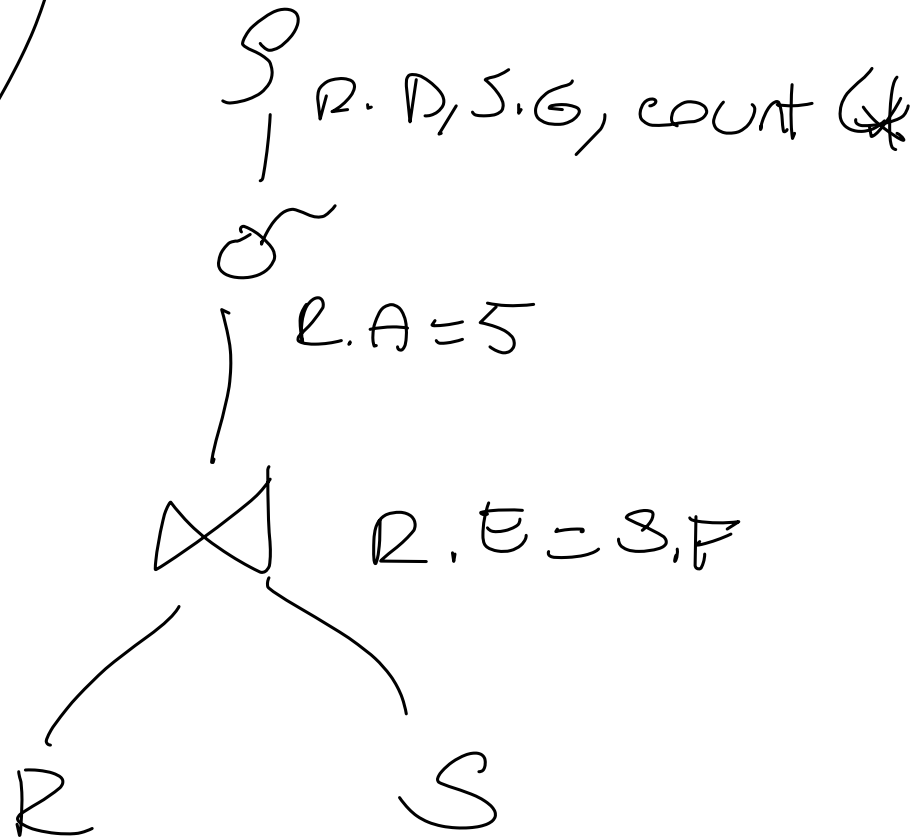


