16 July 2018

Week11_Class1_inClass_1.pdf

Secondary Index: Unique Values (pg. 1)

1. $\frac{25000}{10} = 2500$
2. $\log_2 2500 = 12$
3. 25,000 index entries, because a secondary index requires one entry per record
4. $\lfloor \frac{4096}{5+5} \rfloor = 409$
5. $\lceil \frac{2500}{409} \rceil = 7$
6. $\lceil \log_2 7 \rceil + 1 = 4$
7. $1 + 1 + 1 = 3$ (he wrote this as #8 but I'm pretty sure it's #7 because there is no #8)

Secondary Index: Non-unique Values (pg. 2)

1. $\frac{25000}{10} = 2500$

   5 duplicates per record

2. 1, 2
3. 5000; one per unique value
4. *pretty sure he just straight up skipped this one*
5. $\lfloor \frac{4096}{5+5} \rfloor = 409$
6. $\lceil \frac{5000}{409} \rceil = 13$ $\lceil \log_2 13 \rceil + 1 \approx 5$
7. $1 + 1 + 1 = 3$

   $1 + 1 + 2 = 4$

Week10_Class3_InClass_2.pdf

pg. 2

3.

a. $\lceil \frac{N}{bf} \rceil = \lceil \frac{800000}{20} \rceil = 40000$

b. 40000

c. $\frac{8000}{10+10} = 400$

d. $\lceil \frac{40000}{400} \rceil = 100$

e. $\lceil \log_2 100 \rceil + 1 = 7 + 1$

4.

a. 20000

b. 2000

c. 200

d. 9

e. 15