Assignment6

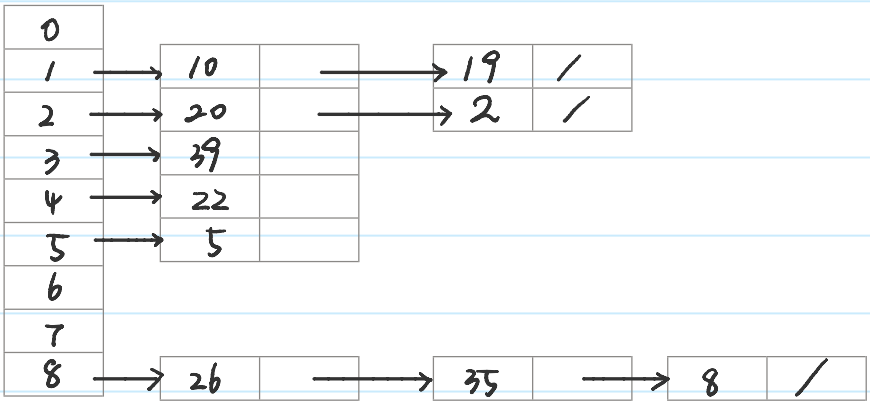
2021年10月25日 18:12

Q1. Step1: Build slots. Step2. Caculate using hash-function

Step3:

X	26	10	20	39	2	35	19	8	22	5
X mod 9	8	1	2	3	2	8	1	8	4	5

Step4:



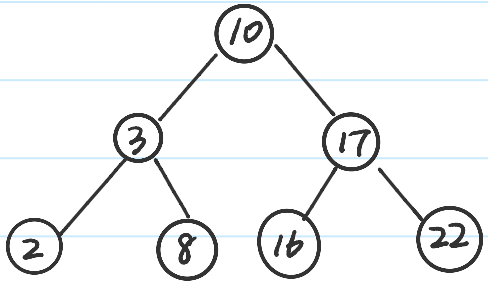
Q2.

When we try to insert k-th key into the hash-table, the expected collision after it is: $\frac{n-k}{m}$

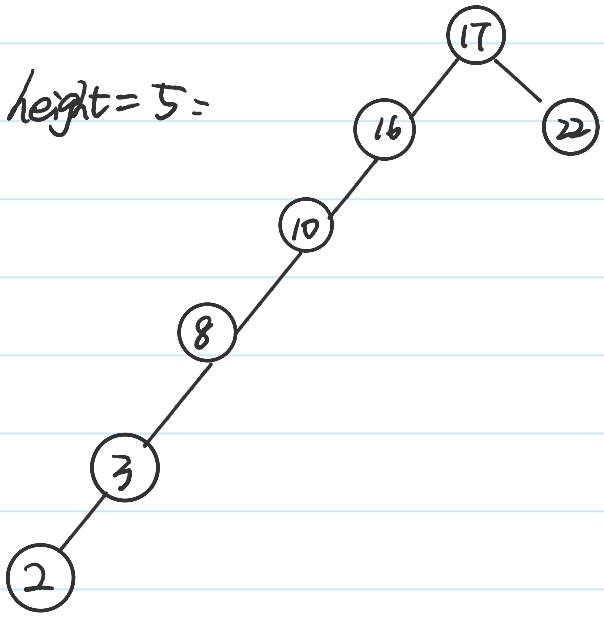
Hence: the sum of collision is:

$$\sum_{i=1}^{n} \frac{n-i}{m} = \frac{0}{m} + \frac{1}{m} + \frac{2}{m} + \cdots + \frac{n-1}{m} = \frac{(0+n-1)\cdot(\frac{n}{2})}{m} = \frac{n^2-n}{2m}$$

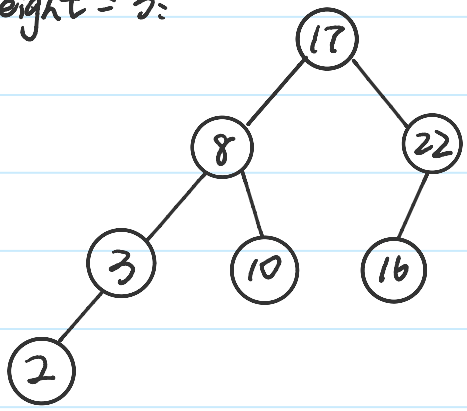
Q3. height=2:



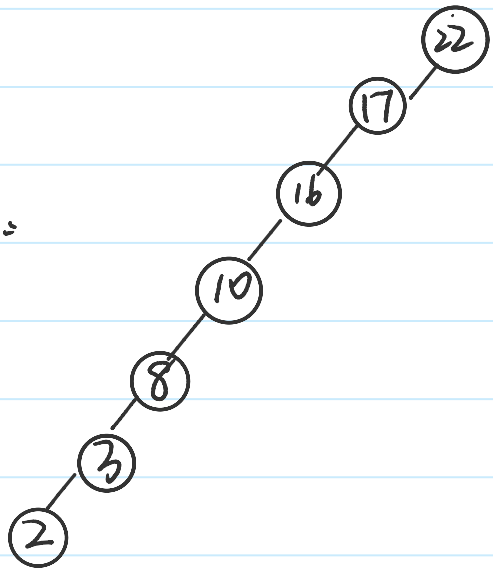
height=5:



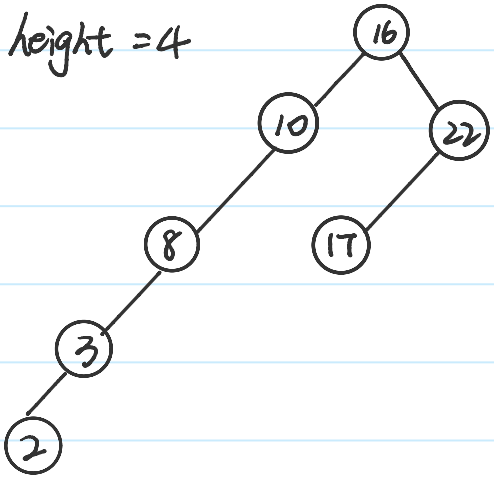
height = 3:



height = 6:

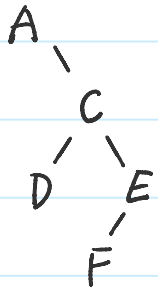


height = 4

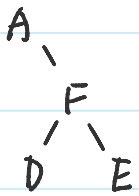


Q4.

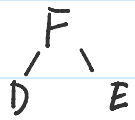
a)



b)



c)



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