

Bases de datos con MySQL (y Python)

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Práctica Mysql

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Descripción

Generar al menos 5 tablas con al menos 3 registros (los registros pueden ser ficticios) de la estructura de university

El código para tal es el siguiente:

```
import mysql.connector
from mysql.connector import errorcode
def create_database(cursor):
    try:
        cursor.execute(
            "CREATE DATABASE {} DEFAULT CHARACTER SET 'utf8mb4'".format(DB_NAME))
    except mysql.connector.Error as err:
        print("Failed creating database: {}".format(err))
        exit(1)
config = {
    'user': 'root',
    'password': 'Cic1234*',
    'host': '127.0.0.1',
    # 'database': 'university',
    'raise_on_warnings': True
}
cnx = mysql.connector.connect(**config)
cursor = cnx.cursor(buffered=True)
DB_NAME = 'university2'
TABLES = {}
TABLES['department'] = (
    "CREATE TABLE `department` ("
    "`dept_name` varchar(20) NOT NULL DEFAULT '',"
    "`building` varchar(15) DEFAULT NULL,"
    "`budget` decimal(12,2) DEFAULT NULL,"
    "PRIMARY KEY (`dept_name`)"
    ") ENGINE=InnoDB DEFAULT CHARSET=utf8;"
TABLES['student'] = (
    "CREATE TABLE `student` ("
    "`ID` varchar(5) NOT NULL DEFAULT '',"
    "`name` varchar(20) NOT NULL,"
    "`dept_name` varchar(20) DEFAULT NULL,"
    "`tot_cred` decimal(3,0) DEFAULT NULL,"
    "PRIMARY KEY (`ID`),"
    "KEY `dept_name` (`dept_name`),"
    "CONSTRAINT `student_ibfk_1` FOREIGN KEY (`dept_name`) REFERENCES `department` (`dept_name`)"
    ") ENGINE=InnoDB DEFAULT CHARSET=utf8;"
TABLES['instructor'] = (
    "CREATE TABLE `instructor` ("
    "`ID` varchar(5) NOT NULL DEFAULT '',"
    "`name` varchar(20) NOT NULL,"
    "`dept_name` varchar(20) DEFAULT NULL,"
    "`salary` decimal(8,2) DEFAULT NULL,"
    "PRIMARY KEY (`ID`),"
    "KEY `dept_name` (`dept_name`),"
    "CONSTRAINT `instructor_ibfk_1` FOREIGN KEY (`dept_name`) REFERENCES `department` (`dept_name`)"
    ") ENGINE=InnoDB DEFAULT CHARSET=utf8;"
TABLES['advisor'] = (
```

```

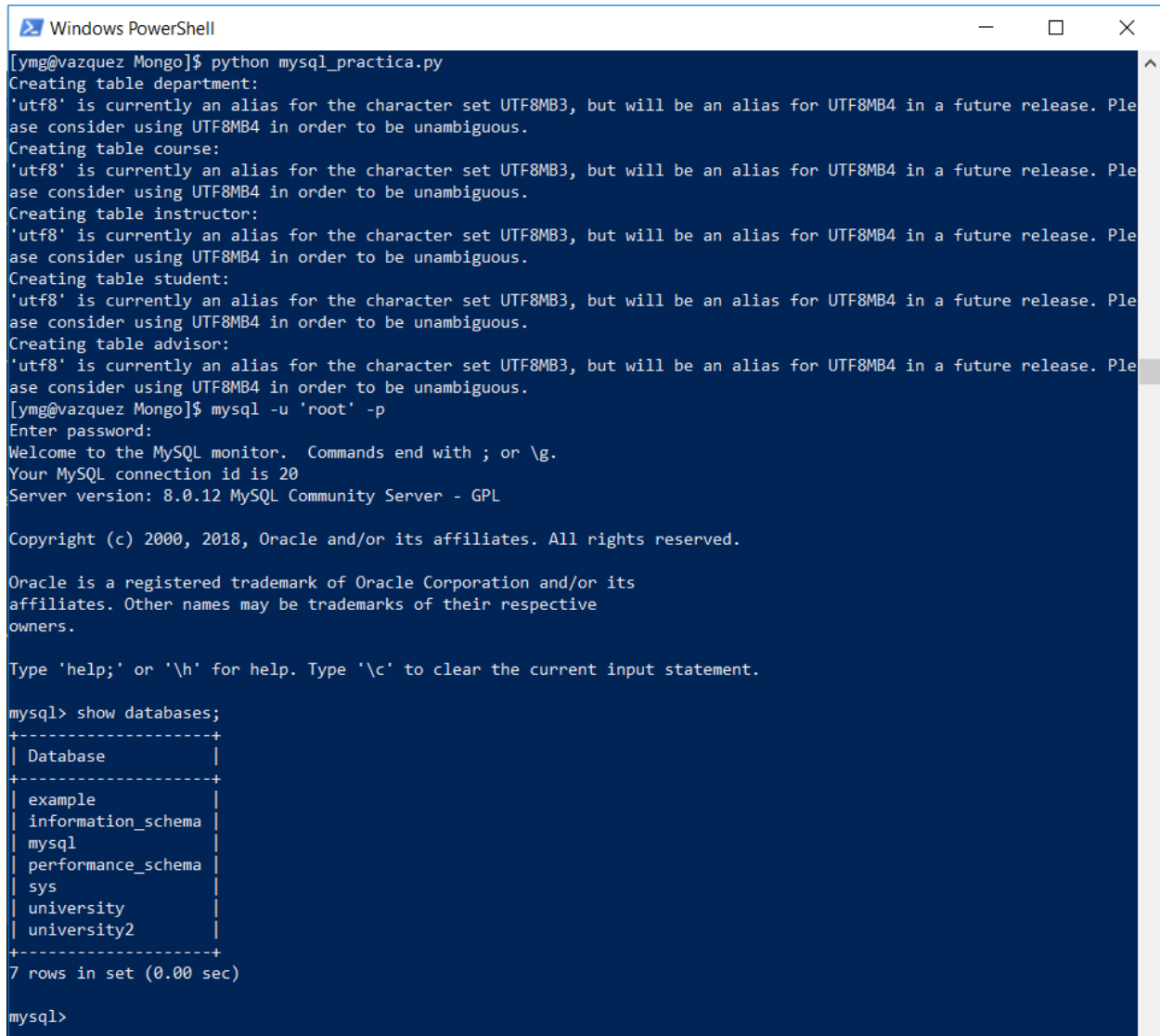
        "CREATE TABLE `advisor` ("
        "`s_ID` varchar(5) NOT NULL DEFAULT '',"
