CSE370

Assignment-3

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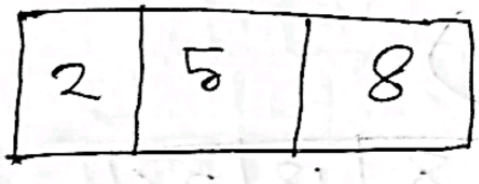
ID : 22301061

section : 13

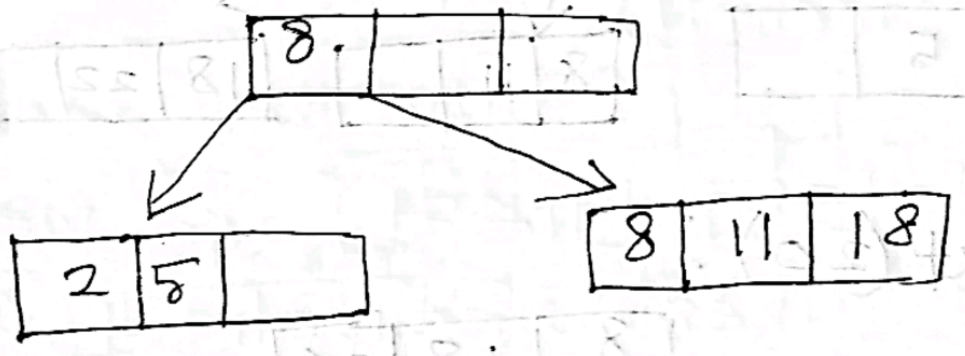
① ⓐ Insert: 2, 5, 8, 11, 18, 22, 32, 26, 20, 21, 29, 43, 73, 66, 53