→ query tree



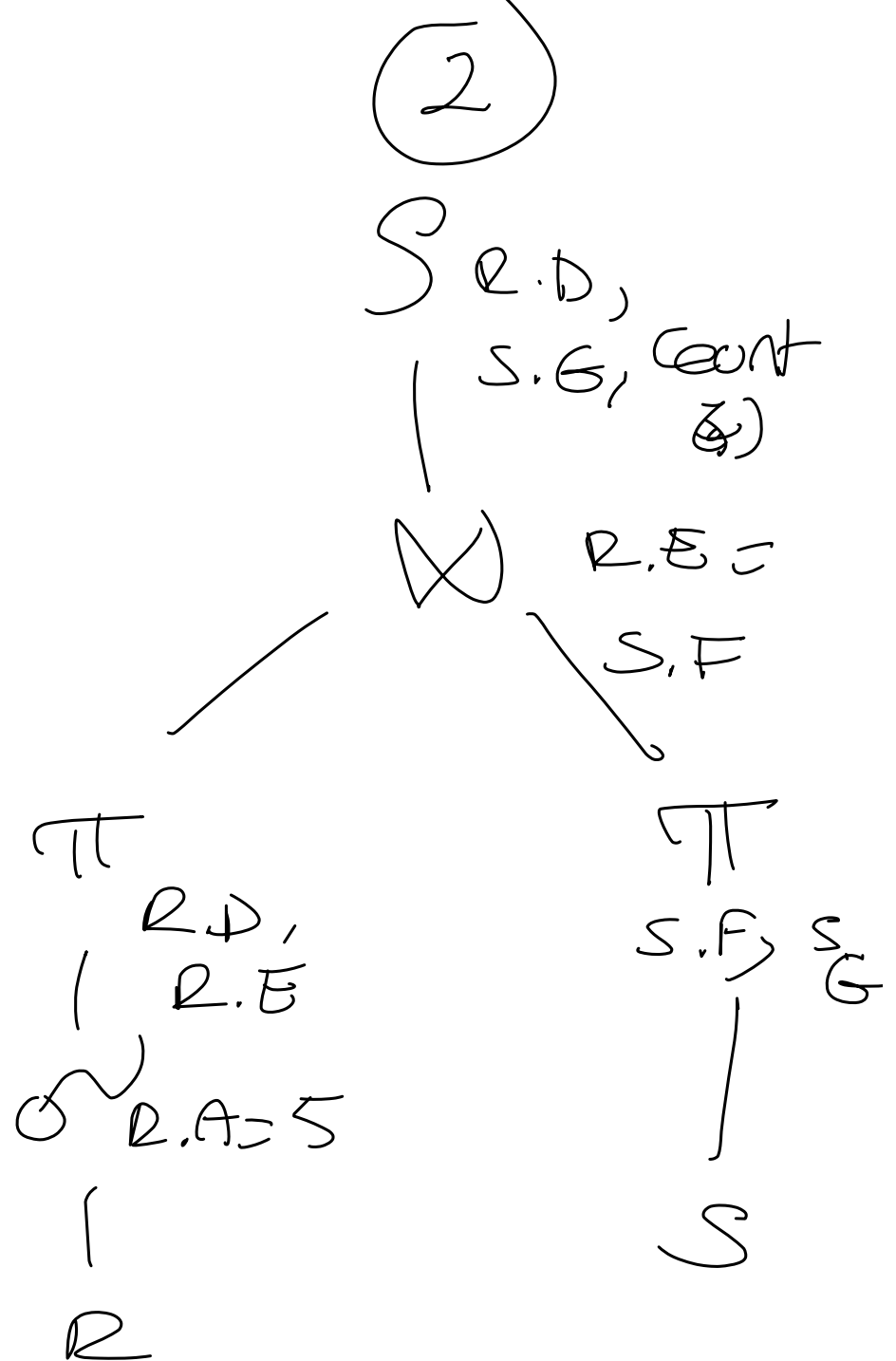
