

**LAPORAN PRAKTIKUM
PRAKTIK PEMROGRAMAN PYTHON
DATABASES**



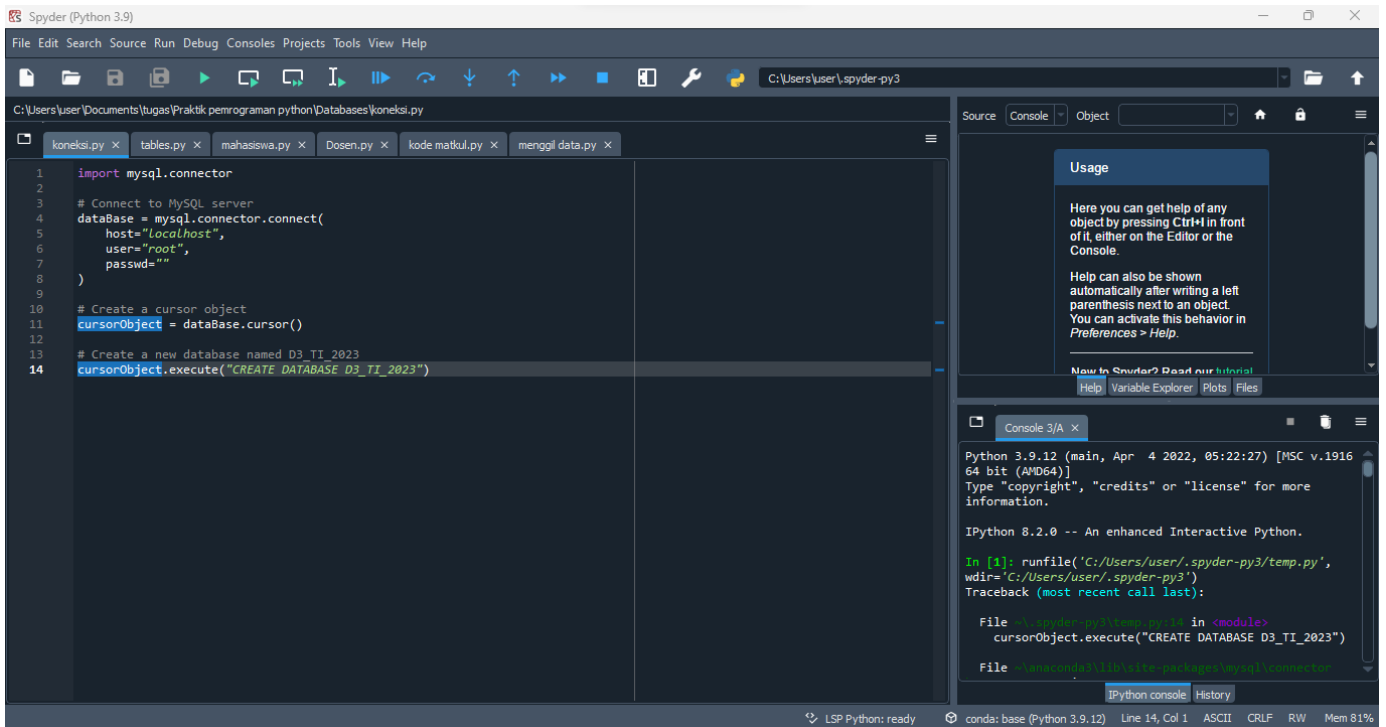
**Oleh :
MUHAMMAD ABIDIN
V3922032**

**Dosen :
Yusuf Fadlila R. S.Kom.,
M.Kom**

**PSDKU D-III TEKNIK
INFORMATIKA SEKOLAH
VOKASI UNIVERSITAS
SEBELAS MARET 2023**

Hasil dan Pembahasan

A. Buat database dengan nama D3_TI_2023



The screenshot shows the Spyder Python IDE interface. The main editor displays a Python script in `koneksi.py` that connects to a MySQL server and creates a new database named `D3_TI_2023`. The script is as follows:

```
1 import mysql.connector
2
3 # Connect to MySQL server
4 dataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd=""
8 )
9
10 # Create a cursor object
11 cursorObject = dataBase.cursor()
12
13 # Create a new database named D3_TI_2023
14 cursorObject.execute("CREATE DATABASE D3_TI_2023")
```

