In [1]:
```
pip install mysql-connector-python
```

```
Requirement already satisfied: mysql-connector-python in c:\users\sagnik
samanta\anaconda3\lib\site-packages (8.4.0)
Note: you may need to restart the kernel to use updated packages.
```

In [2]:
```
import mysql.connector
```

In [ ]:
```
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234")
mycursor=mydb.cursor()
mycursor.execute("Create Database mysqlDatabase")
```

In [3]:
```
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234")
mycursor=mydb.cursor()
mycursor.execute("Show Databases")
for x in mycursor:
    print(x)
```

```
('information_schema',)
('mysql',)
('mysql_python',)
('mysqldatabase',)
('performance_schema',)
('sagnik',)
('sagnik_databases',)
('sql_intro',)
('sql_joins',)
('sys',)
('triggers',)
```

In [4]:
```
## you can try to access the database when making the connection:
## If this page is executed with no error, the database "mysqlDatabase" ex
## Try to connect to the database "mysqlDatabase":
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase")
```

In [10]:
```
## Create Table Student
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase")
mycursor=mydb.cursor()
mycursor.execute("Create table Student(Student_ID int,Name varchar(30),Age
```

In [11]:
```
## Show Tables
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase")
mycursor=mydb.cursor()
mycursor.execute("Show Tables")
for x in mycursor:
    print(x)
```

```
('student',)
```

In [8]:
```
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysql_python")
```

In [5]:
```
## Show Tables
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysql_python")
mycursor=mydb.cursor()
mycursor.execute("Show Tables")
for x in mycursor:
    print(x)
```

```
('orders',)
```

In [12]:
```
## Insert a Record into a Table
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql="Insert into Student values(%s,%s,%s,%s,%s)"
val=(1,"Aniket",25,"M",8975076654)
mycursor.execute(sql,val)

mydb.commit()
print(mycursor.rowcount,"Record Inserted")
```

```
1 Record Inserted
```

In [13]:
```
## Insert Many Records into a Table
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql="Insert into Student values(%s,%s,%s,%s,%s)"
val=[(2,"Anik",25,"M",8475176254),
    (3,"Ankita",25,"F",8575073651),
    (4,"Avik",26,"M",9175078154),
    (5,"Debasis",25,"M",9007533345),
    (6,"Sourav",27,"M",9163850256)]
mycursor.executemany(sql,val)

mydb.commit()
print(mycursor.rowcount,"Was Inserted")
```

```
5 Was Inserted
```

In [14]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "INSERT INTO Student VALUES (%s, %s,%s,%s,%s)"
val = (7,"Sangita",26,"F",9163852756)
mycursor.execute(sql, val)

mydb.commit()

print("1 record inserted, ID:", mycursor.lastrowid)
```

```
1 record inserted, ID: 0
```

In [15]:
```
## Using SELECT Statement
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

mycursor.execute("SELECT * FROM Student")

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(1, 'Aniket', 25, 'M', '8975076654')
(2, 'Anik', 25, 'M', '8475176254')
(3, 'Ankita', 25, 'F', '8575073651')
(4, 'Avik', 26, 'M', '9175078154')
(5, 'Debasis', 25, 'M', '9007533345')
(6, 'Sourav', 27, 'M', '9163850256')
(7, 'Sangita', 26, 'F', '9163852756')
```

In [16]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

mycursor.execute("SELECT Name,Age,Phone_No FROM Student")

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
('Aniket', 25, '8975076654')
('Anik', 25, '8475176254')
('Ankita', 25, '8575073651')
('Avik', 26, '9175078154')
('Debasis', 25, '9007533345')
('Sourav', 27, '9163850256')
('Sangita', 26, '9163852756')
```

In [17]:
```
## Using the fetchone() Method
## If you are only interested in one row, you can use the fetchone() metho
## The fetchone() method will return the first row of the result:
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

mycursor.execute("SELECT * FROM Student")

myresult = mycursor.fetchone()

for x in myresult:
  print(x)
```

```
1
Aniket
25
M
8975076654
```

In [18]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student WHERE Age=25"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(1, 'Aniket', 25, 'M', '8975076654')
(2, 'Anik', 25, 'M', '8475176254')
(3, 'Ankita', 25, 'F', '8575073651')
(5, 'Debasis', 25, 'M', '9007533345')
```

In [21]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student WHERE Name like '%nik%'"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(1, 'Aniket', 25, 'M', '8975076654')
(2, 'Anik', 25, 'M', '8475176254')
```

In [22]:
```
## Prevent SQL Injection
## When query values are provided by the user, you should escape the values
## This is to prevent SQL injections, which is a common web hacking technic
## The mysql.connector module has methods to escape query values:
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student WHERE Name = %s"
Name= ("Aniket",)
mycursor.execute(sql,Name)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(1, 'Aniket', 25, 'M', '8975076654')
```

In [23]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student order by Name"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(2, 'Anik', 25, 'M', '8475176254')
(1, 'Aniket', 25, 'M', '8975076654')
(3, 'Ankita', 25, 'F', '8575073651')
(4, 'Avik', 26, 'M', '9175078154')
(5, 'Debasis', 25, 'M', '9007533345')
(7, 'Sangita', 26, 'F', '9163852756')
(6, 'Sourav', 27, 'M', '9163850256')
```

In [24]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student order by Name desc"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(6, 'Sourav', 27, 'M', '9163850256')
(7, 'Sangita', 26, 'F', '9163852756')
(5, 'Debasis', 25, 'M', '9007533345')
(4, 'Avik', 26, 'M', '9175078154')
(3, 'Ankita', 25, 'F', '8575073651')
(1, 'Aniket', 25, 'M', '8975076654')
(2, 'Anik', 25, 'M', '8475176254')
```

