When designing a database, it often happens that an element can't be fully represented in just one table. In that case, we use a foreign key to link both tables in the database.

Suppose, you need to maintain a table for student details like, name, roll and semester wise GPA, you will create a table say "*student-details*". You also need a detail about fees. Even if, good GPA is scored in a semester, you need to check if there is a fee due. It is hectic to maintain all details in a single table.

So, you need to maintain a separate table say "*fee-details*" for maintaining fee details for each student. And by that way you also need to connect both tables with a common attribute to fetch details for a single unique record.

That is, if a student with roll "5J8" is present in "*student-details*" table, that student record should also be present in "*fee-details*" table. So, whenever there is a need for checking the condition that 5J8 has secured good GPA and also the current semester's fee is cleared you take the help of common attribute between two tables.

If Roll number is **primary key** in student-details table, then linking fee-details with the same attribute, here becomes **Foreign Key**.

By now, you should understand that desired data is no way stored in a single table. It is splitted across different tables. We use the concept of **JOINS,** to fetch desired output from different tables.

As in the early example, to decide if a student to be promoted into next semester the decision is based on the data that should be fetched out from two different tables.

Similar Example:

You are maintaining Employee pay slips in a table. You store only monthly pay slips of each employee with the employee ID. Suppose you found that some employees were paid less than they should actually receive. So, you decided

to mail them with the amount they received and to tell them they will receive the lost amount the following month. To do so, you have to refer another table for mail-ids of those employees. Here employee id in employee details can be a primary key and the same attribute in pay-slips table is a foreign key. We use joins to get those employee ids with their mail-ids and the amount they received.