        "`i_ID` varchar(5) DEFAULT NULL,"
        "PRIMARY KEY (`s_ID`),"
        "KEY `i_ID` (`i_ID`),"
        "CONSTRAINT `advisor_ibfk_1` FOREIGN KEY (`i_ID`) REFERENCES `instructor` (`ID`) ON DELETE SET NULL,"
        "CONSTRAINT `advisor_ibfk_2` FOREIGN KEY (`s_ID`) REFERENCES `student` (`ID`) ON DELETE CASCADE"
        ") ENGINE=InnoDB DEFAULT CHARSET=utf8;")
TABLES['course'] = (
"    CREATE TABLE `course` ("
    "`course_id` varchar(8) NOT NULL DEFAULT '',"
    "`title` varchar(50) DEFAULT NULL,"
    "`dept_name` varchar(20) DEFAULT NULL,"
    "`credits` decimal(2,0) DEFAULT NULL,"
    "PRIMARY KEY (`course_id`),"
    "KEY `dept_name` (`dept_name`),"
    "CONSTRAINT `course_ibfk_1` FOREIGN KEY (`dept_name`) REFERENCES `department` (`dept_name`)"
") ENGINE=InnoDB DEFAULT CHARSET=utf8;")
try:
    cnx.database = DB_NAME
except mysql.connector.Error as err:
    if err.errno == errorcode.ER_BAD_DB_ERROR:
        create_database(cursor)
        cnx.database = DB_NAME
    else:
        print(err)
        exit(1)
for name, ddl in TABLES.iteritems():
    try:
        print("Creating table {}: ".format(name))
        cursor.execute(ddl)
    except mysql.connector.Error as err:
        if err.errno == errorcode.ER_TABLE_EXISTS_ERROR:
            print("already exists.")
        else:
            print(err.msg)
    else:
        print("OK")
query = ("INSERT INTO `department` VALUES ('Accounting','Saucon',441840.92),('Astronomy','Taylor',61725.61),('Physics','Bauer',100000.00))
cursor.execute(query)
cnx.commit()
query = ("INSERT INTO `course` VALUES ('101','Diffusion and Phase Transformation','Accounting',3),('102','Thermodynamics','Physics',3))
cursor.execute(query)
cnx.commit()
query = ("INSERT INTO `student` VALUES ('1000','Manber','Accounting',39),('10033','Zelty','Astronomy',61),('10076','Bawa','Physics',39))
cursor.execute(query)
cnx.commit()
query = ("INSERT INTO `instructor` VALUES ('14365','Lembr','Accounting',32241.56),('15347','Bawa','Astronomy',61),('16807','Manber','Accounting',39))
cursor.execute(query)
cnx.commit()
query = ("INSERT INTO `advisor` VALUES ('1000','14365'),('10033','15347'),('10076','16807');")
cursor.execute(query)
cnx.commit()