$n = 4$, Pointer$(n) = 4$, Values$(n-1) = 3$

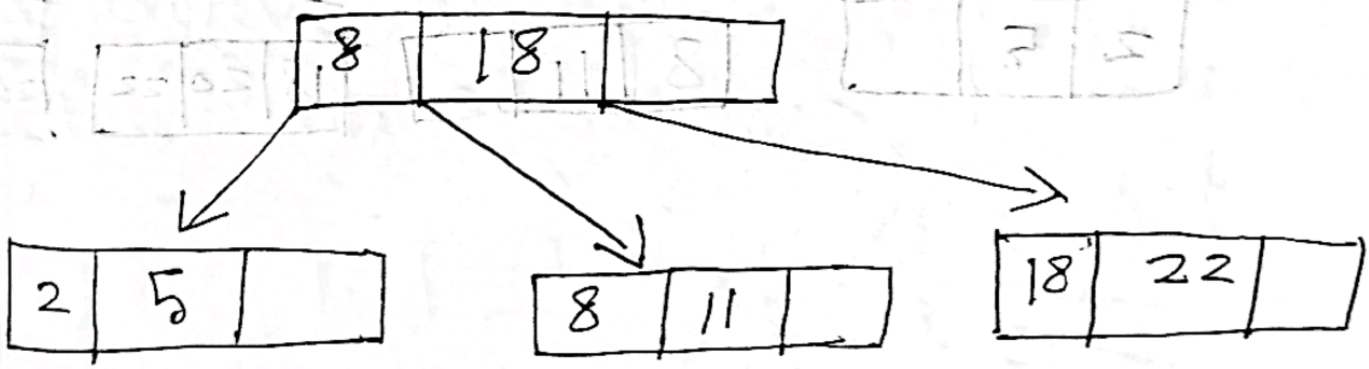
Insert (2, 5, 8),



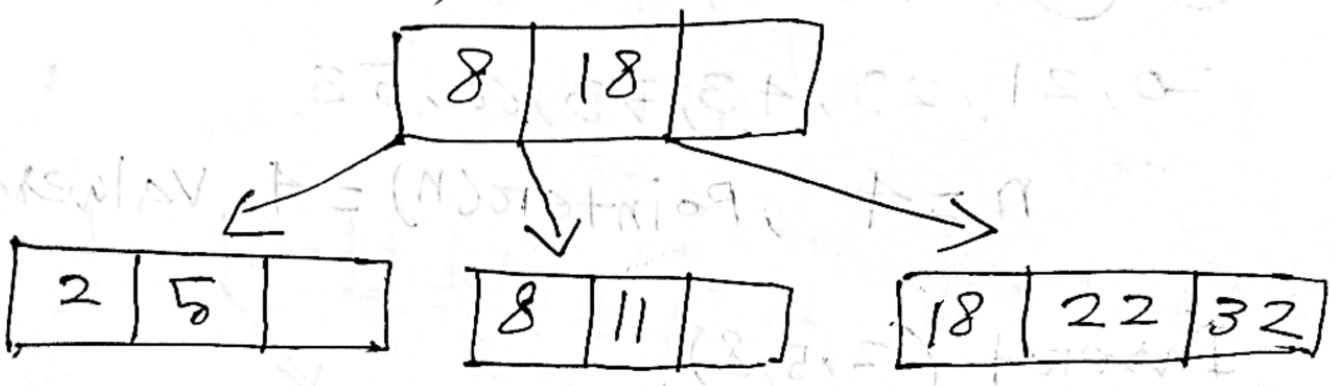
Insert (11, 18),



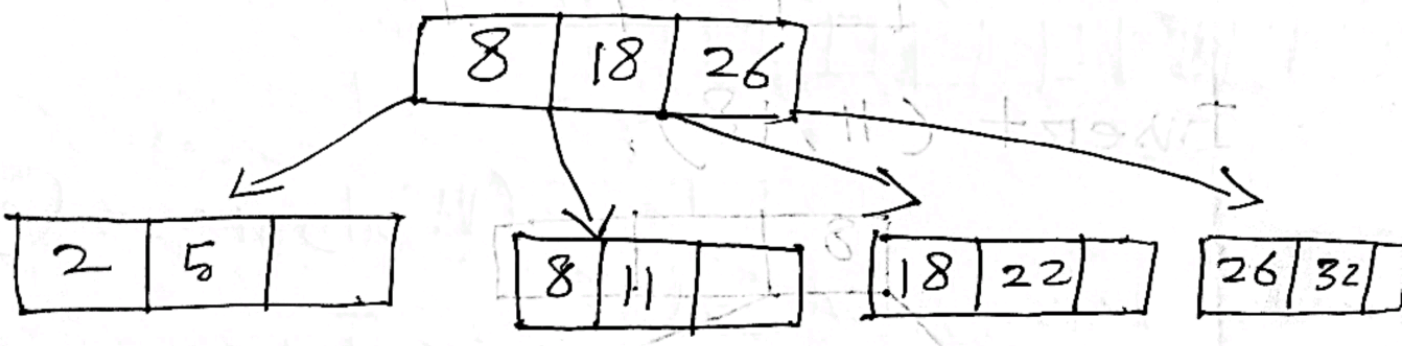
Insert (22),



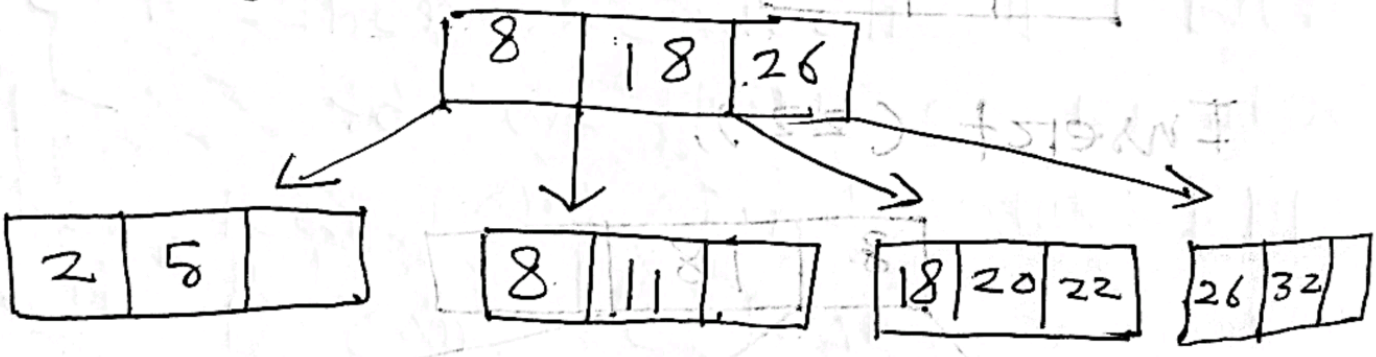
Insert (32):



