


Lec-7

Relational Model :-

⇒

Tables →

Customer ——— Cust-ID
— Name
— address
— Contact

Table → Relation →

	Cust-ID	Name	address	Contact
①	1	Lakshay	---	888--
②	2	Raj	---	--

2) Degree of table \rightarrow No. of attributes.
Cardinality \rightarrow Total no. of tuple.

2) DB design \rightarrow

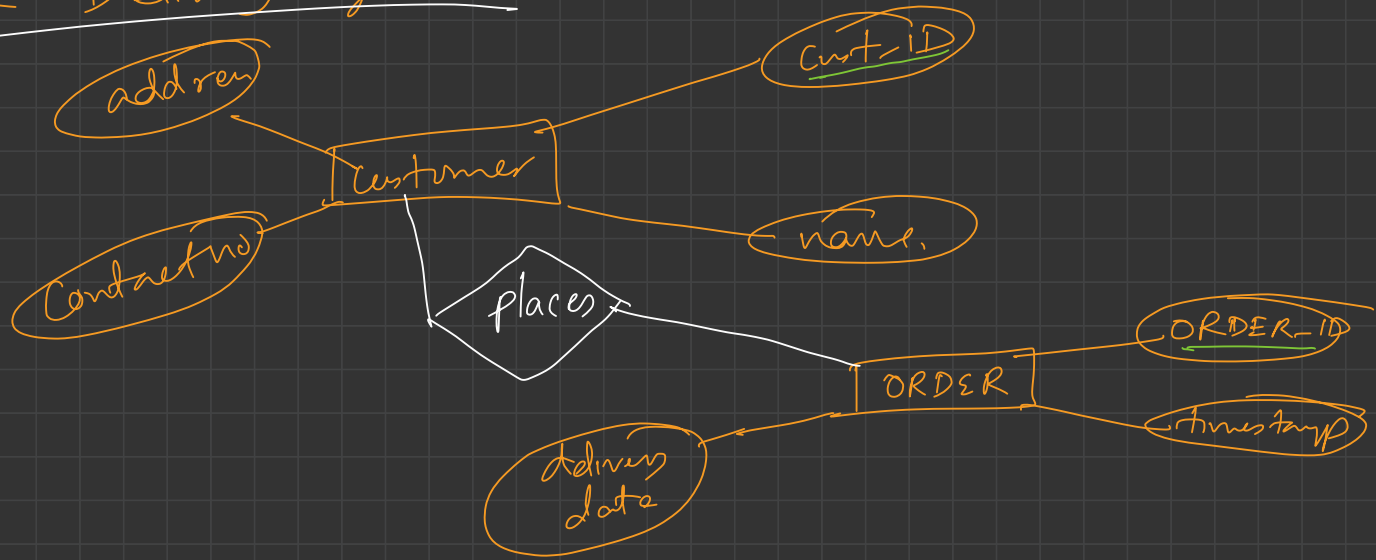
① ER Model \rightarrow ER diagram.

② Relational Model \rightarrow

③ RDBMS \rightarrow software DBMS

\downarrow
software implementation of RM
MySQL, MS access, Oracle etc.

Online Delivery system



① Customer (cust-ID, name, address, contact no.)

② ORDER (order-ID, timestamp, delivery-date)

→ Key → Foreign Key

→ Keys → Primary Key → each data point uniquely identify

cust-ID	Name	contact	address	email
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① Super Key → $\{\underline{\text{Name}}, \text{contact}\}, \{\underline{\text{Name}}, \text{email}\}$
 $\{\underline{\text{cust-ID}}, \text{email}\}, \{\underline{\text{cust-ID}}\}$ {Null}

$\{\underline{\text{cust-ID}}, \text{Name}, \text{contact}, \text{email}\}$

$\{\text{Raj}, 888\}$
 $\{\text{Raj}, 811\}$

② C.K. $\rightarrow \{\underline{\text{Contact}}\}, \{\underline{\text{Cust-ID}}\}, \{\underline{\text{Cust-ID}}, \underline{\text{Contact}}\}, \{\underline{\text{Cust-ID}}, \underline{\text{email}}\}$

③ P.K. $\rightarrow \checkmark \{\underline{\text{Cust-ID}}\} \rightarrow \text{P.K.}$

④ A.K. $\rightarrow \{\underline{\text{C.K.}}\} - \text{P.K.} \rightarrow$

④ Foreign Key -

Customer (cust_ID, name, address, contact no)

Order (order_ID, timestamp, delivery date, cust_ID } {F.K}

Customer \longrightarrow Referenced Relⁿ
/ Parent table.

Cust_ID	Name	address	contact
1	Kaz	--	--
2	Jo	--	--
3	dada	--	--
4	--	--	--

① ORDER

Order-ID	Timestamp	delivery date	Cust-ID
21	--	--	1
22	--	--	2
23	--	--	3

\longrightarrow Child
table.
/ Referencing
relⁿ.

