27-7-2023

Sergio Ibarra

Inserción de datos Base de Formula 1

Inserción de datos en tablas en SQL

## F1 2023 CAR LAUNCHES AND LIVERIES: Photos of every F1 car ahead of the 2023 season | Formula 1®



Se presenta a continuación un resumen de los pasos que se siguieron para importar los datos en las tablas de la base de datos Formula1

Se llevó a cabo la creación y alimentación de datos de en las distintas tablas

## Creación de tablas

USE Formula1\_1;

CREATE TABLE Circuits (circuitID INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

circuitRef varchar(50) NOT NULL,

name varchar(50) NOT NULL,

location varchar(50) NOT NULL,

Country varchar(50) NOT NULL,

url varchar(50));

SELECT \* FROM Circuits;

CREATE TABLE Constructors (

constructorID INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

constructorRef INT NOT NULL,

name VARCHAR(50) NOT NULL,

Nationality VARCHAR(50) NOT NULL,

URL VARCHAR(50) NOT NULL

);

SELECT \* FROM Constructors;

CREATE TABLE Races (

raceId INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

year\_race INT NOT NULL,

round\_race INT NOT NULL,

circuitID INT NOT NULL,

name\_race INT NOT NULL,

date\_race INT NOT NULL,

time\_race VARCHAR(50) NOT NULL,

FOREIGN KEY (circuitID) REFERENCES Circuits(circuitID)

);

-- Modify the data type of name\_race column to VARCHAR(50)

ALTER TABLE Races

ALTER COLUMN name\_race VARCHAR(50) NOT NULL;

-- Modify the data type of date\_race column to DATE

ALTER TABLE Races

ALTER COLUMN date\_race DATE NOT NULL;

SELECT \* FROM Races;

CREATE TABLE Constructors\_results (

constructorResultsId INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

constructorId INT NOT NULL,

Points INT NOT NULL,

Status\_constructor VARCHAR(50) NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (constructorId) REFERENCES Constructors(constructorId)

);

SELECT \* FROM Constructors\_results;

CREATE TABLE Constructors\_standings (

constructorStandingsId INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

constructorId INT NOT NULL,

Points INT NOT NULL,

Position VARCHAR(50) NOT NULL,

PositionText VARCHAR(50) NOT NULL,

Wins INT NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (constructorId) REFERENCES Constructors(constructorId)

);

-- Modify the data type of date\_race column to DATE

ALTER TABLE Constructors\_standings

ALTER COLUMN Position INT NOT NULL;

SELECT \* FROM Constructors\_standings;

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Constructors\_standings';

CREATE TABLE Drivers (

driverId INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

driverRef VARCHAR(50) NOT NULL,

number INT NOT NULL,

Code VARCHAR(50) NOT NULL,

Forename VARCHAR(50) NOT NULL,

Surname VARCHAR(50) NOT NULL,

nationality VARCHAR(50) NOT NULL

);

-- To change the 'NOT NULL' constraint to 'NULL' for columns 'number' and 'Code' in the table 'Drivers'

ALTER TABLE Drivers

ALTER COLUMN number INT NULL;

ALTER TABLE Drivers

ALTER COLUMN Code VARCHAR(50) NULL;

-- To add a new column 'DOB' with data type 'DATE' to the table 'Drivers'

ALTER TABLE Drivers

ADD DOB DATE NOT NULL;

SELECT \* FROM Drivers;

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Drivers';

CREATE TABLE Drivers\_standings (

driverStandingsId INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

driverId INT NOT NULL,

Points INT NOT NULL,

Position VARCHAR(50) NOT NULL,

PositionText VARCHAR(50) NOT NULL,

Wins INT NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (driverId) REFERENCES Drivers(driverId)

);

-- Modify the data type

ALTER TABLE Drivers\_standings

ALTER COLUMN Position INT NOT NULL;

SELECT \* FROM Drivers\_standings;

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Drivers\_standings';

CREATE TABLE Lap\_times (

lapID INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

driverId INT NOT NULL,

Position VARCHAR(50) NOT NULL,

Time VARCHAR(50) NOT NULL,

Miliseconds INT NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (driverId) REFERENCES Drivers(driverId)

);

