



Introduction To Python

Python-Mysql Connectivity

Database Connectivity

- Python Database API supports a wide range of database servers:
 - GadFly
 - mySQL
 - MySQL
 - PostgreSQL
 - Microsoft SQL Server 2000
 - Informix
 - Interbase
 - Oracle
 - Sybase

Step 1 – database import

- Import modules for database in your python program

Mysql

```
import MySQLdb
```

PostgreSql

```
import psycopg2
```


Step 1 – database import

- Import modules for database

Mysql

```
import MySQLdb
```

PostgreSql

```
import psycopg2
```

Error

```
Traceback (most recent call last):  
File "test.py", line 3, in <module>  
import MySQLdb  
ImportError: No module named MySQLdb
```

If the above error happens that means you have not installed the mysql/postgresql module for the python version you are using

Solution : download it from

<http://sourceforge.net/projects/mysql-python>

Step 2 – Establishing connection

- Open a database connection with your program using `connect()`
 - Mysql

```
db = MySQLdb.connect(user='root', password='root', host='localhost', database='test' )
```

- PostgreSQL

```
db = psycopg2.connect(user='root', password='root', host='localhost', database='test' )
```

Step 2 – Establishing connection

- Open database connection
 - Mysql

the connect() constructor creates a connection to the MySQL server and returns a MySQLConnection object

```
db = MySQLdb.connect(user='root', password='root', host='localhost', database='test' )
```

- PostgreSQL

```
db = psycopg2.connect(user='root', password='root', host='localhost', database='test' )
```


Step 3 – Creating cursor object

- We need to create the object of a class called **cursor** that allows Python code **to execute database command in a database session**.
- **Cursors** are created by the **connection.cursor() method**: they are bound to the connection for the entire lifetime and all the commands are executed in the context of the database session wrapped by the connection.
 - Mysql / PostgreSQL

```
cursor = db.cursor()
```

Step 4 -Execute SQL query

We can execute the sql queries from python program using `execute()` method associated with cursor object . Examples

- `cursor.execute("SELECT * from tbl_student")`
- `cursor.execute("select a from tbl where b=? and c=?", x, y)`
- `cursor.execute("select a from tbl where b=? and c=?", (x, y))`

Step 4 -Execute SQL query

- Executes an SQL command against all parameter sequences or mappings found in the sequence sql
- purchases = [
 ('2006-03-28', 'BUY', 'IBM', 1000, 45.00),
 ('2006-04-05', 'BUY', 'MSFT', 1000, 72.00),
 ('2006-04-06', 'SELL', 'IBM', 500, 53.00)
]

• `c.executemany('INSERT INTO stocks VALUES (?, ?, ?, ?, ?)', purchases)`

Step 5 – Fetch data from database

- MySQLdb provides multiple ways to retrieve data such as:

— fetchall()

- Fetch all (remaining) rows of a query result, returning them as a sequence of sequences (e.g. a list of tuples).

— fetchmany(size)

- Fetch the next set of rows of a query result, returning a sequence of sequences (e.g. a list of tuples) .It will return number of rows that matches to the **size** argument

— fetchone()

- Fetch the next row of a query result set, returning a single sequence, or None when no more data is available

Example

```
Import MySQLdb
```

```
db = MySQLdb.connect(user='root', password='root', host='localhost', database='test' )
```

```
cursor = db.cursor()
```

```
cursor.execute("select * from tbl_student where place= calicut")
```

```
results = cursor.fetchall()
```

```
for row in results:
```

```
    fname = row[0]
```

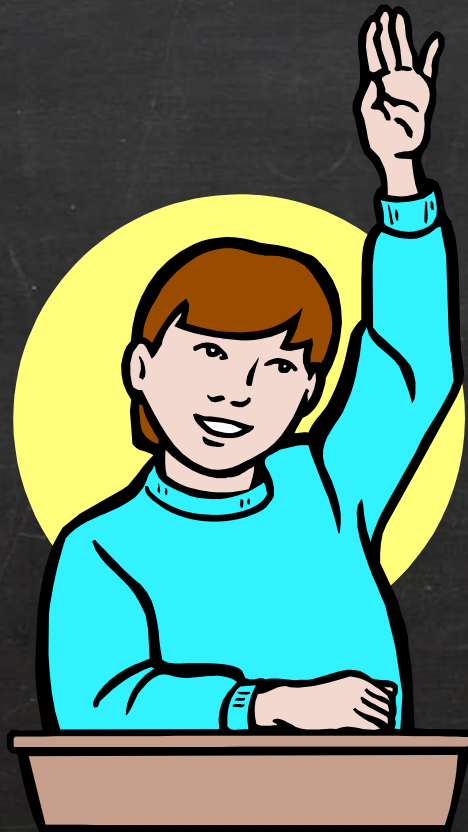
```
    lname = row[1]
```

```
    age = row[2]
```

```
print "fname=%s,lname=%s,age=%d " % (fname, lname, age)
```


Questions?

“A good question deserve a good grade...”

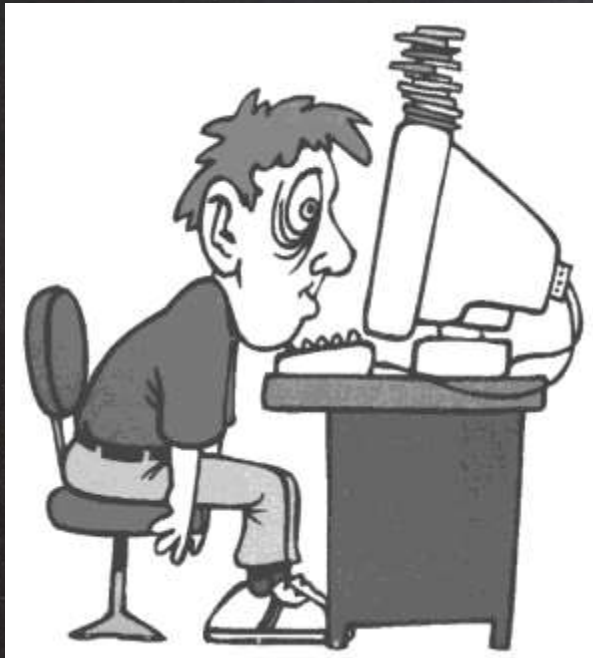


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