Types of Keys

1. What is key:

WHAT ARE DBMS KEYS?

 A DBMS Key is an attribute or a set of attributes which help you uniquely identify a record or a row of data in a relation(table).

2. Need:

WHY WE NEED DBMS KEYS?

- For identifying any row of data in a table uniquely
- We can force identity of data and ensure integrity of data is maintained.
- To establish relationship between tables and

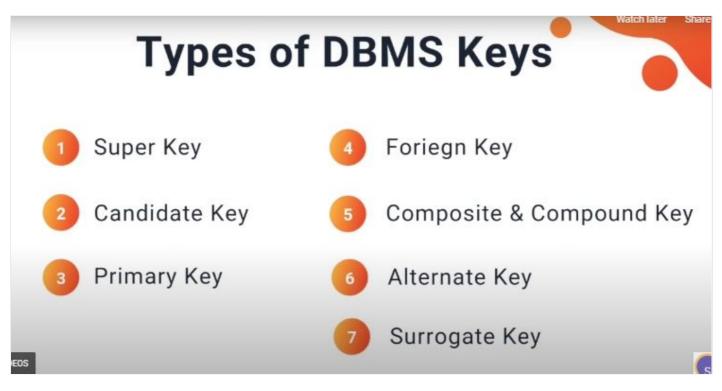
PRE VIDEOS identifying relationship between tables.

	Sid is man	datory	
SId	SName	SBranch	SEmail
1	John	C.S.	john@xyz.com
2	Adam	C.S.	adamcool@xyz.com
3	Adam	I.T.	adamnerd@xyz.com
4	Elly	Electronics	elly@xyz.com

Then we can say for sure that each row will be identifiable stored that the stored stored stored says and the stored stored says are stored to the stored says and the stored says are stored says and the stored says are sto

3. Types

Student Records



Super key is a default key and composite and compound keys are like sisters.

1. Super Key: Every possible key inside a table is said to be as super key.

Stude	ent Tabl	е			Watch
SID	REG_ID	NAME	BRANCH	EMAIL	ľ
1	CS-2019-37	John	CS	john@xyz.com	4
2	CS-2018-02	Adam	cs	adamcool@xyz.com	TOPE WELL
3	IT-2019-01	Adam	ΙΤ	adamnerd@xyz.com	E m as
4	ECE-2019-07	Elly	ECE	elly@xyz.	igns
Keys	:			Canbin	e more as well lations as
• SI	D	• SI	D + REG		• SID + REG_ID +
. DE	G ID	. DE	C ID +	EMAIL	EMAII

• REG_ID

• REG_ID + EMAIL

EMAIL

• EMAIL

• EMAIL + SID

- An attribute or a set of attributes that can be used to identify row of data in a table is a super key.
- 2. Candidate Key: It is a minimal subset of the super key which can be used to identify a set of rows uniquely.

Student Table

SID	REG_ID	NAME	BRANCH	EMAIL
1	CS-2019-37	John	CS	john@xyz.com
2	CS-2018-02	Adam	cs	adamcool@xyz.com
3	IT-2019-01	Adam	IT	adamnerd@xyz.com
4	ECE-2019-07	Elly	ECE	elly@xyz.com

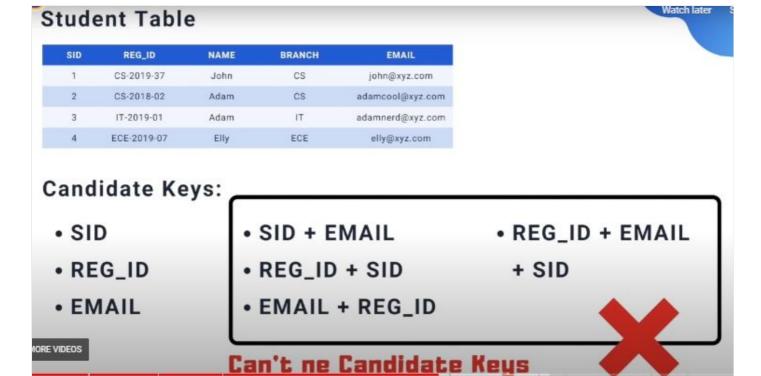
Candidate Keys:

• SID

We can choose any one as

REG_ID Candidate Key

EMAIL



- If any proper subset of a super key is a super key then that key cannot be a candidate key.
- 3. Primary key: It is the key which is any one of a subset of candidates key and anyone of them can be used as to find a unique row of data.

