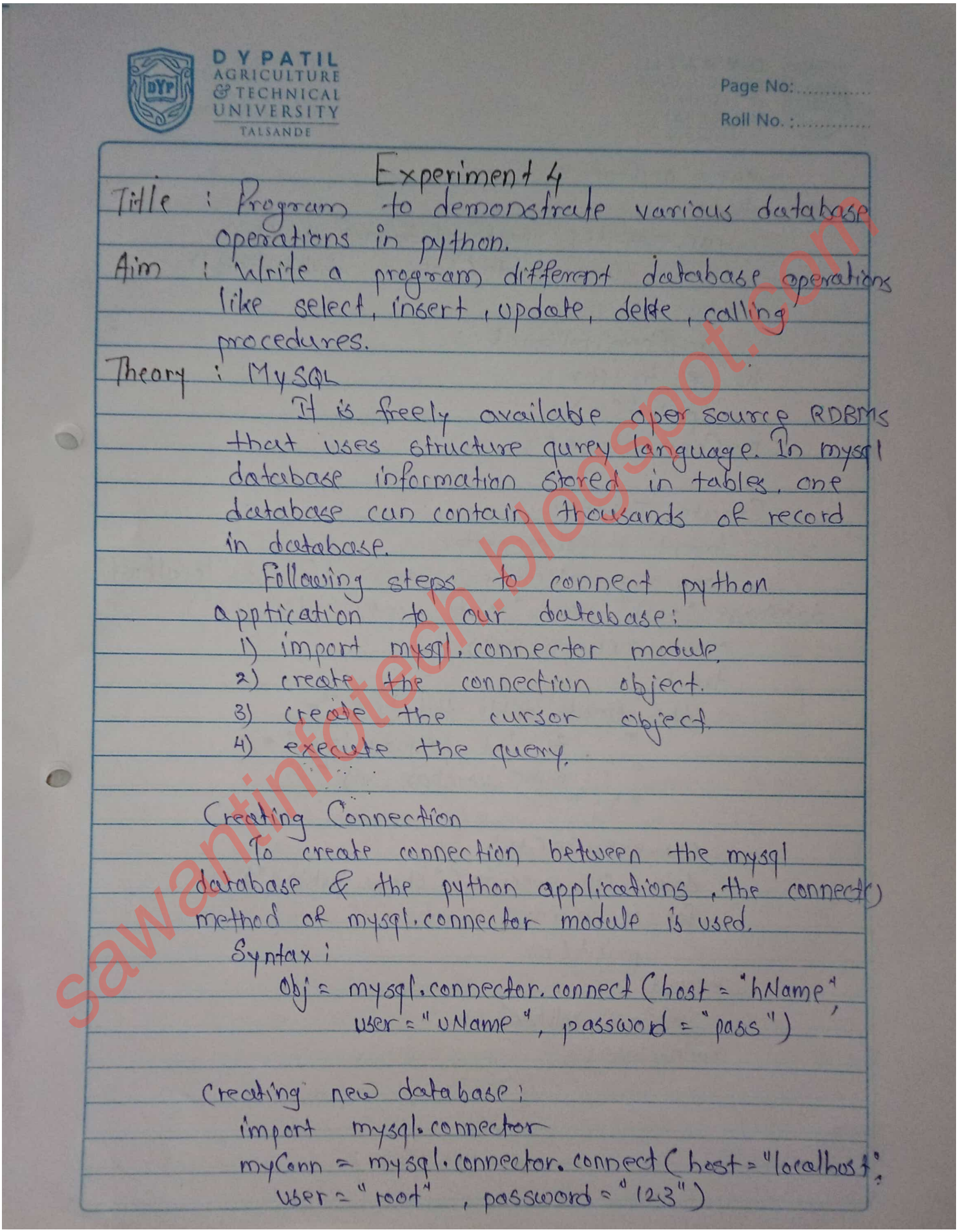


DY PATIL AGRICULTURE & TECHNICAL UNIVERSITY TALSANDE

Page No:.....
Roll No. :.....

