



Relational Database Concepts

*How To Write CREATE TABLE
STATEMENTS*

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Objectives

- Learn how to write CREATE TABLE statements to create tables in a database.
- Learn how to use the Create Table statement to define the columns and integrity constraints for a table.



How To Create Tables

- Before tables can be used, they have to be created and this is generally the job of the DBA.
- Creating tables is done using the CREATE TABLE command.
- Create Table is a statement in the structured query language, SQL.
- Because SQL is an industry standard language, the Create Table statement can be used to create tables in most DBMS's
- Important to learn the correct syntax and PRACTICE will get you there.



Create Table Syntax

- A CREATE TABLE statement can be used to define the heading part of a table.

CREATE TABLE Syntax

```
CREATE TABLE table_name  
(column_name1 data_type(size),  
column_name2 data_type(size),  
column_name3 data_type(size),....);
```

- The column_name parameters specify the names of the columns of the table.
- The data_type parameter specifies what type of data the column can hold (e.g. varchar, integer, decimal, date, etc.).
- The size parameter specifies the maximum length of the column of the table.



CREATE TABLE Statement

- CREATE TABLE statement creates a table.
- Tables contain columns and constraints, rules to which data must conform.
- Table-level constraints specify a column or columns.
- Columns have a data type and can specify column constraints (column-level constraints).
- Tables are organized into rows and columns; and each table must have a name.

The Oracle create table command does the following:

- Oracle create table syntax defines the table name.
- Oracle create table syntax defines the columns in the table and the datatypes of those columns.
- Oracle create table syntax defines what tablespace the table resides in (optional)
- Oracle create table syntax defines other characteristics of the table (optional)



CREATE TABLE Example

- A review of the students' table from the university database shows that it contains nine columns.
- The CREATE TABLE statement that follows creates the Student Table. For each column, the column name and data type are specified.
- Data types indicate the kind of data (character, numeric, date etc.) and permissible operations (numeric operations, string operations etc.) for the column.



CREATE TABLE Example

```
CREATE TABLE Student
(StdSSN          CHAR(11),
 StdFirstName    VARCHAR(50),
 StdLastName     VARCHAR(50),
 StdCity         VARCHAR(50),
 StdState        CHAR(2),
 StdZip          CHAR(10),
 StdMajor        CHAR(6),
 StdClass        CHAR(6),
 StdGPA          DECIMAL(3,2));
```



CREATE TABLE Example

- The statement begins with the keywords create table and then you define the name of the table. In our case, it is called STUDENT.
- Following the create table keywords, you need a left parenthesis, the list of columns you want to specify will be listed inside the parenthesis.
- If constraints are defined on the table, they will be listed inside the parenthesis.
- A column list involves a column name and optional inline constraints. Data types indicate the kind of data, character, numeric and so on.
- And permissible operations such as numeric operations, and string operations such as subset for the column.
- Each data type has a name. For example, CHAR for character and usually a length specification.



CREATE TABLE Example

- Keywords must be spelled exactly. For example, misspelling table as **tble** will cause a syntax error. Database compilers, unfortunately, do not have spelling correction to help you.
- Each column definition is terminated by a comma.
- A missing comma will result in a syntax error with a message that will not be easy to understand.
- The entire statement terminates with a right parenthesis and semi colon.
- A key part of a column definition is the data type specification.