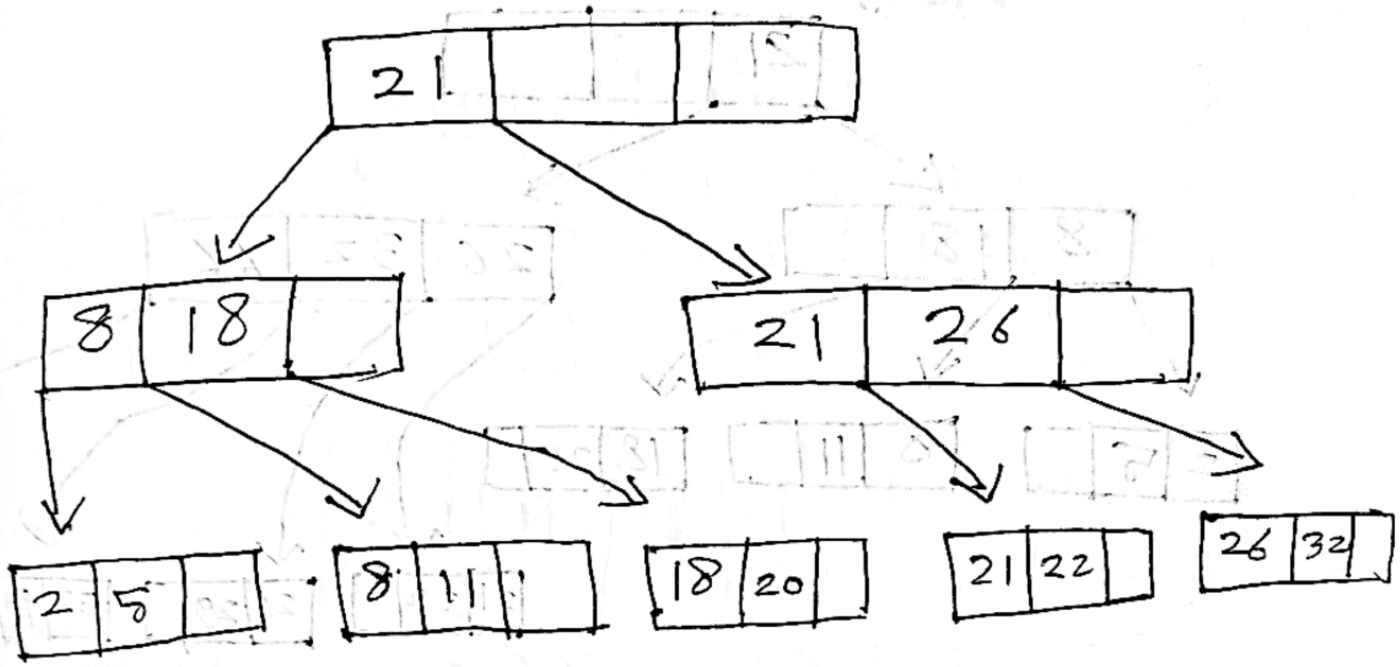
Insert (26)



