P136

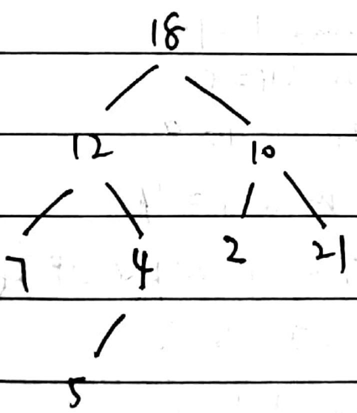
10.3-1

	1	2	3	4	5	6	7	8
next	2	3	4	5	6			
key	13	4	8	19	5	11		
prev		1	2	3	4	5		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
13	4	0	4	7	1	8	10	4	19	13	7	5	16	10	11	/		

P138

10.4-1



P139 10-1

o(n)	o(n)	o(n)	o(n)
O(1)	o(n)	o(1)	o(n)
o(n)	o(n)	o(1)	o(1)
o(n)	o(1)	o(n)	o(1)
o(n)	o(n)	o(n)	o(1)
o(n)	o(1)	o(n)	o(1)
o(n)	o(n)	o(n)	o(1)

P146

11.2-2

0	
1	→ 28 → 19 → 10
2	→ 20
3	→ 12
4	
5	→ 5
6	→ 15 → 33
7	
8	→ 17

$h(5)=5$

$h(28)=1$

$h(19)=1$

$h(15)=6$

$h(20)=2$

$h(33)=6$

$h(12)=3$

$h(17)=8$

$h(10)=1$

P155 11.4-1

线性探查

0	22
1	88
2	
3	
4	4
5	15
6	28
7	17
8	59
9	31
10	10

10 mod 11 = 10

22 mod 11 = 0

31 mod 11 = 9

4 mod 11 = 4

15 mod 11 = 4 冲突

∴找5空

28 mod 11 = 6

17 mod 11 = 6 冲突

找下一个7空

88 mod 11 = 0 冲突

找下一个空1

59 mod 11 = 5

冲突 找8

二次探查

$h'(k) + i + 3i^2$

