Python

SQL

ORM

- Object Relational Mapping (Объектно-реляционное отображение)
- Объектно-реляционное отображение — это технология программирования, которая связывает базы данных с концепциями объектно-ориентированных языков программирования, создавая «виртуальную объектную базу данных». Существуют как проприетарные, так и свободные реализации этой технологии.

Python

csv

Атрибуты при открытии файла

Режим	Обозначение
'r'	открытие на чтение (является значением по умолчанию).
'w'	открытие на запись, содержимое файла удаляется, если файла не существует, создается новый.
'x'	открытие на запись, если файла не существует, иначе исключение.
'a'	открытие на дозапись, информация добавляется в конец файла.
'b'	открытие в двоичном режиме.
't'	открытие в текстовом режиме (является значением по умолчанию).
'+'	открытие на чтение и запись

Запись

- d1={'name':'Pert','surname':'Romanov','age':44}
- d2={'name':'Vlodimir','surname':'Lenin','age':34}
- d3={'name':'Lev','surname':'Tolstoy','age':74}

- d_list=[d1,d2,d3]

- for i in d_list:
- print(i)
- write_csv(i)

```
import csv


def write_csv(data):
  with open('writers.csv','a') as file:
        writer=csv.writer(file)
        #writer=csv.writer(file,delimiter=',')
        #writer=csv.writer(file, dialect='Excel')
        #writer.writerow((data['name'],data['surname'],data['age']))
        writer.writerow([data['name'],data['surname'],data['age']])
```

- def write_csv2(data):
- with open('writers2.csv','a') as file:
- order=['name','surname','age']
- writer=csv.DictWriter(file, fieldnames=order)
- writer.writerow(data)

```
G:\django2018\csv>python csv001.py
{'name': 'Pert', 'surname': 'Romanov', 'age': 44}
{'name': 'Vlodimir', 'surname': 'Lenin', 'age': 34}
{'name': 'Lev', 'surname': 'Tolstoy', 'age': 74}

G:\django2018\csv>python csv001.py
{'surname': 'Romanov', 'name': 'Pert', 'age': 44}
{'surname': 'Lenin', 'name': 'Vlodimir', 'age': 34}
{'surname': 'Tolstoy', 'name': 'Lev', 'age': 74}
```

Чтение

- def open_csv():
- with open('writers2.csv','r') as file:
- reader=csv.DictReader(file)
- for i in reader:
- print(i)

```
G:\django2018\csv>python csv003.py
{'Romanov': 'Lenin', '44': '34', 'Pert': 'Vlodimir'}
{'Romanov': 'Tolstoy', '44': '74', 'Pert': 'Lev'}
```

- def open_csv():
- with open('writers2.csv','r') as file:
- order=['name','surname','age']
- reader=csv.DictReader(file, fieldnames=order)
- for i in reader:
- print(i)

```
G:\django2018\csv>python csv004.py
{'age': '44', 'name': 'Pert', 'surname': 'Romanov'}
{'age': '34', 'name': 'Vlodimir', 'surname': 'Lenin'}
{'age': '74', 'name': 'Lev', 'surname': 'Tolstoy'}
```

```python
import csv
csvFile=open('csv001.csv','wt')

writer=csv.writer(csvFile)
writer.writerow(('number','numper plus 2','number times 2'))
for i in range(10):
    writer.writerow((i,i+2,i*2))
csvFile.close()
```

```
number,numper plus 2,number times 2

0,2,0

1,3,2

2,4,4

3,5,6

4,6,8

5,7,10

6,8,12

7,9,14

8,10,16

9,11,18
```

Скрайбинг текста из википедии

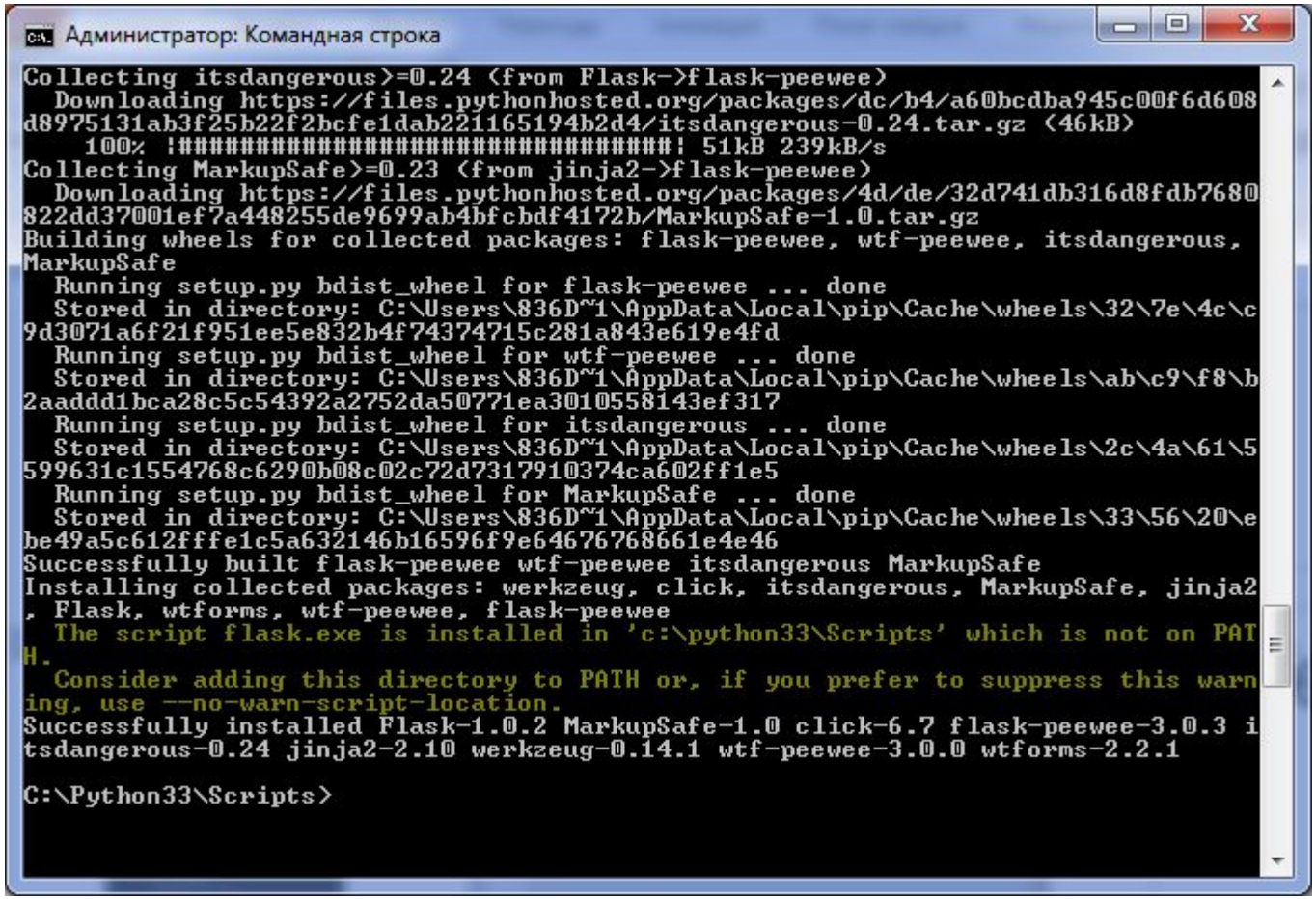
```
import csv
from urllib.request import urlopen
from bs4 import BeautifulSoup as BS

html=urlopen("http://en.wikipedia.org/wiki/Comparison_of_text_editors")
bs_str=BS(html,'lxml')

table=bs_str.findAll('table',{'class':'wikitable'})[0]
rows=table.findAll('tr')

csvFile=open('editors.csv','wt')
writer=csv.writer(csvFile)

for row in rows:
    csvRow=[]
    for cell in row.findAll(['td','th']):
        csvRow.append(cell.get_text())
        writer.writerow(csvRow)

csvFile.close()
```