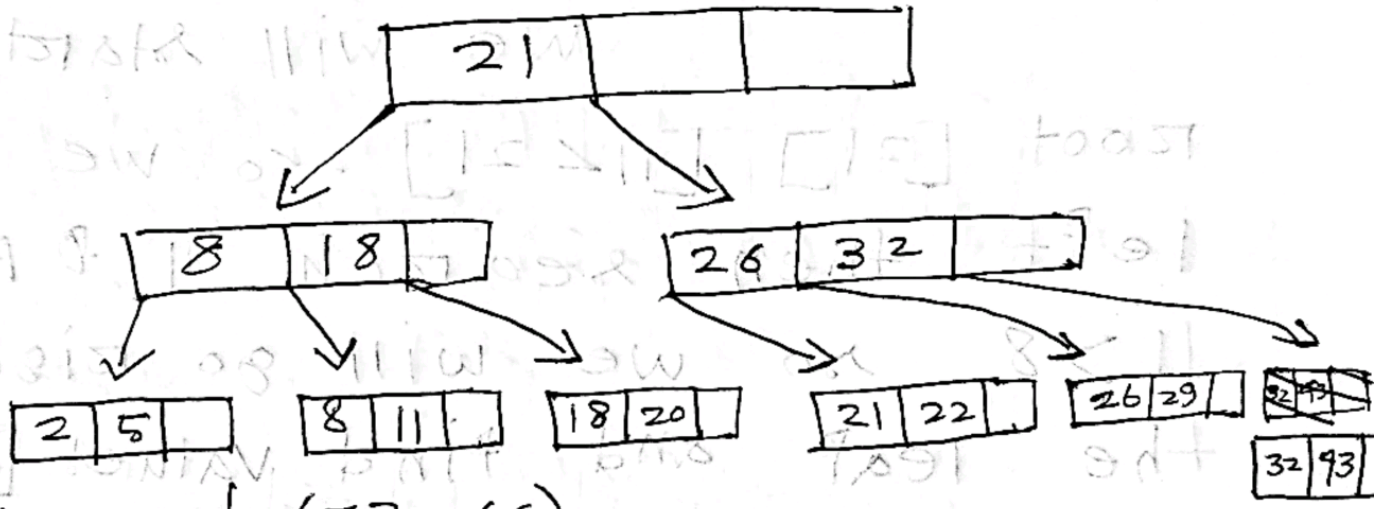
Insert (20):



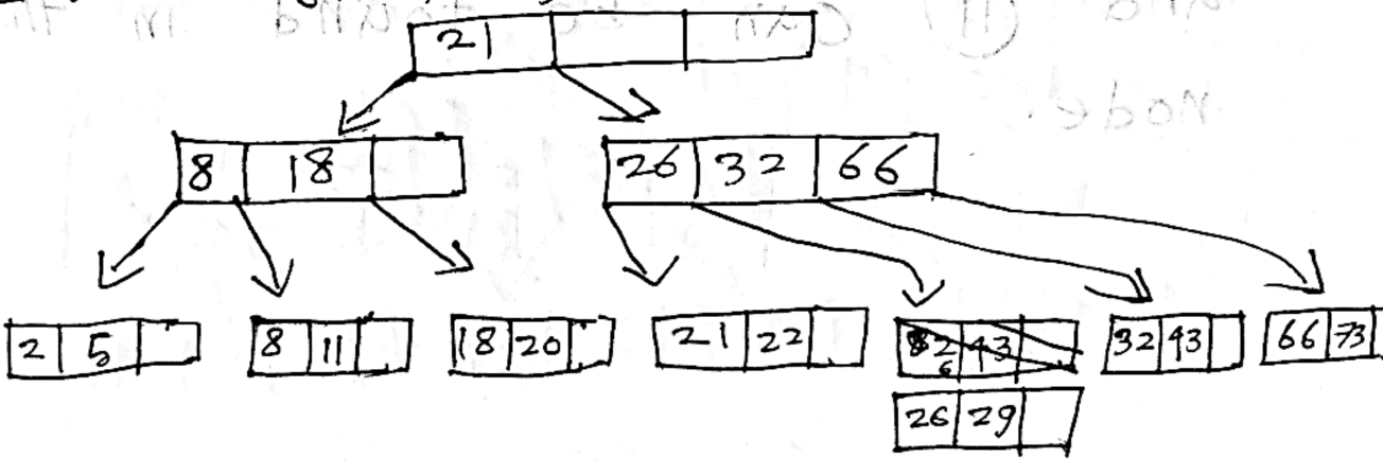
Insert (21):



