



# CSE370

## Database Systems

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Student Name : Rejwan Shafi

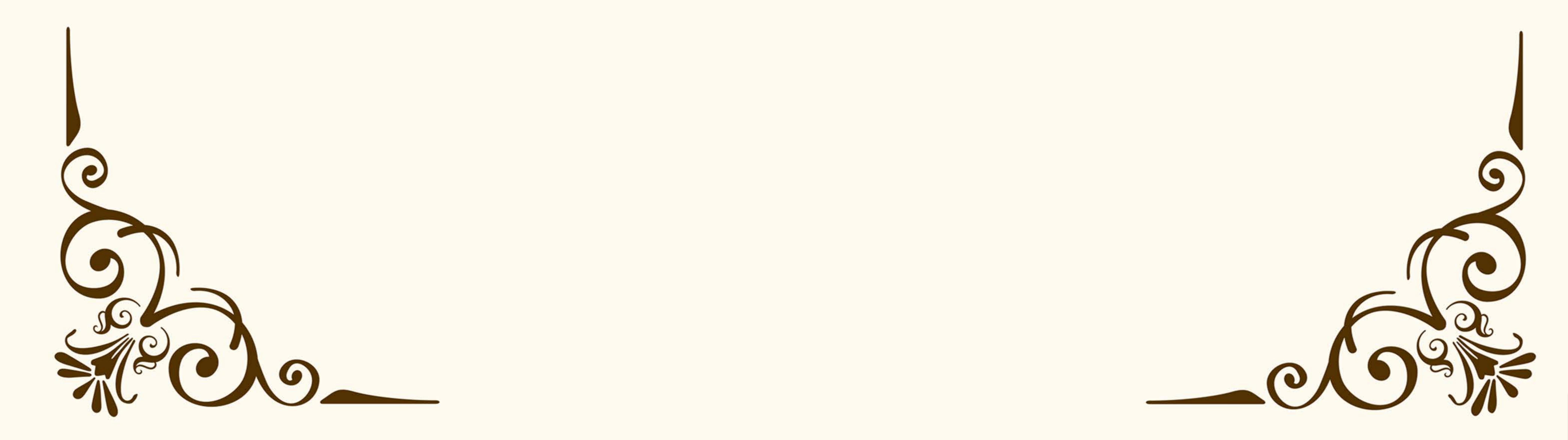
Student ID : 23241108

Section : 08

Semester : Fall 2023

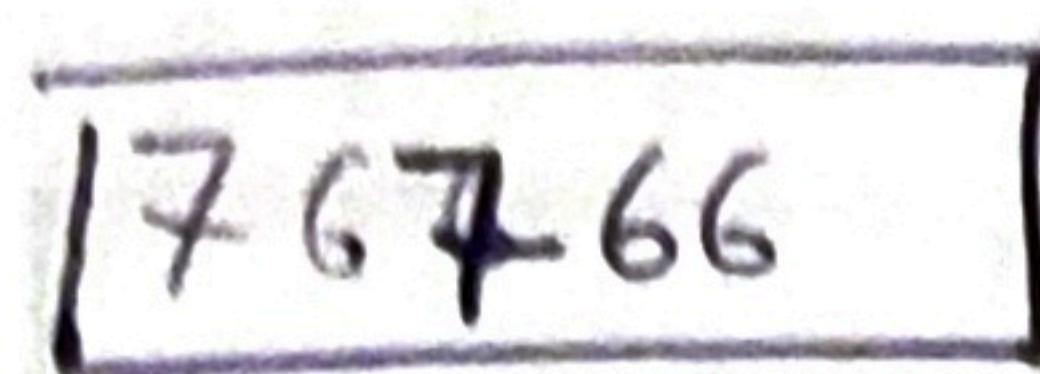
Assignment No : 03

Date of Submission : 12 / 12 / 2023

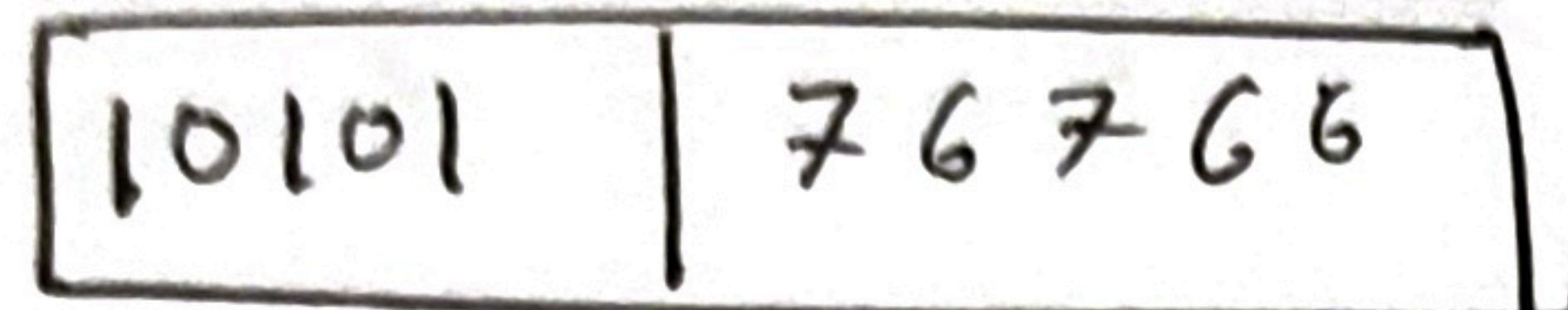


Answer to the question no 1(A)