-- Modify the data type

ALTER TABLE Lap\_times

ALTER COLUMN Position INT NOT NULL;

-- To rename the column 'Time' to 'Time\_lap'

EXEC sp\_rename 'Lap\_times.Time', 'Time\_lap', 'COLUMN';

-- To modify the data type of the 'Time\_lap' column to 'TIME'

ALTER TABLE Lap\_times

ALTER COLUMN Time\_lap TIME NOT NULL;

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'Lap\_times';

SELECT \* FROM Lap\_times;

CREATE TABLE PIT\_stops (

StopsID INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

driverId INT NOT NULL,

lap INT NOT NULL,

Wins INT NOT NULL,

Time INT NOT NULL,

duration VARCHAR(50) NOT NULL,

Miliseconds INT NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (driverId) REFERENCES Drivers(driverId),

FOREIGN KEY (lap) REFERENCES Lap\_times(lapID)

);

-- To rename the column 'Time' to 'Time\_lap'

EXEC sp\_rename 'PIT\_stops.Time', 'Time\_stops', 'COLUMN';

-- Truncate the table to remove all existing data

TRUNCATE TABLE PIT\_stops;

-- Modify the data type of the 'Time\_stops' column to 'TIME'

ALTER TABLE PIT\_stops

ALTER COLUMN Time\_stops TIME NOT NULL;

-- Check for default constraint on the 'Time\_stops' column

SELECT OBJECT\_NAME(default\_object\_id) AS default\_constraint\_name

FROM sys.columns

WHERE OBJECT\_ID = OBJECT\_ID('PIT\_stops') AND name = 'Time\_stops';

-- Drop the table PIT\_stops

DROP TABLE PIT\_stops;

CREATE TABLE PIT\_stops (

StopsID INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

driverId INT NOT NULL,

lap INT NOT NULL,

Time\_stops TIME NOT NULL,

duration FLOAT NOT NULL,

Miliseconds INT NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (driverId) REFERENCES Drivers(driverId),

FOREIGN KEY (lap) REFERENCES Lap\_times(lapID)

);

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'PIT\_stops';

SELECT \* FROM PIT\_stops;

CREATE TABLE qualifying (

qualifyId INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

driverId INT NOT NULL,

constructorId INT NOT NULL,

number INT NOT NULL,

Position VARCHAR(50) NOT NULL,

q1 VARCHAR(50) NOT NULL,

q2 VARCHAR(50) NOT NULL,

q3 VARCHAR(50) NOT NULL,

q4 VARCHAR(50) NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (driverId) REFERENCES Drivers(driverId),

FOREIGN KEY (constructorId) REFERENCES Constructors(constructorId)

);

-- Modify the data type of the 'Time\_stops' column to 'TIME'

ALTER TABLE qualifying

ALTER COLUMN Position INT NOT NULL;

ALTER TABLE qualifying

ALTER COLUMN q1 VARCHAR(50) NULL;

ALTER TABLE qualifying

ALTER COLUMN q2 VARCHAR(50) NULL;

ALTER TABLE qualifying

ALTER COLUMN q3 VARCHAR(50) NULL;

-- To delete the column 'q4' from the table 'qualifying'

ALTER TABLE qualifying

DROP COLUMN q4;

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'qualifying';

CREATE TABLE results (

resultID INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

driverId INT NOT NULL,

constructorId INT NOT NULL,

number INT NOT NULL,

Grid INT NOT NULL,

Position VARCHAR(50) NOT NULL,

PositionText VARCHAR(50) NOT NULL,

PositionOrder VARCHAR(50) NOT NULL,

Time VARCHAR(50) NOT NULL,

Miliseconds INT NOT NULL,

fastestLap INT NOT NULL,

rank\_results INT NOT NULL,

statusID INT NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (driverId) REFERENCES Drivers(driverId),

FOREIGN KEY (constructorId) REFERENCES Constructors(constructorId)

);

-- Change the data type of the 'Position' column to INT

ALTER TABLE results

ALTER COLUMN Position INT NOT NULL;

-- Rename the 'Time' column to 'Time\_results'

EXEC sp\_rename 'results.Time', 'Time\_results', 'COLUMN';

-- Allow NULL values in specific columns

ALTER TABLE results

ALTER COLUMN Position INT NULL;

