Jonathan Nguy
603 799 761

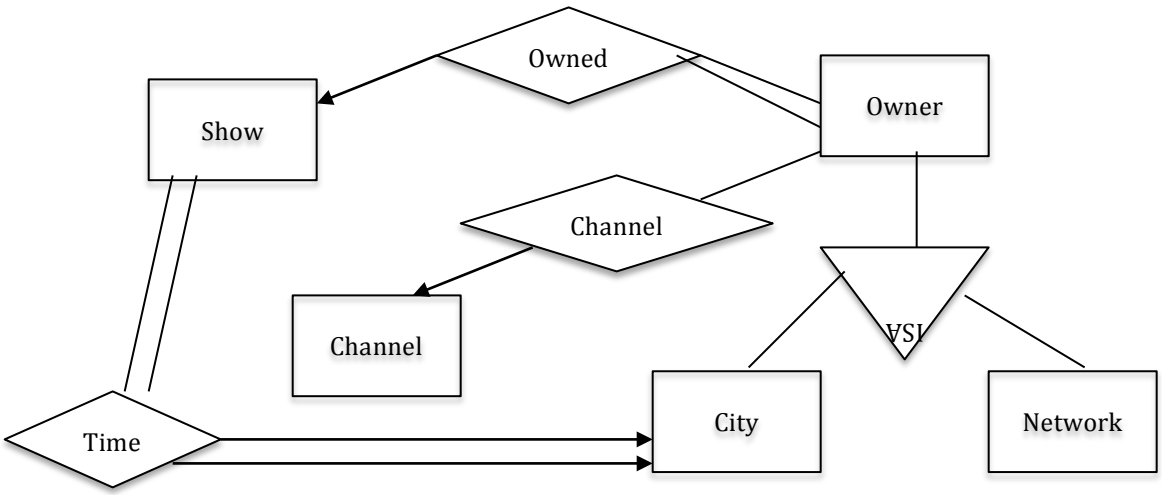
CS 143 HW 5

1.

For the first query plan, we need 750,000/500 = 1500 sequential block accesses for reading the tuples of relation R. For each tuple of R, we need to access S by using the B attribute. Since it's a non-clustered, non-unique B+ tree index, we need to access 5 blocks randomly. Therefore, this would require 1500 + 750000*5 = 3751500 disk I/Os

This new plan needs 1500 sequential block access for reading the tuples of relation R. For each tuple of R, we need to access S by using the C attribute. S has 250,000/100 = 2500 blocks. Since we have a clustered non-unique b+ tree index for C, we need to access 2500/(250000/5000)=50 blocks sequentially. Therefore, this plan would require 1500 + 750000*50 disk I/Os, but it will do it sequentially, so it can be faster than the first one.

2.



3.

Parts (<u>number</u>)
Assembly (<u>number</u>, cost)
ComposedOf (number, quantity)