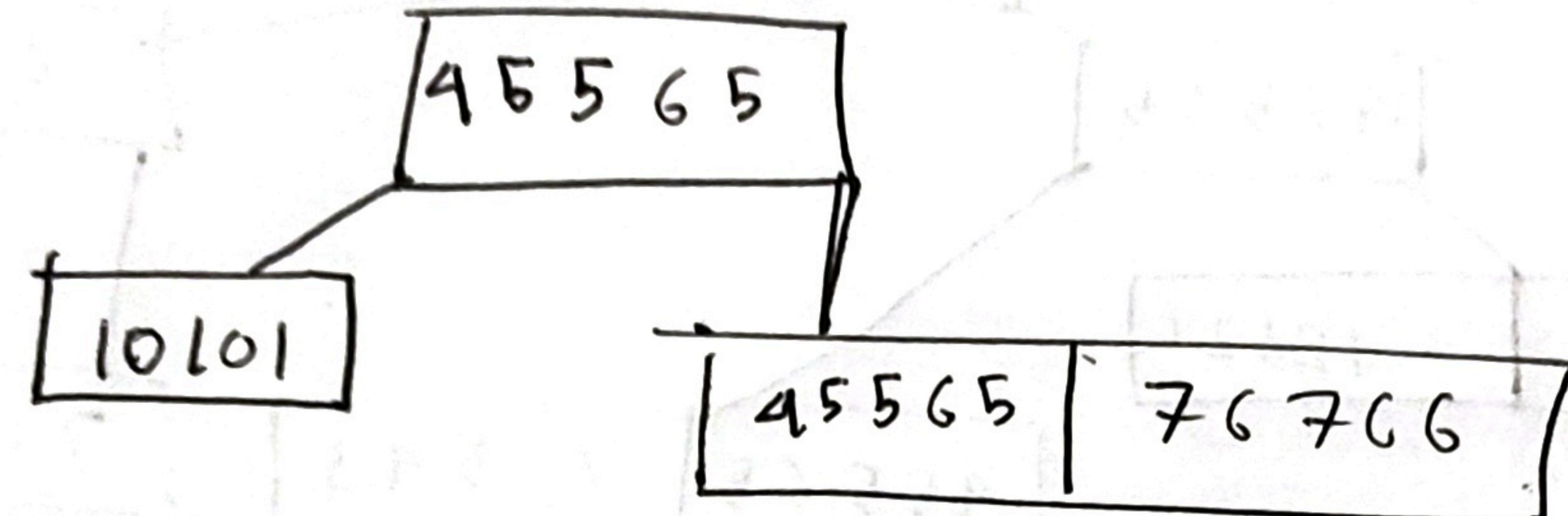
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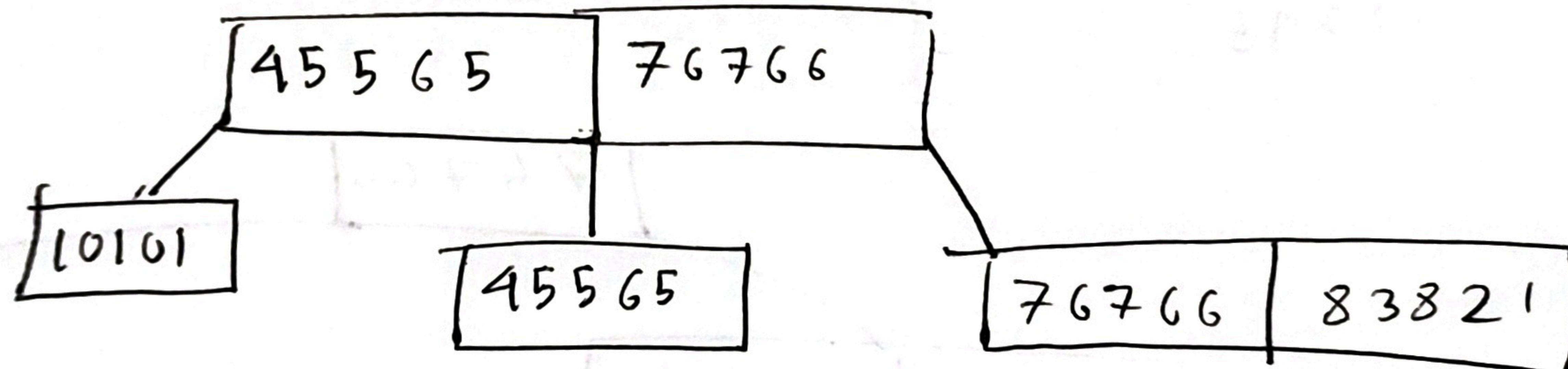
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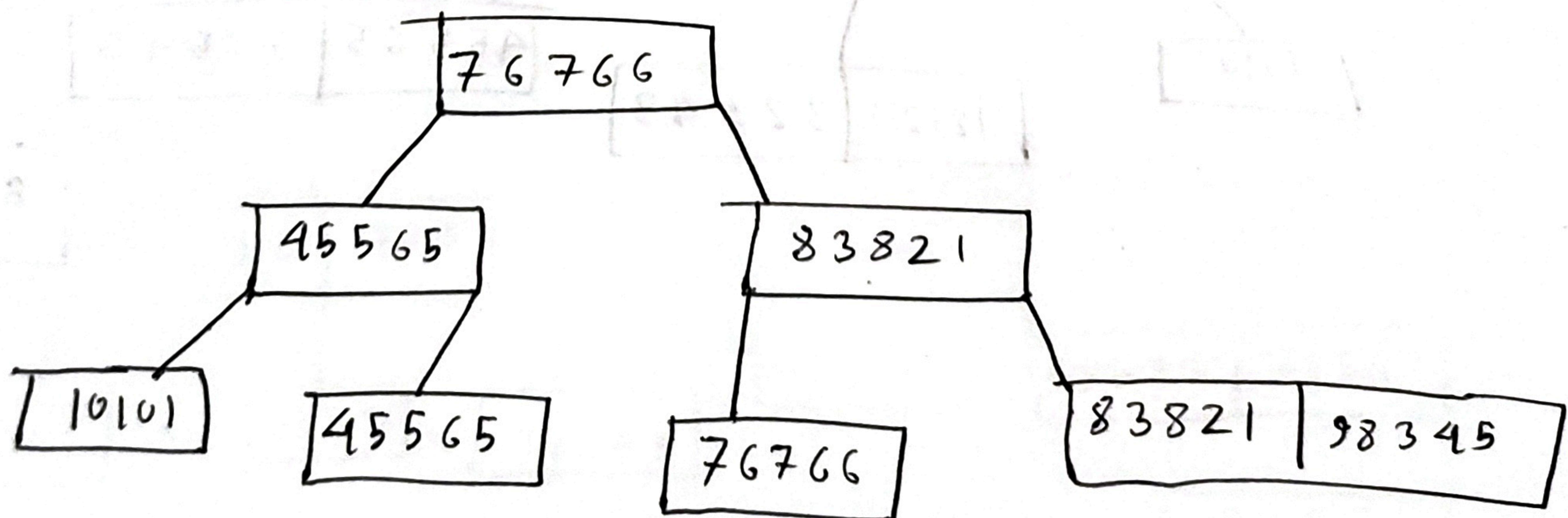
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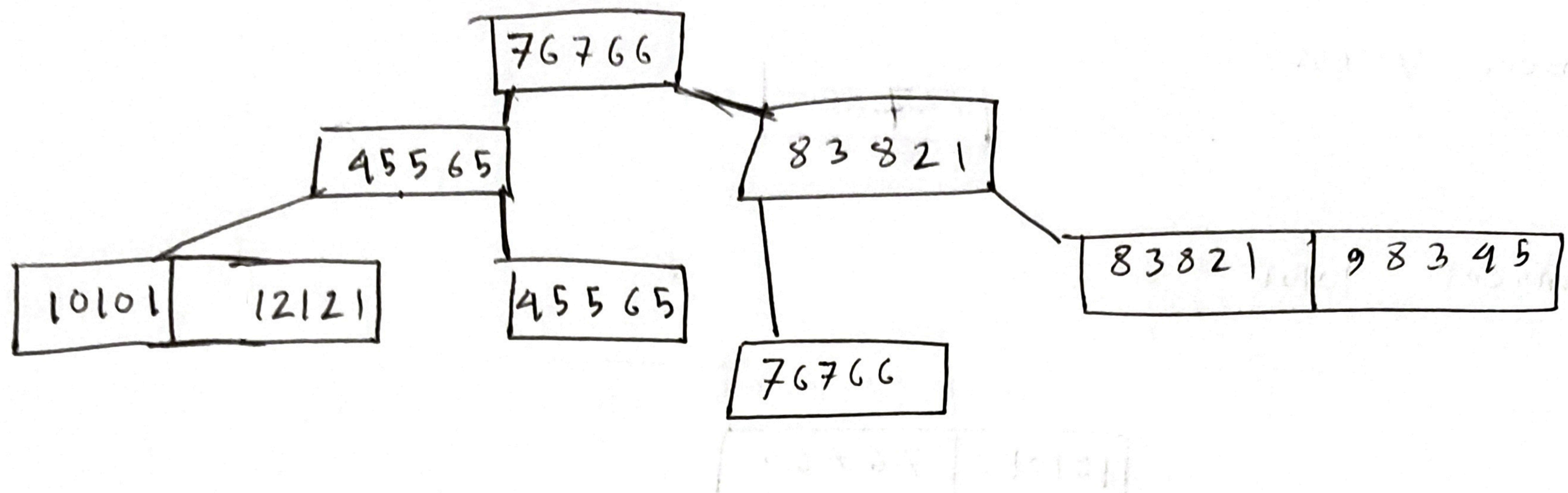