0	22
1	
2	88
3	17
4	4
5	
6	28
7	59
8	15
9	31
10	10

10 mod 11 = 10

22 mod 11 = 0

31 mod 11 = 9

4 mod 11 = 4

15 mod 11 = 4 冲突 找

4+1+3 = 8 ✓ 空

28 mod 11 = 6

17 mod 11 = 6 冲突

找 6+1+3 = 10 冲突

找 6+2+3×4
= 8+12 = 20 mod 11 = 9

找 6+3+3×9 = 36

36 mod 11 = 3 空

88 mod 11 = 0 冲突

0+1+3 = 4，冲突

$0+2+3\times4 = 14$ mod 11 = 3 ×

$0+3+27 = 30$ mod 11 = 8 ×

$0+4+3\times16 = 52$ ×

$0+5+3\times25 = 80$ 3×

$0+6+3\times6^2 = 114$ ×

$0+7+3\times7^2 = 154$ ×

$0+8+3\times8^2 = 200$ mod 11 = 2 ✓

59 mod 11 = 4 ×

4+1+3 = 8 ×

$4+2+3\times4 = 18$ mod 11 = 7

双重散列

$h_1(k)=k$

$h_2(k)=1+(k \bmod (m-1)) = 1+k \bmod 10$

0	22
1	
2	59
3	17
4	4
5	15
6	28
7	88
8	
9	31
10	10

$10 \bmod 11 = 10$

$22 \bmod 11 = 0$

$31 \bmod 11 = 9$

$4 \bmod 11 = 4$

$15 \bmod 11 = 4$ X

$15 + 1\times(1+15 \bmod 10) = 21$ X

$15+2\times(1+5) = 27 \bmod 11 = 5$

