

SQL INTERVIEW

Last Minute Revision!

SQL KEYS GUIDE

7 Types you must know

1. Primary Key

2. Foreign Key

3. Composite Key

4. Natural Key

5. Surrogate Key

6. Alternate Key

7. Unique Key



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SQL KEYS

1. Essential

PRIMARY KEY

UNIQUE ID

↓

Students Table		
Stu_ID	Name	Age
101	Anand	24
102	Sarah	22

schema.sql

```
CREATE TABLE Students (  
    StudentID INT PRIMARY KEY,  
    FirstName VARCHAR(50),  
    LastName VARCHAR(50)  
);
```

- 📌 **Definition:** Uniquely identifies EACH row.
- 🚫 **Rules:** Cannot be NULL. Must be Unique.



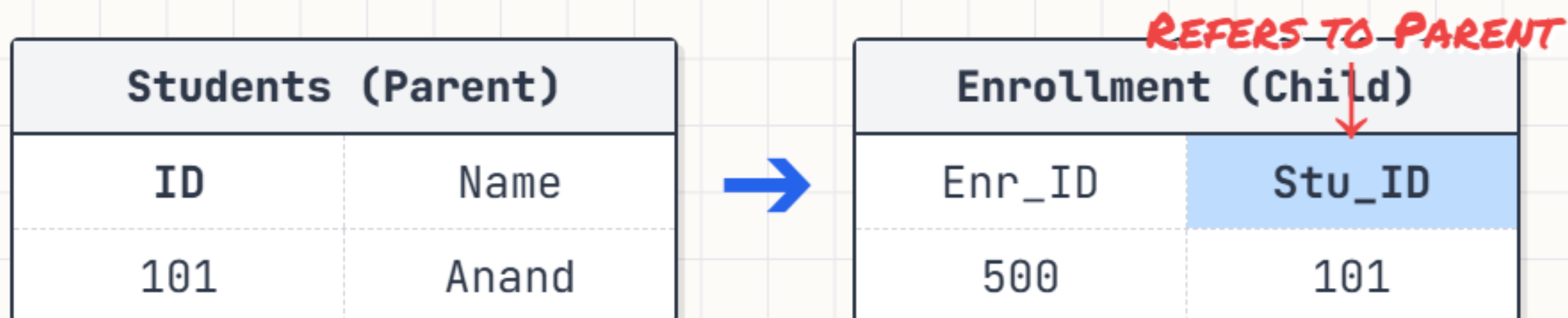
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2. Relations

FOREIGN KEY



```
relationships.sql

CREATE TABLE Enrollments (
  EnrollID INT PRIMARY KEY,
  StudentID INT,
  FOREIGN KEY (StudentID)
  REFERENCES Students(StudentID)
);
```

-  **Purpose:** Connects two tables.
-  **Link:** Points to a Primary Key in another table.



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3. Advanced

COMPOSITE KEY

COMBINED = UNIQUE

Course_Grades		
Stu_ID	Course	Grade
101	Math	A
101	Science	B

```
CREATE TABLE Grades (  
  StudentID INT,  
  CourseID INT,  
  Grade CHAR(1),  
  -- Both columns make the PK  
  PRIMARY KEY (StudentID, CourseID)  
);
```

 **Definition:** A key made of 2+ columns.

 **Use Case:** When one column isn't enough to be unique.



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4. Real World

NATURAL KEY

REAL DATA!

Professors		
SSN	Name	Dept
AB-123	Smith	CS

```
CREATE TABLE Professors (  
    -- SSN exists in real life  
    SSN VARCHAR(20) PRIMARY KEY,  
  
    Name VARCHAR(50),  
    Dept VARCHAR(50)  
);
```

 **Definition:** A key derived from existing real-world data (SSN, Email, ISBN).

 **Warning:** Real data can sometimes change!



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5. Artificial

SURROGATE KEY

GENERATED!

Professors		
Prof_ID	SSN	Name
1	AB-123	Smith

```
CREATE TABLE Professors (  
    -- Artificial Key (No business meaning)  
    ProfID INT PRIMARY KEY AUTO_INCREMENT,  
  
    SSN VARCHAR(20) UNIQUE  
);
```

 **Definition:** A system-generated key.

 **Why?** Faster integers. Decoupled from business logic.



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6. The Backup

ALTERNATE KEY

I COULD BE PK
TOO!

Employees	
Emp_ID (PK)	Email
101	boss@co.com

```
CREATE TABLE Employees (  
  -- Chosen as Primary Key  
  EmpID INT PRIMARY KEY,  
  
  -- Alternate Key (Candidate but not chosen)  
  Email VARCHAR(100) UNIQUE  
);
```

 **Definition:** A candidate key that was NOT chosen as the Primary Key.

 **Role:** Still unique, but acts as a secondary identifier.



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7. Constraint

UNIQUE KEY

NO DUPLICATES!

Users	
ID(PK)	Phone
1	555-0100
2	555-0199

```
constraints.sql

CREATE TABLE Users (
  UserID INT PRIMARY KEY,

  -- Allows NULL, but NO duplicates
  Phone VARCHAR(15) UNIQUE
);
```

📌 **VS Primary Key:** Unique Keys allow 1 NULL value (in most DBs).

💡 **Usage:** Emails, Phone Numbers, Usernames.



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Connect

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