Practical-9: Python Database Connectivity

1. **Write a python code to establish connection with MySQL and create database demo_data. Also display list of all the available database.**

```
print("21012021003_AMIT GOSWAMI")
import mysql.connector
conn = mysql.connector.connect(
   host = "localhost",
   user = "root",
   password = ""
)
cursor = conn.cursor()
cursor.execute('create database demo_data')
cursor.execute('show databases')
for i in cursor:
   print(i)
cursor.close()
conn.close()
```

```
21012021003_AMIT GOSWAMI
('amit',)
('demo_data',)
('information_schema',)
('mysql',)
('performance_schema',)
('phpmyadmin',)
('test',)
```

2. **Write a python code to create below specified two tables 'hospital_details' and 'doctor_details' and insert values as mentioned below.**

hospital_details		
Hospital_Id	**Hospital_Name**	**Bed_count**
1	**Janta**	**200**
2	**Zydus**	**500**
3	**Sal**	**1000**
4	**Stirling**	**1500**

doctor_details					
Doctor_Id	**Doctor_Name**	**Hospital_Id**	**Speciality**	**Salary**	**Experienve**

101	Karan	1	Pediatric	40000	0
102	Naresh	1	Onchologist	80000	5
103	Hardik	2	Surgen	60000	2
104	Vishal	2	Homeopathy	50000	1
105	Jay	3	Aayurvedic	40000	0
106	Deep	3	Physeotherapist	70000	4
107	Divyesh	4	Pediatric	55000	3
108	Arjun	4	Scin	55000	3

```
import mysql.connector
conn = mysql.connector.connect(
   host='localhost',
   user='root',
   password='',
   database='demo_data'
)
cursor = conn.cursor()
cursor.execute("CREATE TABLE `demo_data`.`hospital_details` (`Hospital_Id` INT(10) NOT
NULL , `Hospital_Name` VARCHAR(50) NOT NULL , `Bed_count` INT(10) NOT NULL ) ")
cursor.execute("INSERT INTO `demo_data`.`hospital_details` (`Hospital_Id`,
`Hospital_Name`, `Bed_count`) VALUES (%s, %s, %s);")
values = [(1,'Janta',200) , (2,'Zydus',500) , (3,'Sal',1000) , (4,'Stirling',1500)]
cursor.executemany(query, values)

cursor.execute("CREATE TABLE `demo_data`.`doctor_details` (`Doctor_Id` INT(10) NOT
NULL , `Doctor_Name` VARCHAR(50) NOT NULL , `Hospital_Id` INT(10) NOT NULL ,
`Speciality` VARCHAR(50) NOT NULL , `Salary` INT(10) NOT NULL , `Experience` INT(3)
NOT NULL ) ")
query2 = "INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
`Speciality`, `Salary`, `Experience`) VALUES (%s, %s, %s, %s, %s, %s);"
values2 = [(101 , "Karan" ,     1 , "Pediatric" , 40000 , 0),
          (102 , "Naresh" ,1 , "Onchologist" , 80000 , 5),
          (103 , "Hardik" , 2 , "Surgen" , 60000 , 2),
          (104 , "Vishal" , 2 , "Homeopathy" , 50000 , 1),
          (105 , "Jay" , 3 , "Aayurvedic" , 40000 , 0),
          (106 , "Deep" , 3 , "Physeotherapist" , 70000 , 4),
          (107 , "Divyesh" , 4 , "Pediatric" , 55000 , 3),
          (108 , "Arjun" , 4 , "Scin" , 55000 , 3)]
cursor.executemany(query2, values2)

conn.commit()
cursor.close()
conn.close()
```

3. **Write a python code to retrieve all the details of doctors.**

```
import mysql.connector

conn = mysql.connector.connect(
```

```
    host='localhost',
    user='root',
    password='',
    database='demo_data'
)
cursor = conn.cursor()
cursor.execute("SELECT * FROM `doctor_details` ")
d = cursor.fetchall()
for i in d:
    print(i)


cursor.close()
conn.close()
```

```
(101, 'Karan', 1, 'Pediatric', 40000, 0)
(102, 'Naresh', 1, 'Onchologist', 80000, 5)
(103, 'Hardik', 2, 'Surgen', 60000, 2)
(104, 'Vishal', 2, 'Homeopathy', 50000, 1)
(105, 'Jay', 3, 'Aayurvedic', 40000, 0)
(106, 'Deep', 3, 'Physeotherapist', 70000, 4)
(107, 'Divyesh', 4, 'Pediatric', 55000, 3)
(108, 'Arjun', 4, 'Scin', 55000, 3)
```

4. Write a python code to retrieve all the doctors who are in Janta hospital.

```
import mysql.connector
conn = mysql.connector.connect(
    host='localhost',
    user='root',
    password='',
    database='demo_data'
)
cursor = conn.cursor()
cursor.execute('select * from doctor_details JOIN hospital_details ON
      hospital_details.hospital_id = doctor_details.hospital_id where
      hospital_details.hospital_name = "janta"')

result = cursor.fetchall()

for i in result:
```

```
    print(i)

conn.commit()
cursor.close()
conn.close()
```

```
(101, 'Karan', 1, 'Pediatric', 40000, 0, 1, 'Janta', 200)
(102, 'Naresh', 1, 'Onchologist', 80000, 5, 1, 'Janta', 200)
```