In [25]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "DELETE FROM Student Where Name='Aniket' "

mycursor.execute(sql)

mydb.commit()

print(mycursor.rowcount, "record(s) deleted")
```

```
1 record(s) deleted
```

In [26]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student order by Name"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(2, 'Anik', 25, 'M', '8475176254')
(3, 'Ankita', 25, 'F', '8575073651')
(4, 'Avik', 26, 'M', '9175078154')
(5, 'Debasis', 25, 'M', '9007533345')
(7, 'Sangita', 26, 'F', '9163852756')
(6, 'Sourav', 27, 'M', '9163850256')
```

In [27]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "DELETE FROM Student WHERE Name = %s"
Name= ("Sangita",)
mycursor.execute(sql,Name)

mydb.commit()

print(mycursor.rowcount, "record(s) deleted")
```

```
1 record(s) deleted
```

In [29]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(2, 'Anik', 25, 'M', '8475176254')
(3, 'Ankita', 25, 'F', '8575073651')
(4, 'Avik', 26, 'M', '9175078154')
(5, 'Debasis', 25, 'M', '9007533345')
(6, 'Sourav', 27, 'M', '9163850256')
```

In [7]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "DROP TABLE Student"

mycursor.execute(sql)
```

In [9]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "DROP TABLE IF EXISTS Student"

mycursor.execute(sql)
```

In [16]:
```
## Update Statement
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "UPDATE Student SET Name = 'Sayantini' WHERE Phone_No = 9163852756"

mycursor.execute(sql)

mydb.commit()

print(mycursor.rowcount, "record(s) affected")
```

```
1 record(s) affected
```

In [17]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "UPDATE Student SET Name = %s WHERE Phone_No = %s"
val = ("Sayantini", 9163852756)

mycursor.execute(sql, val)

mydb.commit()

print(mycursor.rowcount, "record(s) affected")
```

```
0 record(s) affected
```

In [18]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(1, 'Aniket', 25, 'M', '8975076654')
(2, 'Anik', 25, 'M', '8475176254')
(3, 'Ankita', 25, 'F', '8575073651')
(4, 'Avik', 26, 'M', '9175078154')
(5, 'Debasis', 25, 'M', '9007533345')
(6, 'Sourav', 27, 'M', '9163850256')
(7, 'Sayantini', 26, 'F', '9163852756')
```

In [19]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student limit 3"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(1, 'Aniket', 25, 'M', '8975076654')
(2, 'Anik', 25, 'M', '8475176254')
(3, 'Ankita', 25, 'F', '8575073651')
```

In [20]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Student limit 3 offset 2"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(3, 'Ankita', 25, 'F', '8575073651')
(4, 'Avik', 26, 'M', '9175078154')
(5, 'Debasis', 25, 'M', '9007533345')
```

In [24]:
```
## Create Table Users
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase")
mycursor=mydb.cursor()
mycursor.execute("Create table Users(ID int,Name varchar(30),fav int)")
```

In [28]:
```
## Insert Many Records into a Table
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql="Insert into Users values(%s,%s,%s)"
val=[(1,"John",154),
    (2,"Peter",154),
    (3,"Amy",155),
    (4,"Hannah",156),
    (5,"Michael",157)]
mycursor.executemany(sql,val)

mydb.commit()
print(mycursor.rowcount,"Was Inserted")
```

```
5 Was Inserted
```

In [29]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Users"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(1, 'John', 154)
(2, 'Peter', 154)
(3, 'Amy', 155)
(4, 'Hannah', 156)
(5, 'Michael', 157)
```

In [30]:
```
## Create Table Product
mydb=mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase")
mycursor=mydb.cursor()
mycursor.execute("Create table Product(ID int,Name varchar(30))")
```

In [31]:
```
## Insert Many Records into a Table
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql="Insert into Product values(%s,%s)"
val=[(154,"Chocolate Heaven"),
    (155,"Tasty Lemons"),
    (156,"Vanilla Dreams")]
mycursor.executemany(sql,val)

mydb.commit()
print(mycursor.rowcount,"Was Inserted")
```

```
3 Was Inserted
```

In [32]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT * FROM Product"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
(154, 'Chocolate Heaven')
(155, 'Tasty Lemons')
(156, 'Vanilla Dreams')
```

In [36]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT \
  Users.Name AS user, \
  Product.Name AS favorite \
  FROM Users \
  LEFT JOIN Product ON Users.fav = Product.ID"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
('John', 'Chocolate Heaven')
('Peter', 'Chocolate Heaven')
('Amy', 'Tasty Lemons')
('Hannah', 'Vanilla Dreams')
('Michael', None)
```

In [37]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT \
  Users.Name AS user, \
  Product.Name AS favorite \
  FROM Users \
  RIGHT JOIN Product ON Users.fav = Product.ID"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
('Peter', 'Chocolate Heaven')
('John', 'Chocolate Heaven')
('Amy', 'Tasty Lemons')
('Hannah', 'Vanilla Dreams')
```

In [38]:
```
mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  password="Abcd@1234",
  database="mysqlDatabase"
)

mycursor = mydb.cursor()

sql = "SELECT \
  Users.Name AS user, \
  Product.Name AS favorite \
  FROM Users \
  INNER JOIN Product ON Users.fav = Product.ID"

mycursor.execute(sql)

myresult = mycursor.fetchall()

for x in myresult:
  print(x)
```

```
('John', 'Chocolate Heaven')
('Peter', 'Chocolate Heaven')
('Amy', 'Tasty Lemons')
('Hannah', 'Vanilla Dreams')
```

In [ ]:
```

```