

Schema - logical representation

3-level Schema

are diff

Tier-3 Architecture

Terminology



View level

Database Designer

Conceptual Schema

Logical level

Details of physical

Physical Schema

presence of data



Ex Schema / View level

College Portal

Profile

Marks

Grades

P-1/2

his marks

his projects

Marks

Faulty

\Rightarrow

30
31
33
38



Conceptual Schema / logical level
blueprint

1 Blueprint of the DB

Marks	Rollno	Name	Fees Paid

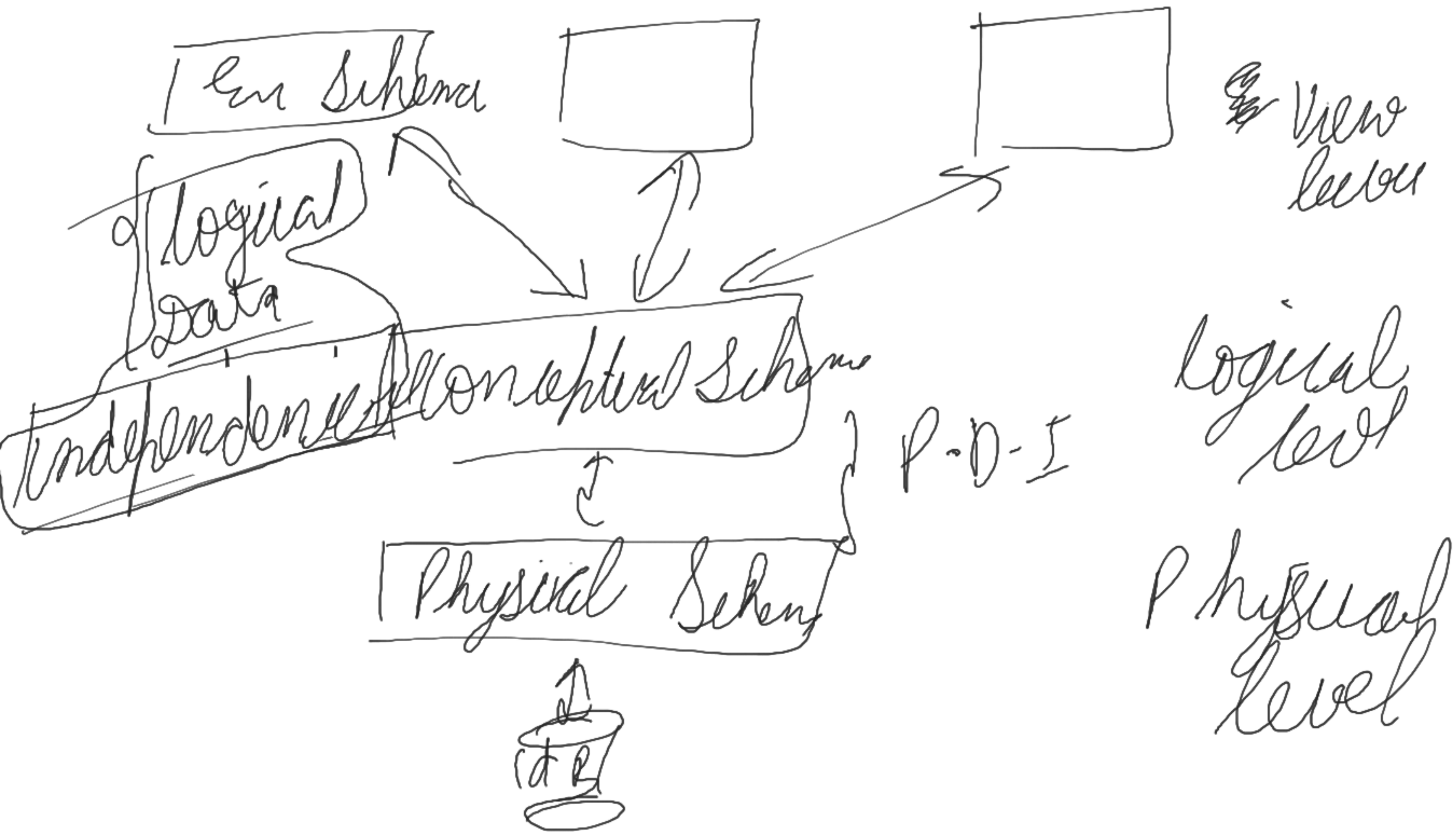
Marks
Name
 Roll no
 fees Paid

Data is in form tables

representing

Files

tables



P.D.I \Rightarrow Physical Data Independence

Any change in physical level
won't affect the conceptual

Schema

Primary Key

Key \Rightarrow Uniquely identify

Aadhar

$\begin{matrix} & \swarrow & \\ & \text{S1} & \\ & \searrow & \end{matrix}$

Roll No

$\begin{matrix} & \swarrow & \\ & \text{S1} & \\ & \searrow & \end{matrix}$

Reg's Num

$\begin{matrix} & \swarrow & \\ & \text{S1} & \\ & \searrow & \end{matrix}$

License / PAN / Photo ID