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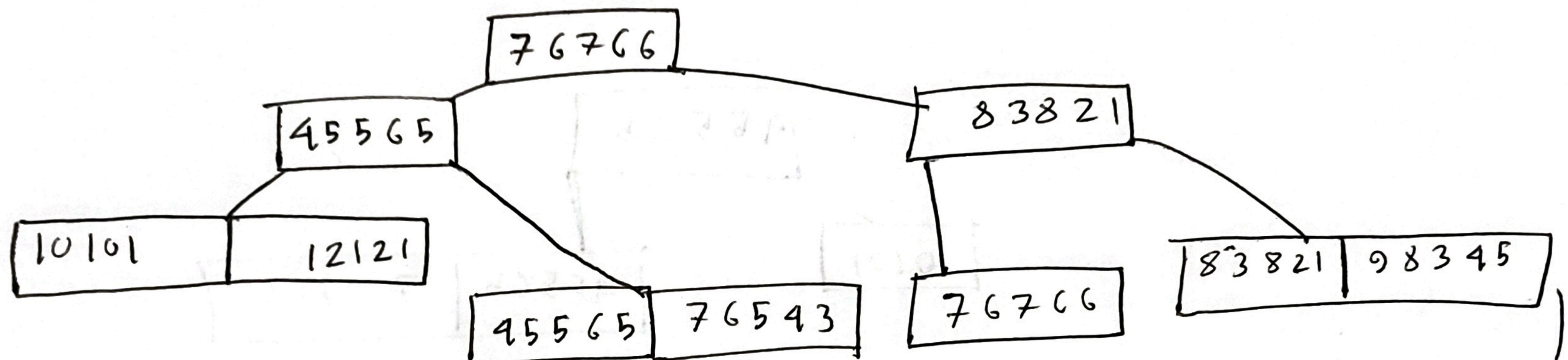
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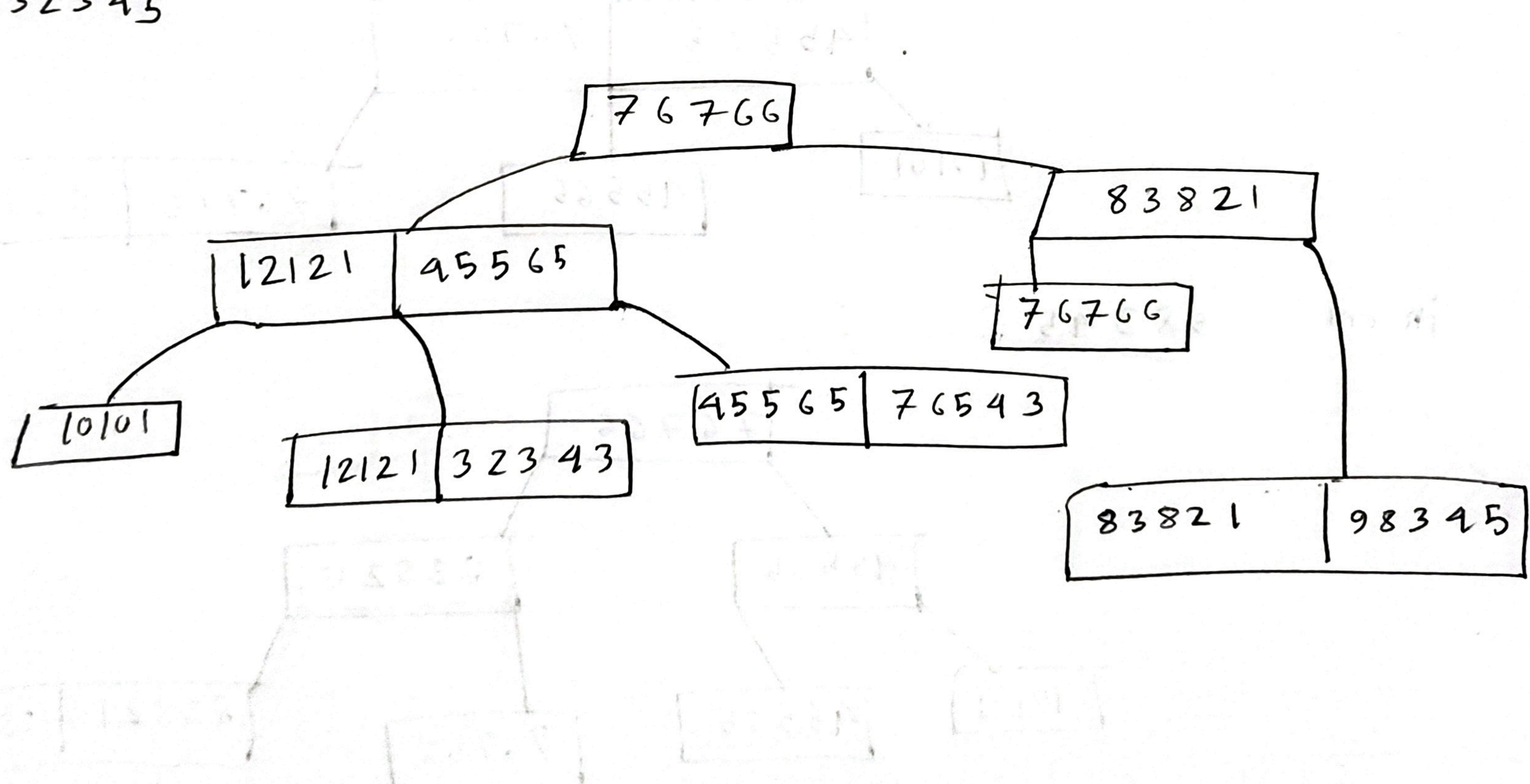
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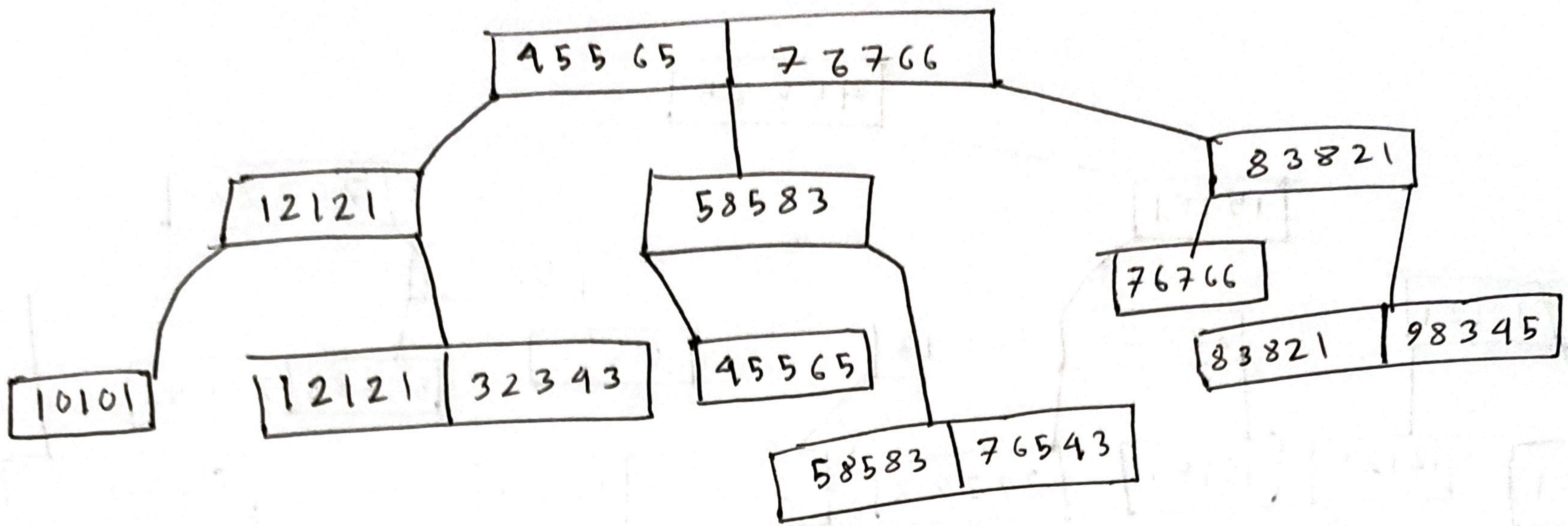