* Surrogate key →

Table of School A

<u>reg.no</u>	name
101	Ram
102	Monika
103	Tata.

Merged. →

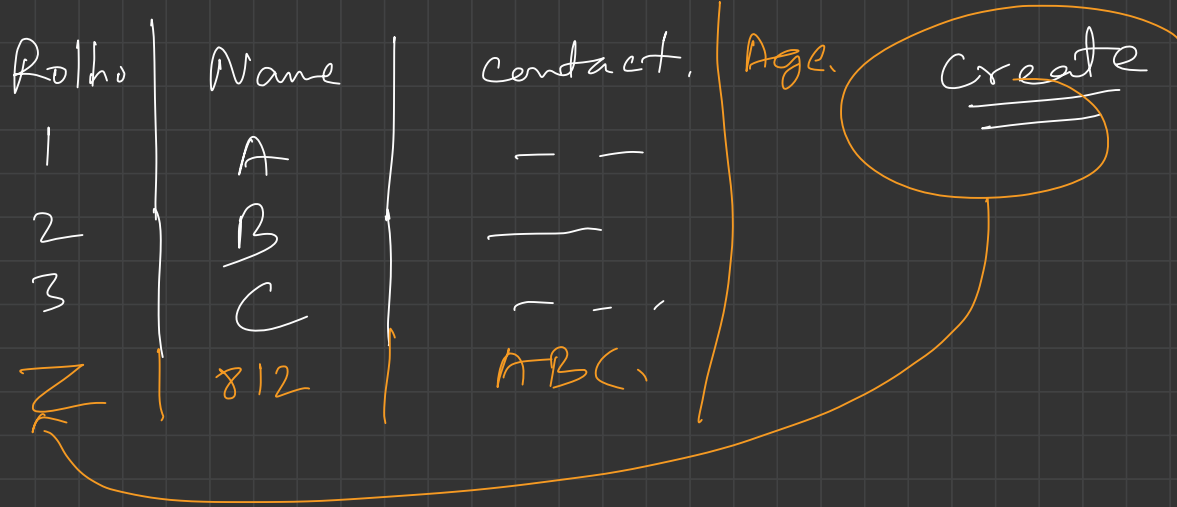
<u>Surr-no</u>	reg-no	name
1	101	Ram
2	102	Monika
3	103	Tata
4	AB101	Tommy
5	AB102	Nota.

table of school B

<u>reg-no</u>	name.
AB101	Tommy
AB102	Nota.

CRUD

Roll no	Name	contact.	Age.	<u>create</u>
1	A	---		
2	B	---		
3	C	---		
<u>Σ</u>	812	ABC.		



* Referential constraint

Customer :-

↳ Parent relⁿ
Referenced table.

<u>Cust_ID</u>	Name	add	Contact no.
1	Kaz	- -	- -
2	To	- -	- -
3	Dada	- -	- -

ORDER 1-

↳ Child
Relⁿ/
Referencing table

order_ID	Timestamp	delivery date	<u>Cust_ID</u> → F.K.
21	- - -	- -	1
22	- -	- -	2
23	- - -	- -	3 Null.

① Insert constraint :- value can't be inserted in child table if the value is not lying in parent table.

② Delete constraint :- value can't delete from parent table if the value is lying in child table.

→ ON Delete Cascade |—

Can we delete value from parent table if the value is lying in the child table w/o violating delete constraint?

→ delete value from parent table → delete corresponding entry from child table too.

create table Order (order-ID int P.K, ..., ..., cust-ID int referencing Customer on delete cascade);

→ Can F.K have Null value?

ON Delete Null ~

delete value from parent table → put corresponding F.K value Null.

* Key constraints :-

- ① Not Null → By default a attribute/column can be Null.
→ enforce a column to not accept null.

create Table Customer (

ID int Not Null,

Name varchar(50) Not Null,

Age int,

);

② Unique constraint →

↳ ensure all values in col. are diff.

- Both unique & P.K constraint provide uniqueness.
- you may have many unique constraints per table
But only one P.K constraints per table.

```
create Table Customer (  
    ID int Not Null,  
    Name varchar(50) Not Null,  
    unique (ID)  
);
```

③ Default constant :

↳ set default value of col,

create table Customer (

prime_status int DEFAULT 0,

);

④

Check ! -

— limit value Range (Domain)

(

check (age >= 18)

)

⑧ Primary key constraint

→ uniquely identify each tuple.

— P.K \neq Null.

— Relation only 1 P.K.

(

:

PRIMARY KEY (ID)

:

)

⑥ Foreign Key Constant

— keeps relⁿ b/w 2 table.

Create table Order (

PRIMARY KEY (order_ID)

FOREIGN KEY (Cust_ID) Referencing
Customer (Cust_ID)

);