The right-hand pane shows the IPython console with the following output:

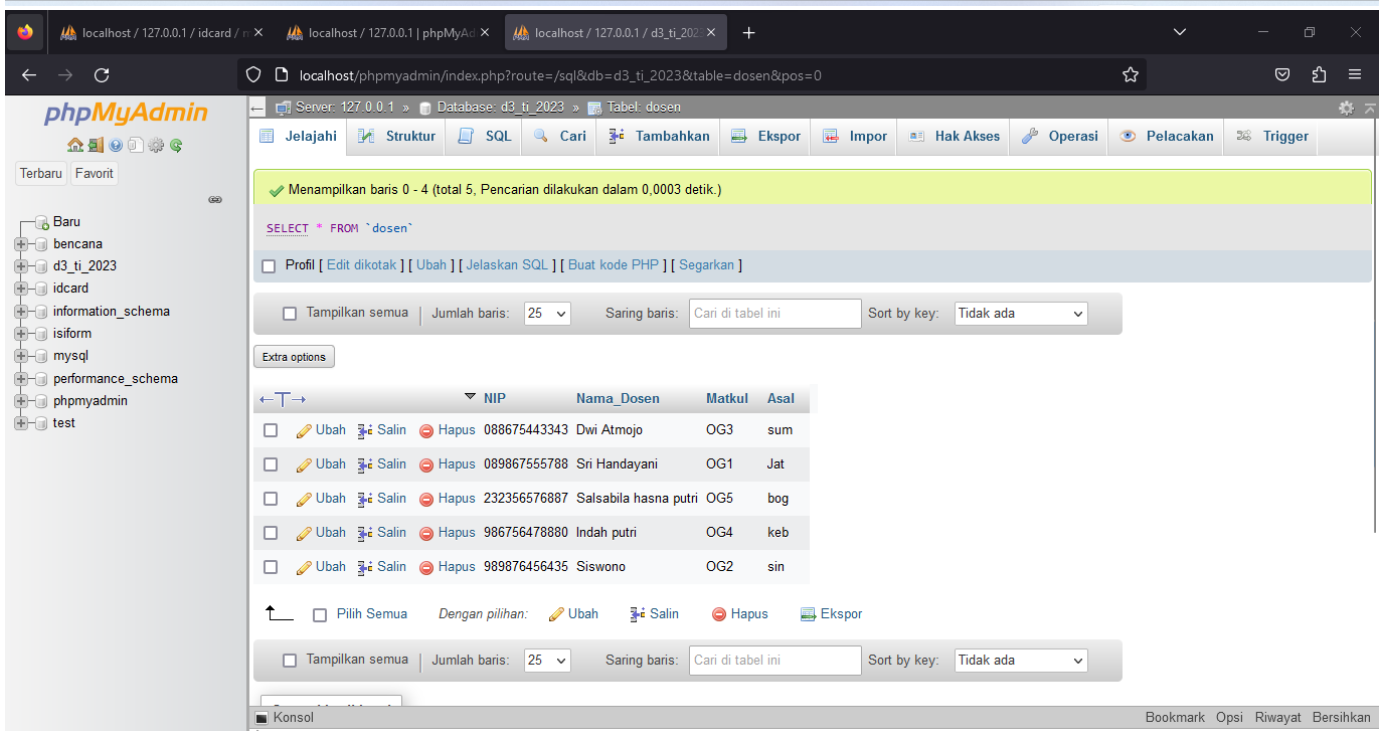
```
Python 3.9.12 (main, Apr 4 2022, 05:22:27) [MSC v.1916
64 bit (AMD64)]
Type "copyright", "credits" or "license" for more
information.

IPython 8.2.0 -- An enhanced Interactive Python.

In [4]: runfile('C:/Users/user/.spyder-py3/temp.py',
wdir='C:/Users/user/.spyder-py3')
Traceback (most recent call last):

File "C:/Users/user/.spyder-py3/temp.py", line 14, in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")

File "C:/Users/user/.spyder-py3/packages/mysql.connector
```



The screenshot shows the phpMyAdmin interface. The left sidebar displays the database structure, including the `d3_ti_2023` database. The main area shows the `dosen` table with the following data:

	NIP	Nama_Dosen	Matkul	Asal
<input type="checkbox"/>	088675443343	Dwi Atmojo	OG3	sum
<input type="checkbox"/>	089867555788	Sri Handayani	OG1	Jat
<input type="checkbox"/>	232356576887	Salsabila hasna putri	OG5	bog
<input type="checkbox"/>	986756478880	Indah putri	OG4	keb
<input type="checkbox"/>	989876456435	Siswono	OG2	sin

B. Database diisi dengan 3 tabel, yaitu : 1. Tabel Mahasiswa, Tabel Dosen, Tabel Mata Kuliah.

The image shows two screenshots related to database management. The top screenshot is a screenshot of the phpMyAdmin web interface in a browser. The browser address bar shows 'localhost/phpmyadmin/index.php?route=/database/structure&db=d3_ti_2023'. The interface shows the 'Database: d3_ti_2023' and a list of tables: 'dosen', 'mahasiswa', and 'matakuliah'. Each table has 5 rows, is InnoDB, and has a size of 16.0 KB. The total size for all tables is 48.0 KB. Below the table list, there is a 'Create new table' section with a 'Nama tabel' field and a 'Jumlah kolom' dropdown set to 4. The bottom screenshot is a screenshot of the Spyder Python IDE. The file explorer shows a project named 'Praktik pemrograman python' with a subdirectory 'Databases' containing files 'koneksi.py', 'tables.py', 'mahasiswa.py', 'dosen.py', 'kode matakul.py', and 'menggil data.py'. The code editor shows the 'koneksi.py' file with the following Python code:

```
1 import mysql.connector
2
3 # Hubungkan ke database
4 dataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd="",
8     database="D3_TI_2023"
9 )
10
11 # Buat Table Mahasiswa
12 cursorObject = dataBase.cursor()
13 cursorObject.execute("CREATE TABLE Mahasiswa ( NIM VARCHAR(10) PRIMARY KEY, Nama VARCHAR(30), Alamat VARCHAR(255) )")
14
15 # Buat Table Dosen
16 cursorObject.execute("CREATE TABLE Dosen ( NIP VARCHAR(20) PRIMARY KEY, Nama_Dosen VARCHAR(50), Matkul VARCHAR(50) )")
17
18 # Buat Table Matkul
19 cursorObject.execute("CREATE TABLE Matakuliah ( Kode_Matkul VARCHAR(10) PRIMARY KEY, Nama_Matkul VARCHAR(50), )")
20
21 # Close the cursor and database connection
22 cursorObject.close()
23 dataBase.close()
```

The right sidebar shows the 'Console' tab with the following output:

```
Python 3.9.12 (main, Apr 4 2022, 05:22:27) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 8.2.0 -- An enhanced Interactive Python.

In [1]: runfile("C:/Users/user/.spyder-py3/temp.py",
wdir="C:/Users/user/.spyder-py3")
Traceback (most recent call last):
  File "C:/Users/user/.spyder-py3/temp.py", line 1, in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")
  File "C:/Users/user/.spyder-py3/temp.py", line 1, in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")
```

C. Berikut kolom wajib di tabel Mahasiswa :

NIM - Varchar (10) (Primary key)

Nama - Varchar (30)

Alamat - Varchar (255)

Mata kuliah yang diikuti – Varchar (10)**

Boleh ditambahkan sendiri

The image shows two screenshots. The top screenshot is a web browser displaying the phpMyAdmin interface for a database named 'd3_ti_2023'. The table 'mahasiswa' is selected, and the SQL query 'SELECT * FROM `mahasiswa`' is shown. The table structure is visible with columns: NIM, Nama, Alamat, Matkul, and Prodi. The bottom screenshot shows the Spyder Python IDE with a script named 'mahasiswa.py'. The script connects to a MySQL database, creates a cursor, and inserts data into the 'mahasiswa' table.