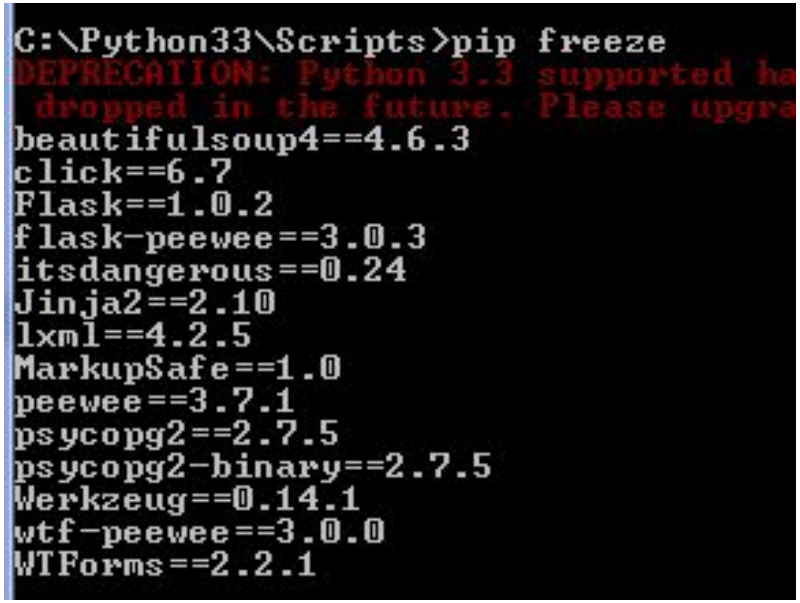
SQLite

pip install peewee


```
C:\Python33\Scripts>pip3 install peewee
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
 dropped in the future. Please upgrade your Python.
Collecting peewee
  Downloading https://files.pythonhosted.org/packages/f1/15/6c861d6351613be83fd9
92b5431ac15353dfbd796ea780dc565b6cdf732d/peewee-3.7.1.tar.gz (2.2MB)
    100% |################################| 2.2MB 2.0MB/s
Building wheels for collected packages: peewee
  Running setup.py bdist_wheel for peewee ... done
  Stored in directory: C:\Users\836D~1\AppData\Local\pip\Cache\wheels\f1\02\73\1
4974b571ebf1dcc3b0af965ff96e4f7e47e75797222ccadf6
Successfully built peewee
Installing collected packages: peewee
Successfully installed peewee-3.7.1
```

pip install flask-peewee




C:\Python33\Scripts>pip freeze
DEPRECATION: Python 3.3 supported ha
dropped in the future. Please upgra
beautifulsoup4==4.6.3
click==6.7
Flask==1.0.2
flask-peewee==3.0.3
itsdangerous==0.24
Jinja2==2.10
lxml==4.2.5
MarkupSafe==1.0
peewee==3.7.1
psycopg2==2.7.5
psycopg2-binary==2.7.5
Werkzeug==0.14.1
wtf-peewee==3.0.0
WTForms==2.2.1

```
from peewee import *

db = SqliteDatabase('people.db')

class Person(Model):
    name=CharFieald()
    birthday=DateField()
    is_relative=BooleanField()

    class Meta:
        database=db
```

- null=False – возможно ли хранение null-значений;
- index=False – создавать ли индекс для данного столбца в базе;
- unique=False – создавать ли уникальный индекс для данного столбца в базе; verbose_name=None – строка для человекопонятного представления поля;
- help_text=None – строка с вспомогательным текстом для поля;
- db_column=None – строка, явно задающая название столбца в базе для данного поля, используется например при работе с legacy базой данных;
- default=None – значение по-умолчанию для полей класса при инстанцировании;
- choices=None – список или кортеж двухэлементных кортежей, где первый элемент – значение для базы, второй – отображаемое значение (аналогично джанге);
- primary_key=False – использовать ли данное поле, как первичный ключ;
- sequence=None – последовательность для наполнения поля (удостоверьтесь, что бекэнд поддерживает такую функциональность);

Метаданные

Опция	Описание	Наследуется?
database	база данных для модели	да
db_table	название таблицы, в которой будут храниться данные	нет
indexes	список полей для индексирования	да
order_by	список полей для сортировки по-умолчанию	да
primary_key	составной первичный ключ, экземпляр класса CompositeKey	да
table_alias	алиас таблицы для использования в запросах	нет

Типы полей 1

Field Type	Sqlite	Postgresql	MySQL
IntegerField	integer	integer	integer
BigIntegerField	integer	bigint	bigint
SmallIntegerField	integer	smallint	smallint
AutoField	integer	serial	integer
BigAutoField	integer	bigserial	bigint

Типы полей 2

Field Type	Sqlite	Postgresql	MySQL
IdentityField	not supported	int identity	not supported
FloatField	real	real	real
DoubleField	real	double precision	double precision
DecimalField	decimal	numeric	numeric
CharField	varchar	varchar	varchar
FixedCharField	char	char	char

Типы полей 3

Field Type	Sqlite	Postgresql	MySQL
TextField	text	text	text
BlobField	blob	bytea	blob
BitField	integer	bigint	bigint
BigBitField	blob	bytea	blob
UUIDField	text	uuid	varchar(40)
BinaryUUIDField	blob	bytea	varbinary(16)