Experiment 4

Title : Program to demonstrate various database operations in python.

Aim : Write a program different database operations like select, insert, update, delete, calling procedures.

Theory : MySQL

It is freely available open source RDBMS that uses structure query language. In mysql database information stored in tables. one database can contain thousands of record in database.

Following steps to connect python application to our database:

1) import mysql.connector module
2) create the connection object.
3) create the cursor object
4) execute the query.

Creating Connection

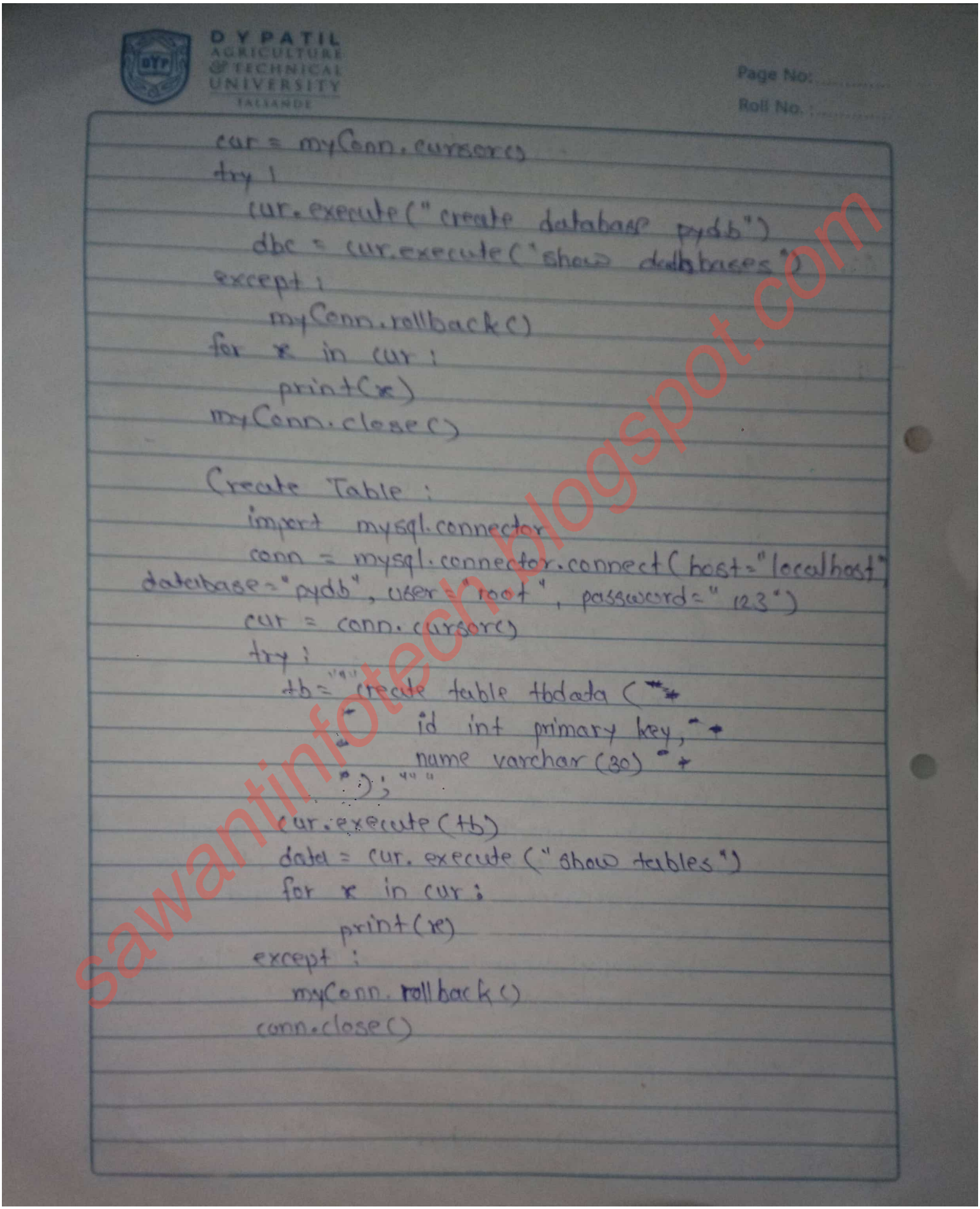
To create connection between the mysql database & the python applications, the connect() method of mysql.connector module is used.

