1.12 Python operations MySQL database

MySQL Connector/Python Developer Guide:
https://dev.mysql.com/doc/connector-python/en/

➢ 安裝 mysql.connector 模組

Install corresponding Python 3 module on linux:

```
# sudo apt-get install python3-mysql.connector
```

Install corresponding Python 2 module on linux:

```
# sudo apt-get install python-mysql.connector
```

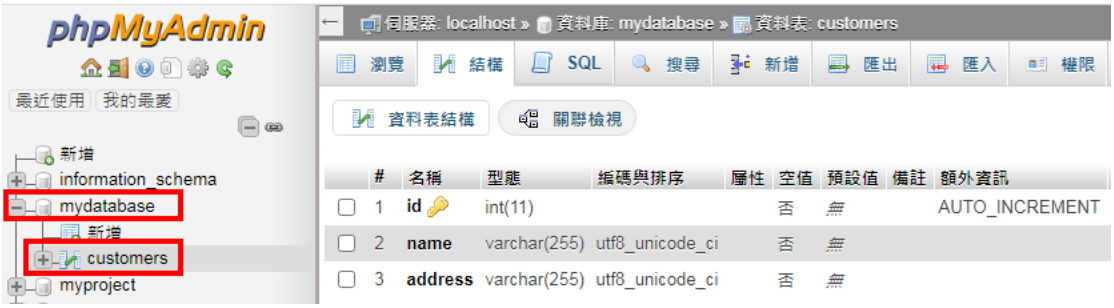
Install corresponding Python 3 module on windows

```
# pip install mysql-connector-python
```

https://pypi.org/project/mysql-connector-python/

➢ Python MySQL Connect Database

建立「mydatabase 資料庫」，建立「customers」，細節如下：



Try connecting to the database "mydatabase":

```
#!/usr/bin/python

# -*- coding: utf-8 -*

import mysql.connector


mydb = mysql.connector.connect(

  host="localhost",
```

```
  user="root",
  passwd="1234",
  database="mydatabase"
)
mydb.close()
```

範例: operation_mysql1.py

- **插入資料(insert)**

```
#!/usr/bin/python
# -*- coding: utf-8 -*
import mysql.connector

mydb = mysql.connector.connect(
  host="localhost",
  user="root",
  passwd="1234",
  database="mydatabase"
)



mycursor = mydb.cursor()

sql = "INSERT INTO customers (name, address) VALUES (%s, %s)"
val = ("John", "Highway 21")

mycursor.execute(sql, val)
```

```
#提交
mydb.commit()


print(mycursor.rowcount, "record inserted.")
```

範例: operation_mysql2.py

```
#!/usr/bin/python
# -*- coding: utf-8 -*


import mysql.connector
from mysql.connector import errorcode



# Obtain connection string information from the portal
config = {
  'host':'localhost',
  'user':'root',
  'password':'1234',
  'database':'mydatabase'
}


# Construct connection string
try:
   conn = mysql.connector.connect(**config)
   print("Connection established")
```

```
except mysql.connector.Error as err:
  if err.errno == errorcode.ER_ACCESS_DENIED_ERROR:
    print("Something is wrong with the user name or password")
  elif err.errno == errorcode.ER_BAD_DB_ERROR:
    print("Database does not exist")
  else:
    print(err)
else:
  cursor = conn.cursor()


# Insert some data into table
cursor.execute("INSERT INTO inventory (name, quantity) VALUES (%s, %s);",
("banana", 150))
print("Inserted",cursor.rowcount,"row(s) of data.")


# Cleanup
conn.commit()
cursor.close()
conn.close()
print("Done.")
```

範例: operation_mysql3.py

➢ 讀取資料（read）

```
#!/usr/bin/python
```

```
# -*- coding: utf-8 -*


import mysql.connector
from mysql.connector import errorcode


# Obtain connection string information from the portal
config = {
  'host':'localhost',
  'user':'root',
  'password':'1234',
  'database':'mydatabase'
}


# Construct connection string
try:
   conn = mysql.connector.connect(**config)
   print("Connection established")
except mysql.connector.Error as err:
  if err.errno == errorcode.ER_ACCESS_DENIED_ERROR:
    print("Something is wrong with the user name or password")
  elif err.errno == errorcode.ER_BAD_DB_ERROR:
    print("Database does not exist")
  else:
    print(err)
else:
  cursor = conn.cursor()
```

```
# Read data
cursor.execute("SELECT * FROM inventory;")
rows = cursor.fetchall()
print("Read",cursor.rowcount,"row(s) of data.")

print type(rows)

# Print all rows
for row in rows:
    print("Data row = (%s, %s, %s)" %(str(row[0]), str(row[1]),
str(row[2])))

# Cleanup
cursor.close()
conn.close()
print("Done.")
```

