

Python SQLite — Establishing Connection

SQLite3 can be integrated with Python using sqlite3 module, which was written by Gerhard Haring. It provides an SQL interface compliant with the DB-API 2.0 specification described by PEP 249. You do not need to install this module separately because it is shipped by default along with Python version 2.5.x onwards

To install sqlit3 run the cmd:

Pip install sqlite3

You can communicate with SQLite2 database using the SQLite3 python module.

```
import sqlite3
```

```
conn = sqlite3.connect('example.db')
```

```
print("Connection established .....")
```

Import the sqlite3 module using the import statement.

The connect() method accepts the name of the database you need to connect with as a parameter and, returns a Connection object.

Creating a table using python

```
import sqlite3
conn = sqlite3.connect('example.db')
cursor = conn.cursor()      #Creating a cursor object using the cursor() method
cursor.execute("DROP TABLE IF EXISTS EMPLOYEE")
```

#Creating table as per requirement

```
sql = """CREATE TABLE EMPLOYEE( FIRST_NAME CHAR(20) NOT NULL,
LAST_NAME CHAR(20), AGE INT, SEX CHAR(1), INCOME FLOAT)"""
```

```
cursor.execute(sql)
print("Table created successfully.....")
conn.commit()      # Commit your changes in the database
conn.close()       #Closing the connection
```

Inserting data using python

```
import sqlite3
```

```
conn =sqlite3.connect('example.db')  
cursor = conn.cursor()
```

```
# Preparing SQL queries to INSERT a record into the database.
```

```
cursor.execute("""INSERT INTO EMPLOYEE(FIRST_NAME, LAST_NAME, AGE, SEX, INCOME) VALUES  
( 'Shreya', 'Sawant', 27, 'F', 9000)""")
```

```
cursor.execute("""INSERT INTO EMPLOYEE(FIRST_NAME, LAST_NAME, AGE, SEX, INCOME) VALUES  
( 'Krutika', 'Mahajan', 20, 'F', 6000)""")
```

```
cursor.execute("""INSERT INTO EMPLOYEE(FIRST_NAME, LAST_NAME, AGE, SEX, INCOME) VALUES  
( 'Sharukh', 'Khan', 25, 'M', 8300)""")
```

```
cursor.execute("""INSERT INTO EMPLOYEE(FIRST_NAME, LAST_NAME, AGE, SEX, INCOME) VALUES  
( 'Sakshi', 'Sharma', 26, 'F', 10000)""")
```

```
cursor.execute("""INSERT INTO EMPLOYEE(FIRST_NAME, LAST_NAME, AGE, SEX, INCOME) VALUES  
( 'Piyush', 'Thakare', 24, 'M', 6000)""")
```

```
conn.commit()
```

```
print("Records inserted.....")
```

```
# Closing the connection
```

```
conn.close()
```

Retrieving data using python

```
import sqlite3
```

```
conn =sqlite3.connect('example.db')  
cursor = conn.cursor()
```

```
#Retrieving data  
cursor.execute("""SELECT * from EMPLOYEE""")
```

```
#Fetching 1st row from the table  
result = cursor.fetchone();  
print(result)
```

```
#Fetching all row from the table  
result = cursor.fetchall();  
print(result)
```

```
conn.commit()  
print("Records inserted.....")  
# Closing the connection  
conn.close()
```

Retrieving data — Where Clause

```
import sqlite3
```

```
conn =sqlite3.connect('example.db')
cursor = conn.cursor()
```

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Create table
Insert data

```
#Retrieving data
cursor.execute("Select * from emp.id=dep.id and age>25")
print(cursor.fetchall())
```

```
conn.commit()  
print("Records inserted.....")  
# Closing the connection  
conn.close()
```

Deleting data using python

```
import sqlite3
conn = sqlite3.connect('example.db')
cursor = conn.cursor()

print("Contents of the table: ")
cursor.execute("""SELECT * from EMPLOYEE""")
print(cursor.fetchall())

#Deleting records
cursor.execute("""DELETE FROM EMPLOYEE WHERE AGE > 25""")

print("Contents of the table after delete operation ")
cursor.execute("SELECT * from EMPLOYEE")
print(cursor.fetchall())

#Commit your changes in the database
conn.commit()
#Closing the connection
conn.close()
```

Updating existing data using python

```
import sqlite3
conn = sqlite3.connect('example.db')
cursor = conn.cursor()
.
.
.
cursor.execute("""SELECT * from EMPLOYEE""")
print(cursor.fetchall())

sql = """UPDATE EMPLOYEE SET AGE=AGE+1 WHERE SEX = 'M' """
cursor.execute(sql)
print("Table updated..... ")

print("Contents of the table after delete operation ")
cursor.execute("SELECT * from EMPLOYEE")
print(cursor.fetchall())

#Commit your changes in the database
conn.commit()
#Closing the connection conn.close()
```