Типы полей 4

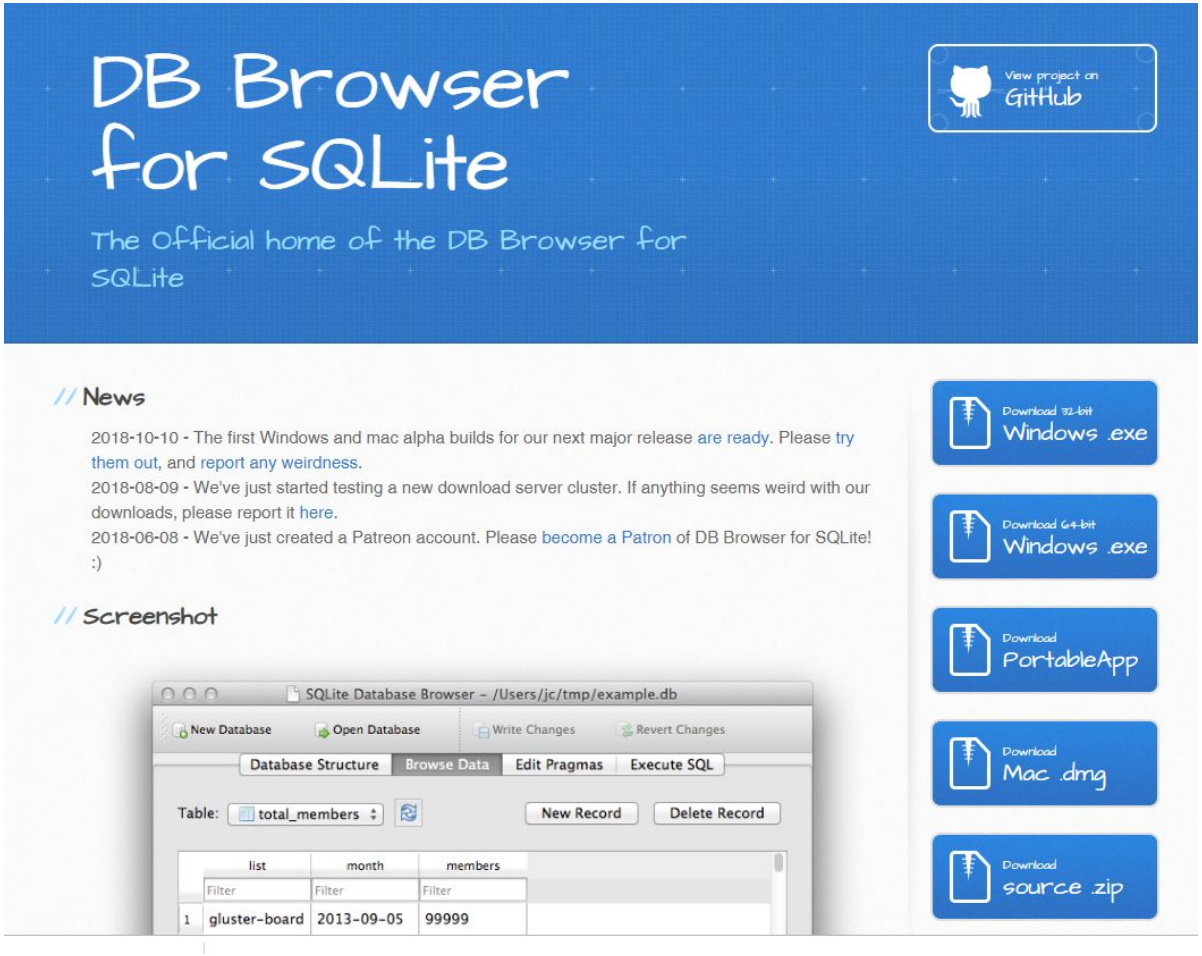
Field Type	Sqlite	Postgresql	MySQL
DateTimeField	datetime	timestamp	datetime
DateField	date	date	date
TimeField	time	time	time
TimestampField	integer	integer	integer
IPField	integer	bigint	bigint
BooleanField	integer	boolean	bool
BareField	untyped	not supported	not supported
ForeignKeyField	integer	integer	integer

