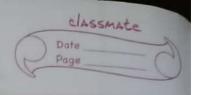
Prit Deseri 1002170533 Fands-On 11



17

ljuers a dynamic table (see section 17.4) that doubles in size when it needs more space. Find the amoritized runtime for inserting a dements.

a) Use the aggregate method we consider the total cost accross all the insertions and calculate the average (amortized) cost per insertion.

When inserting the its element, if a vesize operation is not needed then the existing hoppins are cost o (i) as it involves copyins are existing elements to the new table of size 2°K (K is the number of vesizes performed.).

Fotal cost :- O(n) K

~ O(n logn)

Cost per insertion = O(logn)
Runtime per insertion = O(logn)
Total time is O(n) * log(n+1).

b) Accounting Method In the accounting Mothed, we assign each insertion a higher "amortized" Cost to store " credets" that your for freture resigning costs. Pesudo code: for 121 ton. It table is full new table = create new table with size then copy elements green at stable to nevery table = newtable start aten i trapa inital charge=0 for izl ton. Charges += 2 mark exist ni bertuat error pt into 2m. credits + 2 m. Notal charge= 2 n = 0 (n). total credits = m+2m ... n/2*m A molized cost pa insertion = Total /n. 20 (n/n). 2001). runtime per uniertion O(1). Total time O(n)

Page