$28 \bmod 11 = 6$

$17 \bmod 11 = 6$ X

$17+1\times(1+17 \bmod 10) = 25 \bmod 11 = 3$

$88 \bmod 11 = 0$ X

$88+1\times(1+88 \bmod 10) = 88+9 = 97$ 9 X

$88+2\times 9 = 106 \bmod 11 = 7$

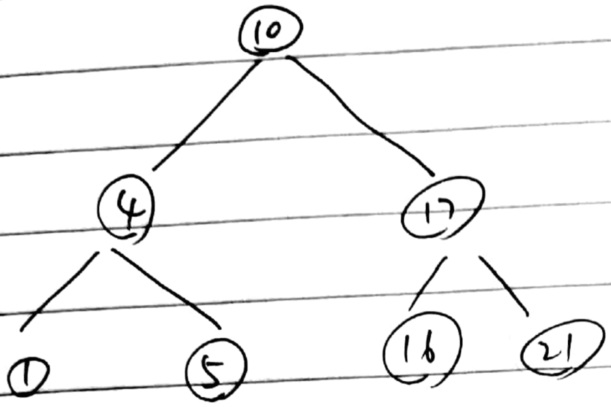
$59 \bmod 11 = 4$ X

$59+1\times(1+59 \bmod 10) = 59+10 = 69$ X

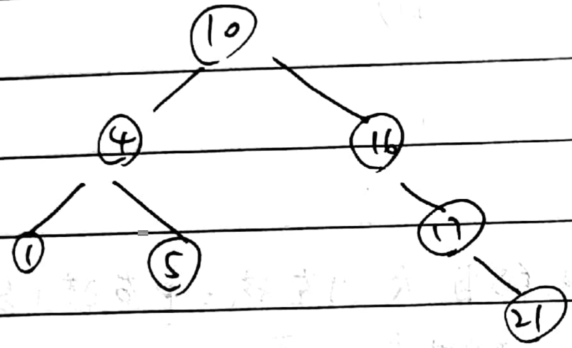
$59+2\times(1+9) = 79 \bmod 11 = 2$

P162 12.1-1

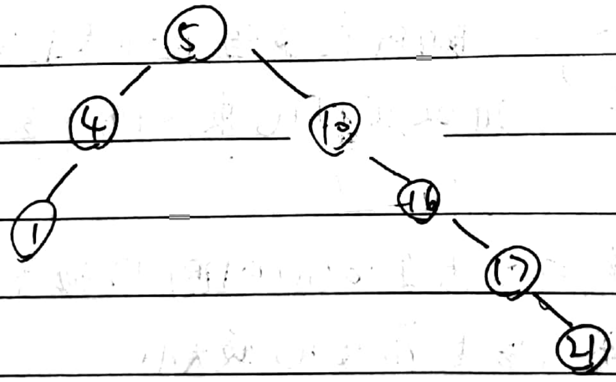
高度2



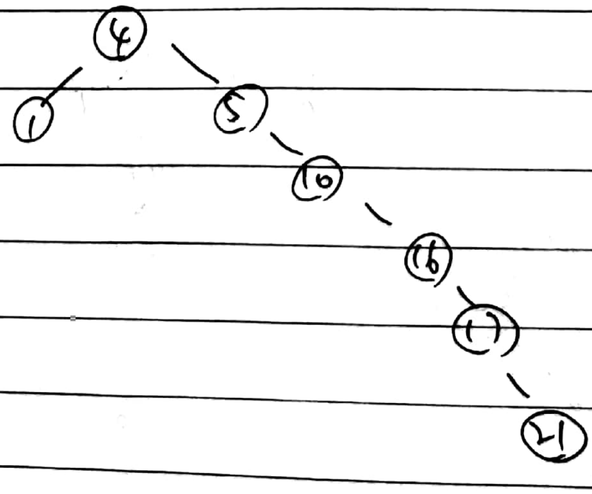
高度为3



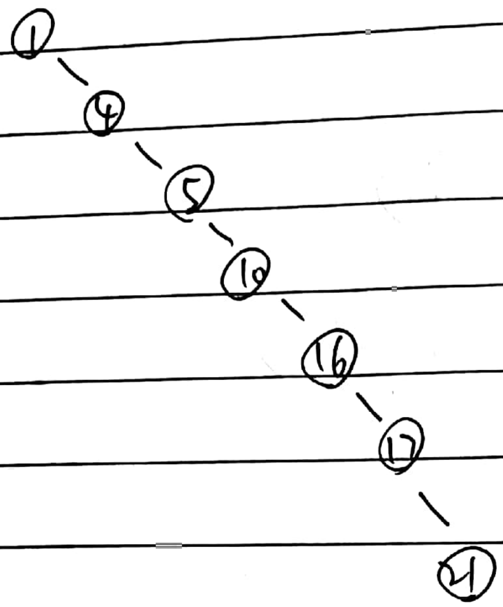
高度为4



高度为5



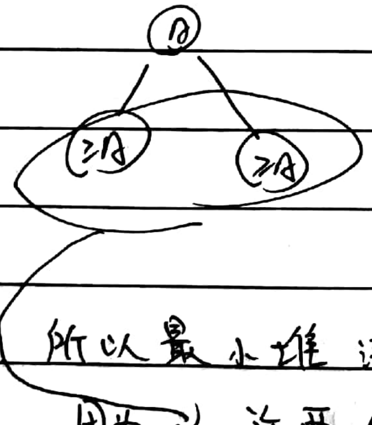
高度为6



P162

12.1-2

最小堆只要求 非叶子结点的值 不大于左孩子和右孩子的值



而 二叉搜索树要求 一个结点的值 不小于左子树结点的值 且不大于 右子树结点的值

所以限制比最小堆更多

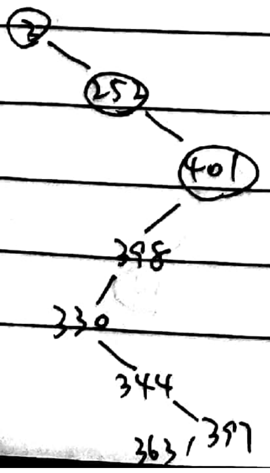
所以最小堆 没办法在 O(n)时间内按序输出 n个关键字

因为 这两个结点需要比较大小

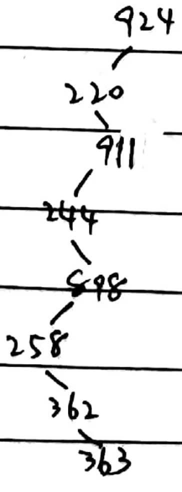
P165

12.2-1

a.



b.



