

Python training - lab 17

Python connect to PostgreSQL

```
# pip install psycopg2
```

```
import psycopg2
```

```
conn = psycopg2.connect(  
    host="localhost",  
    database="postgres",  
    user="my_user",  
    password="my_password")
```

```
c = conn.cursor()  
c.execute('select version()')
```

```
db_version = c.fetchone()  
print('DB server version:', db_version)
```

```
c.close()  
conn.close()
```

Python connect to PostgreSQL

```
import psycopg2

conn = None
try:
    conn = psycopg2.connect(host="localhost", database="postgres",
                           user="my_user", password="my_password")

    c = conn.cursor()
    c.execute('select version()')
    db_version = c.fetchone()
    print('PostgreSQL version:', db_version)
    c.close()
except psycopg2.OperationalError as ex:
    print('Database error:', ex)
finally:
    print('Closing DB connection')
    if conn:
        conn.close()
```

insert

```
c = conn.cursor()
c.execute("""insert into department
        (\"name\", description)
        values ('RD', 'Research/Design')""")

val = ('Log', 'Logistics')
c.execute("""insert into department
        (name, description)
        values (%s, %s)""", val)

conn.commit()
```

transactions, commit, rollback

```
# explicit commit or rollback
```

```
c = conn.cursor()  
c.execute(query1)  
c.execute(query2)
```

```
if some_condition:  
    conn.rollback()  
else:  
    conn.commit()
```

```
# autocommit
```

```
conn.autocommit = True
```

```
# define a transaction
```

```
with conn:
```

```
    c = conn.cursor()  
    c.execute(query1)  
    c.execute(query2)
```

update

```
with conn, conn.cursor() as c:  
    dep_name = 'HR'  
    new_name = 'Resurse umane'  
    query = """update department set  
        description=%s where name=%s"""  
  
    c.execute(  
        query,  
        (new_name, dep_name)  
    )
```

get latest inserted id

```
with conn, conn.cursor() as c:  
    query = """insert into department  
        (name, description)  
        values ('RD', 'Research/Design')  
        returning id"""  
  
    c.execute(query)  
    last_id = c.fetchone()  
    print(last_id[0])
```

fetchall

```
with conn:
    c = conn.cursor()
    c.execute("""
        select surname, first_name
        from employee
    """)
    records = c.fetchall()
    print(records, type(records))

    for r in records:
        print(r)
```