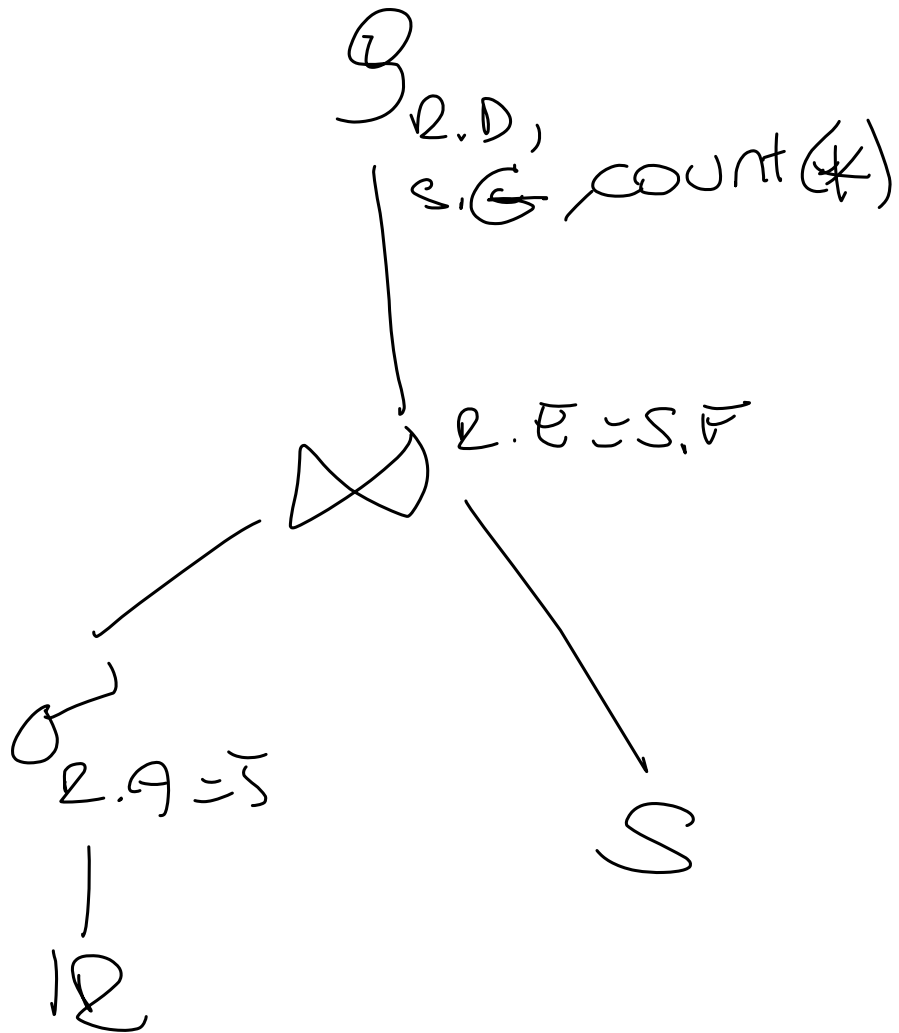
①

