# **SQL PRIMARY KEY Constraint**

**SQL PRIMARY KEY Constraint:**

1. The PRIMARY KEY constraint uniquely identifies each record in a table.
2. Primary keys must contain UNIQUE values, and cannot contain NULL values.
3. A table can have only ONE primary key; and in the table, this primary key can consist of single or multiple columns (fields).

**SQL PRIMARY KEY on CREATE TABLE**

1. The following SQL creates a PRIMARY KEY on the "ID" column when the "Persons" table is created:  
   MySQL:

|  |
| --- |
| CREATE TABLE Persons (  ID int NOT NULL,  LastName varchar(255) NOT NULL,  FirstName varchar(255),  Age int,  PRIMARY KEY (ID)  ); |

SQL Server / Oracle / MS Access:

|  |
| --- |
| CREATE TABLE Persons (  ID int NOT NULL PRIMARY KEY,  LastName varchar(255) NOT NULL,  FirstName varchar(255),  Age int  ); |

To allow naming of a PRIMARY KEY constraint, and for defining a PRIMARY KEY constraint on multiple columns, use the following SQL syntax:  
 MySQL / SQL Server / Oracle / MS Access:

|  |
| --- |
| CREATE TABLE Persons (  ID int NOT NULL,  LastName varchar(255) NOT NULL,  FirstName varchar(255),  Age int,  CONSTRAINT PK\_Person PRIMARY KEY (ID,LastName)  ); |

In the example above there is only ONE PRIMARY KEY (PK\_Person). However, the VALUE of the primary key is made up of TWO COLUMNS (ID + LastName).

**SQL PRIMARY KEY on ALTER TABLE**

1. To create a PRIMARY KEY constraint on the "ID" column when the table is already created, use the following SQL:  
   MySQL / SQL Server / Oracle / MS Access:

|  |
| --- |
| ALTER TABLE Persons  ADD PRIMARY KEY (ID); |

To allow naming of a PRIMARY KEY constraint, and for defining a PRIMARY KEY constraint on multiple columns, use the following SQL syntax:  
MySQL / SQL Server / Oracle / MS Access:

|  |
| --- |
| ALTER TABLE Persons  ADD CONSTRAINT PK\_Person PRIMARY KEY (ID,LastName); |

If you use ALTER TABLE to add a primary key, the primary key column(s) must have been declared to not contain NULL values (when the table was first created).

**DROP a PRIMARY KEY Constraint**

1. To drop a PRIMARY KEY constraint, use the following SQL:  
   MySQL:

|  |
| --- |
| ALTER TABLE Persons  DROP PRIMARY KEY; |

SQL Server / Oracle / MS Access:

|  |
| --- |
| ALTER TABLE Persons  DROP CONSTRAINT PK\_Person; |