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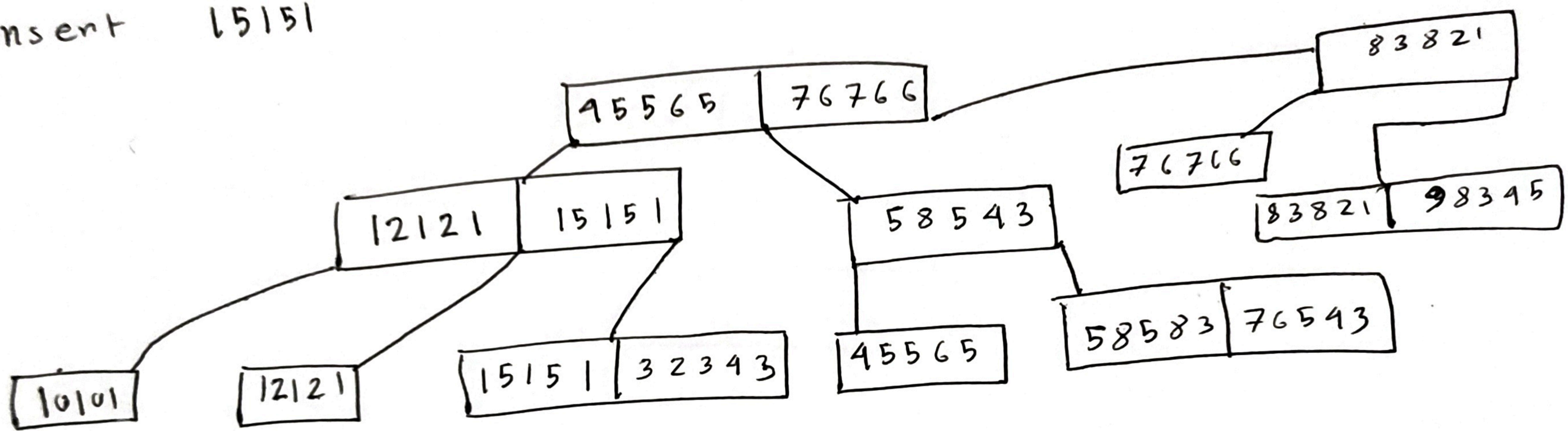
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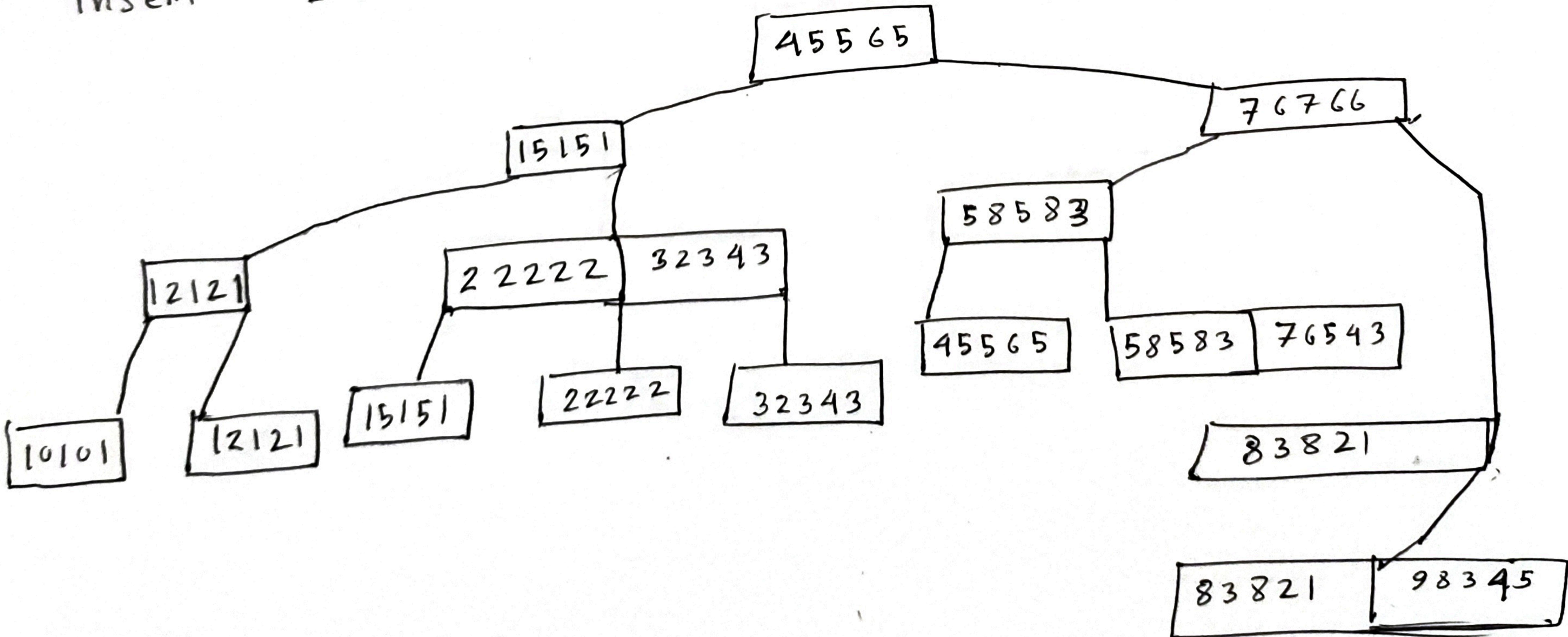
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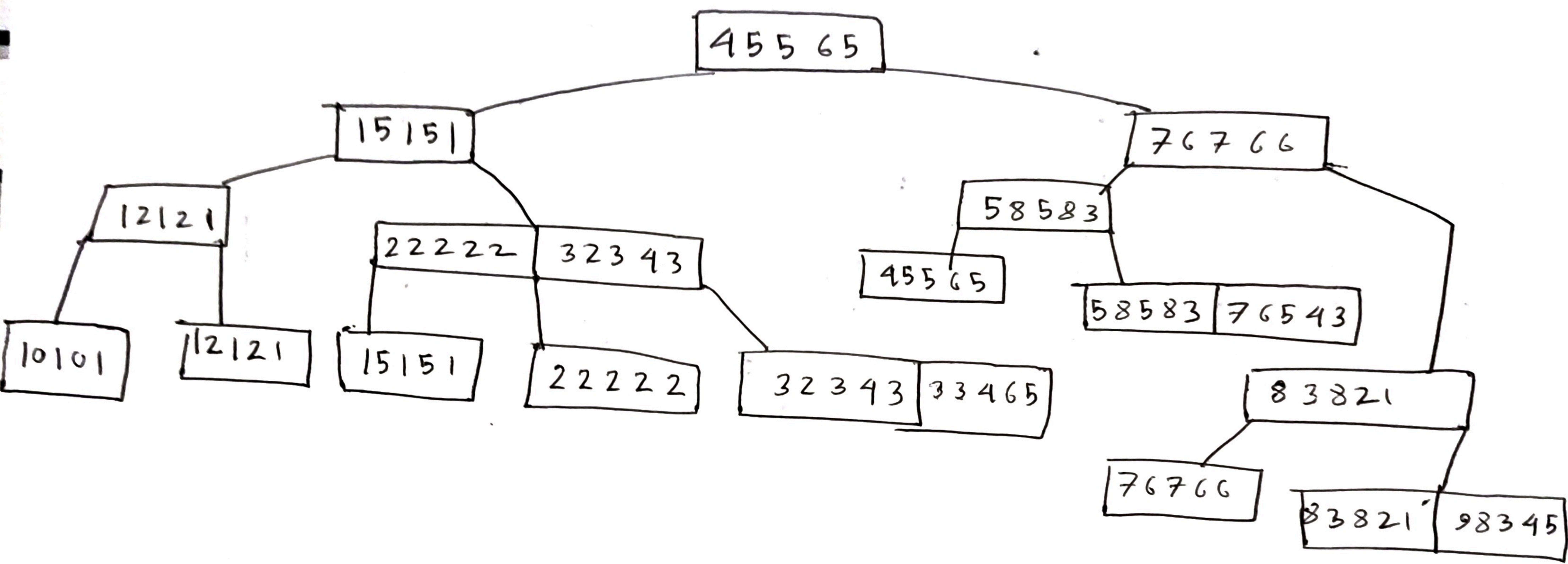
insert 15151