Table Structure (from phpMyAdmin):

NIM	Nama	Alamat	Matkul	Prodi
V5565567	ody frans wijaya	Jl. Ahmad yani. 66	OG1	THP
V8567869	muhammad asror alfa	Jl. Basuki rahmad. 9	OG2	AKUN
V9786878	muhammad farhan	Jl. Sultan thaha syarifuddin No. 3	OG3	TI
V9866785	muhammad faldi	Jl. Sudirman.no 89	OG4	FH
V9876548	muhammad faris	Jl. Bung hatta .5	OG4	FK

Python Script (mahasiswa.py):

```

1 import mysql.connector
2
3 # Connect to MySQL server
4 dataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd="",
8     database="D3_TI_2023"
9 )
10
11 # Create a cursor object
12 cursorObject = dataBase.cursor()
13
14 # Insert data into Mahasiswa table
15 sql = "INSERT INTO mahasiswa (NIM, Nama, Alamat, Matkul, Prodi) VALUES (%s, %s, %s, %s, %s)"
16 val = [
17     ('V5565567', 'ody frans wijaya', 'Jl. Ahmad yani. 66', 'OG1', 'THP'),
18     ('V8567869', 'muhammad asror alfa', 'Jl. Basuki rahmad. 9', 'OG2', 'AKUN'),
19     ('V9786878', 'muhammad farhan', 'Jl. Sultan thaha syarifuddin No. 3', 'OG3', 'TI'),
20     ('V9866785', 'muhammad faldi', 'Jl. Sudirman.no 89', 'OG4', 'FH'),
21     ('V9876548', 'muhammad faris', 'Jl. Bung hatta .5', 'OG4', 'FK')
22 ]
23
24 cursorObject.executemany(sql, val)
25
26 # Commit changes to the database
27 dataBase.commit()
28
29 # Close the cursor and database connection
30 cursorObject.close()
31 dataBase.close()

```

D. Berikut kolom wajib di tabel Dosen :

NIP - Varchar (20) (Primary key)*

Nama Dosen – Varchar (50)

Mata Kuliah yang di ajar – Varchar (50)**

Boleh ditambahkan sendiri

The image shows two windows. The top window is a web browser displaying the PHPMyAdmin interface for a database named 'd3_ti_2023'. The 'Tabel: dosen' tab is selected, showing a table with 4 rows. The columns are NIP, Nama_Dosen, Matkul, and Asal. The bottom window is the Spyder Python IDE, showing a script named 'Dosen.py' that connects to the MySQL database and inserts data into the 'dosen' table.

Menampilkan baris 0 - 4 (total 5, Pencarian dilakukan dalam 0,0004 detik.)

```
SELECT * FROM `dosen`
```

Profil [Edit dikotak] [Ubah] [Jelaskan SQL] [Buat kode PHP] [Segarkan]

Tampilkan semua | Jumlah baris: 25 | Saring baris: Cari di tabel ini | Sort by key: Tidak ada

	NIP	Nama_Dosen	Matkul	Asal		
<input type="checkbox"/>	Ubah	Salin	Hapus	088675443343 Dwi Atmojo	OG3	sum
<input type="checkbox"/>	Ubah	Salin	Hapus	089867555788 Sri Handayani	OG1	Jat
<input type="checkbox"/>	Ubah	Salin	Hapus	232356576887 Salsabila hasna putri	OG5	bog
<input type="checkbox"/>	Ubah	Salin	Hapus	986756478880 Indah putri	OG4	keb
<input type="checkbox"/>	Ubah	Salin	Hapus	989876456435 Siswono	OG2	sin

Pilih Semua Dengan pilihan: Ubah Salin Hapus Ekspor

Tampilkan semua | Jumlah baris: 25 | Saring baris: Cari di tabel ini | Sort by key: Tidak ada

```
import mysql.connector

# Connect to MySQL server
dataBase = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="D3_TI_2023"
)

# Create a cursor object
cursorObject = dataBase.cursor()

# Insert data into Mahasiswa table
sql = "INSERT INTO Dosen (NIP, Nama_Dosen, Matkul, Asal) VALUES (%s, %s, %s, %s)"
val = [
    ('089867555788', 'Sri Handayani', 'OG1', 'Jatirogo'),
    ('089876456435', 'Siswono', 'OG2', 'Sindon'),
    ('088675443343', 'Dwi Atmojo', 'OG3', 'Sumbasuko'),
    ('986756478880', 'Indah putri', 'OG4', 'Kebonsari'),
    ('232356576887', 'Salsabila hasna putri', 'OG5', 'Bogor')
]

cursorObject.executemany(sql, val)

# Commit changes to the database
dataBase.commit()

# Close the cursor and database connection
cursorObject.close()
dataBase.close()
```

E. Berikut kolom wajib di tabel Mata Kuliah :

Kode Mata Kuliah – Varchar (10)*

Nama Mata Kuliah – Varchar (50)

Waktu - Date

Ruangan – Varchar (10)

Boleh ditambahkan sendiri ...