Syntax :

```
Obj = mysql.connector.connect(host = "hName",
      user = "uName", password = "pass")
```

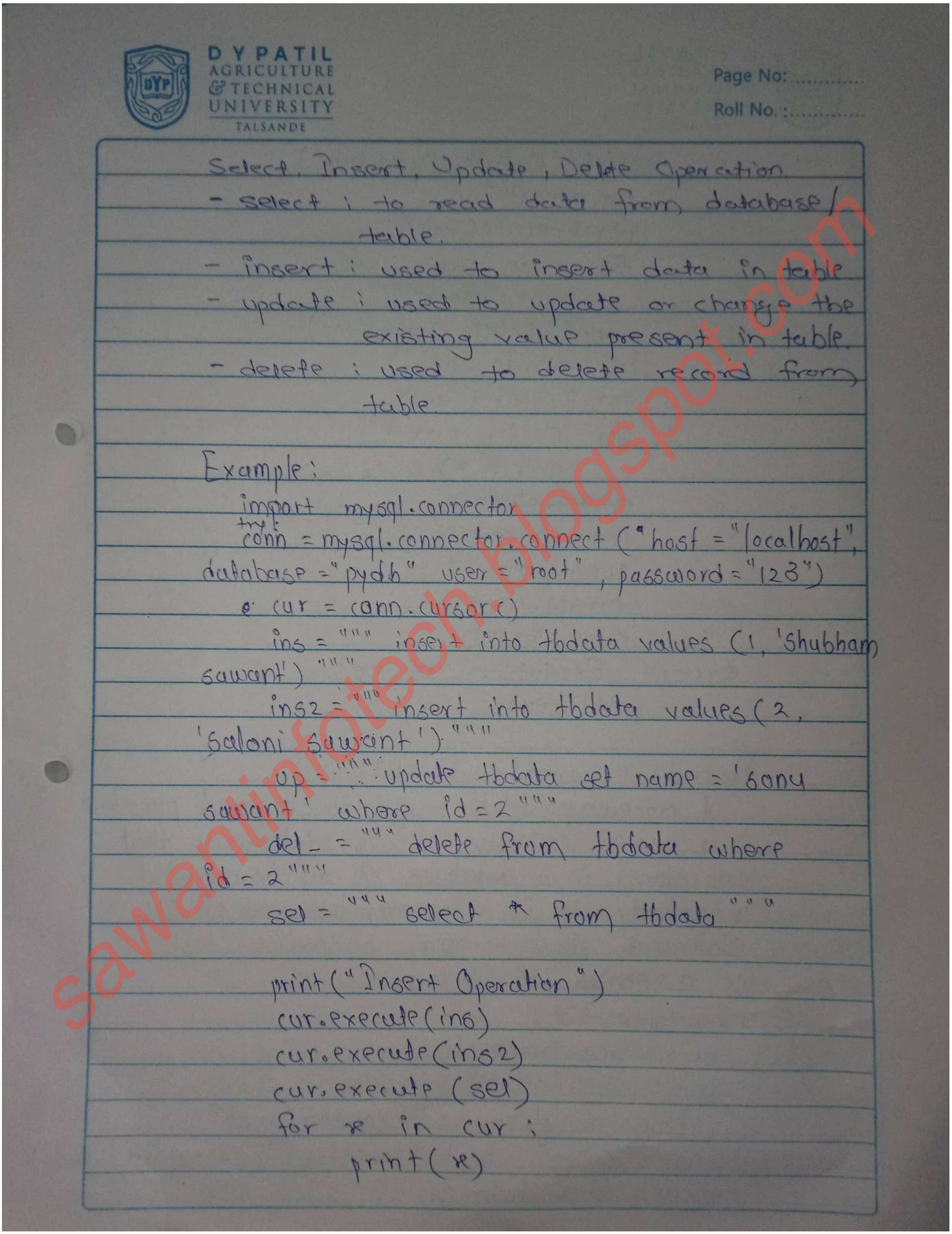
Creating new database :

```
import mysql.connector
myConn = mysql.connector.connect(host = "localhost",
  user = "root", password = "123")
```



```
cur = myConn.cursor()
try :
    cur.execute("create database pydb")
    dbc = cur.execute("show databases")
except :
    myConn.rollback()
for x in cur :
    print(x)
myConn.close()

Create Table :
    import mysql.connector
    conn = mysql.connector.connect(host="localhost",
database="pydb", user="root", password="123")
    cur = conn.cursor()
    try :
        tb="create table tbdata (" +
            id int primary key," +
            name varchar(30) " +
        ");"
        cur.execute(tb)
        data = cur.execute("show tables")
        for x in cur :
            print(x)
    except :
        myConn.rollback()
    conn.close()
```