S
R. D, S, G, count

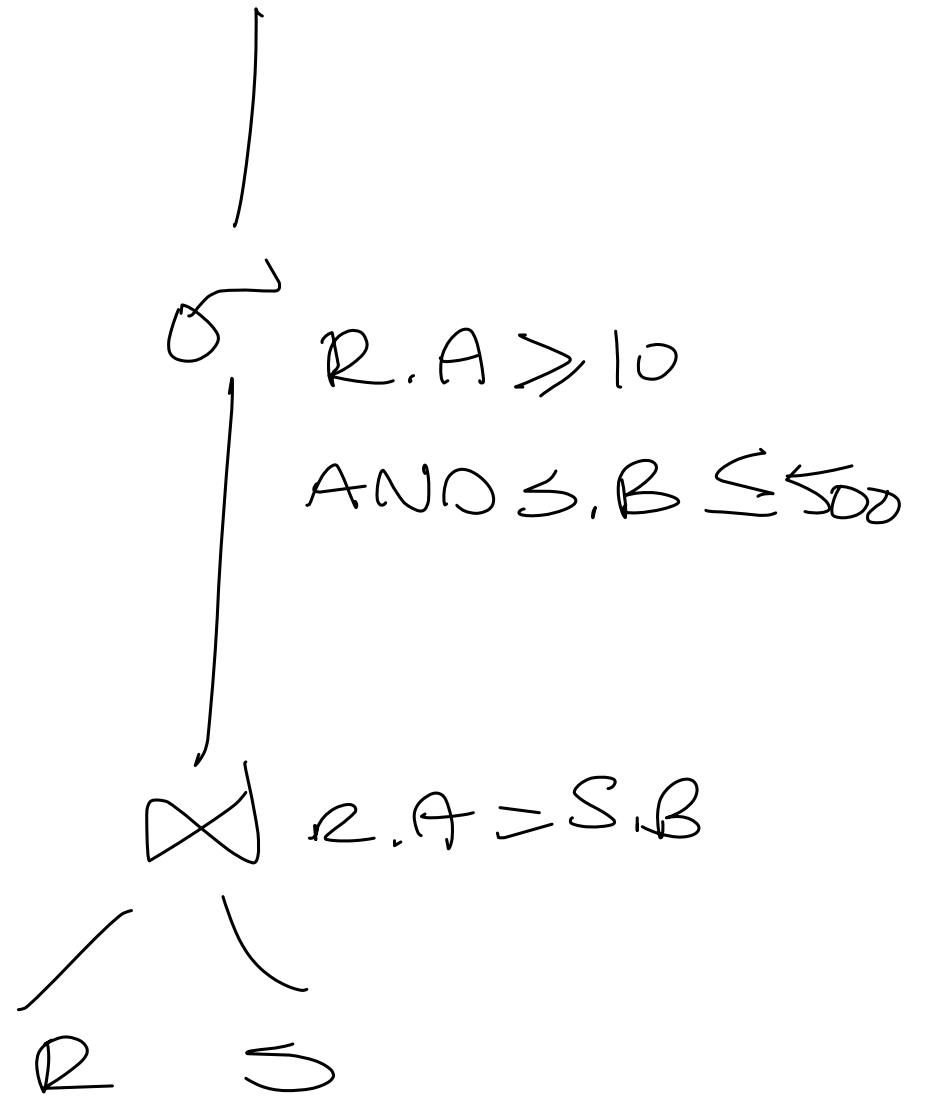
