KEYS IN DBMS

<u>Foreign Key</u> : A foreign key is a field in a table that refers to the primary key in another table. It establishes a relationship between two tables.

Student (Base/referenced table)

Roll no	Name	Hometown
1	Rahul	KOLKATA
2	Raj	KOLKATA
3	Riti	DELHI

Primary key

Subject (referencing table)

Roll no	Name	subject
1	Rahul	Maths
2	Raj	SST
3	Riti	Science

Foreign key

KEYS IN DBMS

Referenced table – Table having primary key (pk)
Referencing table– Table having foreign key(fk)

Student
(Base/referenced table)

Roll no	Name	Hometown
1	Rahul	KOLKATA
2	Raj	KOLKATA
3	Riti	DELHI

↓
Primary key

Subject
(referencing table)

Roll no	subject id	subject
1	s1	Maths
2	s2	SST
3	s3	Science

↓
Foreign key

KEYS IN DBMS

Referential Integrity in Foreign key

Referential integrity is an important concept in foreign key. We always say foreign key maintains referential integrity.

Referential integrity ensures that the relationships between tables remain accurate, consistent, and meaningful within a relational database.

KEYS IN DBMS

Referential Integrity in Foreign key

Now consider there are two tables one is refrencing and other is refrenced table .
Lets see how some operations like insert, update and delete works here.

KEYS IN DBMS

Refrential Integrity in Foreign key

- Insertion in Referenced/base table

No violation

KEYS IN DBMS

Refrential Integrity in Foreign key

- Deletion in Referenced/base table

May cause violation if the coressponding data is present in refrencing table.

KEYS IN DBMS

Refrential Integrity in Foreign key

If a record in referenced table is deleted or updated , the corresponding records in the referencing table should be deleted or updated to maintain the integrity of the relationship.

We using action like "CASCADE DELETE" for the same. Also we can set null for the values deleted.

KEYS IN DBMS

Refrential Integrity in Foreign key

- Updation in Referenced/base table

May cause violation if the coressponding data is present in refrencing table. We can using action like "CASCADE UPDATE".

KEYS IN DBMS

Refrential Integrity in Foreign key

- Insertion in Referencing table

May cause violation

KEYS IN DBMS

Refrential Integrity in Foreign key

- Deletion in Referencing table

No violation

KEYS IN DBMS

Refrential Integrity in Foreign key

- Updation in Referencing table

No issues untill we are updating foreign key attribute
Voilation would be caused on updating