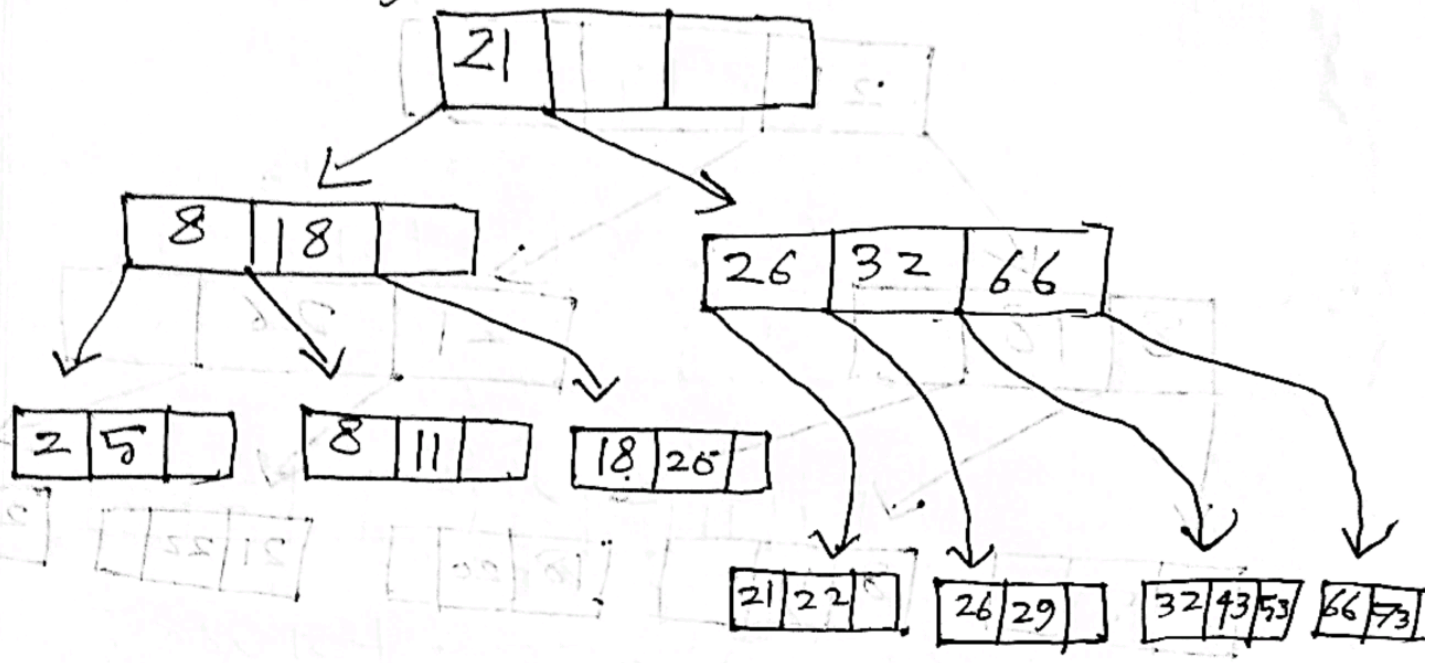
Insert (29, 43):



Insert (73, 66)



Insert (53):



(b) search(11):

We will start from root [21] [11 < 21]. So we will go left then search 11. But 11 > 8 so we will go right to the leaf and find values [8 11] and (11) can be found in this leaf node.

search(20):

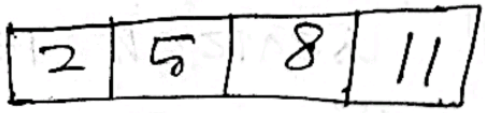
similarly $20 < 21$, so we will search left of the root. Now $20 > 18$. so we will go right from 18 and find the node with the value. [18 | 20 |]

(c) search(12):

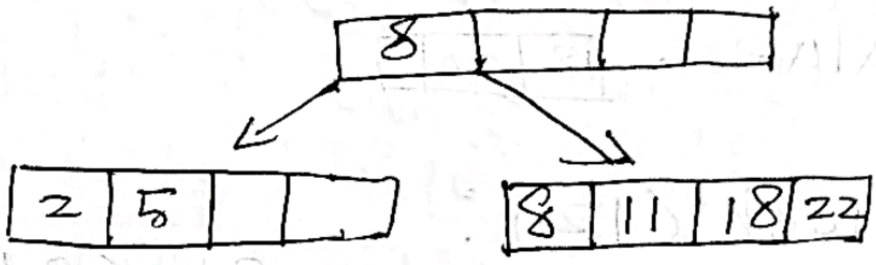
$12 < 21$ so we will go left from root. $12 > 8$ so we will go ~~left~~ right from [8] node. Finally we will find [8 | 11 |]. But 12 is not present here. So value not found / doesn't exist in the data table.