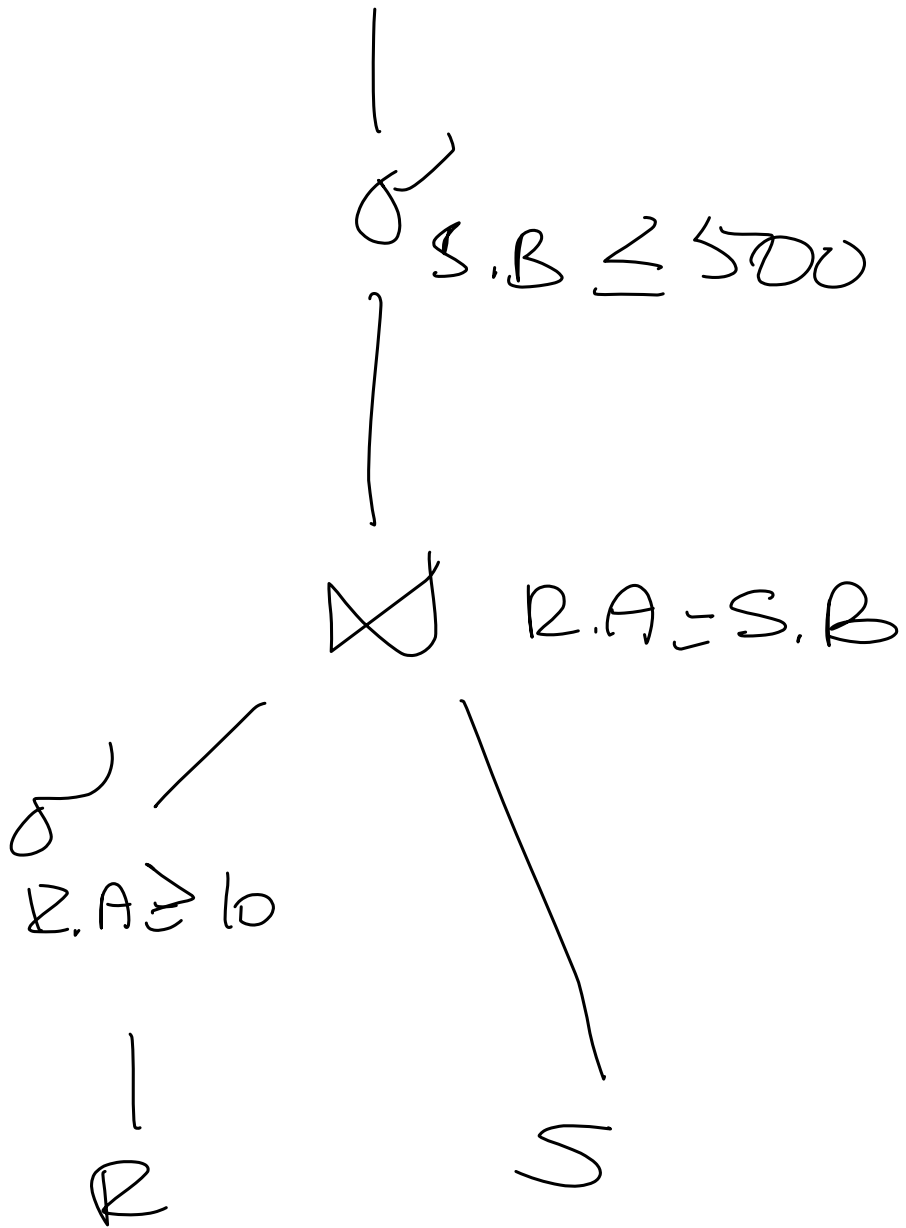
σ
R.A = 5