Student Table SID REG_ID NAME BRANCH **EMAIL** CS-2019-37 John CS john@xyz.com CS-2018-02 Adam CS adamcool@xyz.com 3 IT-2019-01 Adam IT adamnerd@xyz.com ECE-2019-07 Elly ECE elly@xyz.com Candidate Keys: SID Pick any one as Primary Key REG_ID EMAIL RE VIDEOS

Student Table

SID	REG_ID	NAME	BRANCH	EMAIL
1	CS-2019-37	John	CS	john@xyz.com
2	CS-2018-02	Adam	cs	adamcool@xyz.com
3	IT-2019-01	Adam	IT	adamnerd@xyz.com
4	ECE-2019-07	Elly	ECE	elly@xyz.com

- SID If we choose REG_ID as Primary
- REG_ID Key then SID and EMAIL will
- EMAIL become Alternate Key
- 4. Alternate Key: From the set of Candidates key after picking one of them as primary key the remaining keys are said to be Alternate keys.
- 5. Foreign Key: This key comes into the picture when we have 2 tables where one table is making a relationship with another table.

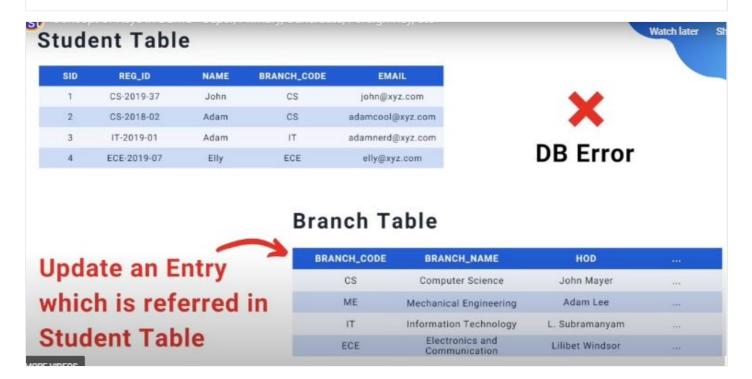
Firstly, the key that we consider a foreign key must be the primary key of that table and the same ID should be stored in another table to show the relationship between the two.

Branch Table

BRANCH_CODE	BRANCH_NAME	HOD	
CS	Computer Science	John M	
ME	Mechanical Engineering	Adam Lee	
IT	Information Technology	L. Subramanyam	
ECE	Electronics and Communication	Lilibet Windsor	***

Student Table

SID	REG_ID	NAME	BRANCH_CODE	EMAIL
1	CS-2019-37	John	cs	john@xyz.com
2	CS-2018-02	Adam	cs	adamcool@xyz.com
3	IT-2019-01	Adam	IT	adamnerd@xyz.com
4	ECE-2019-07	Elly	ECE	elly@xyz.com



This is how data integrated is maintained.

6. Composite Key: Any key with more than one attribute is called a composite key.

COMPOSITE KEY

- Any key with more than one attribute is called Composite Key.
- In the above example (SID, REG_ID), (REG_ID, EMAIL), (EMAIL, SID), (SID, REG_ID, EMAIL) etc all are composite keys.

all super key more than one attribute are considered to be composite keys.

7. Compound Key: If a composite key has at -least one attribute which is a foreign key. This is a compound key.

COMPOUND KEY

- If a composite key has at-least one attribute which is a foreign key then it is called as Compound Key.
- In the above example if we have a composite key (REG_ID, BRANCH_CODE) then it will be known as a Compound Key because BRANCH attribute is a Foreign Key.

8. Surrogate key:

SURROGATE KEY

- If a relation has no attribute which can be used to identify the data stored in it, then we create an attribute for this purpose.
- It adds no meaning to the data but serves the sole purpose of identifying rows uniquely in a table.