The image shows two screenshots. The top screenshot is a web browser displaying the phpMyAdmin interface for a database named 'd3_ti_2023'. The table 'matakuliah' is selected, and the SQL query 'SELECT * FROM `matakuliah`' is shown. Below the query, there are options to display all rows, set the number of rows (25), and sort by key (Tidak ada). The table data is displayed with columns: Kode_Matkul, Nama_Matkul, Waktu, Ruangan, and Prodi. The data includes five rows of course information.

Kode_Matkul	Nama_Matkul	Waktu	Ruangan	Prodi
OG1	Matematika informatika	1999-08-02	R1L1	THP
OG2	praktik APSI	1999-08-03	R1L2	AKUN
OG3	Agama	1999-08-04	R1L3	TI
OG4	PPKN	1999-08-05	R2L1	FH
OG5	MTK	1999-08-06	R2L2	FK

The bottom screenshot shows the Spyder Python IDE. The code editor displays a Python script that connects to a MySQL database and inserts data into the 'matakuliah' table. The script uses the 'mysql.connector' module and the 'cursorObject' to execute the SQL query.

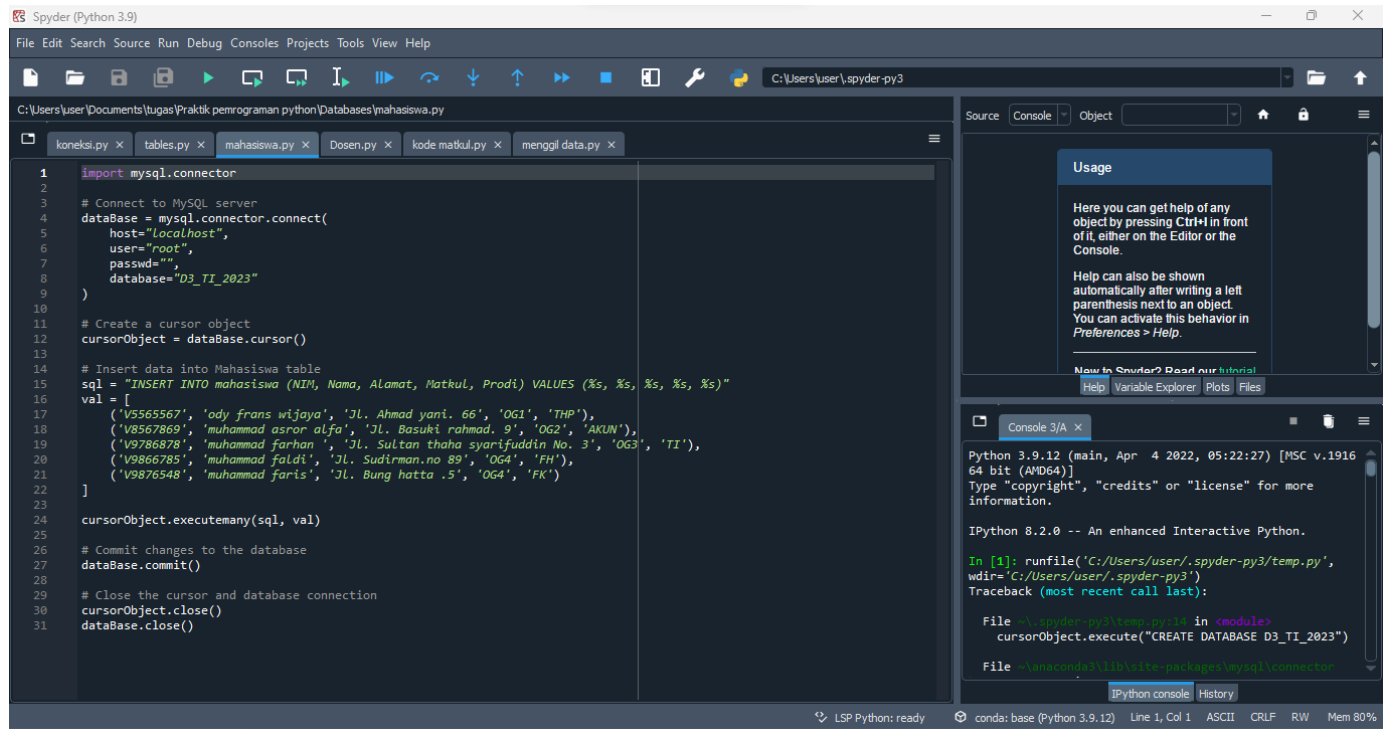
```
1 import mysql.connector
2
3 # Connect to MySQL server
4 dataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd="",
8     database="D3_TI_2023"
9 )
10
11 # Create a cursor object
12 cursorObject = dataBase.cursor()
13
14 # Insert data into Mahasiswa table
15 sql = "INSERT INTO matakuliah (Kode_Matkul, Nama_Matkul, Waktu, Ruangan, Prodi) VALUES (%s, %s, %s, %s, %s)"
16 val = [
17     ('OG1', 'Matematika informatika', '1999-08-02', 'R1L1', 'THP'),
18     ('OG2', 'praktik APSI', '1999-08-03', 'R1L2', 'AKUN'),
19     ('OG3', 'Agama', '1999-08-04', 'R1L3', 'TI'),
20     ('OG4', 'PPKN', '1999-08-05', 'R2L1', 'FH'),
21     ('OG5', 'MTK', '1999-08-06', 'R2L2', 'FK')
22 ]
23
24 cursorObject.executemany(sql, val)
25
26 # Commit changes to the database
27 dataBase.commit()
28
29 # Close the cursor and database connection
30 cursorObject.close()
31 dataBase.close()
```