σ
R.E = S, F

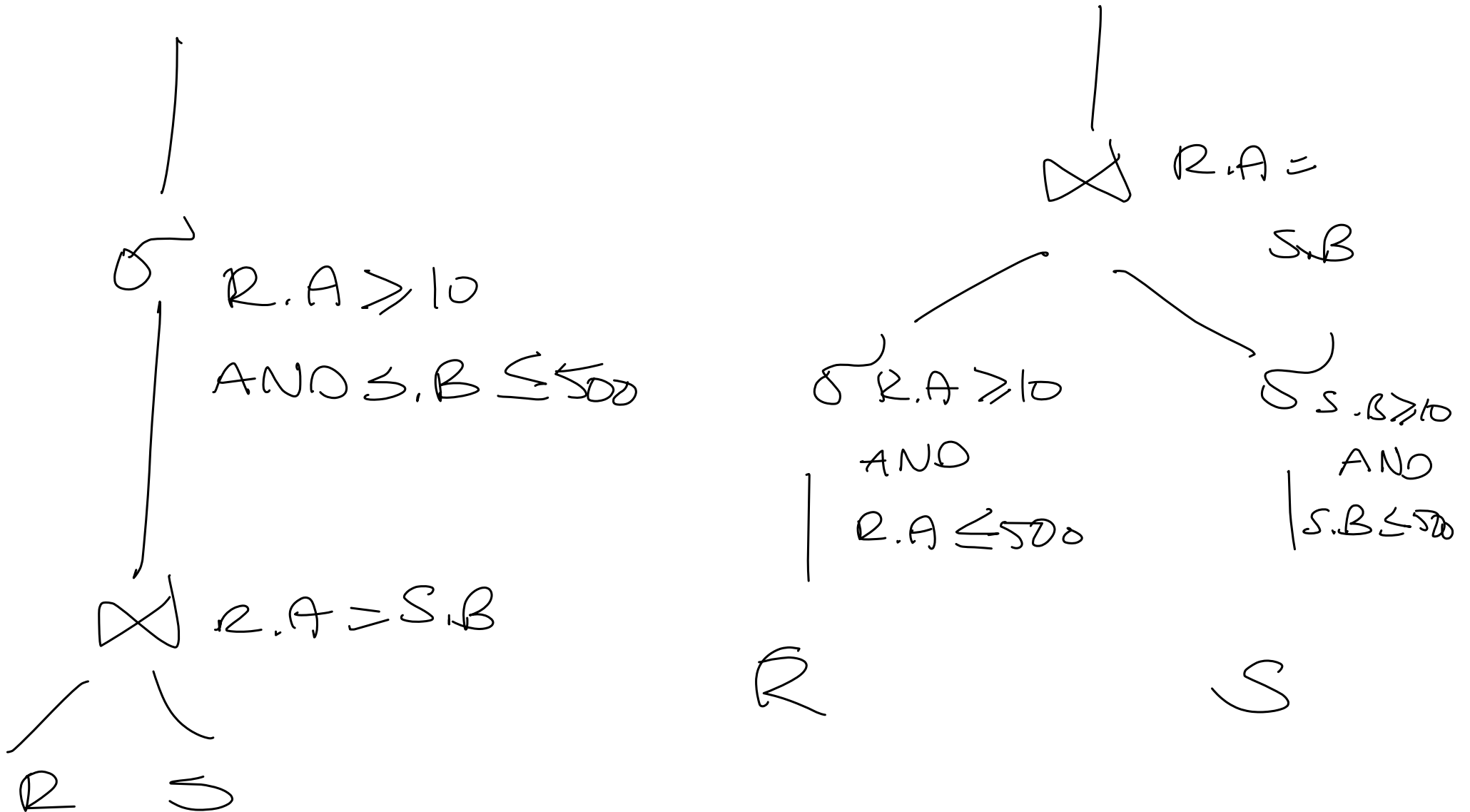


