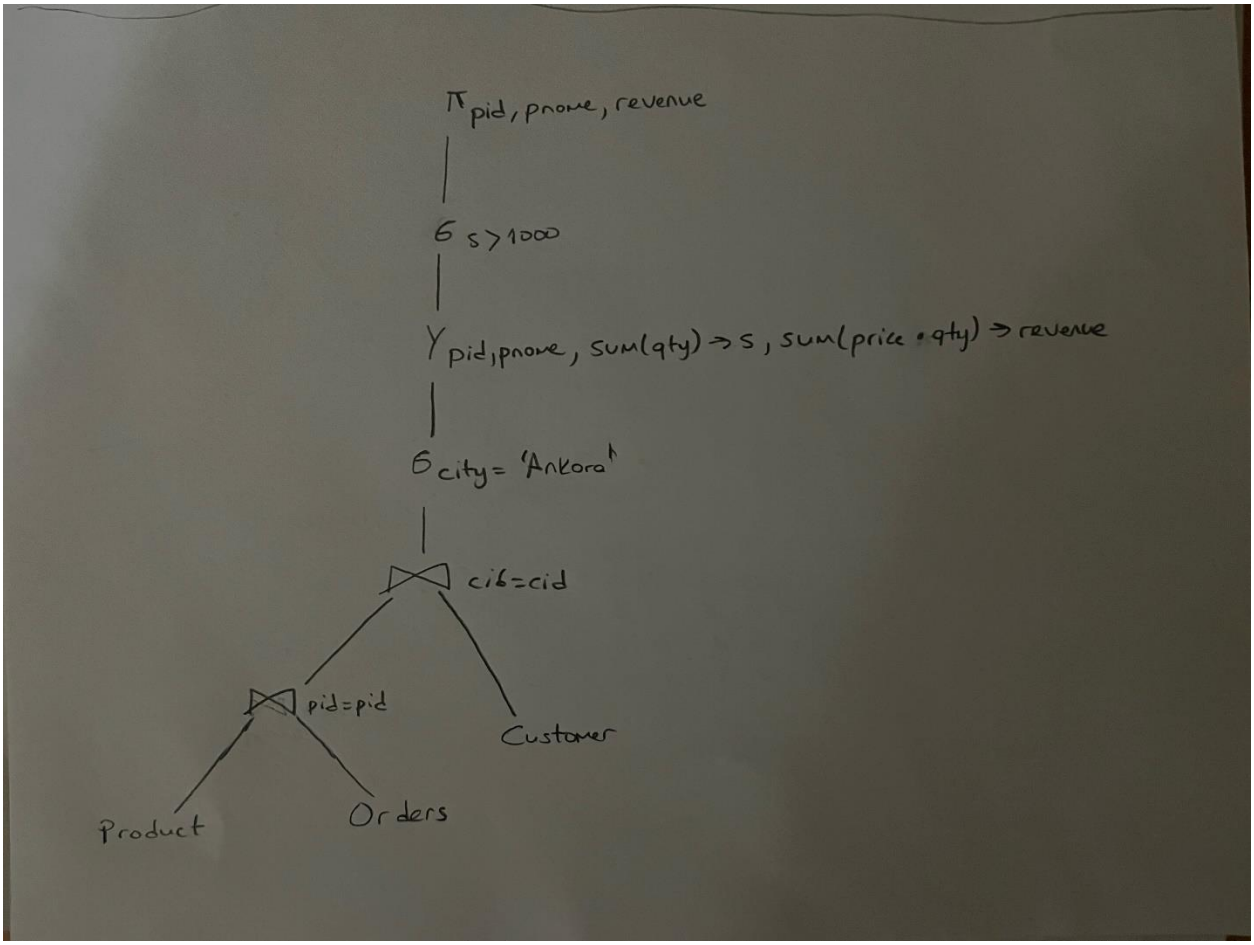
CENG352 Written Assignment 2

Bartu Kılıçkaya

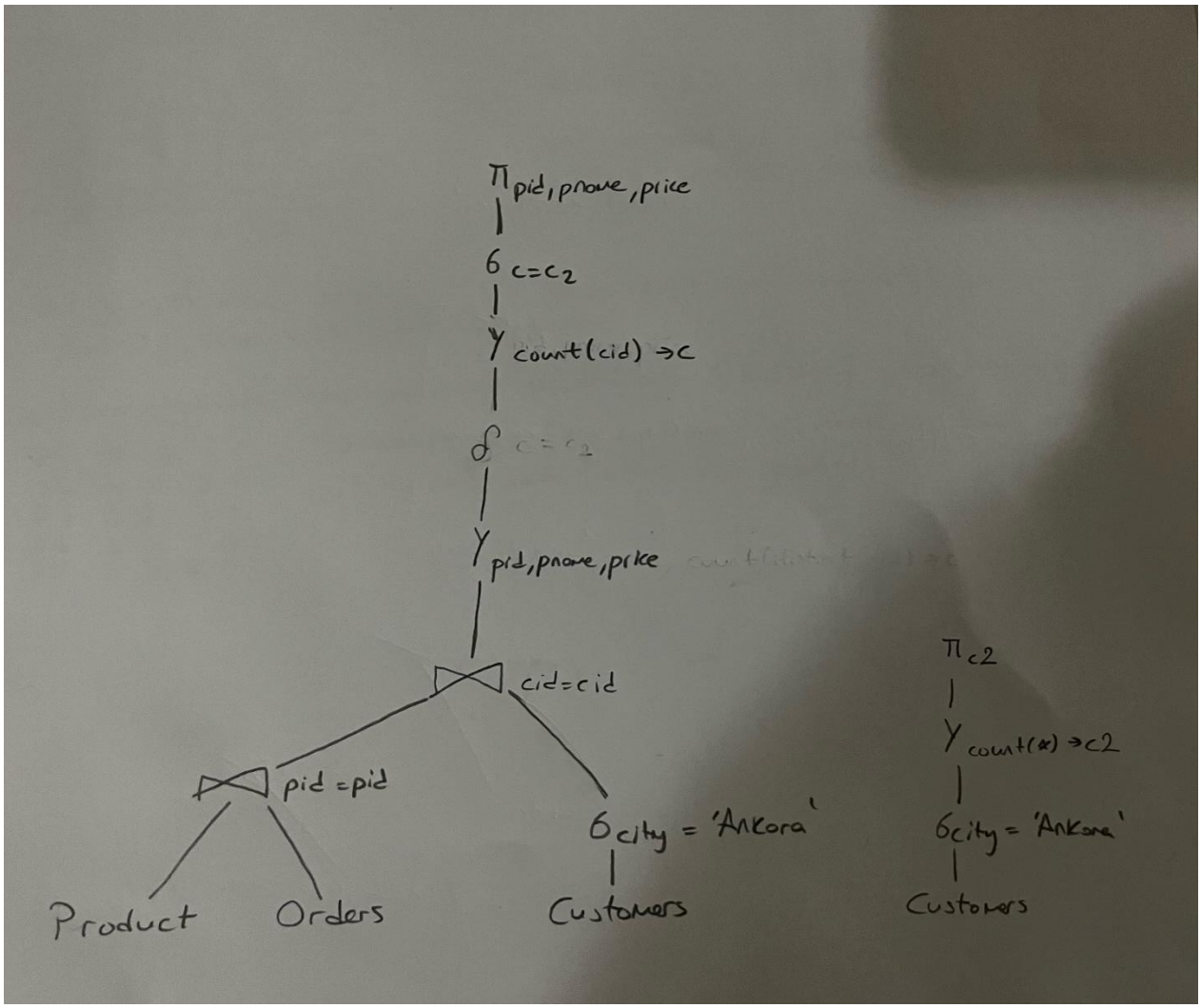
2380640

Q1)

a)



b) We need the products that are sold to all of the customers which live in Ankara. With that means all of the customers from Ankara have to buy that product.



Q2)

a) 100000/1000 = 100 tuples and 10000/1000 = 10 blocks.

b) 1000 * 5000 / max{100, 1000} = 1000 * 5000 / 1000 = 5000 tuples.

100 * 200/max{100, 1000} = 100*200/1000 = 20 blocks. 20 * 3/2 = 30 blocks in total since size increased %50.

c) Since cost = B(R) + B(R)B(S)/(M-2), 100 + 100*200/20 = 1100

d) Since B(S) + B(R) > M . Total cost: 3B(R) + 3B(S). 3*100 + 3*200 = 900.

e) Since min(B(R), B(S)) <= M^2, we can use partitioned hash join. Cost= 3B(R) + 3B(S) = 3*100 + 3*200 = 900.

f) Since cost= B(R) + T(R)T(S)/V(S,b), 100 + 1000*5000/1000 = 5100

g) R $join_B$ S = 100 + 100*200 = 20100. 5000 tuples in total.

Selection for D: 10000 / 1000 = 10. 100 tuples in total.

RS $join_C$ T = 5000 + 5000 * 100 = 505000.

Total cost = 20100 + 10 + 505000 = 525110.

Q3)

Plan 1:

Index Scan: 2

Index Join for B: 2 + 2*3000/3000 = 4. 4000 tuples.

Index Join for C: 4000+4000*40000/20000 = 12000

Total cost: 12006

Plan 2:

Index Scan: 2

Hash Join for B: 2 + 3000 = 3002. 600000*2/3000 = 4000 tuples.

Index Scan: $5*10^4 / 10^4 = 5$

Hash join for C: 4000 + 5 = 4005

Total cost: 7014