5. Write a python code to update experience of doctors.

```
import mysql.connector
conn = mysql.connector.connect(
    host='localhost',
    user='root',
    password='',
    database='demo_data'
)
cursor = conn.cursor()
cursor.execute("update doctor_details set Experience = 4 where hospital_id = 1")
cursor.execute("update doctor_details set Experience = 4 where hospital_id = 3")
cursor.execute("SELECT * FROM `doctor_details` ")
d = cursor.fetchall()
for i in d:
    print(i)
conn.commit()
cursor.close()
conn.close()
```

```
(101, 'Karan', 1, 'Pediatric', 40000, 4)
(102, 'Naresh', 1, 'Onchologist', 80000, 4)
(103, 'Hardik', 2, 'Surgen', 60000, 2)
(104, 'Vishal', 2, 'Homeopathy', 50000, 1)
(105, 'Jay', 3, 'Aayurvedic', 40000, 4)
(106, 'Deep', 3, 'Physeotherapist', 70000, 4)
(107, 'Divyesh', 4, 'Pediatric', 55000, 3)
(108, 'Arjun', 4, 'Scin', 55000, 3)
```

6. Write a python code to drop table ‘hospital_details’.

```
import mysql.connector
conn = mysql.connector.connect(
    host='localhost',
    user='root',
    password='',
    database='demo_data' )
cursor = conn.cursor()
cursor.execute("DROP TABLE `hospital_details` ")
```

```
cursor.close()
conn.close()
```

7. Write a python code to create in memory database and table using sqlite database engine.

```
import sqlite3
conn = sqlite3.connect(':memory:')
cursor = conn.cursor()
query = """
CREATE TABLE `hospital_details` (`Hospital_Id` INT(10) NOT NULL ,
    `Hospital_Name` VARCHAR(50) NOT NULL , `Bed_count` INT(10) NOT NULL );
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (1,'Janta',200);
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (2,'Zydus',500);
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (3,'Sal',1000);
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (4,'Stirling',1500);
"""
cursor.executescript(query)
cursor.execute("SELECT * FROM hospital_details ")
print( "Hospital_details : ",cursor.fetchall())
conn.commit()
cursor.close()
conn.close()
```

```
Hospital_details :  [(1, 'Janta', 200), (2, 'Zydus', 500), (3, 'Sal', 1000), (4, 'Stirling', 1500)]
```

8. Establish connection with sqlite database engine and create above tables into database demo. Show demonstration of execaute script to execute multiple queries at a time.

```
import sqlite3
conn = sqlite3.connect('test.db')
cursor = conn.cursor()
query = """
CREATE TABLE `hospital_details` (`Hospital_Id` INT(10) NOT NULL ,
    `Hospital_Name` VARCHAR(50) NOT NULL , `Bed_count` INT(10) NOT
    NULL );
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (1,'Janta',200);
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (2,'Zydus',500);
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (3,'Sal',1000);
INSERT INTO `hospital_details` (`Hospital_Id`, `Hospital_Name`, `Bed_count`)
    VALUES (4,'Stirling',1500);
CREATE TABLE `doctor_details` (`Doctor_Id` INT(10) NOT NULL ,
```

```
    `Doctor_Name` VARCHAR(50) NOT NULL , `Hospital_Id` INT(10) NOT
    NULL , `Speciality` VARCHAR(50) NOT NULL , `Salary` INT(10) NOT
    NULL , `Experience` INT(3) NOT NULL );
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (101 , "Karan" ,   1 , "Pediatric" ,
    40000 , 0);
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (102 , "Naresh" ,1 , "Onchologist"
    , 80000 , 5);
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (103 , "Hardik" , 2 , "Surgen" ,
    60000 , 2);
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (104 , "Vishal" , 2 ,
    "Homeopathy" , 50000 , 1);
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (105 , "Jay" , 3 , "Aayurvedic" ,
    40000 , 0);
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (106 , "Deep" , 3 ,
    "Physeotherapist" , 70000 , 4);
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (107 , "Divyesh" , 4 , "Pediatric" ,
    55000 , 3);
INSERT INTO `doctor_details` (`Doctor_Id`, `Doctor_Name`, `Hospital_Id`,
    `Speciality`, `Salary`, `Experience`) VALUES (108 , "Arjun" , 4 , "Scin" , 55000
    , 3);
"""
cursor.executescript(query)
cursor.execute("SELECT * FROM hospital_details ")
print( "Hospital_details : ",cursor.fetchall())
cursor.execute("SELECT * FROM doctor_details ")
print("Doctor_details : ",cursor.fetchall())
conn.commit()
conn.close()
```

```
Hospital_details :  [(1, 'Janta', 200), (2, 'Zydus', 500), (3, 'Sal', 1000), (4, 'Stirling', 1500)]
Doctor_details :  [(101, 'Karan', 1, 'Pediatric', 40000, 0), (102, 'Naresh', 1, 'Onchologist', 80000, 5), (103
, 'Hardik', 2, 'Surgen', 60000, 2), (104, 'Vishal', 2, 'Homeopathy', 50000, 1), (105, 'Jay', 3, 'Aayurvedic',
40000, 0), (106, 'Deep', 3, 'Physeotherapist', 70000, 4), (107, 'Divyesh', 4, 'Pediatric', 55000, 3), (108, 'A
rjun', 4, 'Scin', 55000, 3)]
```