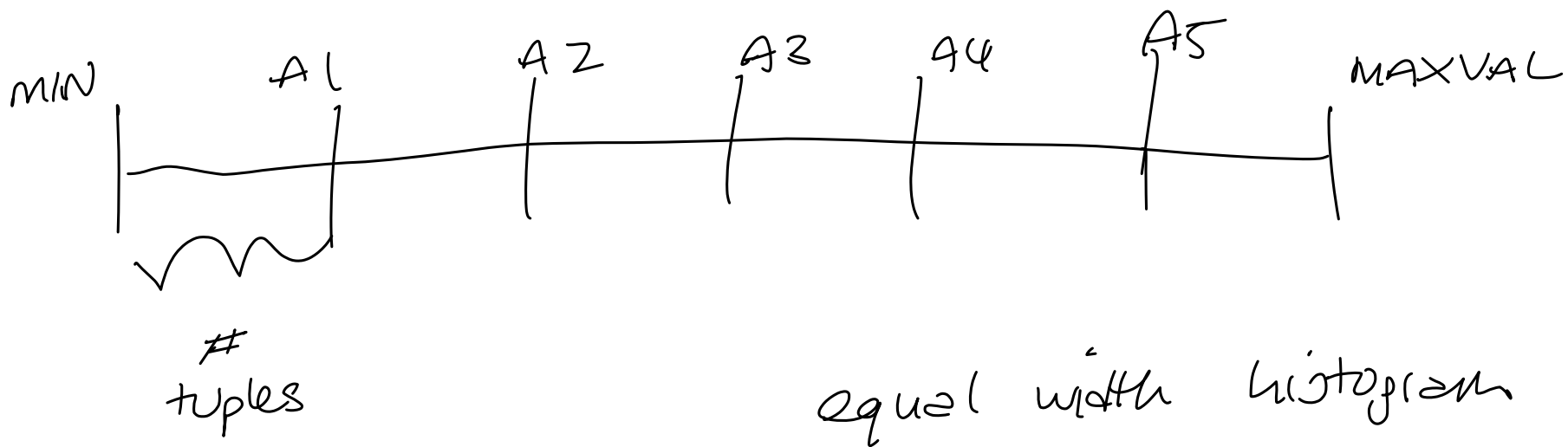
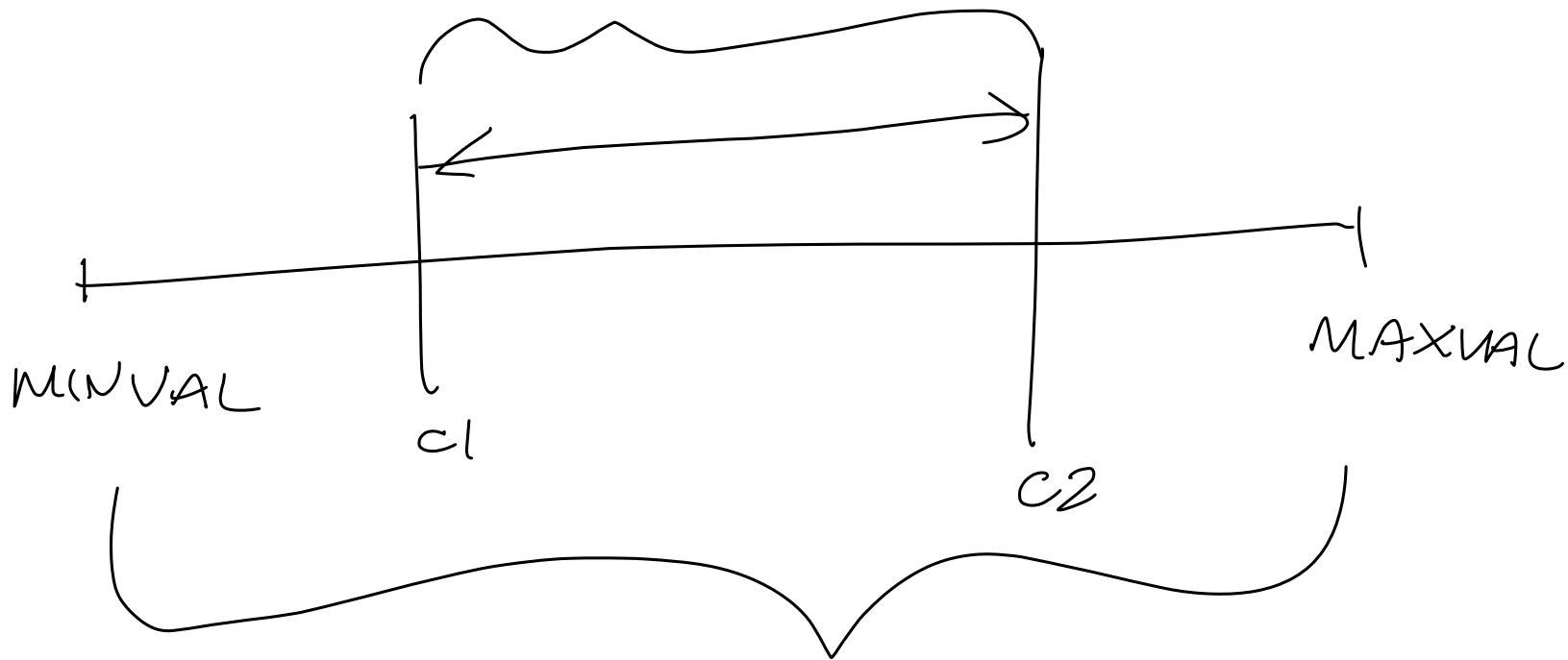


