

Homework 3 – Brennan Giles - CS440

1. I would push down Rating and Year Requirement, then project on country attribute and title attribute. Last I would join Movie.StudioName and studio.name.

COST:

For push (1/3 of 2400 T(movie)) 1/10 for rating and T(movie) 24000/(10 * 3) = 800

For project it stays the same, no cost added so 800

For Join 1000*8000/1000 = 800

- 2.

T(R) = 4000 T(S) = 3000 T(W) = 2000 T(U) = 1000

Query	Size	Cost	plan
RS	120	0	
RW	80	0	
RU	40	0	
SW	60	0	
SU	30	0	
WU	20	0	
RSW	RS)W: 2.4M RW)S: 2.4M SW)R 2.4M	RS)W: 120k RW)S: 80k SW)R: 60k	(SW)R
RSU	RS)U: 1.2M RU)S: 1.2M SU)R: 1.2M	RS)U: 120k RU)S: 40k SU)R: 30k	(SU)R
WSU	WS)U: .6M WU)S: .6M SU)W: .6M	WS)U: 60k WU)S: 20k SU)W: 30k	(WU)S
WUR	WU)R: .8M WR)U: .8M RU)W: .8M	WU)R: 20k WR)U: 80k RU)W: 40k	(WU)R
RSWU	(SW)R)U: 24M (SU)R)W: 24M (WU)S)R: 24M (WU)R)S: 24M	(SW)R)U: 2.4M (SU)R)W: 1.2M (WU)S)R: .6M (WU)R)S: .8M	((WU)S)R

3.1. Serializable and 2PL. Serializable because no cycles of conflict, 2PL because there are no locks with conflicting commands

3.2 Not Serializable, because there is a cycle between T2 and T3. Not 2PL because not Serializable

3.3 Not Serializable, loop between T1 and T2. Not 2PL because not Serializable

3.4 Not Serializable, loop between T1 and T2.