DY PATIL AGRICULTURE & TECHNICAL UNIVERSITY TALSANDE

Page No:.....
Roll No.:.....

Select, Insert, Update, Delete Operation

- select : to read data from database/table.
- insert : used to insert data in table
- update : used to update or change the existing value present in table.
- delete : used to delete record from table.

Example:

```
import mysql.connector
try:
conn = mysql.connector.connect("host="localhost", database="pydb" user="root", password="123")
cur = conn.cursor()
ins = """ insert into tbdata values (1, 'shubham sawant') """
ins2 = """ insert into tbdata values (2, 'saloni sawant') """
up = """ update tbdata set name = 'sonu sawant' where id = 2 """
del_ = """ delete from tbdata where id = 2 """
sel = """ select * from tbdata """

print("Insert Operation")
cur.execute(ins)
cur.execute(ins2)
cur.execute(sel)
for x in cur:
    print(x)
```

Page No:.....
Roll No.:.....

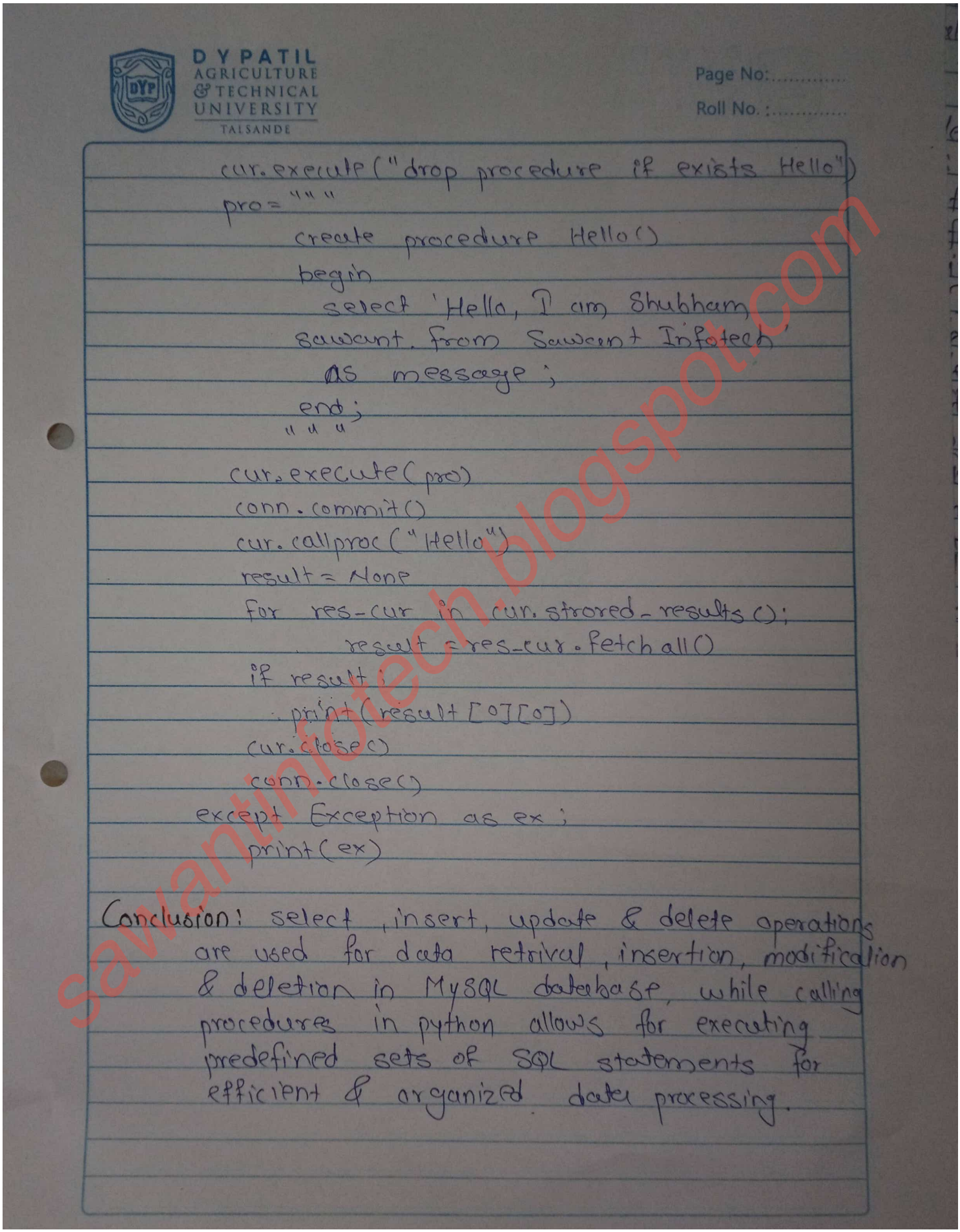
```
print("Update Operation")
cur.execute(up)
cur.execute(sel)
for x in cur:
    print(x)
print("Delete Operation")
cur.execute(del-)
cur.execute(sel)
for x in cur:
    print(x)
conn.commit()
cursor.close()
conn.close()
except Exception as ex:
    print(ex)
```

Procedure create & call

A procedure, also known as a stored procedure, is a named collection of SQL statements that are stored in a database & can be executed repeatedly. It is a precompiled set of SQL statements that perform a specific task or a series of tasks.

Example:

```
import mysql.connector
try:
    conn = mysql.connector(user="root",
database="pydb", host="localhost", password="123")
    cur = conn.cursor()
```



DY PATIL AGRICULTURE & TECHNICAL UNIVERSITY TALSANDE

Page No:.....
Roll No. :.....

```
cur.execute("drop procedure if exists Hello")
pro = """
    create procedure Hello()
    begin
      select 'Hello, I am Shubham
      Sawant. from Sawant Infotech'
      as message;
    end;
"""

cur.execute(pro)
conn.commit()
cur.callproc("Hello")
result = None
for res-cur in cur.stored_results():
        result = res-cur.fetchall()
if result:
    print(result[0][0])
cur.close()
conn.close()
except Exception as ex:
    print(ex)
```

Conclusion: select, insert, update & delete operations are used for data retrival, insertion, modification & deletion in MySQL database, while calling procedures in python allows for executing predefined sets of SQL statements for efficient & organized data processing.