insert 22222



insert 33 465



Answer to the question no 1 (B)

Given that,

Order ,  $n = 5$ .

$\therefore$  maximum number of values in a node  $= 5 - 1$   
 $= 4$

$\therefore$  maximum number of children per node  $= 5$ .

insert Crick

Crick

insert Srinivan

Crick | Srinivan

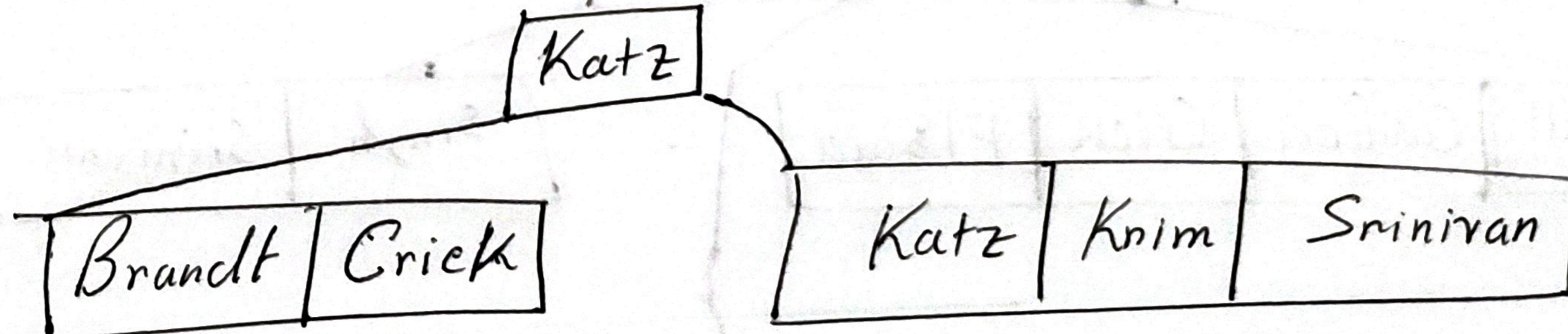
insert Katz

Crick | Katz | Srinivan

