IMPORTING LIBRARIES

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
from mysql.connector import Error
import pandas as pd
```

Create Server Connection

In [3]:
```
def create_server_connection(host_name, user_name, user_password):
    connection=None
    try:
        connection=mysql.connector.connect(
        host=host_name,
        user=user_name,
        password=user_password
        )
        print("MySQL Database Connection Successful")
    except Error as err:
        print(f"Error:'{err}'")
    return connection
```

In [4]:
```
# Put Our MySQL Terminal Password
pw="Abcd@1234"
# Database Name
db="mysql_python"
```

In [5]:
```
connection=create_server_connection("localhost","root",pw)
```

```
MySQL Database Connection Successful
```

Create Database mysql_python

In [6]:
```
def create_database(connection,query):
    cursor=connection.cursor()
    try:
        cursor.execute(query)
        print("Database Created Successfully")
    except Error as err:
        print(f"Error:'{err}'")
create_database_query="create database mysql_python"
create_database(connection,create_database_query)
```

```
Error:'1007 (HY000): Can't create database 'mysql_python'; database exist
s'
```

Connect to Database

In [7]:
```
def create_db_connection(host_name, user_name, user_password,db_name):
    connection=None
    try:
        connection=mysql.connector.connect(
        host=host_name,
        user=user_name,
        password=user_password,
        database=db_name
        )
        print("MySQL Database Connection Successful")
    except Error as err:
        print(f"Error:'{err}'")
    return connection
```

In [8]:
```
# Put Our MySQL Terminal Password
pw="Abcd@1234"
# Database Name
db="mysql_python"
```

In [9]:
```
connection=create_db_connection("localhost","root",pw,db)
```

```
MySQL Database Connection Successful
```

Execute SQL Queries

In [10]:
```
def execute_query(connection,query):
    cursor=connection.cursor()
    try:
        cursor.execute(query)
        connection.commit()
        print("Query was Successful")
    except Error as err:
        print(f"Error:'{err}'")
```

In [11]:
```
create_orders_table="""
create table orders(
Order_ID int primary key,
Customer_Name varchar(30) not null,
Product_Name varchar(20) not null,
Date_Ordered date,
Quantity int,
Unit_Price float,
Phone_Number varchar(20));
"""
## Connect to the Database
connection=create_db_connection("localhost","root",pw,db)
execute_query(connection,create_orders_table)
```

```
MySQL Database Connection Successful
Error:'1050 (42S01): Table 'orders' already exists'
```

Insert Data

In [12]:
```
data_orders="""
insert into orders values
(101,"Steve","Laptop","2018-06-12",2,800,"6293730802"),
(102,"Jos","Books","2019-02-10",10,12,"8367489124"),
(103,"Stacy","Trousers","2019-12-25",5,50,"8976123645"),
(104,"Nancy","T-Shirt","2018-07-14",7,30,"7368145099"),
(105,"Maria","Headphones","2019-05-30",6,48,"8865316698"),
(106,"Danny","Smart TV","2018-08-20",10,300,"7720130449");
"""
connection=create_db_connection("localhost","root",pw,db)
execute_query(connection,data_orders)
```

