

P-6

Our solution will be that we will store the employees' table in the hash table by the employee id, and each cell will store the registered employee and its index, then we will iterate the transaction table and search the hash table by the Foreigner key, He will take  $O(m)$  where  $m$  is the volume of transactions

P-8

I think there are many solutions

- let's say that the products are stored in a sorted (by time) array and each element has a flag ( boolean value ) that represent the situation. true => is normal, false => there is wrong.

we can just iterate over that array and get the first element we find its flag is false, his solution takes  $O(n)$  for worst-case

- the second solution I think it's the best I can get. we can divide the array and check the last element in the first part if its flag is false we will ignore the second part and do the previous step again and if the flag wasn't false we will ignore the first part and do the same step in the second part.

It takes  $O(n \log n)$