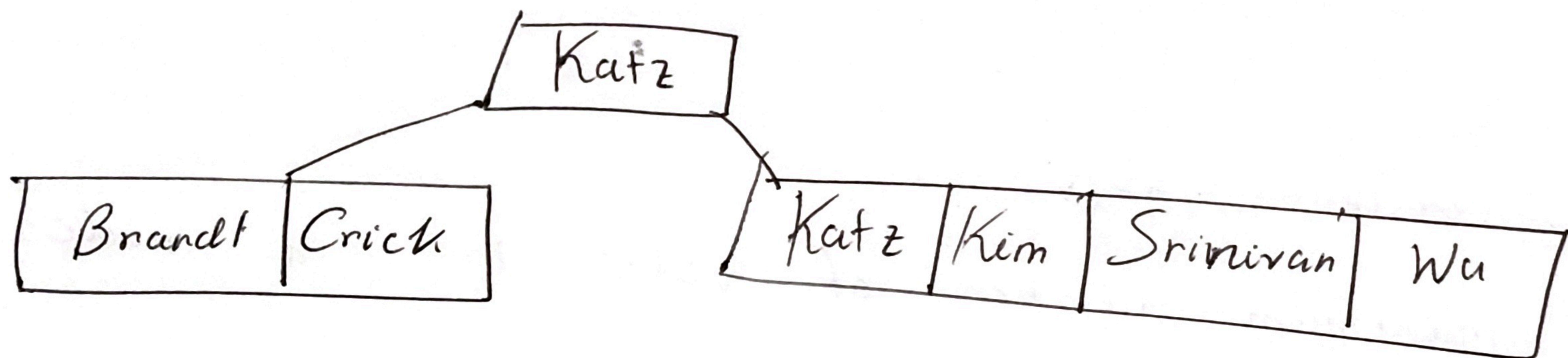
insert Brandt

Brandt | Crick | Katz | Srinivan

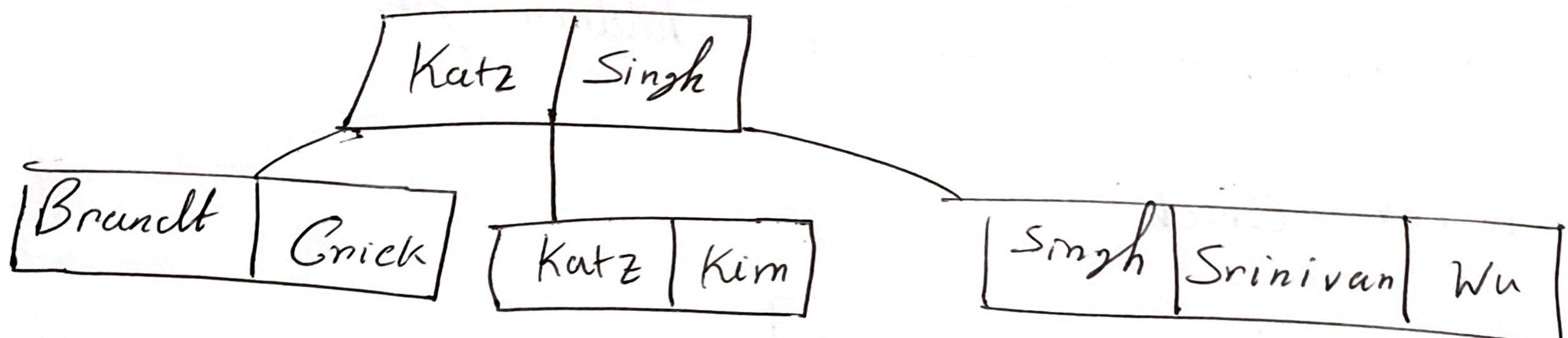
insert Krim



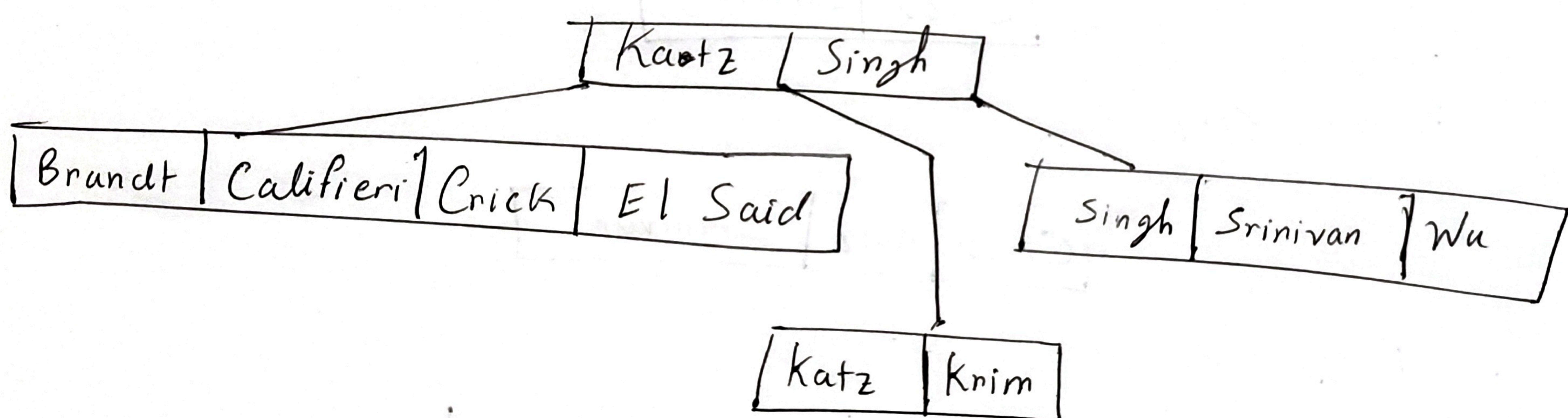
insert Wu



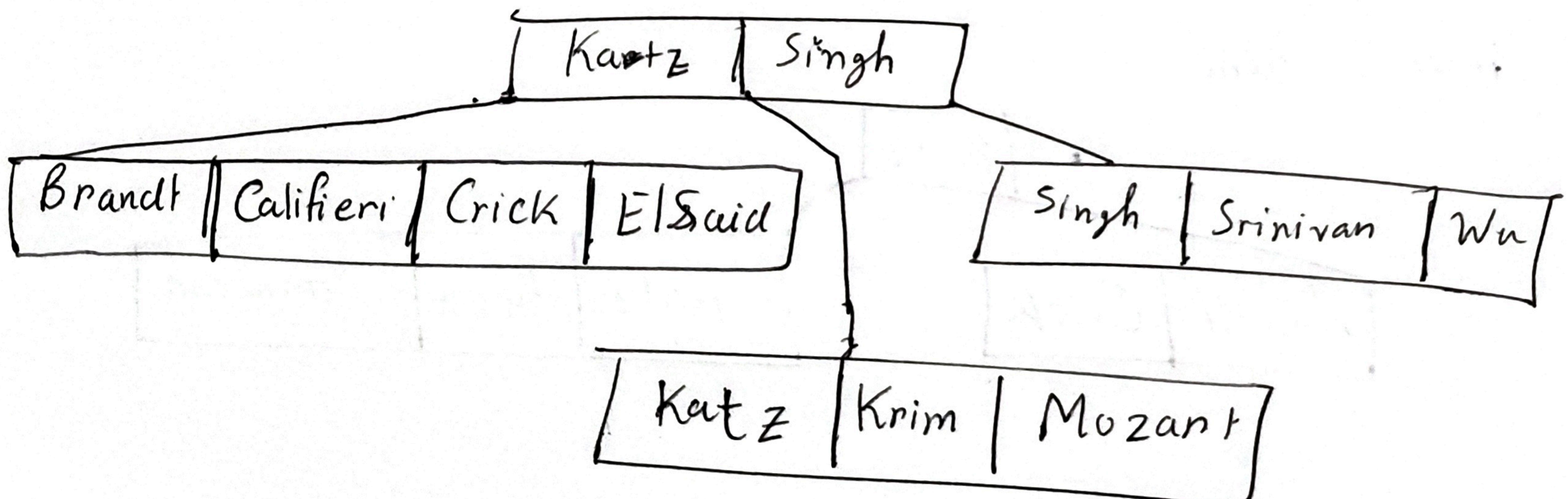
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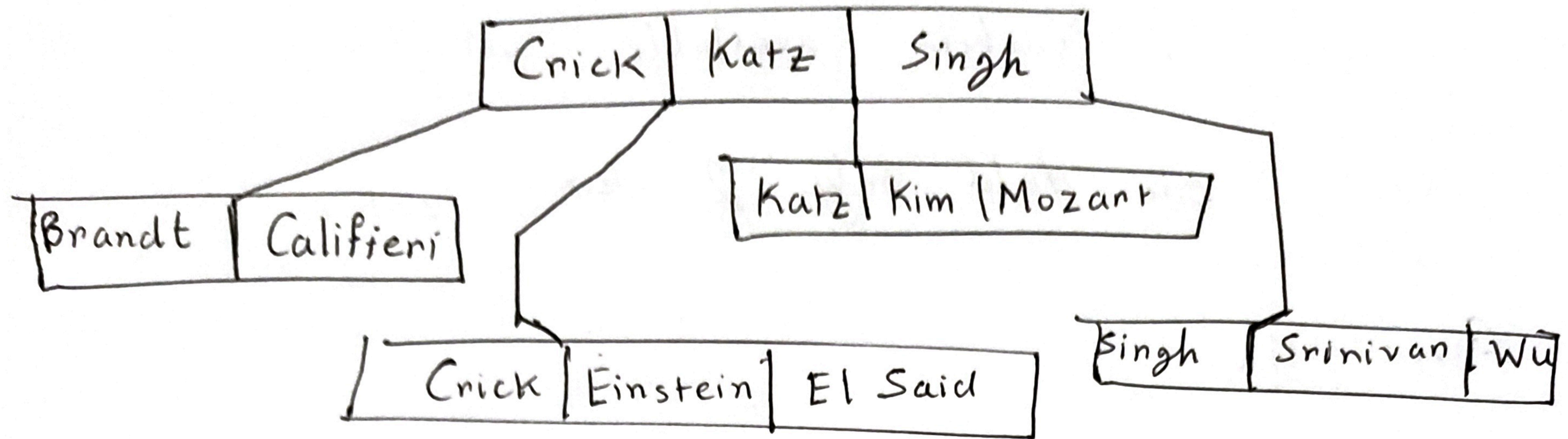
insert El-Said, Califoen.



