

# KEYS & CRUD

## \* Agenda :-

- ① Revise SuperKey & candidate key
- ① Primary key
  - ① Good Practices for PK
- ① Composite key
- ① Introduction to SQL
  - ① Creation of Database
  - ① Creation of Table
- ① Foreign keys
  - ① Constraints with FK
- ① Practical

## \* Quick Recap!

student-id	class-id	attendance
1	5	70%
1	7	80%
2	5	70%

### Columns

(student-id)

(class-id)

(attendance)

(student-id, class-id)

(student-id, attendance)

(student-id, class-id, attendance)

### SK

X

X

X

✓

X

✓

### CK

X

X

X

✓

X

X

superkey:-

set of columns that identifies row uniquely

candidate key:-

super key with minimal set of columns

Q13

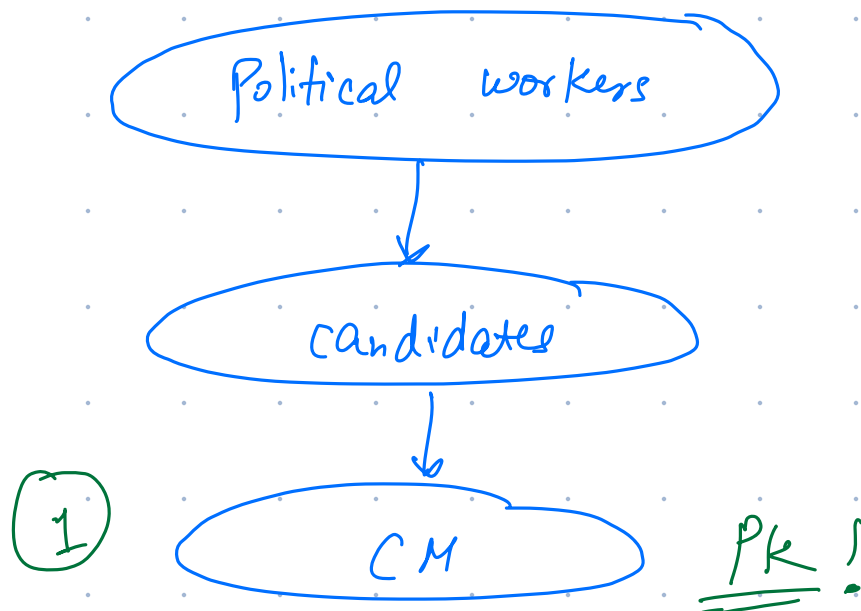
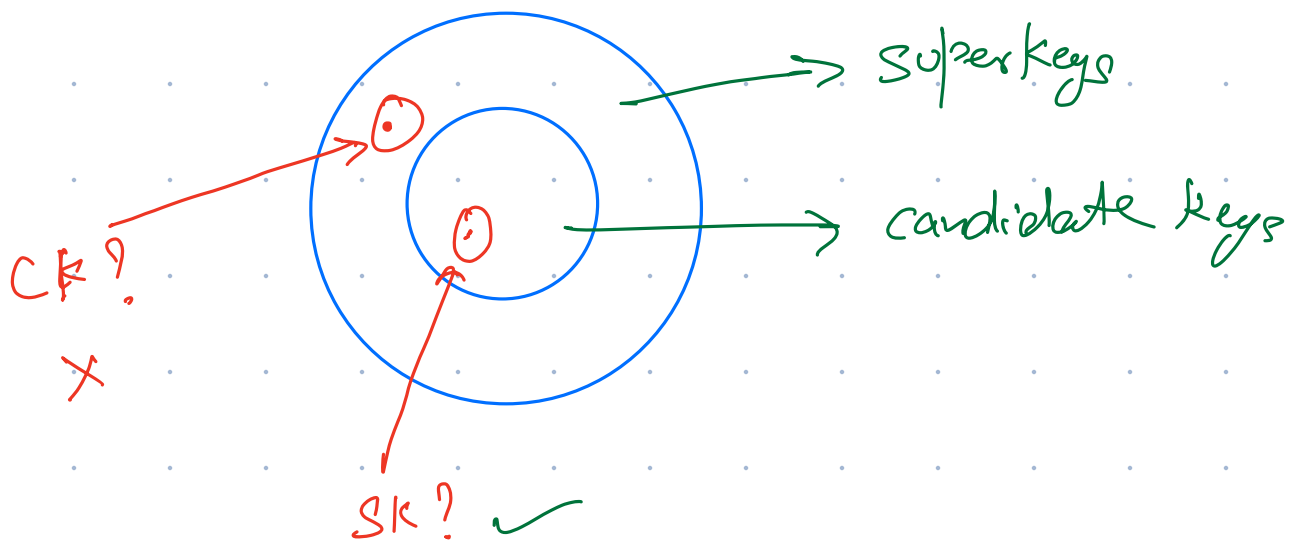
Employee

(empId, Dept.)

