

Qus - 2

(a) It is already in 1NF as there are no composite, multivalued attribute or nested relationship.

(b) It is not in 2NF. Here is the nonmalization,

FD1:

<u>clientID</u>	cName	cContactNo
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FD2:

<u>propertyID</u>	pAddress	size	rentStart	rentFinish	rentAmount
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FD3:

<u>ownerID</u>	oName	oContactNo	oNomineeID	oNomineeName	oNomineeContactNo
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FD4:

<u>clientID</u>	<u>propertyID</u>	<u>ownerID</u>	contractID
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(c) It is not in 3NF. Here is the normalization,

FD1:

<u>clientID</u>	cName	cContact No
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FD2:

<u>propertyID</u>	pAddress	size	rent start	rent finish
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FD3:

<u>site</u>	<u>rent start</u>	<u>rent finish</u>	rent Amount
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FD4:

<u>ownerID</u>	oName	oContactNo	oNomineeID
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FD5:

<u>oNomineeID</u>	oNomineeName	oNominee Contact No
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FD6:

<u>clientID</u>	<u>propertyID</u>	<u>ownerID</u>	contractID
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②

Qus - 4

(a) $n = 4$

$$\text{max-value} = (4-1) = 3$$

Inserting 20:

20

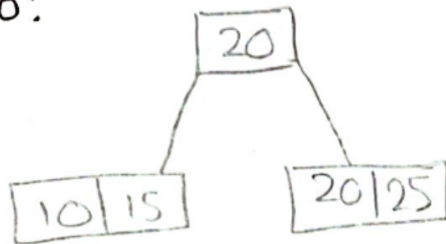
Inserting 15:

15 | 20

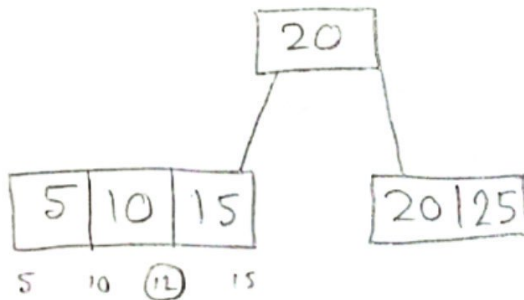
Inserting 25:

15 | 20 | 25
10 15 20 25

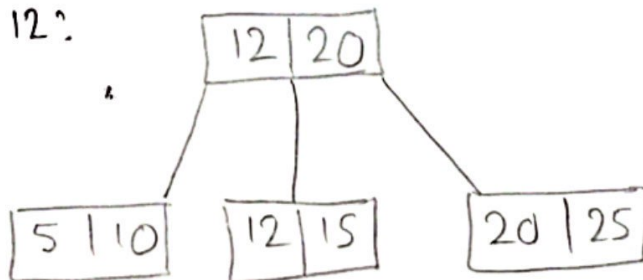
Inserting 10:



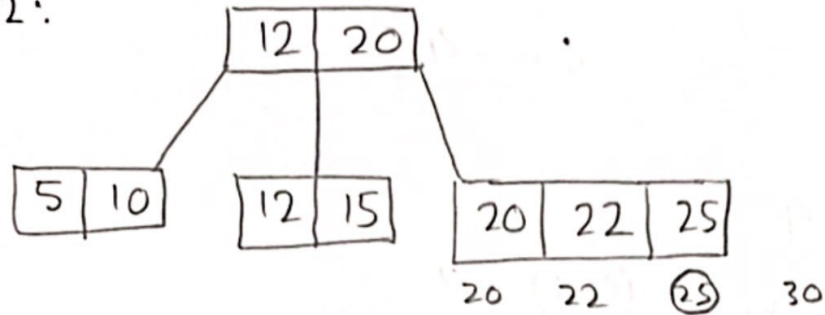
Inserting 5:



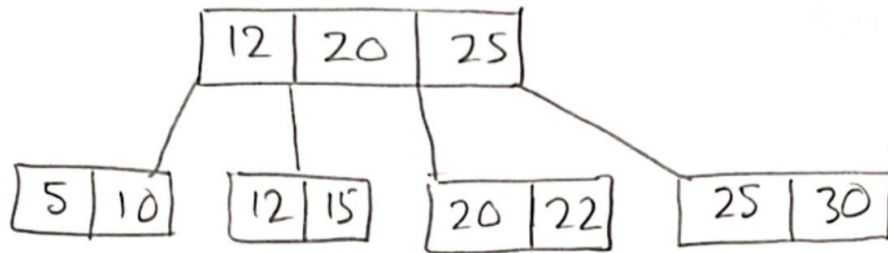
Inserting 12:



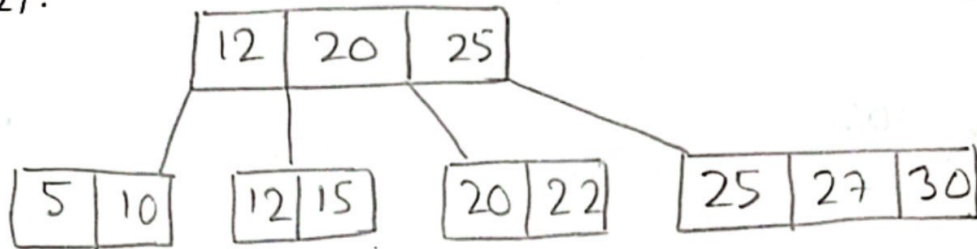
Inserting 22:



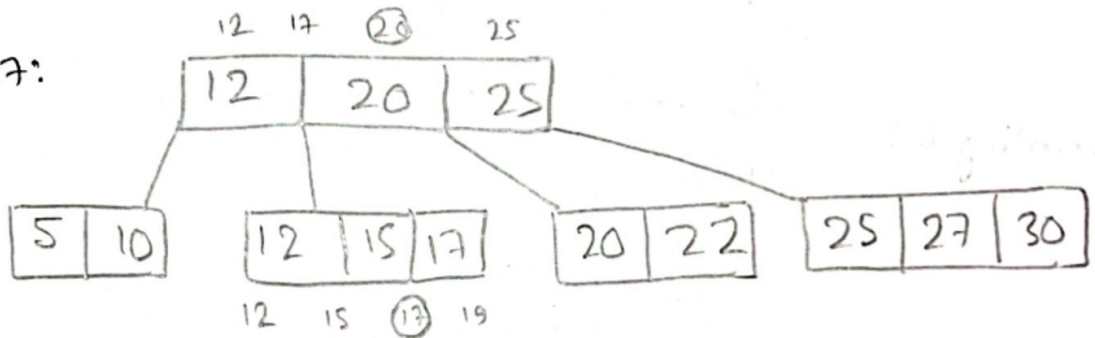
Inserting 30:



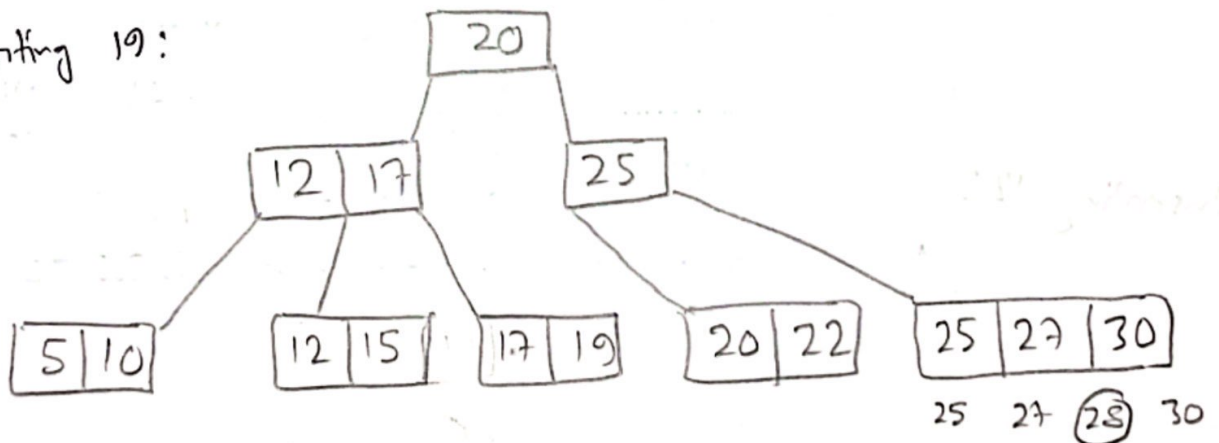
Inserting 27:



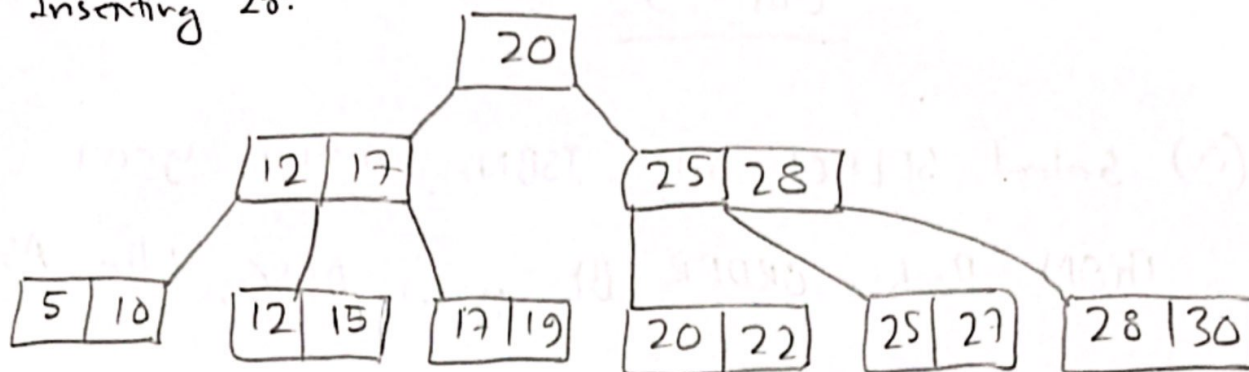
Inserting 17:



