ASSIGNMENT 1

FIRST POINT:

a.

Algebra:

$$\pi_{sname}((\pi_{sid,sname}(\sigma_{rating>5}Sailors)) \bowtie_{sid=sid} (\pi_{sid}(\sigma_{bid=100}Reserves)))$$
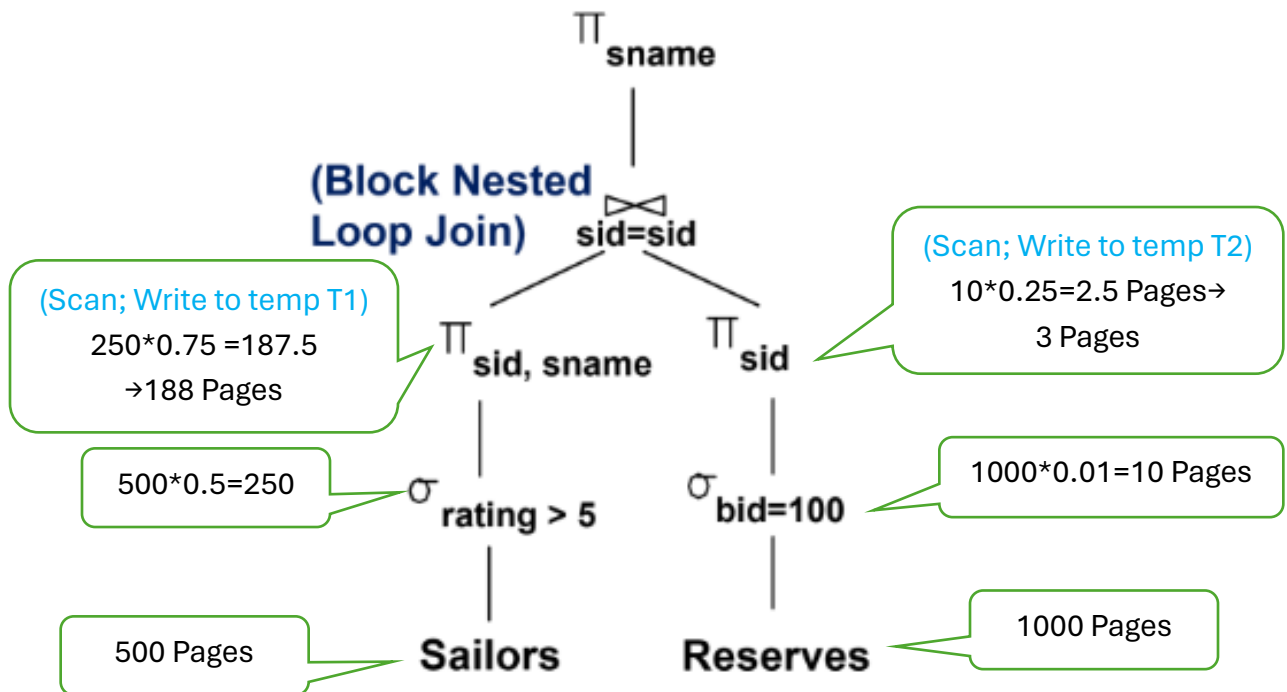
Query:

SELECT T1.sname

FROM

      (SELECT S.sid, S.sname FROM Sailors S WHERE S.rating>5) T1,

      (SELECT R.sid FROM Reserves R WHERE R.bid=100) T2
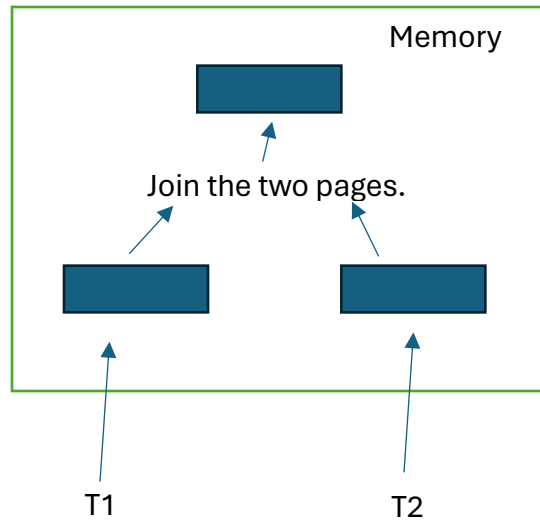
WHERE T1.sid=T2.sid;

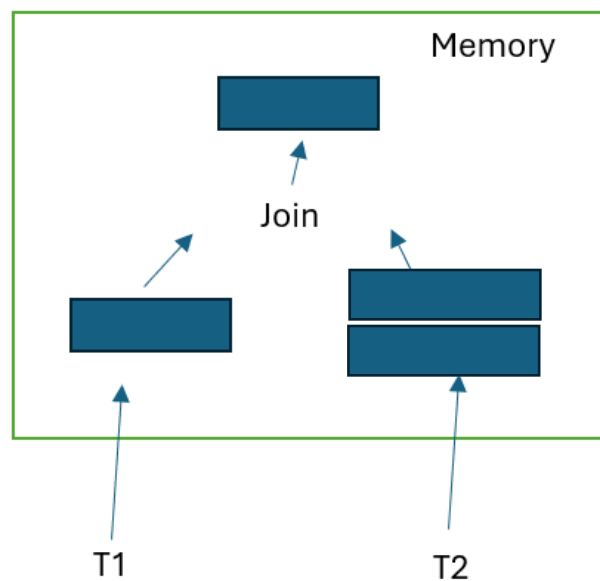**Join:** Is a Block Nested Loop Join with T2 the outer table and T1 the inner table.

b.

Join Cost: 3+3*188= 567 I/O's (We need to Scan T1 3 Times)

Total Cost: 500 (Sailors - Scan) +188 (T1 - Write) + 1000 (Reserves - Scan)+ 3 (T2 - Write) + 567 Join Cost = 2258 I/O's

SECOND POINT:

Because T2 is the outer table I would put the extra page for T2.

Join cost: 3+2*188 = 379 I/O's (We need to scan T1 [3/2]=2 times)

Total Cost: 500 (Sailors - Scan) +188 (T1 - Write) + 1000 (Reserves - Scan)+ 3 (T2 - Write) + 379 Join Cost = 2070 I/O's