c、

925
202
911
240
912

912大于911 ∴不可能

d、

2
399
387
219
266
382
381
278
363

e、

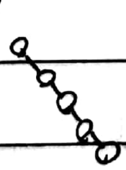
935
278
347
621
299
392
358
363

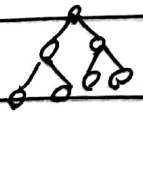
299小于347，不能在347的右子树

P169

12.3-3

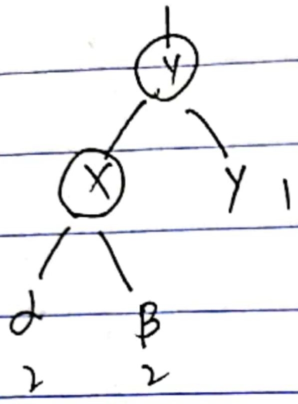
中：左根右

最坏 → 树为一长串  $O(n^2)$

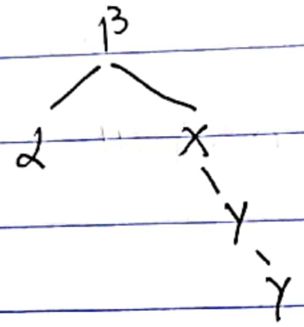
最好  $O(n\lg n)$

P177

T13.2-3



X左旋，右子树上移



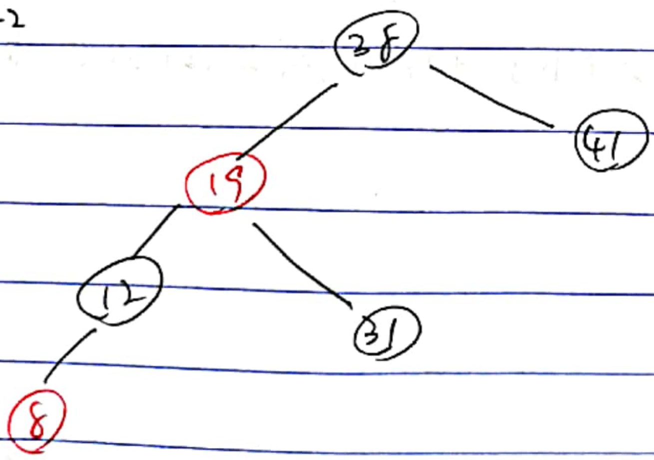
α -1

β -2

γ +2

P182

T13.3-2



P210 15.1-3

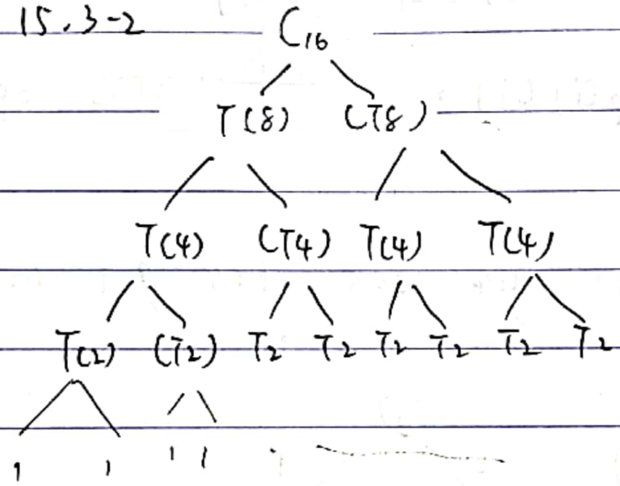
$q = \max(q, p[i] - cost + r[j-i])$

P215 15.2-1

$((5\times10)(10\times3))((3\times12)(12\times5))((5\times50)(50\times6)))$

5×3 3×5 5×6

P222 15.3-2



5cn

merge-sort 对任意一个小问题都只进行一次递归调用，即这些子问题都不重叠，不存在反复求解降低效率这一问题，所以备忘技术无效

P226 15.4-1

⟨1 0 0 1 0 1 0 1⟩

⟨0 1 0 1 1 0 1 1 0⟩

100110

P241 16.1-1

Greedy-avctivity-selector o(n)

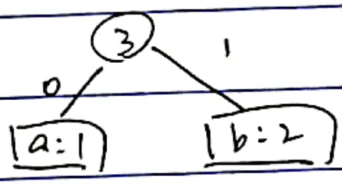
P244 16-2-2

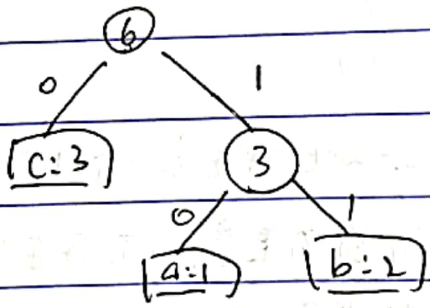
同oj上的疫情下的大学生

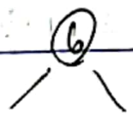
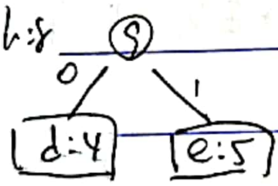
```
for i =1 to n
  for j =1 to w
    if j < i.weight
      dp[i][j] = dp[i-1][j]
    else
      dp[i][j] = max(dp[i-1][j], dp[i-1][j-i.weight]
                                  + i.value)
```

