

SQL

Connect to database server

In the Terminal,

```
mysql -u <CSE Username> -p
```

Change database

```
use <CSE Username>;
```

Create table

```
CREATE TABLE protein(  
id INT(10) PRIMARY KEY AUTO_INCREMENT,  
accessID VARCHAR(6) UNIQUE,  
.....  
);
```

Insert data row

```
INSERT INTO protein( id, accessID ) VALUE (1, "Q6GZX4");
```

Read rows

```
SELECT id, accessID  
FROM protein
```

SQL with Python

Python2

Following is Python2

Python2: on CSE server

Run python file like:

```
python2 lab1.py
```

Python2: import MySQLdb

```
import MySQLdb
```

Connect to database server

```
HOST = 'cse.unl.edu'
USER = '[CSE Username]'
PASSWD = '[CSE mysql password]'
DB = '[CSE Username]'

db = MySQLdb.connect(host=HOST,user=USER,passwd=PASSWD,db=DB)
```

Python3

Following is Python3

Python3: (If you wish to)install PyMySQL package on your labtop

On your local Terminal/Powershell, execute

```
pip3 install pymysql
```

No need on the CSE server.

Python3: on CSE server

Run python file like:

```
python3 lab1.py
```

Python3: import PyMySQL

```
import pymysql
```

Python3: Connect to database server

```
HOST = 'cse.unl.edu'
USER = '[CSE Username]'
PASSWD = '[CSE mysql password]'
DB = '[CSE Username]'

db = pymysql.connect(host=HOST,user=USER,passwd=PASSWD,db=DB)
```

Create a cursor

Following are same for Python2 with MySQLdb and python3 with PyMySQL

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

Create table

```
createSQL = '''
CREATE TABLE [table name](
.....
);
'''
cur.execute(createSQL)
db.commit()
```

Insert data row

```
insertSQL='''
INSERT INTO [table name]( [column1], [column2] ) VALUE (%s, %s);
'''
cur.execute(insertSQL,(1,"Q6GZX4"))
db.commit()
```

Read data

Read one row

```
selectSQL='''
SELECT [column1], [column2] FROM [table name];
'''
cur.execute(selectSQL)
```

```
oneResult = cur.fetchone()
print(oneResult)
```

Read all result rows

```
selectSQL=''
SELECT [column1], [column2] FROM [table name];
'''

cur.execute(selectSQL)
Results = cur.fetchall()
for row in Results:
    print(row)
```