

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.



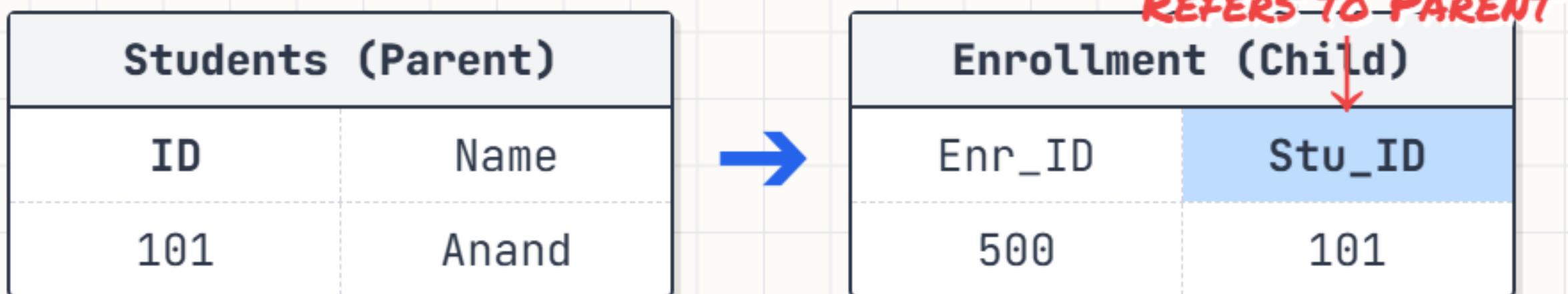
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2. Relations

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



composite.sql

```
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



real_world.sql

```
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



auto_gen.sql

```
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



candidates.sql

```
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

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

```
constraints.sql

CREATE TABLE Users (
    UserID INT PRIMARY KEY,
    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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