```

```
cursor.close()
cnx.close()
```

Nota: Se modificaron los datos para que no hubiera problemas de llaves referenciadas que no existen y por lo tanto algunos datos pueden no tener sentido.

Ejecución y chequeo de database:



```
Windows PowerShell
[ymg@vazquez Mongo]$ python mysql_practica.py
Creating table department:
'utf8' is currently an alias for the character set UTF8MB3, but will be an alias for UTF8MB4 in a future release. Please consider using UTF8MB4 in order to be unambiguous.
Creating table course:
'utf8' is currently an alias for the character set UTF8MB3, but will be an alias for UTF8MB4 in a future release. Please consider using UTF8MB4 in order to be unambiguous.
Creating table instructor:
'utf8' is currently an alias for the character set UTF8MB3, but will be an alias for UTF8MB4 in a future release. Please consider using UTF8MB4 in order to be unambiguous.
Creating table student:
'utf8' is currently an alias for the character set UTF8MB3, but will be an alias for UTF8MB4 in a future release. Please consider using UTF8MB4 in order to be unambiguous.
Creating table advisor:
'utf8' is currently an alias for the character set UTF8MB3, but will be an alias for UTF8MB4 in a future release. Please consider using UTF8MB4 in order to be unambiguous.
[ymg@vazquez Mongo]$ mysql -u 'root' -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 20
Server version: 8.0.12 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| example |
| information_schema |
| mysql |
| performance_schema |
| sys |
| university |
| university2 |
+-----+
7 rows in set (0.00 sec)

mysql>
```

Chequeo de tablas y contenido:

```
Windows PowerShell
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university2
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables
-> ;
+-----+
| Tables_in_university2 |
+-----+
| advisor                |
| course                 |
| department              |
| instructor              |
| student                 |
+-----+
5 rows in set (0.00 sec)

mysql> select * from advisor
-> ;
+-----+-----+
| s_ID | i_ID |
+-----+-----+
| 1000 | 14365 |
| 10033 | 15347 |
| 10076 | 16807 |
+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from course
-> ;
+-----+-----+-----+-----+
| course_id | title | dept_name | credits |
+-----+-----+-----+-----+
| 101 | Diffusion and Phase Transformation | Accounting | 3 |
| 102 | Image Processing | Astronomy | 3 |
| 103 | Differential Equations | Athletics | 3 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from department;
+-----+-----+-----+
| dept_name | building | budget |
+-----+-----+-----+
| Accounting | Saucon | 441840.92 |
| Astronomy | Taylor | 617253.94 |
| Athletics | Bronfman | 734550.70 |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

```
| 102 | Image Processing | Astronomy | 5 |
| 103 | Differential Equations | Athletics | 3 |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from department;
+-----+-----+-----+
| dept_name | building | budget |
+-----+-----+-----+
| Accounting | Saucon | 441840.92 |
| Astronomy | Taylor | 617253.94 |
| Athletics | Bronfman | 734550.70 |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from instructor
-> ;
+-----+-----+-----+
| ID | name | dept_name | salary |
+-----+-----+-----+
| 14365 | Lembr | Accounting | 32241.56 |
| 15347 | Bawa | Astronomy | 72140.88 |
| 16807 | Yazdi | Athletics | 98333.65 |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> select * from student;
+-----+-----+-----+
| ID | name | dept_name | tot_cred |
+-----+-----+-----+
| 1000 | Manber | Accounting | 39 |
| 10033 | Zelty | Astronomy | 60 |
| 10076 | Duan | Athletics | 105 |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql>
```