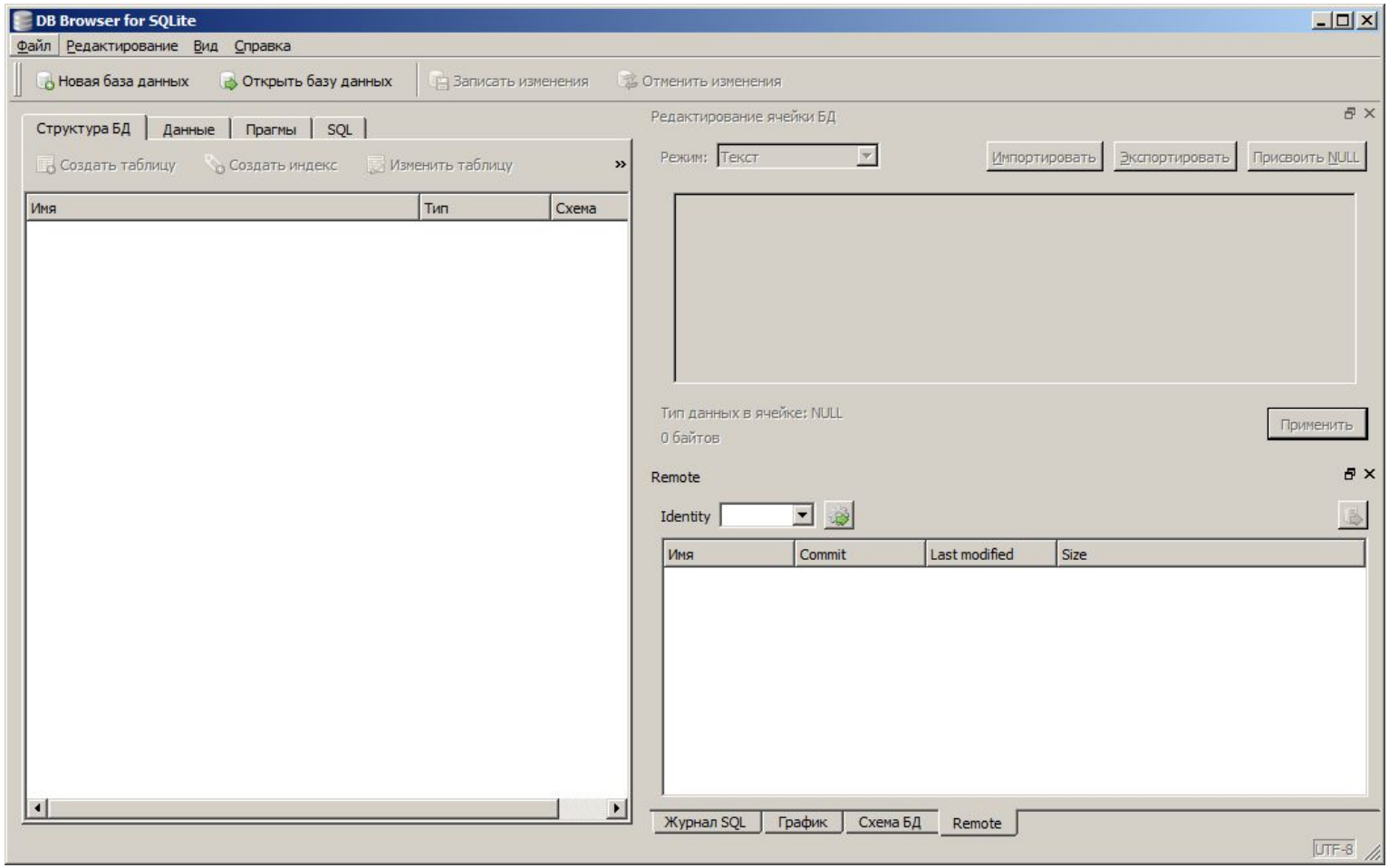
Специальные параметры полей

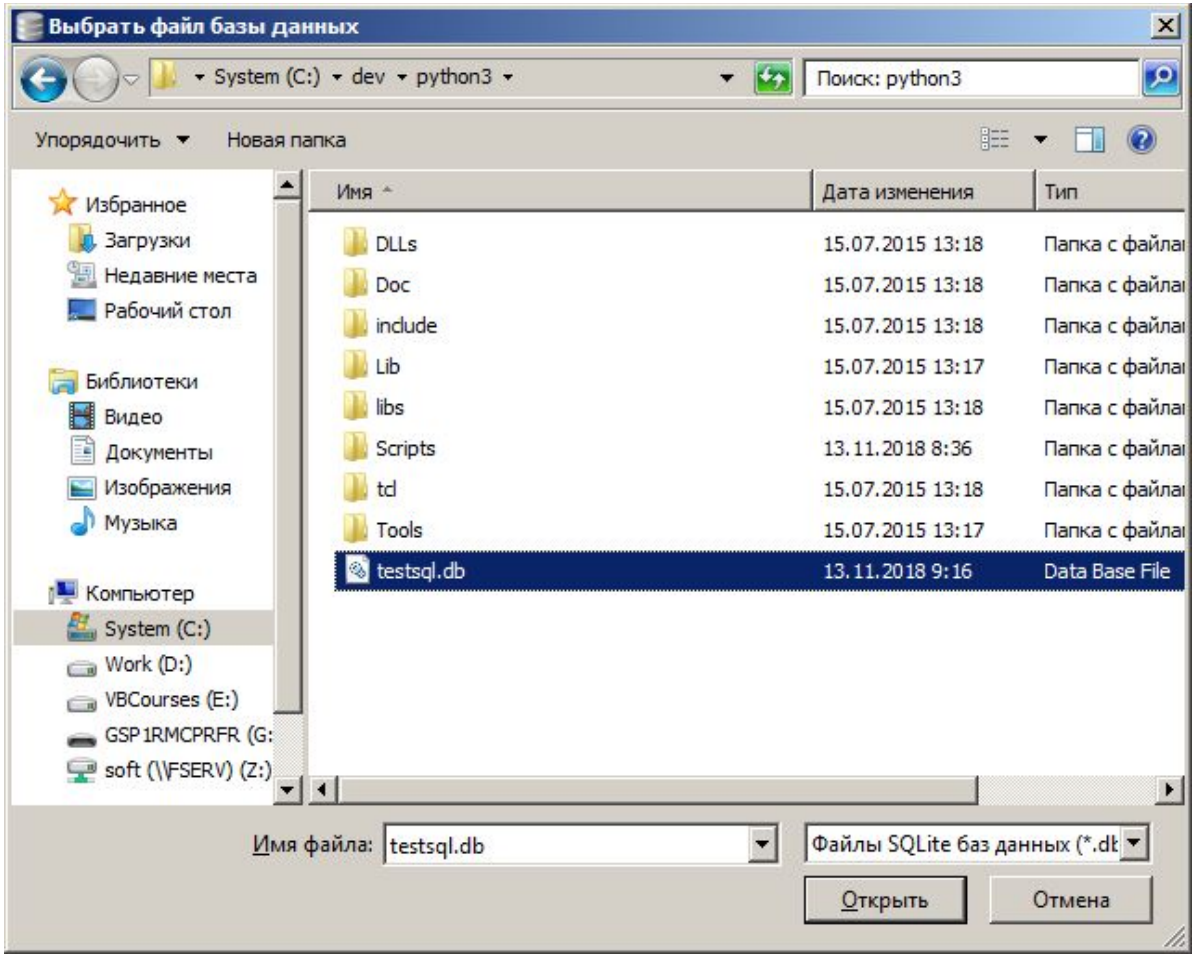
Field type	Special Parameters
CharField	max_length
FixedCharField	max_length
DateTimeField	formats
DateField	formats
TimeField	formats
TimestampField	resolution, utc
DecimalField	max_digits, decimal_places, auto_round, rounding
ForeignKeyField	model, field, backref, on_delete, on_update, deferrable
BareField	adapt

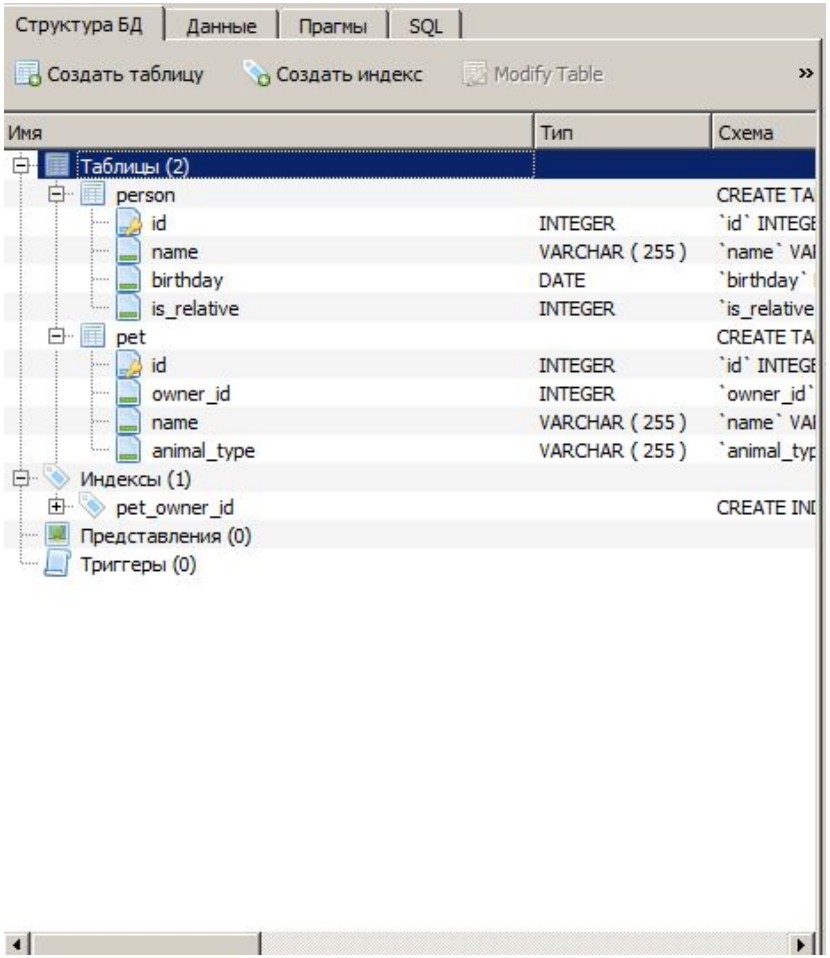
```python
from peewee import *

db=SqliteDatabase('testsql.db')

class Person(Model):
    name=CharField()
    birthday=DateField()
    is_relative=BooleanField()

    class Meta:
        database=db


class Pet(Model):
    owner = ForeignKeyField(Person, related_name='pets')
    name = CharField()
    animal_type=CharField()

    class Meta:
        database=db


Person.create_table()
Pet.create_table()
```