Inserting 19:

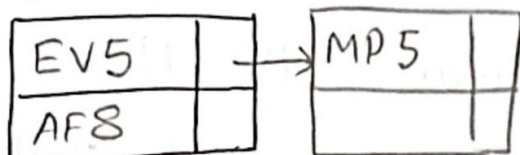


Inserting 28:

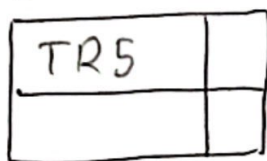


(b)

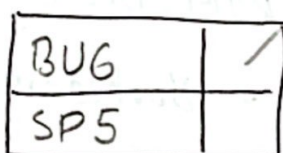
0



1



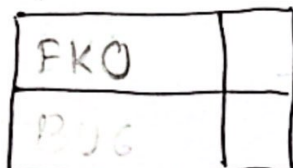
2



3



4



$$\begin{aligned} \text{EV5} &= 69 + 86 + 53 = (208)^L \\ n &= 5 \\ (5//2) &= 3 \quad (5//2)+1 = 2 \\ 3+2 &= 5 \quad 5 \cdot 5 = 0 \end{aligned}$$

$$\begin{aligned} \text{BUG} &= 66 + 85 + 54 = (205)^L \\ n &= 5 \\ (5//2) &= 2 \quad (5//2)+1 = 0 \\ 2 & \quad 2 \cdot 5 = 2 \end{aligned}$$

$$\begin{aligned} \text{SP5} &= 83 + 80 + 53 = (216)^L \\ n &= 5 \\ (5//2) &= 6 \quad (5//2)+1 = 6 \\ 6+6 &= 12 \quad 12 \cdot 5 = 2 \end{aligned}$$

$$\begin{aligned} \text{TR5} &= 84 + 82 + 53 = (219)^L \\ n &= 5 \\ (5//2) &= 7 \quad (5//2)+1 = 9 \\ 7+9 &= 16 \quad 16 \cdot 5 = 1 \end{aligned}$$

$$\begin{aligned} \text{AF8} &= 65 + 70 + 56 = (191)^L \\ n &= 5 \\ (5//2) &= 6 \quad (5//2)+1 = 4 \\ 6+4 &= 10 \quad 10 \cdot 5 = 0 \end{aligned}$$

$$\begin{aligned} \text{FKO} &= 70 + 75 + 48 = (193)^L \\ n &= 5 \\ (5//2) &= 7 \quad (5//2)+1 = 2 \\ 7+2 &= 9 \quad 9 \cdot 5 = 4 \end{aligned}$$

$$\begin{aligned} \text{U39} &= 85 + 74 + 57 = (216)^L \\ n &= 5 \\ (5//2) &= 6 \quad (5//2)+1 = 6 \\ 6+6 &= 12 \quad 12 \cdot 5 = 2 \end{aligned}$$

$$\begin{aligned} \text{MP5} &= 77 + 80 + 53 = (210)^L \\ n &= 5 \\ (5//2) &= 4 \quad (5//2)+1 = 1 \\ 4+1 &= 5 \quad 5 \cdot 5 = 0 \end{aligned}$$

Qus - 3

(a) ~~select~~ SELECT title, ISBN, edition, year
FROM Book ORDER BY year DESC, title ASC;

(b) SELECT year, COUNT(*) AS num-books-published
FROM Book GROUP BY year HAVING COUNT(*) > 1;

(c) SELECT title FROM Book WHERE title LIKE 'T%'
AND ~~prc~~ price > ALL(SELECT price FROM Book
WHERE year = 2014);

(d) SELECT SUM(price) AS total-price FROM Book
INNER JOIN Bookloan ON Book.copyNo = Bookloan.
copyNo INNER JOIN Bonnower ON Bookloan.
bonnowerNo = Bonnower.bonnowerNo WHERE
Bonnower.bonnowerName = 'John';

Qus - 1CHEF:

<u>CHEF_ID</u>	Name	Restaurant	Serial_no	Order Date
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CONTACT:

<u>CHEF_ID</u>	<u>Email</u>	<u>Phone</u>	<u>Address</u>
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Customer:

<u>CUST_ID</u>	Name	Phone	Address
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Meal:

<u>CHEF_ID</u>	<u>Serial_no</u>	<u>Order_date</u>	total_cost	Category	type
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Discount:

<u>CUST_ID</u>	<u>Serial_no</u>	<u>Order_date</u>	<u>disc_type</u>	details
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Supervise:

<u>Supervised</u> <u>CHEF_ID</u>	<u>CHEF_CHEF</u>	CHEF_Points
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ORDER:

<u>CUST_ID</u>	<u>Serial_No</u>	<u>Order_date</u>	Advance Paid	Order_date
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GETJ:

<u>CUST-ID</u>	<u>Serial.no</u>	<u>order-date</u>
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