The right sidebar shows the 'Console' tab with the output of the script, indicating that the data was successfully inserted into the database.

F. Isikan minimal 5 data pada tiap – tiap tabel diatas.

G. Tampilkan data (SELECT) yang menunjukkan data mata kuliah yang diikuti oleh mahasiswa beserta dosen yang mengajar.

Input mahasiswa



```
1 import mysql.connector
2
3 # Connect to MySQL server
4 DataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd="",
8     database="D3_TI_2023"
9 )
10
11 # Create a cursor object
12 cursorObject = DataBase.cursor()
13
14 # Insert data into Mahasiswa table
15 sql = "INSERT INTO mahasiswa (NIM, Nama, Alamat, Matkul, Prodi) VALUES (%s, %s, %s, %s, %s)"
16 val = [
17     ('V5565567', 'ady frans wijaya', 'Jl. Ahmad yani. 66', 'OG1', 'THP'),
18     ('V8567869', 'muhammad asror alfa', 'Jl. Basuki rahmad. 9', 'OG2', 'AKUN'),
19     ('V9786878', 'muhammad farhan', 'Jl. Sultan thaha syarifuddin No. 3', 'OG3', 'TI'),
20     ('V9866785', 'muhammad faldi', 'Jl. Sudirman.no 89', 'OG4', 'FH'),
21     ('V9876548', 'muhammad faris', 'Jl. Bung hatta .5', 'OG4', 'FK')
22 ]
23
24 cursorObject.executemany(sql, val)
25
26 # Commit changes to the database
27 DataBase.commit()
28
29 # Close the cursor and database connection
30 cursorObject.close()
31 DataBase.close()
```