n = 5
Value = 4

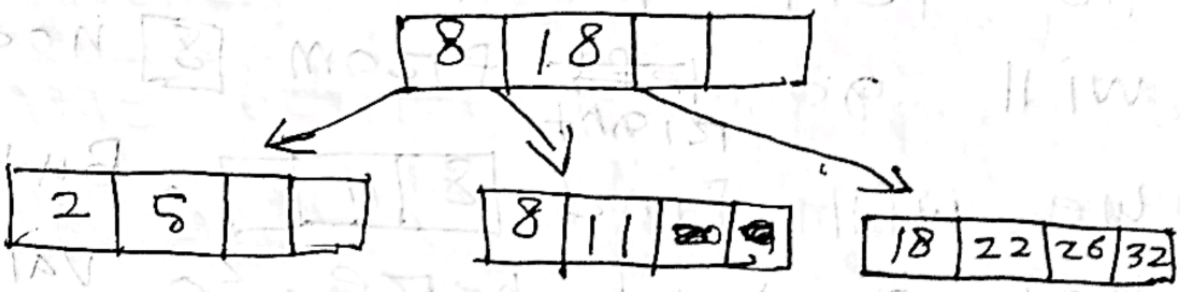
② Insert (2, 5, 8, 11)



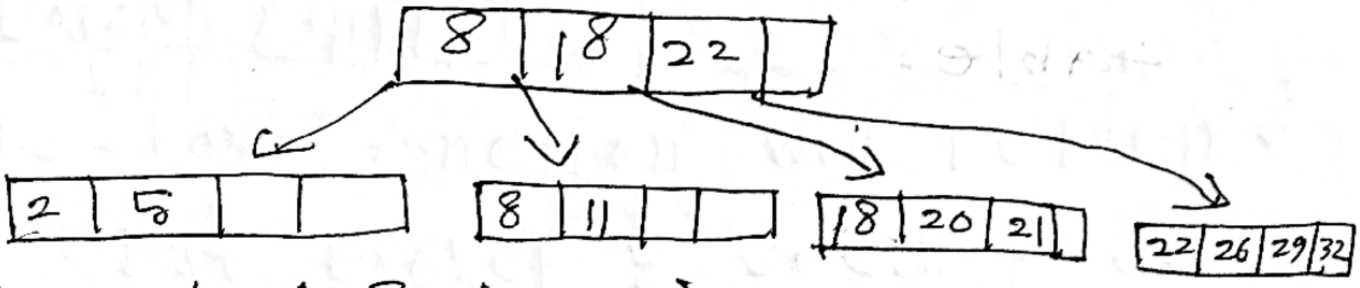
Insert (18, 22):



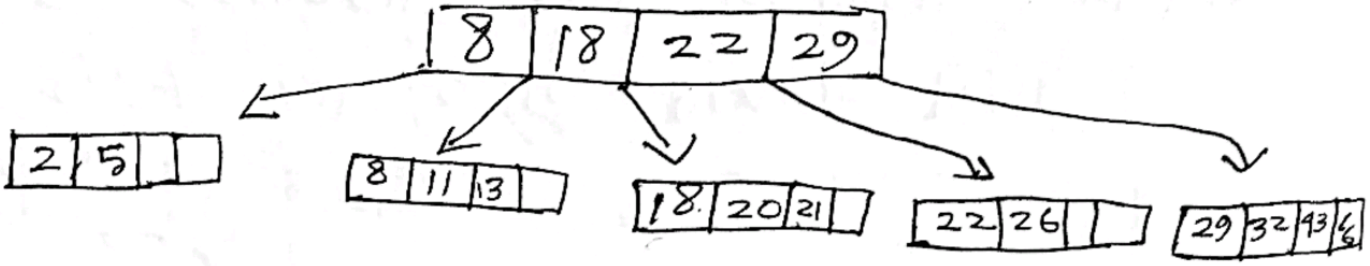
Insert (32, 26):