(email)

(first-name, lname)

(lname, dept.)





Primary Key :-

one of the candidate key that is given a special role of being the key by which the data will be sorted!

(\*) Why PK?



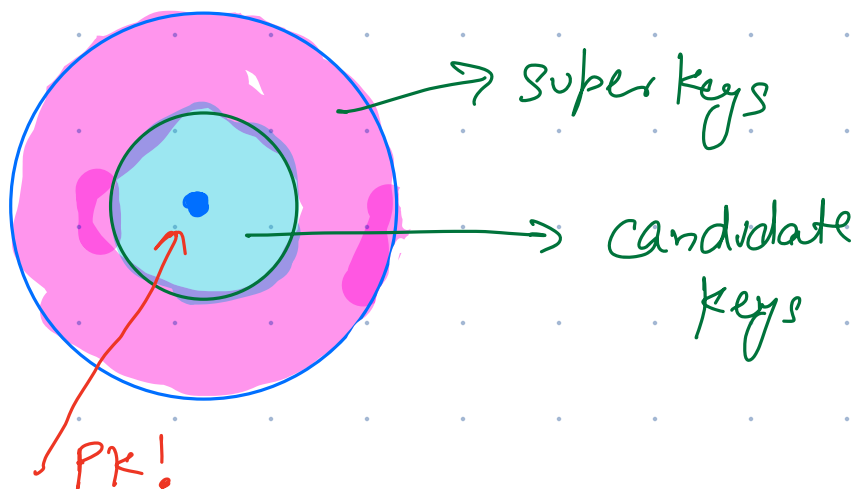
① DB stores the data in order of PK! (sorted)

② outputs the data based on PK!

③ creates an index on PK!



lot of optimization



## (\*) Good Practices to choose PK!

① The value of PK should never change

② Ideally, PK should be an integer.

## (\*) Composite key :-

↳ key with more than one column!

## (\*) Introduction to SQL:-

S → structured  
Q → Query  
L → language.

Language that allows us to Query on structured data

# (\*) Foreign Keys:-

Students

First-name	Last-name	PsP	batch	email	Phone
Abhishek	Kumar	80	1	abcd@gmail.com	9876...
Abhishek	Verma	70	2	xyz@gmail.com	4321...
Pankaj	Sharma	90	1	a1@gmail.com	975...
Rahul	Kumar	100	2	a2@gmail.com	432...
⋮	⋮	⋮	⋮	⋮	⋮

Batches

id	name
1	APR 22
2	JULY 23
⋮	⋮

V	S	4	4	—	—
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← New record

## Foreign Key:-

It allows us to have constraints that allow one column of a table to be linked with one of column of another table.

① FK has no relation PK!

② It should be unique.

Students

PK

id	Pos	batch_id
1	20	1
2	100	2
3	20	1
4	70	NULL

Batches

NOT PK!

id	name
1	A
2	B
1	C
NULL	D

↑  
 unique  
 (No Duplicates)

⊛ Important Note:-

① Both the sides can be Nullable!

② Column of referred table must be UNIQUE!

id	name	batch id
1	John	1
2	Vishal	1
3	Krishna	2

batches

id	name
1	A
2	B
3	C

Orphaning!

Data Integrity!

⊗ Possible solutions:-

- ① Throw Error
- ② Set to Null
- ③ Delete corresponding rows of other table as well! (Risky!)



# ⑧ Constraints on FK!

## ON DELETE

① CASCADE (Risky!)

② SET NULL

③ NO ACTION  
/Restrict

④ SET DEFAULT

## ON UPDATE

① CASCADE (Risky!)

② SET NULL

③ NO ACTION  
/Restrict

④ SET DEFAULT