Console 3/A X

```
Python 3.9.12 (main, Apr 4 2022, 05:22:27) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

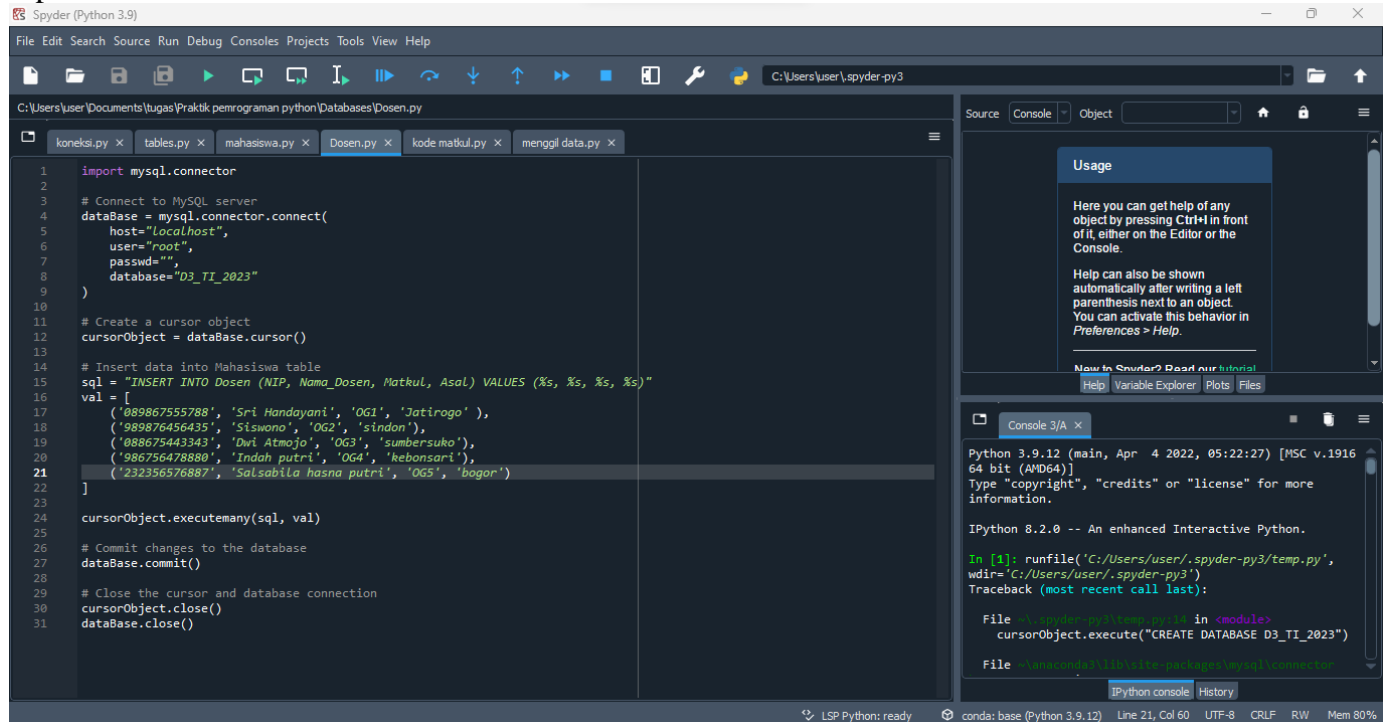
IPython 8.2.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/user/.spyder-py3/temp.py',
wdir='C:/Users/user/.spyder-py3')
Traceback (most recent call last):

File C:/Users/user/.spyder-py3/temp.py in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")

File C:/Users/user/.spyder-py3/temp.py in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")
```

Input Dosen



```
1 import mysql.connector
2
3 # Connect to MySQL server
4 DataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd="",
8     database="D3_TI_2023"
9 )
10
11 # Create a cursor object
12 cursorObject = DataBase.cursor()
13
14 # Insert data into Dosen table
15 sql = "INSERT INTO Dosen (NIP, Nama_Dosen, Matkul, Asal) VALUES (%s, %s, %s, %s)"
16 val = [
17     ('08986755788', 'Sri Handayani', 'OG1', 'Jatirogo'),
18     ('989876456435', 'Siswono', 'OG2', 'sindon'),
19     ('088675443343', 'Dwi Atmojo', 'OG3', 'sumbersuko'),
20     ('986756478880', 'Indah putri', 'OG4', 'kebonsari'),
21     ('232356576887', 'SaIsabila hasna putri', 'OG5', 'bogor')
22 ]
23
24 cursorObject.executemany(sql, val)
25
26 # Commit changes to the database
27 DataBase.commit()
28
29 # Close the cursor and database connection
30 cursorObject.close()
31 DataBase.close()
```

Console 3/A X

```
Python 3.9.12 (main, Apr 4 2022, 05:22:27) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 8.2.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/user/.spyder-py3/temp.py',
wdir='C:/Users/user/.spyder-py3')
Traceback (most recent call last):

File C:/Users/user/.spyder-py3/temp.py in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")

File C:/Users/user/.spyder-py3/temp.py in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")
```