https://sqlitebrowser.org/




DB Browser for SQLite
Файл
Редактирование
Вид
Справка
Новая база данных
Открыть базу данных
Записать изменения
Отменить изменения
Структура БД
Данные
Прагмы
SQL
Создать таблицу
Создать индекс
Изменить таблицу
Имя
Тип
Схема
Редактирование ячейки БД
Режим:
Текст
Импортировать
Экспортировать
Присвоить NULL
Тип данных в ячейке: NULL
0 байтов
Применить
Remote
Identity
Имя
Commit
Last modified
Size
Журнал SQL
График
Схема БД
Remote
UTF-8


Выбрать файл базы данных
System (C:) dev python3
Поиск: python3
Упорядочить
Новая папка
Избранное
Загрузки
Недавние места
Рабочий стол
Библиотеки
Видео
Документы
Изображения
Музыка
Компьютер
System (C:)
Work (D:)
VBCourses (E:)
GSP1RMCPRFR (G:
soft (\\FSERV) (Z:)
Имя
Дата изменения
Тип
DLLs 15.07.2015 13:18 Папка с файлам
Doc 15.07.2015 13:18 Папка с файлам
include 15.07.2015 13:18 Папка с файлам
Lib 15.07.2015 13:17 Папка с файлам
libs 15.07.2015 13:18 Папка с файлам
Scripts 13.11.2018 8:36 Папка с файлам
tcl 15.07.2015 13:18 Папка с файлам
Tools 15.07.2015 13:17 Папка с файлам
testsql.db 13.11.2018 9:16 Data Base File
Имя файла: testsql.db
Файлы SQLite баз данных (*.db
Открыть
Отмена


Структура БД
Данные
Прагмы
SQL
Создать таблицу
Создать индекс
Modify Table
Имя
Тип
Схема
Таблицы (2)
person
CREATE TA
id
INTEGER
`id` INTEGE
name
VARCHAR (255)
`name` VAI
birthday
DATE
`birthday`
is_relative
INTEGER
`is_relative
pet
CREATE TA
id
INTEGER
`id` INTEGE
owner_id
INTEGER
`owner_id`
name
VARCHAR (255)
`name` VAI
animal_type
VARCHAR (255)
`animal_typ
Индексы (1)
pet_owner_id
CREATE IN
Представления (0)
Триггеры (0)

Использование save

```
uncle_bob=Person(name='Bob', birthday=date(1975,1,8),is_relative=True)
uncle_bob.save()
```

id	name	birthday	is_relative
Фильтр	Фильтр	Фильтр	Фильтр
1	Bob	1975-01-08	1

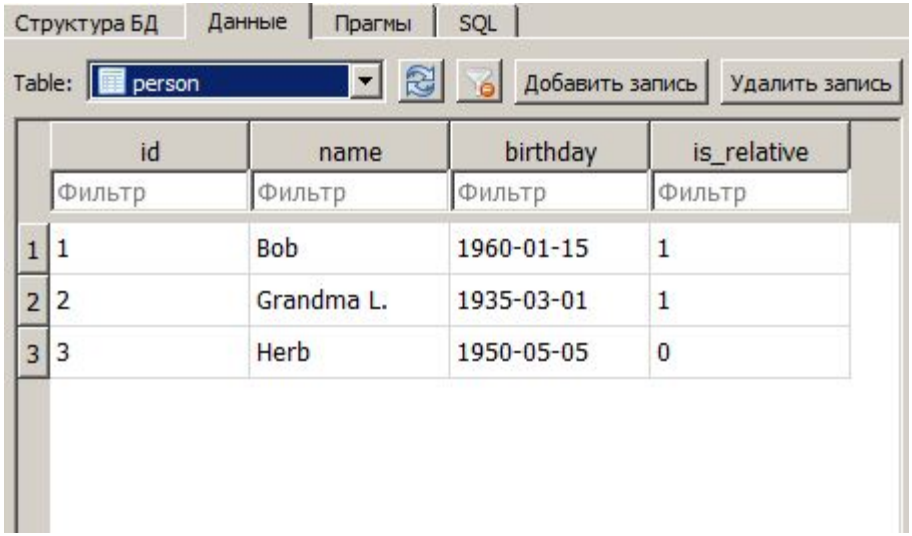
Использование create

```
granma=Person.create(name='Ann',birthday=date(1902,5,7),is_relative=True)
herb=Person.create(name='Herb',birthday=date(1930,7,7),is_relative=False)
```

id	name	birthday	is_relative
ильтр	Фильтр	Фильтр	Фильтр
	Bob	1975-01-08	1
	Ann	1902-05-07	1
	Herb	1930-07-07	0

Изменение записей

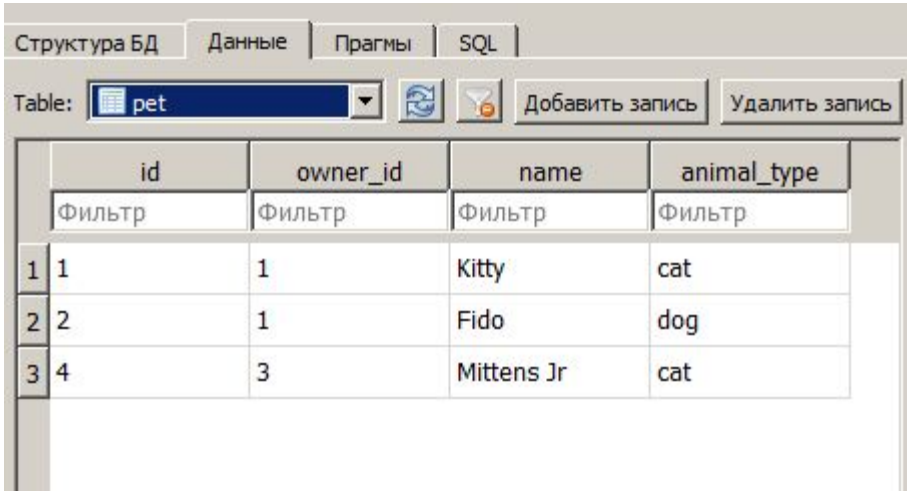
```
grandma.name = 'Grandma L.'
grandma.save()
```



```
bob_kitty = Pet.create(owner=uncle_bob, name='Kitty', animal_type='cat')
herb_fido = Pet.create(owner=herb, name='Fido', animal_type='dog')
herb_mittens = Pet.create(owner=herb, name='Mittens', animal_type='cat')
herb_mittens_jr = Pet.create(owner=herb, name='Mittens Jr', animal_type='cat')
```

	id	owner_id	name	animal_type
	Фильтр	Фильтр	Фильтр	Фильтр
1	1	1	Kitty	cat
2	2	3	Fido	dog
3	3	3	Mittens	cat
4	4	3	Mittens Jr	cat

```
herb_mittens.delete_instance()
herb_fido.owner = uncle_bob
herb_fido.save()
bob_fido = herb_fido
```