Push selections
 \Rightarrow up

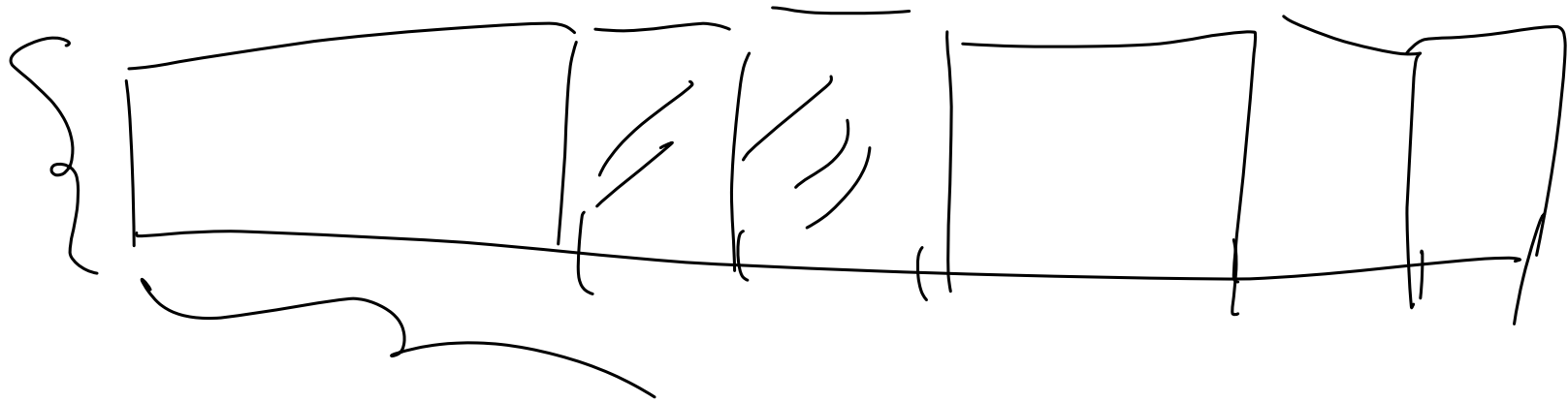


Push selections
down
 \Rightarrow

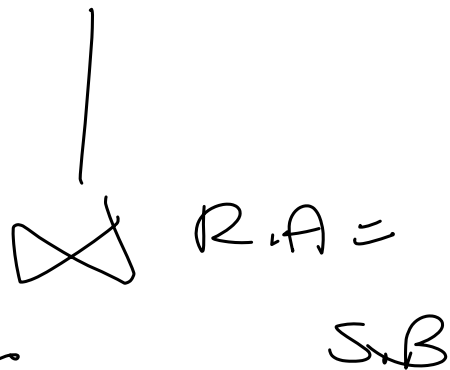




equal height histogram



sort } External sort



Block nested loop join

index search

$\sigma_{R.A \geq 10}$
AND
 $R.A \leq 500$

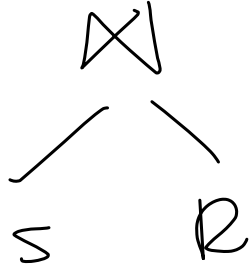
$\sigma_{S.B \geq 10}$
AND
 $S.B \leq 500$

Sequential scan

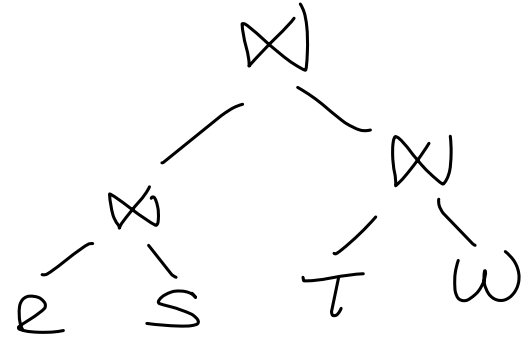
R

S

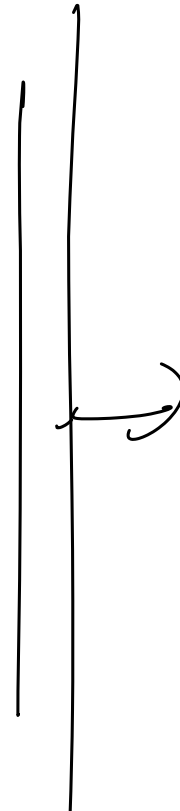
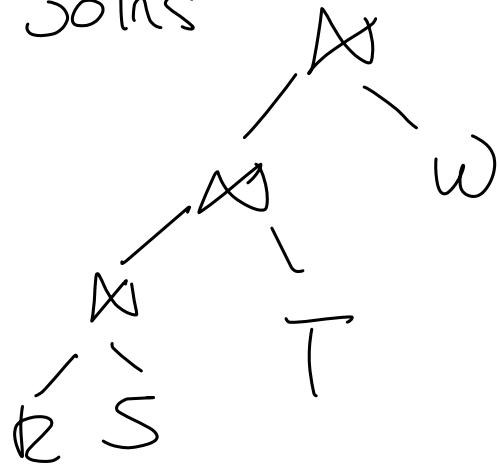
Join ordering



BUSHY JOINS



Left deep joins



good for pipelining