範例: operation_mysql4.py

- **更新資料(update)**

```
#!/usr/bin/python
# -*- coding: utf-8 -*

import mysql.connector
from mysql.connector import errorcode
```

```
# Obtain connection string information from the portal
config = {
  'host':'localhost',
  'user':'root',
  'password':'1234',
  'database':'mydatabase'
}

# Construct connection string
try:
   conn = mysql.connector.connect(**config)
   print("Connection established")
except mysql.connector.Error as err:
  if err.errno == errorcode.ER_ACCESS_DENIED_ERROR:
    print("Something is wrong with the user name or password")
  elif err.errno == errorcode.ER_BAD_DB_ERROR:
    print("Database does not exist")
  else:
    print(err)
else:
  cursor = conn.cursor()

  # Update a data row in the table
  cursor.execute("UPDATE inventory SET quantity = %s WHERE name
= %s;", (200, "banana"))
```

```
  print("Updated",cursor.rowcount,"row(s) of data.")


# Cleanup
conn.commit()
cursor.close()
conn.close()
print("Done.")
```

範例: operation_mysql5.py

- **刪除資料(delete)**

```
#!/usr/bin/python
# -*- coding: utf-8 -*


import mysql.connector
from mysql.connector import errorcode


# Obtain connection string information from the portal
config = {
  'host':'localhost',
  'user':'root',
  'password':'1234',
  'database':'mydatabase'
}


# Construct connection string
```

```
try:
   conn = mysql.connector.connect(**config)
   print("Connection established.")
except mysql.connector.Error as err:
  if err.errno == errorcode.ER_ACCESS_DENIED_ERROR:
    print("Something is wrong with the user name or password.")
  elif err.errno == errorcode.ER_BAD_DB_ERROR:
    print("Database does not exist.")
  else:
    print(err)
else:
  cursor = conn.cursor()


# Delete a data row in the table
cursor.execute("DELETE FROM inventory WHERE name=%(param1)s;",
{'param1':"orange"})
print("DELETE FROM inventory WHERE name=%s;", “’apple’)
cursor.execute("DELETE   FROM   inventory   WHERE   name=%s;",
“’apple’”)


print("Deleted",cursor.rowcount,"row(s) of data.")


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

```
print("Done.")
```

範例: operation_mysql6.py

文獻：
https://docs.microsoft.com/zh-tw/azure/mysql/connect-python

➢ 小專案

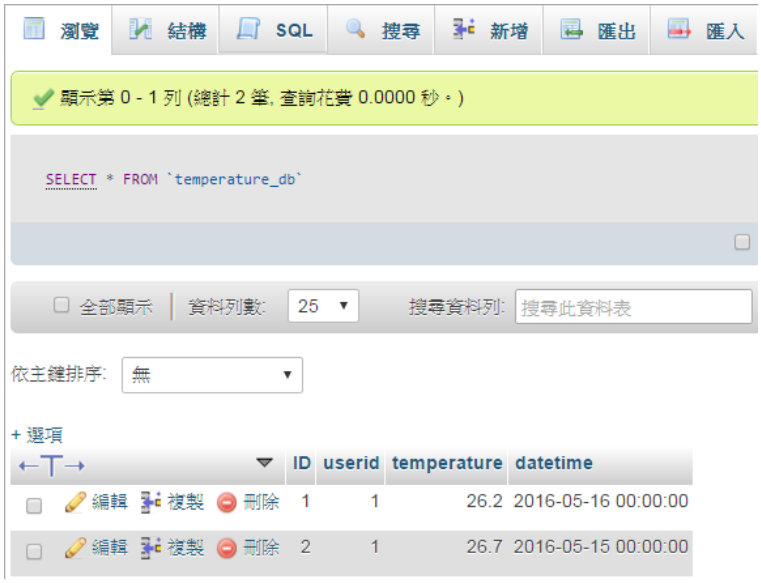
目標：將溫度 DS18B20 溫度感測器，傳入本機資料庫

1、建立資料庫
IOT(utf8_unicode_ci)

temperature_DB

==========

ID	userid	temperature	datetime
INT	INT	float	datetime
A_I			
Primary Key			
1	1	25.2	2015/11/28 19:00:00
2	1	26.6	2015/11/28 21:00:00



2、撰寫 python 程式

範例：upload_temperature_mysql.py