Извлечение одной записи SelectQuery.get()

```
grandma = Person.select().where(Person.name == 'Grandma L.').get()
print(grandma)
grandma = Person.get(Person.name == 'Grandma L.')
print(grandma)
```

```
C:\dev\python3>python sqlite005.py
2
2
```

Извлечение нескольких записей

```
for person in Person.select():
    print (person.name, person.is_relative)
```

```
C:\dev\python3>python sqlite006.py
Bob True
Grandma L. True
Herb False
```

```
for person in Person.select():
    print (person.name, person.is_relative)
print('\n')

for person in Person.select():
    print (person.name, person.pets.count(), 'pets')
    for pet in person.pets:
        print ('    ', pet.name, pet.animal_type)
print('\n')

for pet in Pet.select().where(Pet.animal_type == 'cat'):
    print (pet.name, pet.owner.name)
print('\n')
```


C:\dev\python3>python sqlite006.py
Bob True
Grandma L. True
Herb False
Bob 2 pets
Kitty cat
Fido dog
Grandma L. 0 pets
Herb 1 pets
Mittens Jr cat
Kitty Bob
Mittens Jr Herb

Использование join

```
for pet in Pet.select().join(Person).where(Person.name == 'Bob'):
    print (pet.name)
print('\n')

#for pet in Pet.select().where(Pet.owner == uncle_bob):
#    print (pet.name)
#print('\n')
```

```
C:\dev\python3>python sqlite007.py
Kitty
Fido
```

Сортировка по алфавиту SelectQuery.order_by()

```
for pet in Pet.select().join(Person).where(Person.name == 'Bob'):
    print (pet.name)
print('\n')

#for pet in Pet.select().where(Pet.owner == uncle_bob):
#   print (pet.name)

for pet in Pet.select().join(Person).where(Person.name == 'Bob').order_by(Pet.name):
    print (pet.name)
print('\n')

#for pet in Pet.select().where(Pet.owner == uncle_bob).order_by(Pet.name):
#   print (pet.name)
```

```
C:\dev\python3>python sqlite008.py
Kitty
Fido


Fido
Kitty
```

Упорядочивание по возрасту

```
for person in Person.select().order_by(Person.birthday.desc()):
    print (person.name)
```

```
C:\dev\python3>python sqlite010.py
Bob
Herb
Grandma L.
```

Фильтр по дате

```
d1940 = date(1940, 1, 1)
d1960 = date(1960, 1, 1)
for person in Person.select().where((Person.birthday < d1940) | (Person.birthday > d1960)):
    print (person.name)
```

```
C:\dev\python3>python sqlite010.py
Bob
Herb
Grandma L.


Bob
Grandma L.
```

or не всегда работает

```
for person in Person.select().where((Person.birthday < d1940) or (Person.birthday > d1960)):
    print (person.name)
```

```
Grandma L.
```

```
for person in Person.select().where((Person.birthday > d1940) & (Person.birthday < d1960)):
    print (person.name)
```

Персонажи, начинающиеся с буквы g

```
for person in Person.select().where(fn.Lower(fn.Substr(Person.name, 1, 1)) == 'g'):
    print (person.name)
```

```
C:\dev\python3>python sqlite011.py
Grandma L.
```

SelectQuery.group_by()

SelectQuery.having()

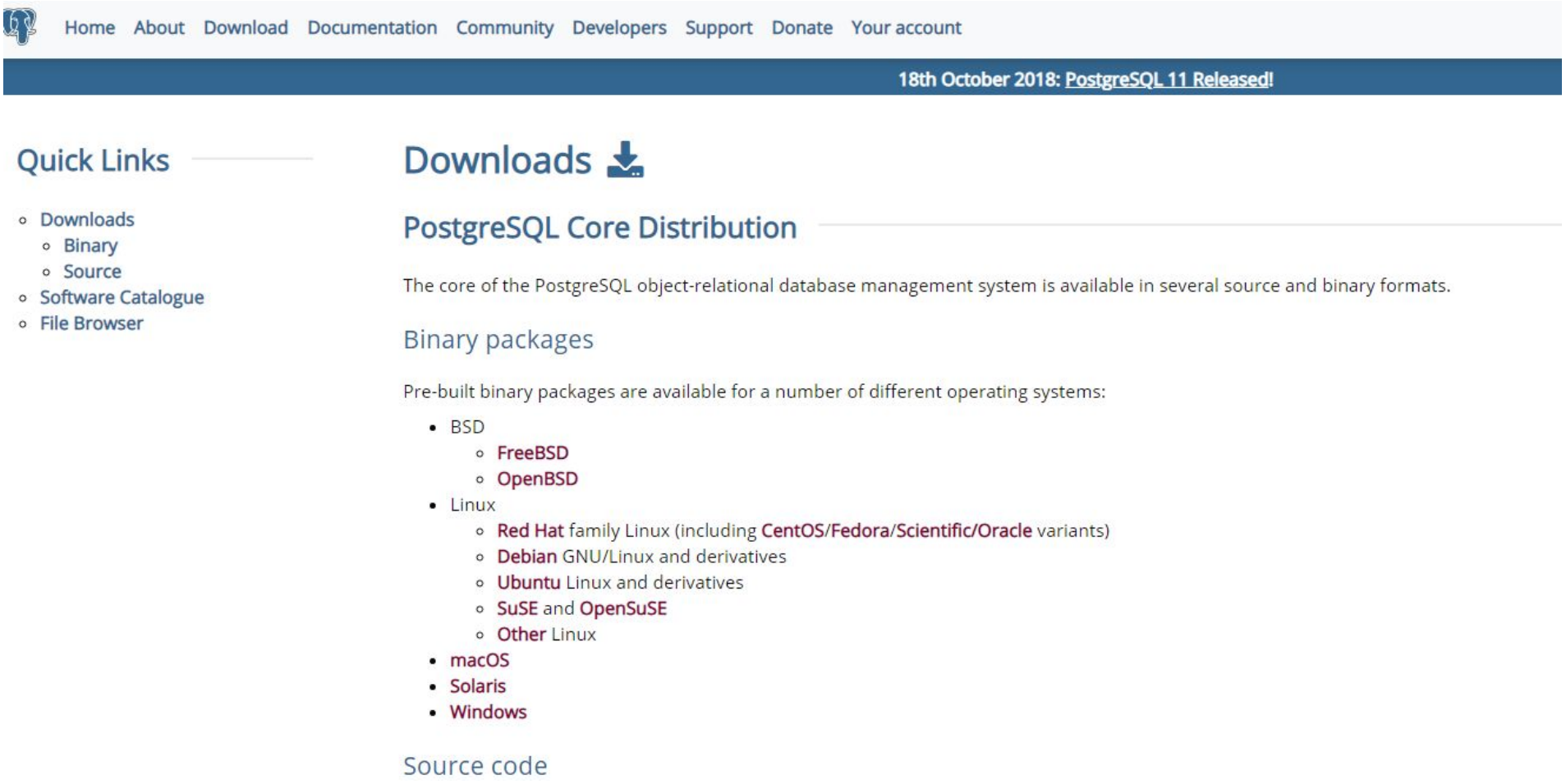
SelectQuery.limit()

