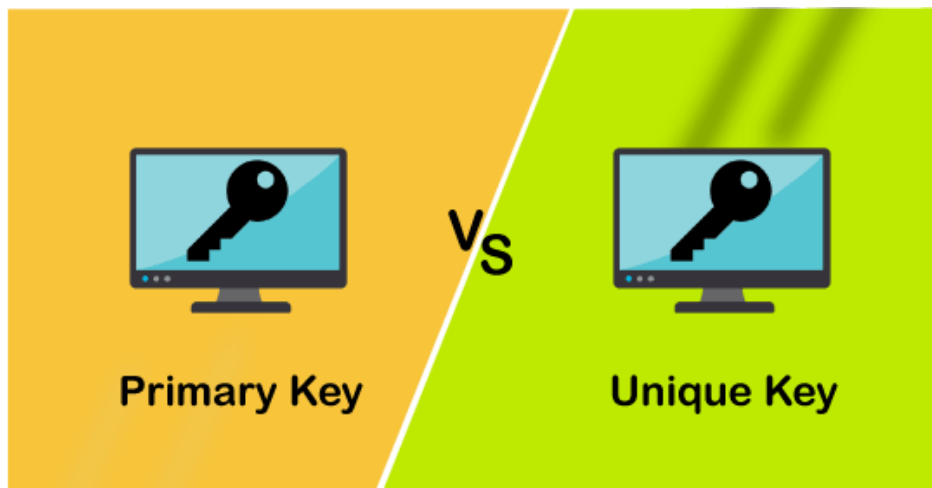


# Difference between Primary Key and Unique key

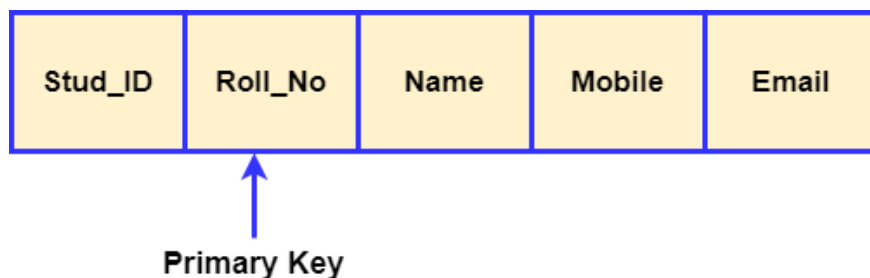
Keys in MySQL are the column or set of columns used to construct a relationship between one or more than two tables. They are also used for accessing records from the table. Both keys provide a guaranteed uniqueness for a column or a set of columns in a table or relation. **The main difference among them is that the primary key identifies each record in the table, and the unique key prevents duplicate entries in a column except for a NULL value.** In this article, we are going to compare essential differences between Primary and Unique Keys based on various parameters. Before making a comparison, we will discuss in brief these keys.



## What is Primary Key?

The **primary key** is a **unique or non-null** key that uniquely identifies every record in that table or relation. The primary key column cannot store duplicate values that mean primary key column values are always unique. It is also called a **minimal super key**; therefore, we cannot specify more than one primary key in any relationship. A primary key column of one table can be referenced by a foreign key column of another table.

**For example,** we have a table named **students** with attributes such as Stud\_ID, Roll\_No, Name, Mobile, and Email.



Here only the **Roll\_No** column can never contain an identical and NULL value. We know every student has a unique roll number. Therefore two students can never have the same roll number. This feature helps to identify each record in the database uniquely. Hence, we can make the Roll\_No attribute a primary key.

## Features of Primary Key

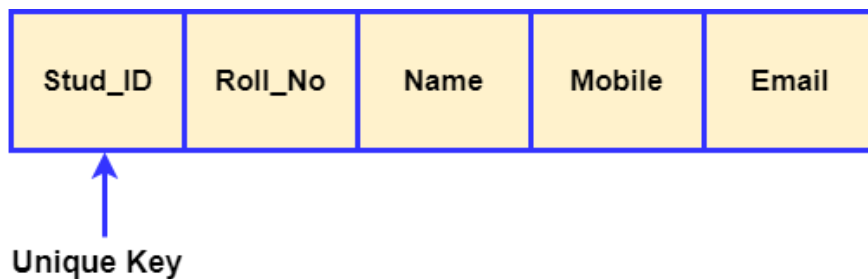
The following are the essential primary key features:

- The primary key column cannot contain duplicate values.
- The primary key implements the entity integrity of the table.
- A table cannot have more than one primary key column.
- We can make the primary key from one or more table fields.
- The primary key column should have NOT NULL constraints.

## What is a Unique Key?

The **unique key** is a single column or combination of columns in a table to uniquely identify database records. A unique key **prevents** from storing **duplicate values** in the column. A table can contain multiple unique key columns, unlike a primary key column. This key is similar to the primary key, except that one NULL value can be stored in the unique key column. The unique key is also called **unique constraints** and can be referenced by another table's foreign key.

**For example**, let's consider the same table named **students** with attributes such as Stud\_ID, Roll\_No, Name, Mobile, and Email.



Here **Stud\_ID** can be assigned as a unique constraint because each student must have a unique identification number. If a student changes the college, then he or she would not have any student ID. In that case, the entry may contain a **NULL** value because a unique key constraint allows storing NULL, but it should be only one.