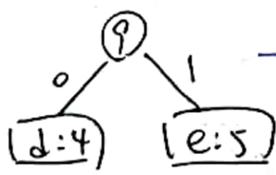
补

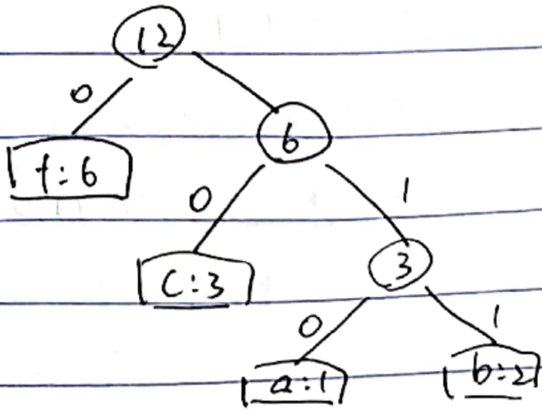
~~a:1~~ ~~b:2~~ ~~c:3~~ ~~d:4~~ e:5 f:6 g:7 h:8

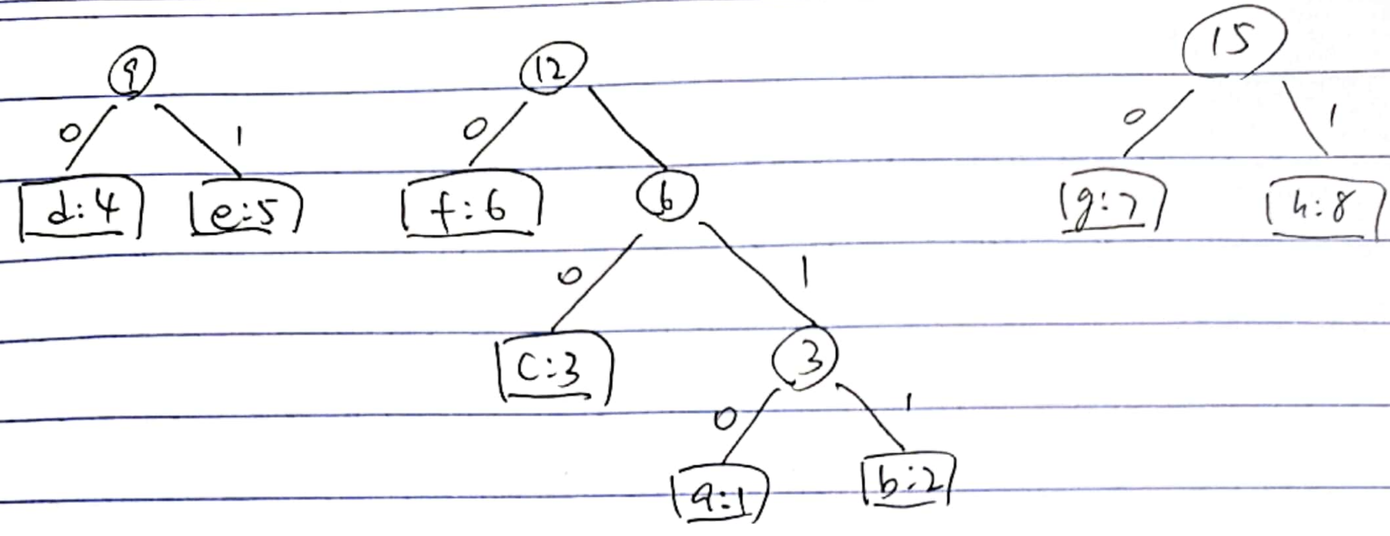


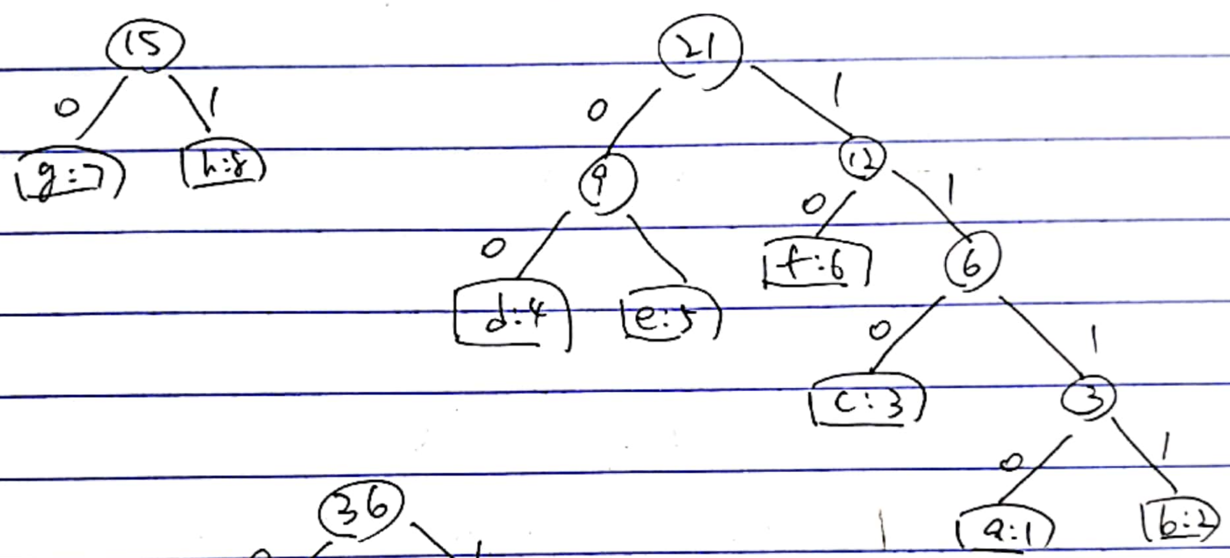