SelectQuery.offset()

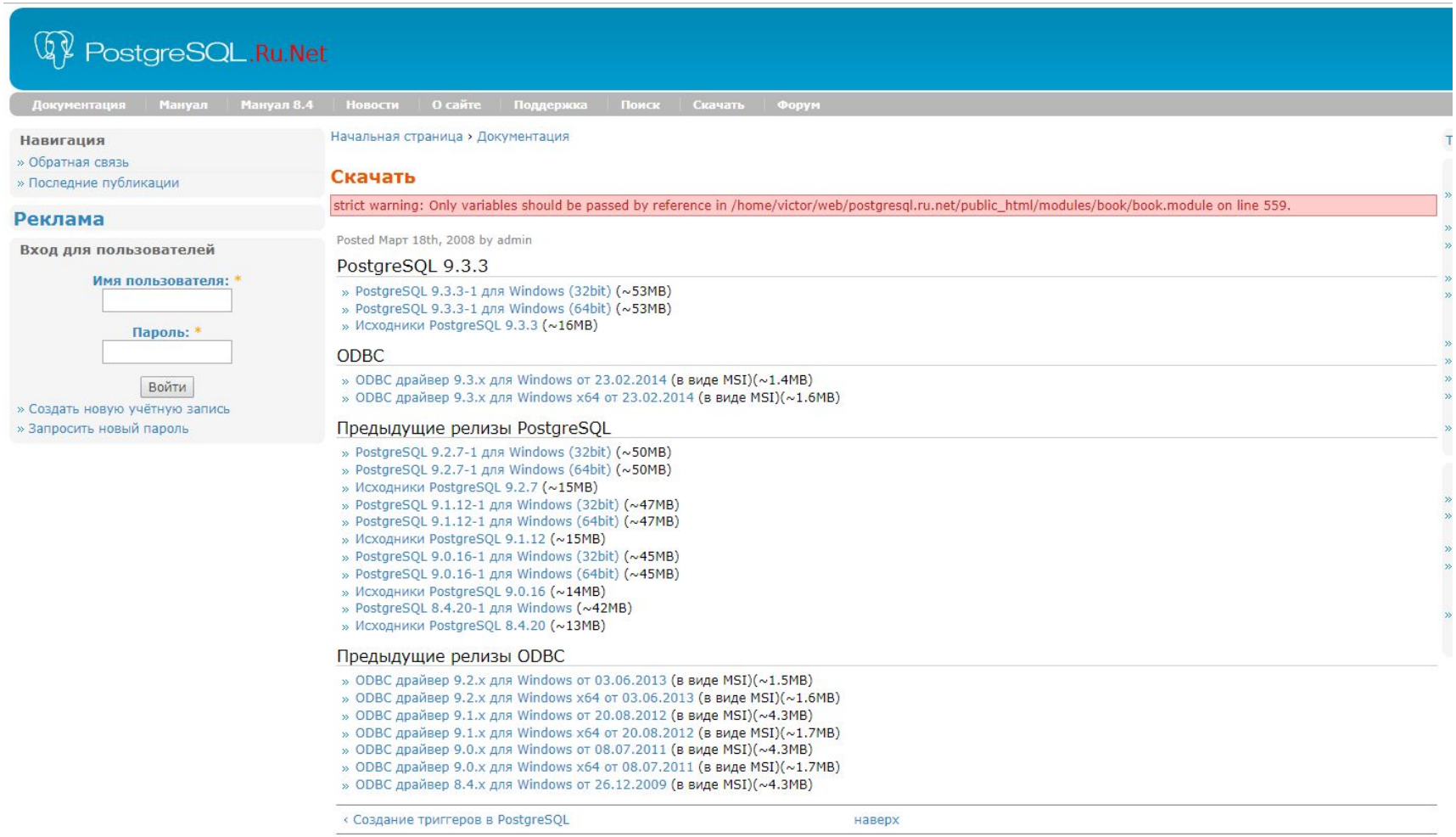
Python

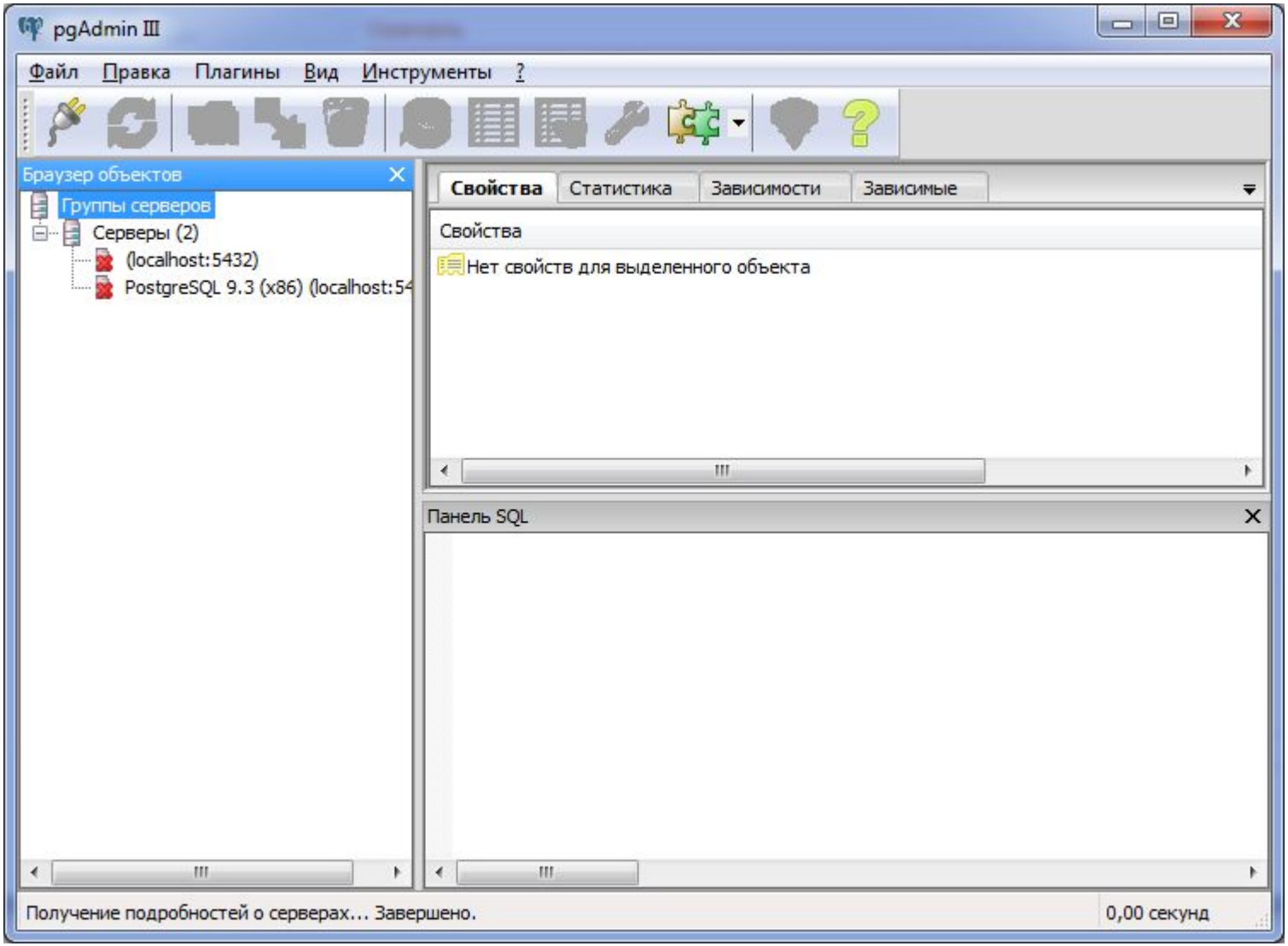
Postgre