Input Matkul

The screenshot shows the Spyder Python IDE with a file named `kode matkul.py` open. The code is a Python script that connects to a MySQL database, creates a cursor, and inserts data into a table named `mahasiswa`. The data is stored in a list `val` and then inserted using `cursorObject.executemany`. The database connection is then closed.

```
1 import mysql.connector
2
3 # Connect to MySQL server
4 dataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd="",
8     database="D3_TI_2023"
9 )
10
11 # Create a cursor object
12 cursorObject = dataBase.cursor()
13
14 # Insert data into Mahasiswa table
15 sql = "INSERT INTO mataKuliah (Kode_Matkul, Nama_Matkul, Waktu, Ruangan, Prodi) VALUES (%s, %s, %s, %s, %s)"
16 val = [
17     ('0G1', 'Matematika informatika', '1999-08-02', 'R1L1', 'THP'),
18     ('0G2', 'praktik APSI', '1999-08-03', 'R1L2', 'AKUN'),
19     ('0G3', 'Agama', '1999-08-04', 'R1L3', 'TI'),
20     ('0G4', 'PPKN', '1999-08-05', 'R2L1', 'FH'),
21     ('0G5', 'MTK', '1999-08-06', 'R2L2', 'FK')
22 ]
23
24 cursorObject.executemany(sql, val)
25
26 # Commit changes to the database
27 dataBase.commit()
28
29 # Close the cursor and database connection
30 cursorObject.close()
31 dataBase.close()
```

The right sidebar shows the IPython console with the following output:

```
Python 3.9.12 (main, Apr 4 2022, 05:22:27) [MSC v.1916
64 bit (AMD64)]
Type "copyright", "credits" or "license" for more
information.

IPython 8.2.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/user/.spyder-py3/temp.py',
wdir='C:/Users/user/.spyder-py3')
Traceback (most recent call last):

File "C:/Users/user/.spyder-py3/temp.py", line 1, in <module>
    cursorObject.execute("CREATE DATABASE D3_TI_2023")
File "C:/Users/user/.spyder-py3/packages/mysql-connector-python/mysql-connector-python\packages\mysql.connector\mysql-connector.py", line 1, in <module>
    from .mysql.connector import *
File "C:/Users/user/.spyder-py3/packages/mysql-connector-python/mysql-connector.py", line 1, in <module>
    from .mysql.connector import *
```

Hasil Setelah Di Inputkan

The screenshot shows the Spyder Python IDE with a file named `menggl data.py` open. The code is a Python script that connects to a MySQL database, creates a cursor, and executes a SELECT query to retrieve data from the `mahasiswa` table. The results are printed to the console.

```
1 import mysql.connector
2
3 # Connect to MySQL server
4 dataBase = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     passwd="",
8     database="D3_TI_2023"
9 )
10
11 # Create a cursor object
12 cursorObject = dataBase.cursor()
13
14 # Execute the SELECT query
15 sql = "SELECT Mahasiswa.NIM, Mahasiswa>Nama, MataKuliah>Nama_Matkul, Dosen>Nama_Dosen FROM Mahasiswa JOIN M"
16 cursorObject.execute(sql)
17
18 # Fetch all the rows
19 result = cursorObject.fetchall()
20
21 # Print the result
22 for row in result:
23     print("-----")
24     print("NIM : ", row[0])
25     print("NAMA : ", row[1])
26     print("MataKuliah : ", row[2])
27     print("Dosen Pengajar : ", row[3])
28     print("-----")
29
30 # Close the cursor and database connection
31 cursorObject.close()
32 dataBase.close()
33
```

The right sidebar shows the IPython console with the following output:

```
NIM : V9786878
NAMA : muhammad farhan
MataKuliah : Agama
Dosen Pengajar : Dwi Atmojo
-----
NIM : V5565567
NAMA : ody frans wijaya
MataKuliah : Matematika informatika
Dosen Pengajar : Sri Handayani
-----
NIM : V9866785
NAMA : muhammad faldi
MataKuliah : PPKN
Dosen Pengajar : Indah putri
-----
NIM : V9876548
NAMA : muhammad faris
MataKuliah : PPKN
Dosen Pengajar : Indah putri
-----
NIM : V8567869
NAMA : muhammad asror alfa
MataKuliah : PPKN
Dosen Pengajar : Indah putri
-----
```