```
MySQL Database Connection Successful
Error:'1062 (23000): Duplicate entry '101' for key 'orders.PRIMARY''
```

In [13]:
```
def read_queries(connection,query):
    cursor=connection.cursor()
    result=None
    try:
        cursor.execute(query)
        result=cursor.fetchall()
        return result
    except Error as err:
        print(f"Error:'{err}'")
```

Using the Select Statement

In [14]:
```
q1="""
select * from orders;
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q1)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(101, 'Steve', 'Laptop', datetime.date(2018, 6, 12), 2, 800.0, '629373080
2')
(102, 'Jos', 'Books', datetime.date(2019, 2, 10), 10, 12.0, '8367489124')
(103, 'Stacy', 'Trousers', datetime.date(2019, 12, 25), 5, 50.0, '8976123
645')
(104, 'Nancy', 'T-Shirt', datetime.date(2018, 7, 14), 7, 30.0, '736814509
9')
(105, 'Maria', 'Headphones', datetime.date(2019, 5, 30), 6, 48.0, '886531
6698')
(106, 'Danny', 'Smart TV', datetime.date(2018, 8, 20), 10, 300.0, '772013
0449')
```

In [15]:
```
q2="""
select Customer_Name,Phone_Number from orders;
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q2)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
('Steve', '6293730802')
('Jos', '8367489124')
('Stacy', '8976123645')
('Nancy', '7368145099')
('Maria', '8865316698')
('Danny', '7720130449')
```

In [16]:
```
q3="""
select year(Date_Ordered) from orders;
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q3)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(2018,)
(2019,)
(2019,)
(2018,)
(2019,)
(2018,)
```

In [17]:
```
q4="""
select distinct year(Date_Ordered) from orders;
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q4)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(2018,)
(2019,)
```

In [19]:
```
q5="""
select * from orders where Date_Ordered < "2018-12-31";
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q5)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(101, 'Steve', 'Laptop', datetime.date(2018, 6, 12), 2, 800.0, '629373080
2')
(104, 'Nancy', 'T-Shirt', datetime.date(2018, 7, 14), 7, 30.0, '736814509
9')
(106, 'Danny', 'Smart TV', datetime.date(2018, 8, 20), 10, 300.0, '772013
0449')
```

In [20]:
```
q6="""
select * from orders where Date_Ordered > "2018-12-31";
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q6)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(102, 'Jos', 'Books', datetime.date(2019, 2, 10), 10, 12.0, '8367489124')
(103, 'Stacy', 'Trousers', datetime.date(2019, 12, 25), 5, 50.0, '8976123
645')
(105, 'Maria', 'Headphones', datetime.date(2019, 5, 30), 6, 48.0, '886531
6698')
```

In [22]:
```
q7="""
select * from orders order by Unit_Price desc;
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q7)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(101, 'Steve', 'Laptop', datetime.date(2018, 6, 12), 2, 800.0, '629373080
2')
(106, 'Danny', 'Smart TV', datetime.date(2018, 8, 20), 10, 300.0, '772013
0449')
(103, 'Stacy', 'Trousers', datetime.date(2019, 12, 25), 5, 50.0, '8976123
645')
(105, 'Maria', 'Headphones', datetime.date(2019, 5, 30), 6, 48.0, '886531
6698')
(104, 'Nancy', 'T-Shirt', datetime.date(2018, 7, 14), 7, 30.0, '736814509
9')
(102, 'Jos', 'Books', datetime.date(2019, 2, 10), 10, 12.0, '8367489124')
```

Create a DataFrame

In [23]:
```
from_db=[]
for result in results:
    result=list(result)
    from_db.append(result)

columns=["Order_ID","Customer_Name","Product_Name","Date_Ordered","Quantity
df=pd.DataFrame(from_db,columns=columns)
display(df)
```

	Order_ID	Customer_Name	Product_Name	Date_Ordered	Quantity	Unit_Price	Phone_Nu
0	101	Steve	Laptop	2018-06-12	2	800.0	629373
1	106	Danny	Smart TV	2018-08-20	10	300.0	772013
2	103	Stacy	Trousers	2019-12-25	5	50.0	897612
3	105	Maria	Headphones	2019-05-30	6	48.0	886531
4	104	Nancy	T-Shirt	2018-07-14	7	30.0	736814
5	102	Jos	Books	2019-02-10	10	12.0	836748

Update Statement

In [24]:
```
update="""
update orders
set Unit_Price=45
where Order_ID=103;
"""
connection=create_db_connection("localhost","root",pw,db)
execute_query(connection,update)
```

```
MySQL Database Connection Successful
Query was Successful
```

In [26]:
```
q8="""
select * from orders where Order_ID=103;
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q8)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(103, 'Stacy', 'Trousers', datetime.date(2019, 12, 25), 5, 45.0, '8976123
645')
```

Delete Statement

In [27]:
```
delete_order="""
delete from orders
where Order_ID=105;
"""
connection=create_db_connection("localhost","root",pw,db)
execute_query(connection,delete_order)
```

```
MySQL Database Connection Successful
Query was Successful
```

In [29]:
```
q9="""
select * from orders;
"""
connection=create_db_connection("localhost","root",pw,db)
results=read_queries(connection,q9)
for result in results:
    print(result)
```

```
MySQL Database Connection Successful
(101, 'Steve', 'Laptop', datetime.date(2018, 6, 12), 2, 800.0, '629373080
2')
(102, 'Jos', 'Books', datetime.date(2019, 2, 10), 10, 12.0, '8367489124')
(103, 'Stacy', 'Trousers', datetime.date(2019, 12, 25), 5, 45.0, '8976123
645')
(104, 'Nancy', 'T-Shirt', datetime.date(2018, 7, 14), 7, 30.0, '736814509
9')
(106, 'Danny', 'Smart TV', datetime.date(2018, 8, 20), 10, 300.0, '772013
0449')
```

In [30]:
```
from_db=[]
for result in results:
    result=list(result)
    from_db.append(result)

columns=["Order_ID","Customer_Name","Product_Name","Date_Ordered","Quantity
df=pd.DataFrame(from_db,columns=columns)
display(df)
```

	Order_ID	Customer_Name	Product_Name	Date_Ordered	Quantity	Unit_Price	Phone_Nu
0	101	Steve	Laptop	2018-06-12	2	800.0	629373
1	102	Jos	Books	2019-02-10	10	12.0	836748
2	103	Stacy	Trousers	2019-12-25	5	45.0	897612
3	104	Nancy	T-Shirt	2018-07-14	7	30.0	736814
4	106	Danny	Smart TV	2018-08-20	10	300.0	772013

In [ ]:
```
```