ALTER TABLE results

ALTER COLUMN Time\_results VARCHAR(50) NULL;

ALTER TABLE results

ALTER COLUMN Miliseconds INT NULL;

ALTER TABLE results

ALTER COLUMN fastestLap INT NULL;

ALTER TABLE results

ALTER COLUMN rank\_results INT NULL;

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'results';

CREATE TABLE status\_ (

statusID INT NOT NULL PRIMARY KEY,

statusDescription VARCHAR(100) NOT NULL

);

ALTER TABLE results

ADD CONSTRAINT FK\_results\_status

FOREIGN KEY (statusID) REFERENCES status\_(statusID);

CREATE TABLE sprint\_results (

resultID INT IDENTITY(1,1) NOT NULL PRIMARY KEY,

raceId INT NOT NULL,

driverId INT NOT NULL,

constructorId INT NOT NULL,

number INT NOT NULL,

Grid INT NOT NULL,

Position VARCHAR(50) NOT NULL,

PositionText VARCHAR(50) NOT NULL,

PositionOrder VARCHAR(50) NOT NULL,

Time VARCHAR(50) NOT NULL,

Miliseconds INT NOT NULL,

fastestLap INT NOT NULL,

rank\_sprint\_res INT NOT NULL,

statusID INT NOT NULL,

FOREIGN KEY (raceId) REFERENCES Races(raceId),

FOREIGN KEY (driverId) REFERENCES Drivers(driverId),

FOREIGN KEY (constructorId) REFERENCES Constructors(constructorId)

);

-- Change the data type of the 'Position' column to INT

ALTER TABLE sprint\_results

ALTER COLUMN Position INT NOT NULL;

-- Rename the 'Time' column to 'Time\_sprints\_res'

EXEC sp\_rename 'sprint\_results.Time', 'Time\_sprints\_res', 'COLUMN';

-- Allow NULL values in specific columns

ALTER TABLE sprint\_results

ALTER COLUMN Position INT NULL;

ALTER TABLE sprint\_results

ALTER COLUMN Time\_sprints\_res VARCHAR(50) NULL;

ALTER TABLE sprint\_results

ALTER COLUMN Miliseconds INT NULL;

ALTER TABLE sprint\_results

ALTER COLUMN fastestLap INT NULL;

ALTER TABLE sprint\_results

ALTER COLUMN rank\_sprint\_res INT NULL;

-- Replace 'Constructors\_standings' with the actual name of your table

SELECT COLUMN\_NAME, DATA\_TYPE

FROM INFORMATION\_SCHEMA.COLUMNS

WHERE TABLE\_NAME = 'sprint\_results';

Diagrama, Esquemático

Descripción generada automáticamente

## Interfaz de usuario gráfica, Aplicación Descripción generada automáticamenteInserción de datos en tablas previamente creadas

ALTER TABLE Races ALTER COLUMN time\_race TIME NULL;

SELECT \* FROM Races;

Interfaz de usuario gráfica, Aplicación

Descripción generada automáticamente

SELECT COLUMN\_NAME, DATA\_TYPE FROM INFORMATION\_SCHEMA.COLUMNS WHERE TABLE\_NAME = 'Constructors\_results';

ALTER TABLE Constructors\_results ALTER COLUMN Status\_constructor VARCHAR(50) NULL;

Interfaz de usuario gráfica, Tabla

Descripción generada automáticamente

SELECT \* FROM Drivers;

Interfaz de usuario gráfica, Tabla

Descripción generada automáticamente con confianza media

ALTER TABLE Drivers ALTER COLUMN DOB DATE;

-Para revisar las Keys (Primary Key and Foreing Key) de una tabla SELECT \* FROM sys.key\_constraints WHERE parent\_object\_id = OBJECT\_ID('Drivers');

-Para revisar las Keys (Foreing Key) y las tablas que dependen de una tabla que no permite borrar SELECT \* FROM sys.foreign\_keys WHERE referenced\_object\_id = OBJECT\_ID('Drivers');

Para intentar otro formato de fecha ALTER TABLE Drivers ALTER COLUMN DOB DATETIME2;

Interfaz de usuario gráfica, Aplicación, Tabla

Descripción generada automáticamenteInterfaz de usuario gráfica, Tabla

Descripción generada automáticamente