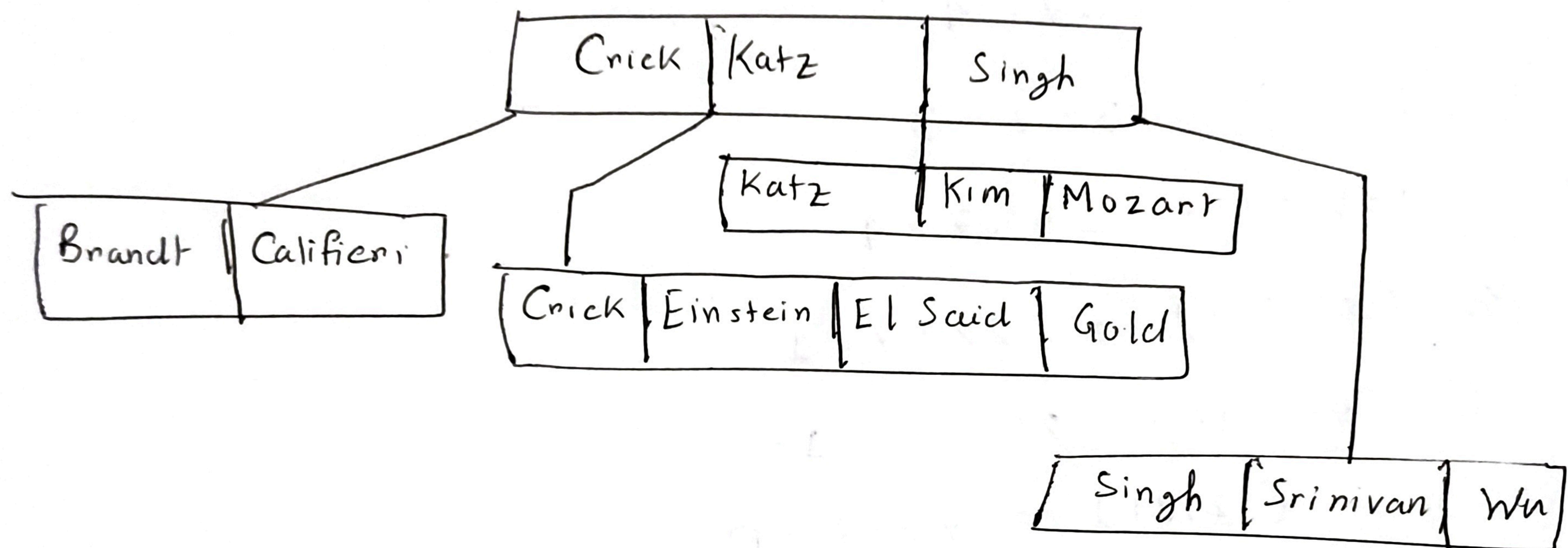
insert Mozart.



Insert Einstein



Insert Gold.



## Answer to the question no 2

There are 7 buckets available where each bucket can hold only 2 index entries.