Set of unique char/keys / Attribute
is known Candidate key

Candidate key → Email / Address / Roll no
Regis NO

Name → No

Phone → Yes

What if 2 students
brothers

Primary key \Rightarrow Unique + NN

Value should be there

NO

Null

Primary key helps to identify dup

Students / tuples

Aadhar

Reg's No

Roll No

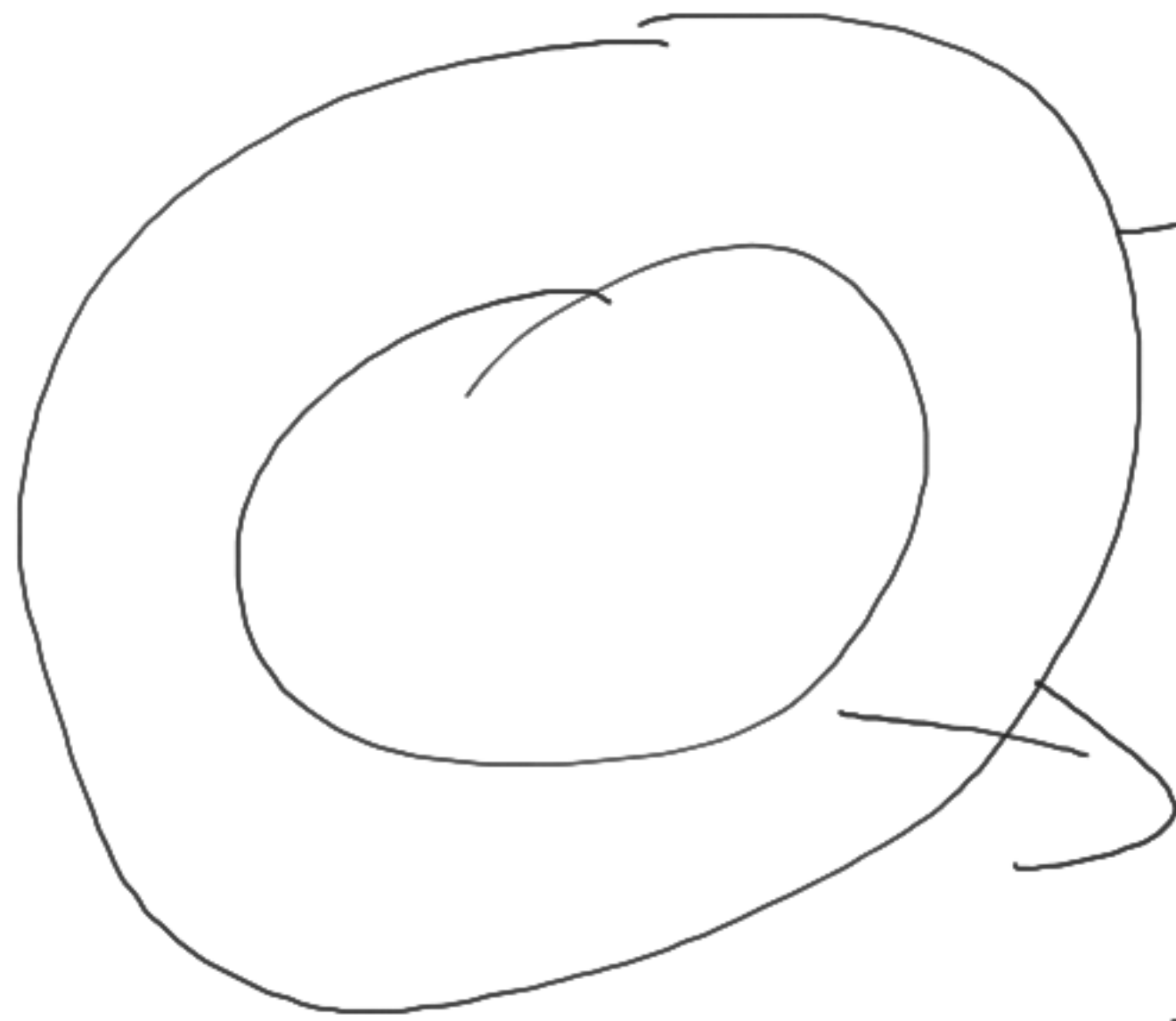
(PAN) →

A Primary Key is a candidate
key

but the vice versa is not true

A diagram illustrating the relationship between a candidate key and a primary key. It shows two sets of attributes: $\{V, NV\}$ and $\{V, NV\}$. The top set $\{V, NV\}$ is underlined, and a line points from the text "candidate key" to it. The bottom set $\{V, NV\}$ is circled, and a line points from the text "primary key" to it.

V, NV candidate
 V, NV key



Candidate
Key

Primary key

Foreign Key

It is an attribute or set of attributes that references to primary key of some table.

T
T C E
E E E
Circul
LSE

name	Sex	Regis No.	Phone
 	 	 	

⇒ 50

Library

~~PK~~

Regis No	Book
 	

PK