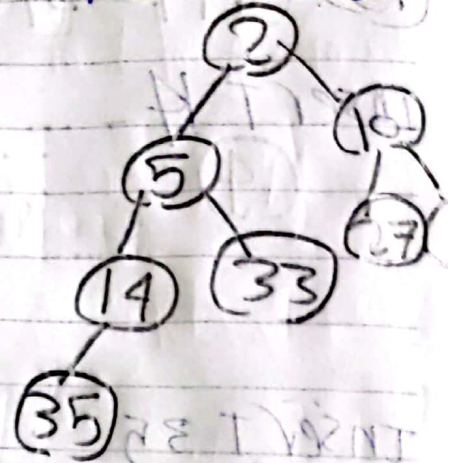
Insert T(5)



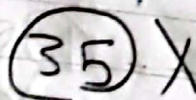
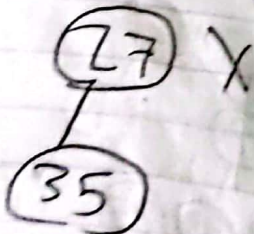
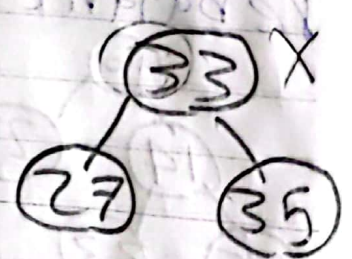
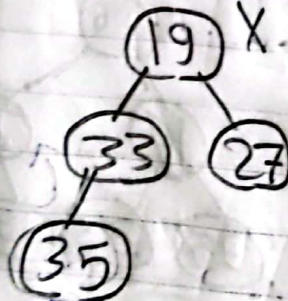
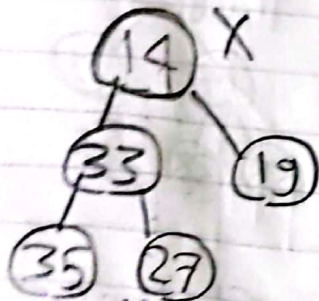
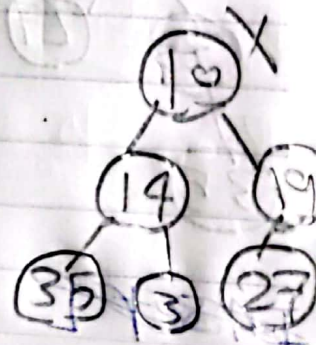
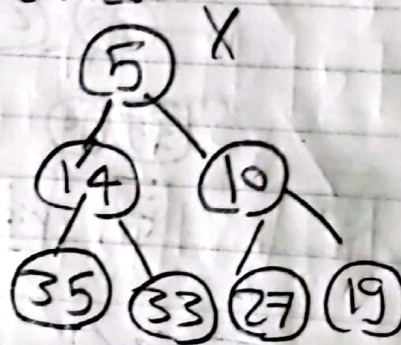
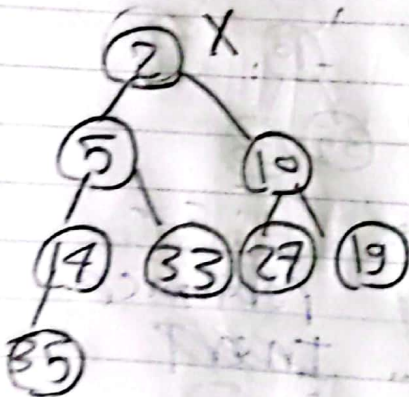
Rebalance



Rebalance



Delete السؤال مطلوبين بس أنا عايزها
مساكن آتقور



2	5	10	14	19	33	27	35
---	---	----	----	----	----	----	----

Quick sort:

[9, 7, 5, 11, 12, 2, 14, 3, 10, 6]

TEST condition

action

Pivot value

9 < 6
False

No action

i = 1
j = 0

7 < 6
False

No action

i = -1
j = 1

5 < 6
True

i++

Swap[arr[i], arr[j]]

i = 2
j = 2

[5, 7, 9, 11, 12, 2, 14, 3, 10, 6]

11 < 6
False

No action

i = 0
j = 3

12 < 6
False

No action

i = 0
j = 4

2 < 6
True

++
Swap

i = 1
j = 5



[5, 2, 3, 11, 12, 7, 9, 10, 16]

10 < 6
False

No action

Swap [arr[i+1], pivot]

i = 2

j = 8

i = 2

Swap [3, pivot]

j = 9

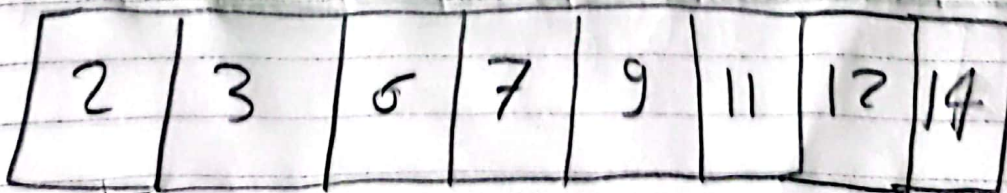
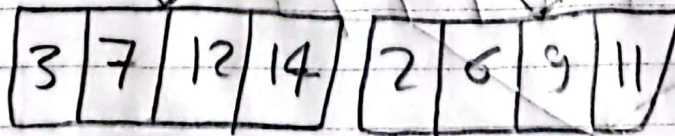
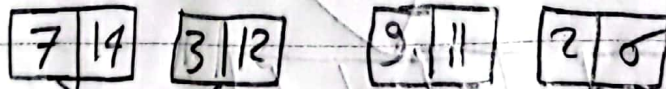
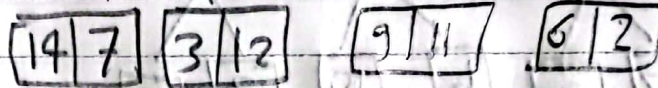
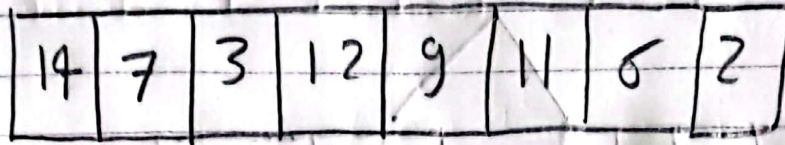
i = 2

j = 4

7, 9, 10, 11, 12

2, 3, 5, 6, 7, 9, 10, 11, 12

merge sort

 $[14, 7, 3, 12, 9, 11, 6, 2]$ 

(14, 33, 27, 35, 10, 19, 2, 5)

