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1) Prosenting in elements using 40

a) aggregate method:

The fable doubles in size when it huns out of space. So if the original size is I, after Bruntion it doubles the size to 2 case after 2 more insertions it doubles doubles to size 4 etc.

In general after k doublings the size is 2k.

Proido code? (3) (1)

initialize tuble with capacity =1

for i=1 to n;

if table is full:

new table = crease newtoble with

size 28 current size

copy elements then from old tubles

o to hew table you

table = new table

Insert element I into tuble

let, k = log (n+1) -1

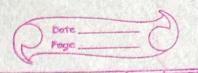
Total cost = o(n) K

17 0 (nlogn)

ast per Pruestion = 0 (109n)

Runtime per insertion is 6 (logn)

Total time es 6 (n) \* log (n+1)



b) accounting methods:

change 2 with for each injertion when the table doubles in size from m to 2m, oredit m with,

Total credit 7, m+2m+ um+..... N2 & m = o(n)

pseudo code :

Initialize table with capacity = 1

for 1=1 to n

if table is full:

new table = create newtable

with size x corrent size

copy element from old table to new table

table = new table

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insent element l'into toble

l'initialize changes = 0

initialize credits = 0

For 82, to n:

charges t=r

it table doubled in size

from m to 2m

credits t=m

Cost per insertion = total/n = o(n)/n = o(1)

Runtine per insertion = 0(1) Total fime = ocn)