## Features of Unique key

The following are the essential unique key features:

- We can construct the unique key from one or more table fields.
- A table can define multiple unique key columns.
- By default, a unique key is in non-clustered unique indexes.
- The unique constraint column can store NULL value, but only one NULL is allowed null per column.
- The foreign key can reference the unique constraint in preserving the uniqueness of a table.

## Key differences between Primary and Unique Key

The following points explain the key differences between primary and candidate keys:

- A primary key can constitute one or more fields of a table to identify records in a table uniquely. On the other hand, a unique key prevents two rows from having duplicate entries in a column.
- A table cannot have more than one primary key in a relational database, while there can be multiple unique keys per table.
- A primary key column cannot contain NULL values, whereas a unique key can have NULL values, but only one NULL is allowed in a table.
- A primary key should be unique, but a unique key cannot necessarily be the primary key.
- The primary key by default is a clustered index where data is physically organized in the sequential index. In contrast, the unique key is a unique non-clustered index.
- The primary key implements entity integrity, whereas the unique key enforces unique data.

## Primary Key vs. Unique Key Comparison Chart

The following comparison chart explains their main differences in a quick manner:

Comparison Basis	Primary Key	Unique Key
<b>Basic</b>	The primary key is used as a unique identifier for each record in the table.	The unique key is also a unique identifier for records when the primary key is not present in the table.
<b>NULL</b>	We cannot store NULL values in the primary key column.	We can store NULL value in the unique key column, but only one NULL is allowed.
<b>Purpose</b>	It enforces entity integrity.	It enforces unique data.

<b>Index</b>	The primary key, by default, creates clustered index.	The unique key, by default, creates a non-clustered index.
<b>Number of Key</b>	Each table supports only one primary key.	A table can have more than one unique key.
<b>Value Modification</b>	We cannot change or delete the primary key values.	We can modify the unique key column values.
<b>Uses</b>	It is used to identify each record in the table.	It prevents storing duplicate entries in a column except for a NULL value.
<b>Syntax</b>	<p>We can create a primary key column in the table using the below syntax:</p> <pre>CREATE TABLE Employee (   Id INT PRIMARY KEY,   name VARCHAR(150),   address VARCHAR(250) )</pre>	<p>We can create a unique key column in the table using the below syntax:</p> <pre>CREATE TABLE Person (   Id INT UNIQUE,   name VARCHAR(150),   address VARCHAR(250) )</pre>

## Conclusion

In this article, we have made a comparison between primary key and unique key constraints. Here we have concluded that a unique key is useful when we want the columns don't contain duplicate values. And the primary key is useful when we do not want to keep NULL value in the table. It can also be ideal when we have a foreign key in another table to create a relationship among tables.

---

 [For Videos Join Our Youtube Channel: Join Now](#)

---

## Feedback

- Send your Feedback to [feedback@jvatpoint.com](mailto:feedback@jvatpoint.com)


---


## Help Others, Please Share





---


## Learn Latest Tutorials

 [Splunk tutorial](#)  
Splunk

 [SPSS tutorial](#)  
SPSS

 [Swagger tutorial](#)  
Swagger

 [T-SQL tutorial](#)  
Transact-SQL

 [Tumblr tutorial](#)  
Tumblr



React tutorial  
ReactJS



Regex tutorial  
Regex



Reinforcement  
learning tutorial  
Reinforcement  
Learning



R Programming  
tutorial  
R Programming



RxJS tutorial  
RxJS



React Native  
tutorial  
React Native



Python Design  
Patterns  
Python Design  
Patterns



Python Pillow  
tutorial  
Python Pillow



Python Turtle  
tutorial  
Python Turtle



Keras tutorial  
Keras

## Preparation



Aptitude  
Aptitude



Logical  
Reasoning  
Reasoning



Verbal Ability  
Verbal Ability



Interview  
Questions  
Interview Questions



Company  
Interview  
Questions  
Company Questions

## Trending Technologies



Artificial  
Intelligence  
Artificial  
Intelligence



AWS Tutorial  
AWS



Selenium  
tutorial  
Selenium



Cloud  
Computing  
Cloud Computing



Hadoop tutorial  
Hadoop



ReactJS  
Tutorial  
ReactJS



Data Science  
Tutorial  
Data Science



Angular 7  
Tutorial  
Angular 7



Blockchain  
Tutorial  
Blockchain



Git Tutorial  
Git



Machine  
Learning Tutorial  
Machine Learning



DevOps  
Tutorial  
DevOps

## B.Tech / MCA



DBMS tutorial  
DBMS



Data Structures  
tutorial  
Data Structures



DAA tutorial  
DAA



Operating  
System  
Operating System



Computer  
Network tutorial  
Computer Network



Compiler  
Design tutorial  
Compiler Design



Computer  
Organization and  
Architecture  
Computer  
Organization



Discrete  
Mathematics  
Tutorial  
Discrete  
Mathematics



Ethical Hacking  
Ethical Hacking



Computer  
Graphics Tutorial  
Computer Graphics



Software  
Engineering  
Software  
Engineering



html tutorial  
Web Technology



Cyber Security  
tutorial  
Cyber Security



Automata  
Tutorial  
Automata



C Language  
tutorial  
C Programming



C++ tutorial  
C++



Java tutorial  
Java



.Net  
Framework  
tutorial  
.Net



Python tutorial  
Python



List of  
Programs  
Programs



Control  
Systems tutorial  
Control System



Data Mining  
Tutorial  
Data Mining



Data  
Warehouse  
Tutorial  
Data Warehouse