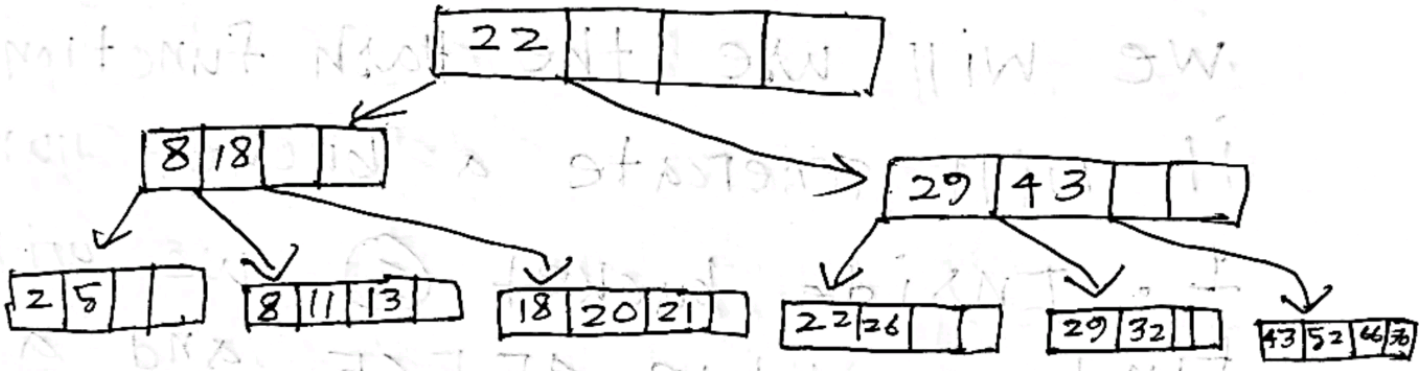
Insert (20, 21, 29):



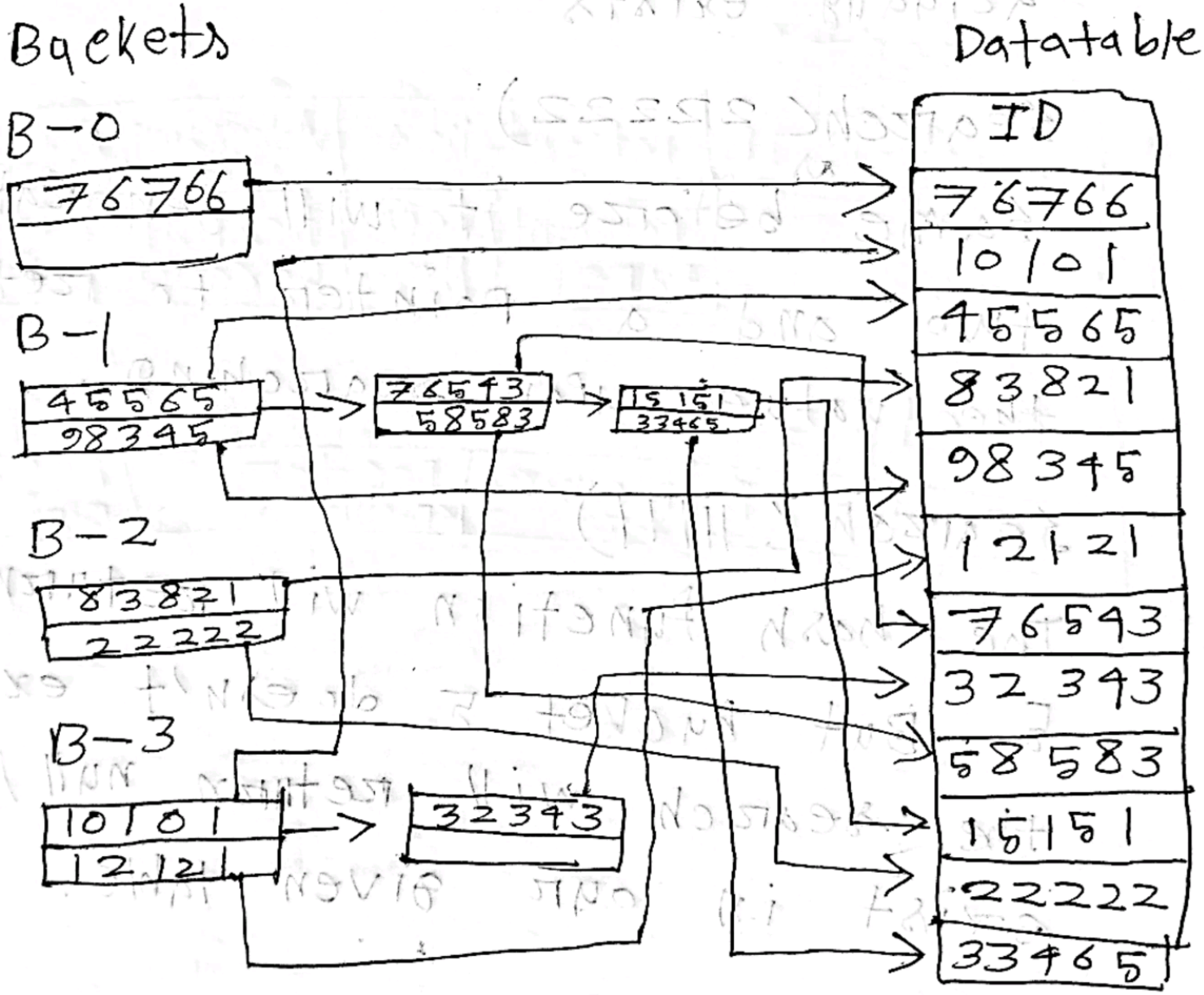
Insert (43, 13, 66):



