HW11

15.2

$$\Pi_T.branch_name((\Pi_b ranch.name, assets(\rho_T(branch))) \bowtie T.assets > S.assets(\Pi_a ssets(\sigma_{branch-ity="Brooklyn")} rho_S(branch)))))$$

15.3

When r_1 is the outer relation, we apply in r_1 , other in r_2

A

r_1:20000*1500+800

r_2:45000*800+1500

B

r_1: [$\frac{800}{M-1}$]*1500+800

r_2:[$\frac{1500}{M-1}$]*800+1500

C

If we assume r_1 and r_2 all tuples stored in memory we get: Cost = $1500[2(log_{M-1}(\frac{1500}{M}+2))]+800[2(log_{M-1}(\frac{800}{M}+2))]+1500+800$

If they aren't in memory initially.we get : Cost = $1500[2(log_{M-1}(\frac{1500}{M}+2))]+800[2(log_{M-1}(\frac{800}{M}+2))]$

D

If $M > \frac{800}{M}$

Cost = 6900

else

Cost = $4600[log_{M-1}(800)-0.5]$