Given thus,

hash function,  $h = (\text{sum of all digits}) \% 7$

$$h(76766) = 32 \% 7 = 4; \quad \text{in id}$$

$$h(10101) = 3 \% 7 = 3$$

$$h(45565) = 25 \% 7 = 4$$

$$h(83821) = 22 \% 7 = 1.$$

$$h(98345) = 29 \% 7 = 1.$$

$$h(12121) = 7 \% 7 = 0.$$

$$h(76543) = 25 \% 7 = 4$$

$$h(32343) = 15 \% 7 = 1$$

$$h(58583) = 29 \% 7 = 1$$

$$h(15151) = 13 \% 7 = 6$$

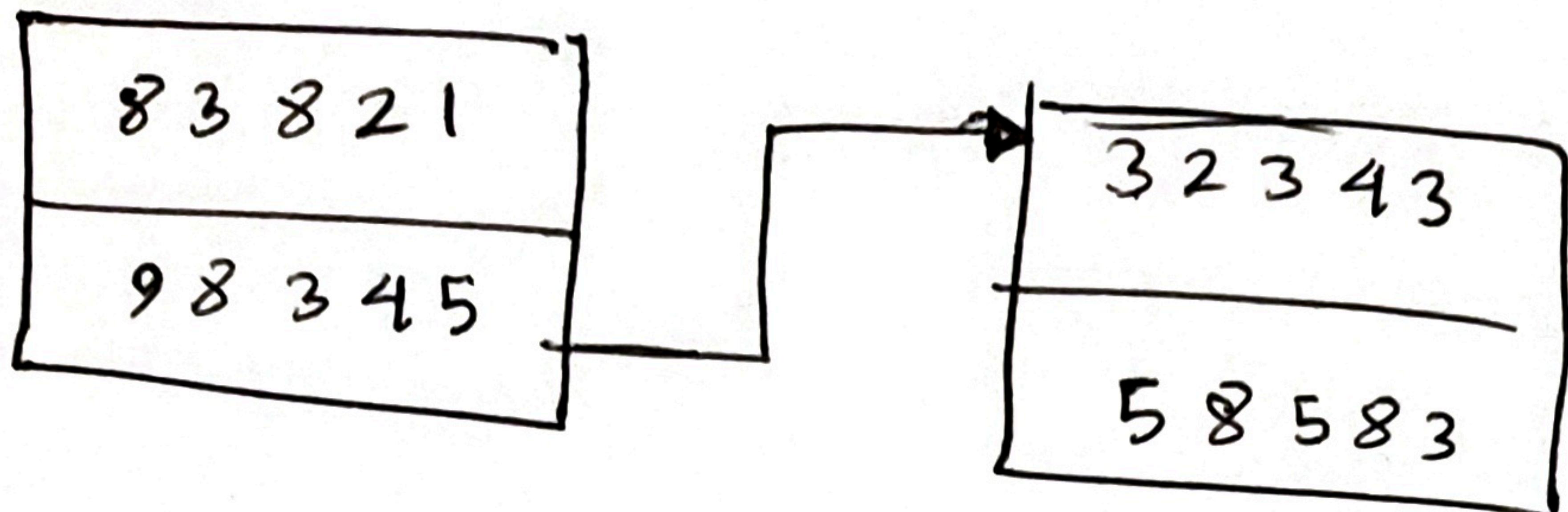
$$h(22222) = 10 \% 7 = 3.$$

$$h(33405) = 21 \% 7 = 0.$$

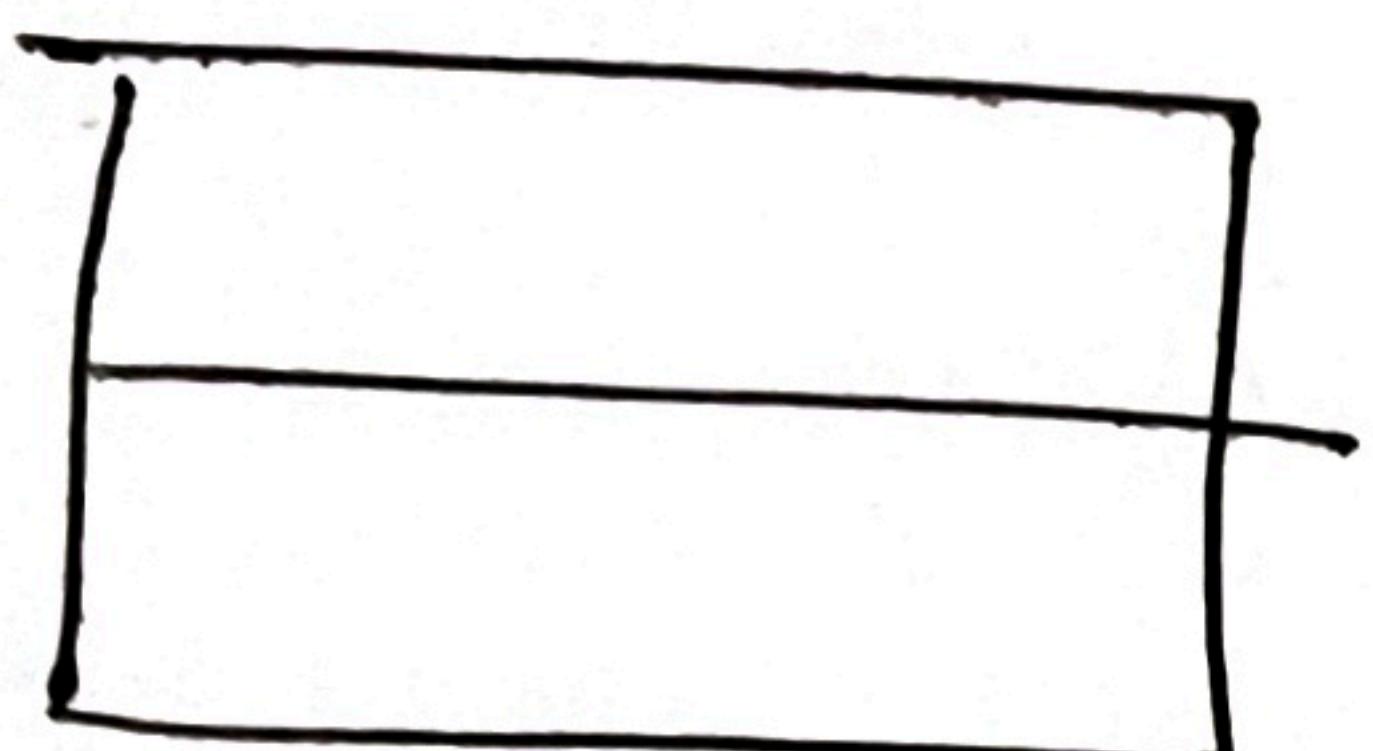
Bucket 0 :

12121
33465

Bucket 1:



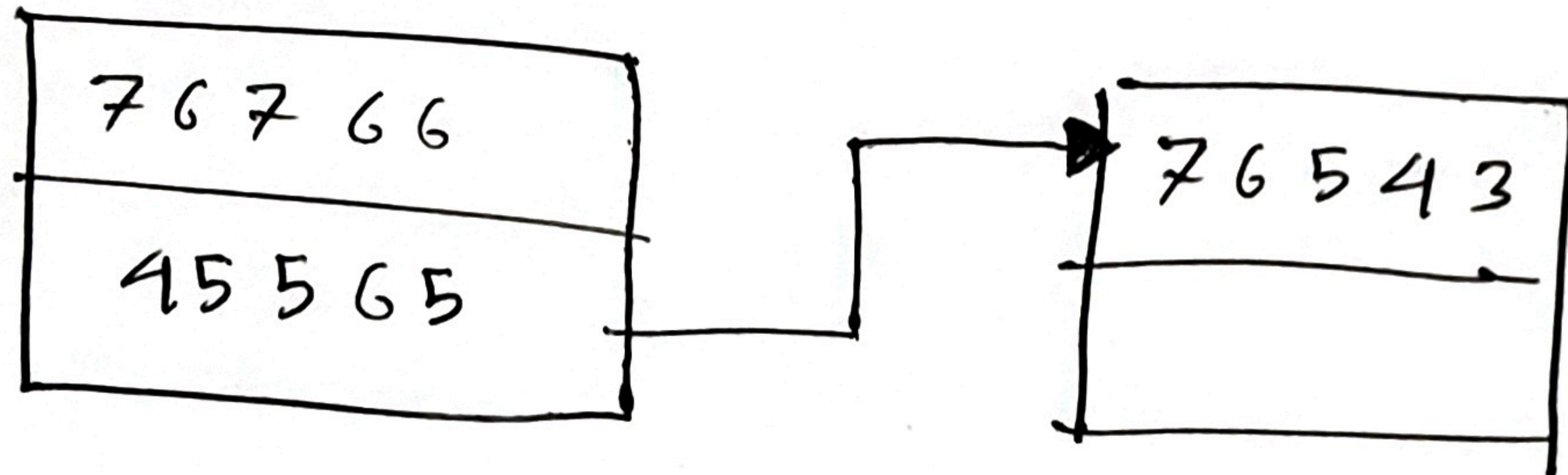
Bucket 2



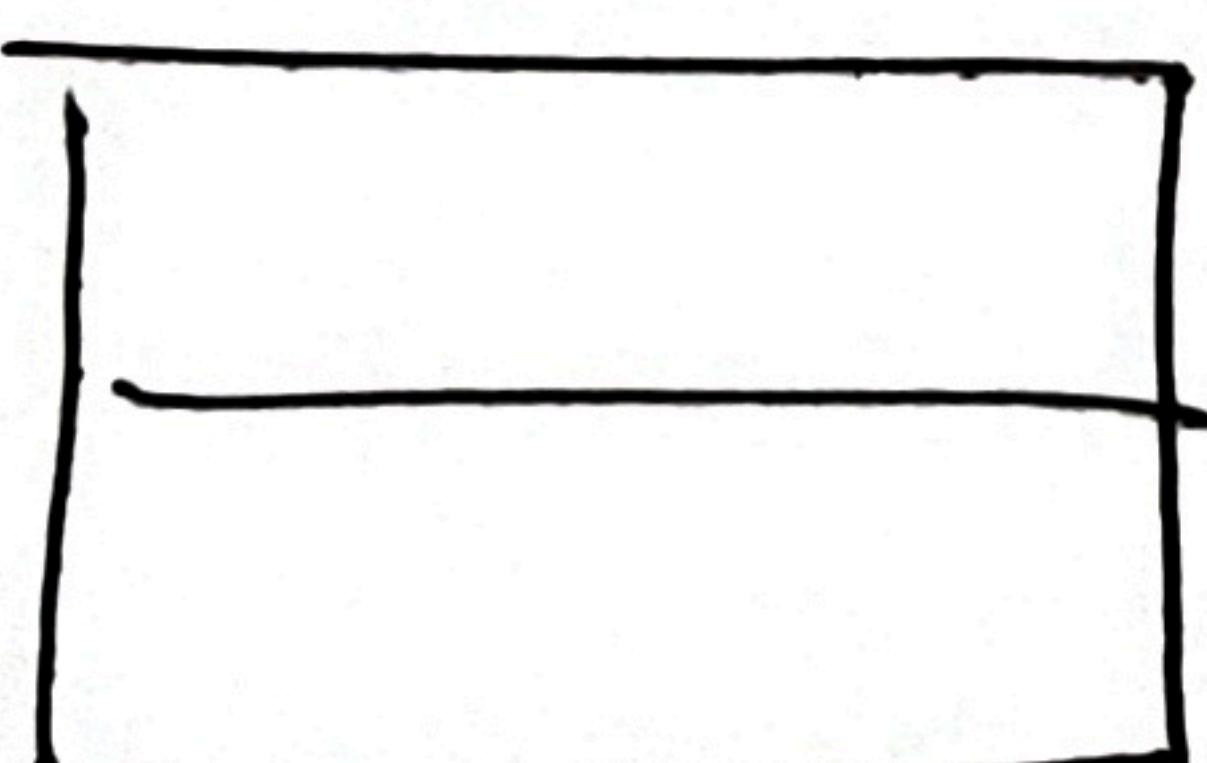
Bucket 3:

10101
22222

Bucket 4



Bucket 5



Bucket 6:

15151