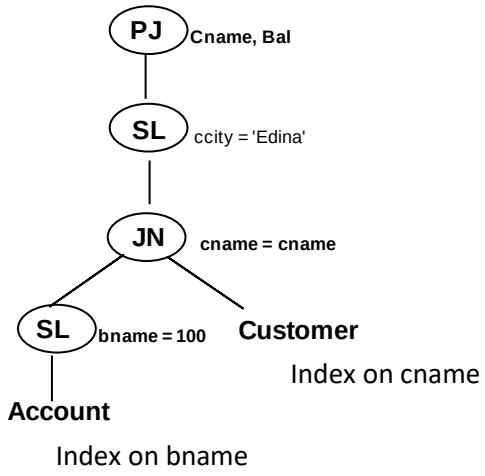
SEIS 630 Assignment 5

1:

Assume the given query tree for the bank database and the statistics given in class.

1. What is the CPU cost of doing the first SL and the cost of the JN if the index on the column bname of the account table is **NOT** clustered?
2. What is the CPU cost of doing the first SL and the cost of the JN if the index on the column bname of the account table is clustered?
3. We have a 3-page buffer. For each of the above two cases, what is the total IO cost of the tree if,
    a. The 2nd SL is done on-the-fly
    b. The 2nd SL is done on a temp table.



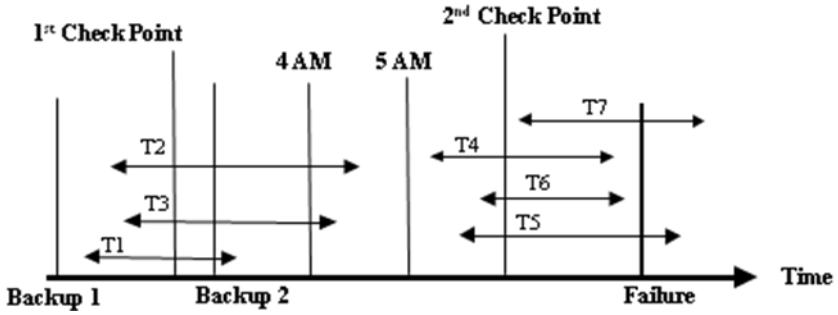
2:

Assume the following three transactions and they order in which they work with items X and Y. Show the schedule that is created by applying 2-phase locking to these transactions. Please show all partial commitment orders. Is this schedule serializable? If yes, what is the serialization order? If not, why?

T1	T2	T3
W(X)		
	W(X)	
W(Y)		
		W(X)
	W(Y)	
		W(Y)

3:

Assume the following transactions, the backup time and failure time. Assume we use immediate update and that T7 has written B-commit to the log while T5 has not. Answer the following:



1. What are the steps you take to recover from a power failure?
2. What are the steps you take to recover from a disk failure?