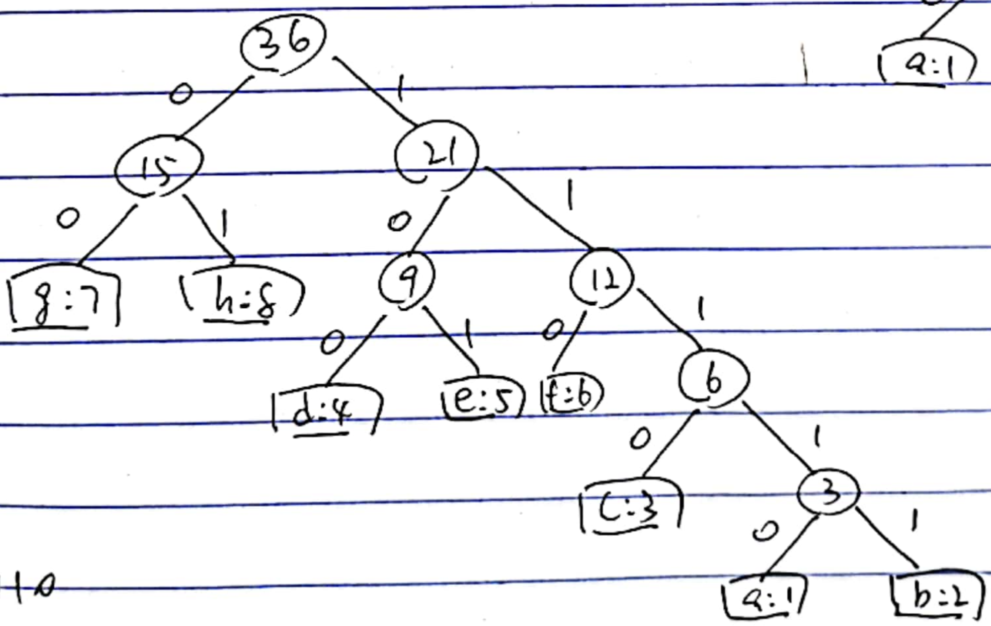
f:6  g:7 h:8 

g:7 h:8 









a: 11110

b: 11111

c: 1110

d: 100

e: 101

f: 110

g: 00

h: 01

1010111010101111000010

f h f e h c g h