Insert (52, 70, 3):



3 a



(b) search (45565)

we will use the Hash function and it will generate a bucket number 1. Inside bucket (1) we will find a value 45565 and a Pointer to the table where the value 45565 actually exists

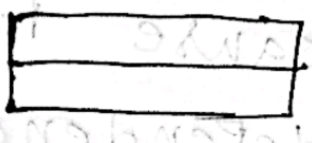
Search(22222)

Same as before it will generate bucket two and a pointer to retrieve the value upon searching.

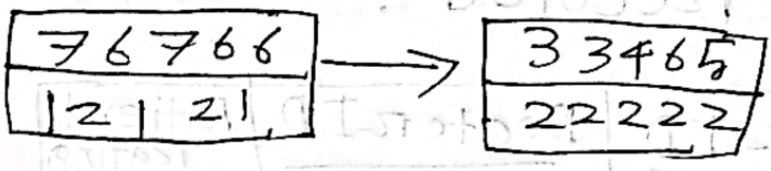
Search (11111)

The hash function will return bucket 5. But bucket 5 doesn't exist. So the search will return null / No value exist in our given table.

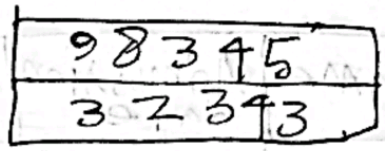
(c) B-0



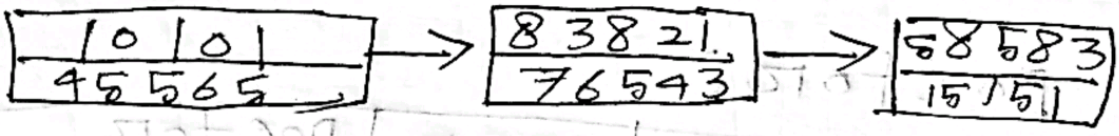
B-1



B-2



B-3



(4) (a) There are no multivalued, composite attribute or no nested relations present so the given relation is already in 1NF.

(b) The FD1 and FD2 relations are not 2NF because FD1 and FD2 are Partial dependence

Hospital record :

Patient_ID	Doctor ID	Patient rating

Patient :

Patient_ID	Patient_name		Admission date	Discharge date
	Treatment type	Room No	Hospital Location	Total Bill

Doctor :

Doctor ID	Doctor_name	Doctor specilization	Doctor Performance

(c) The relations FD3 and FD4 are not 3NF. There are transitive dependency.

Hospital record:

Patient_ID	Doctor ID	Patient rating

Patient

Patient_ID	Patient name	Admission date	discharge date	Treatment type
	Room No	Hospital name		

Treatment

Treatment type	RoomNo	Total bill

Hospital

Hospital name	Hospital location

Doctor

Doctor ID	Doctor name	Doctor specilization	Doctor Performance