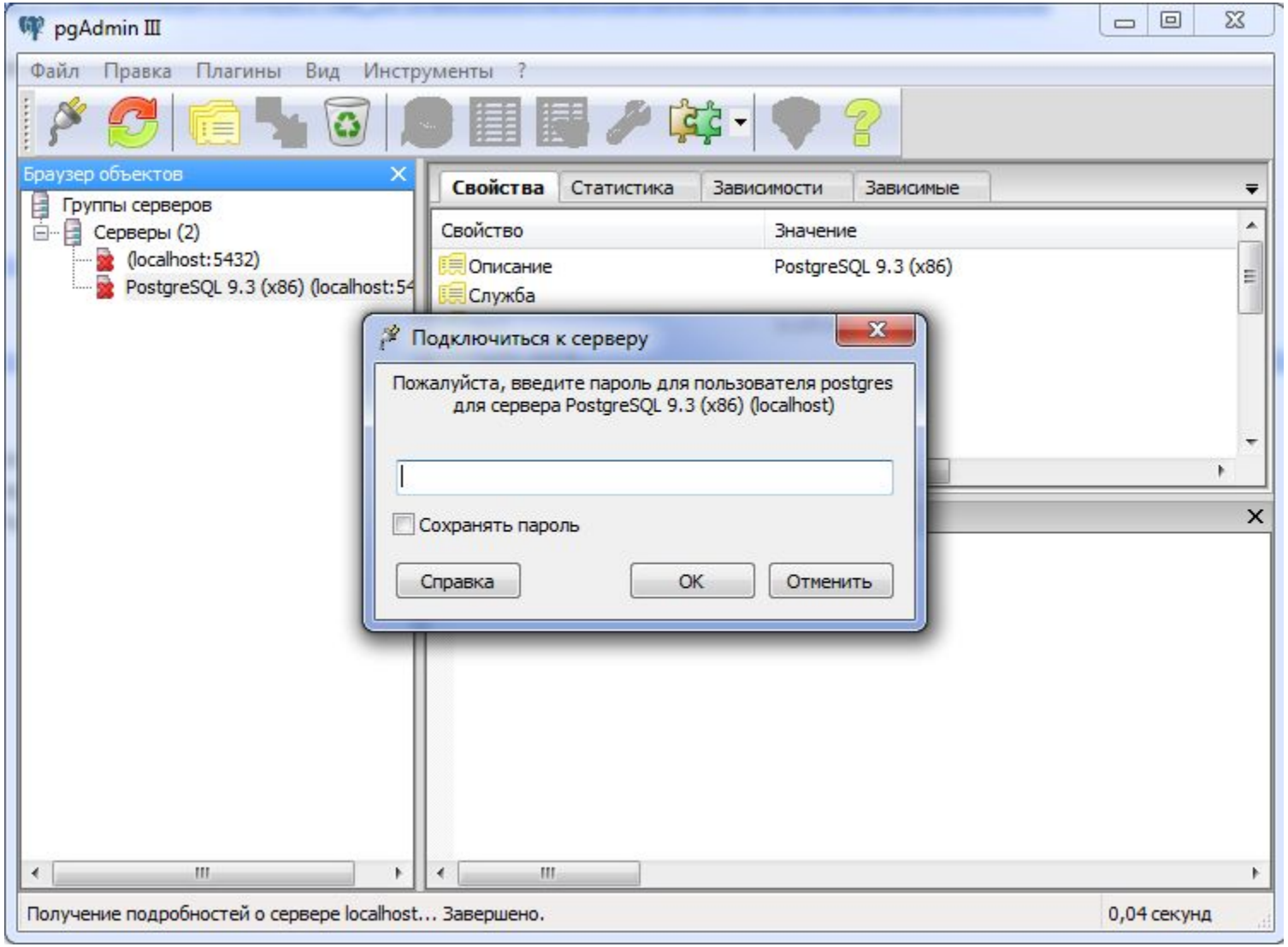
https://www.postgresql.org/download/

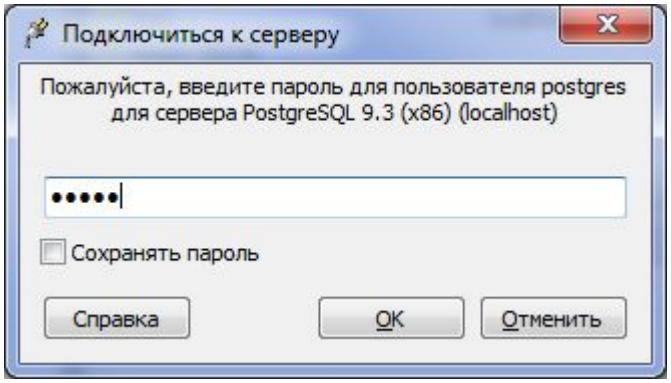


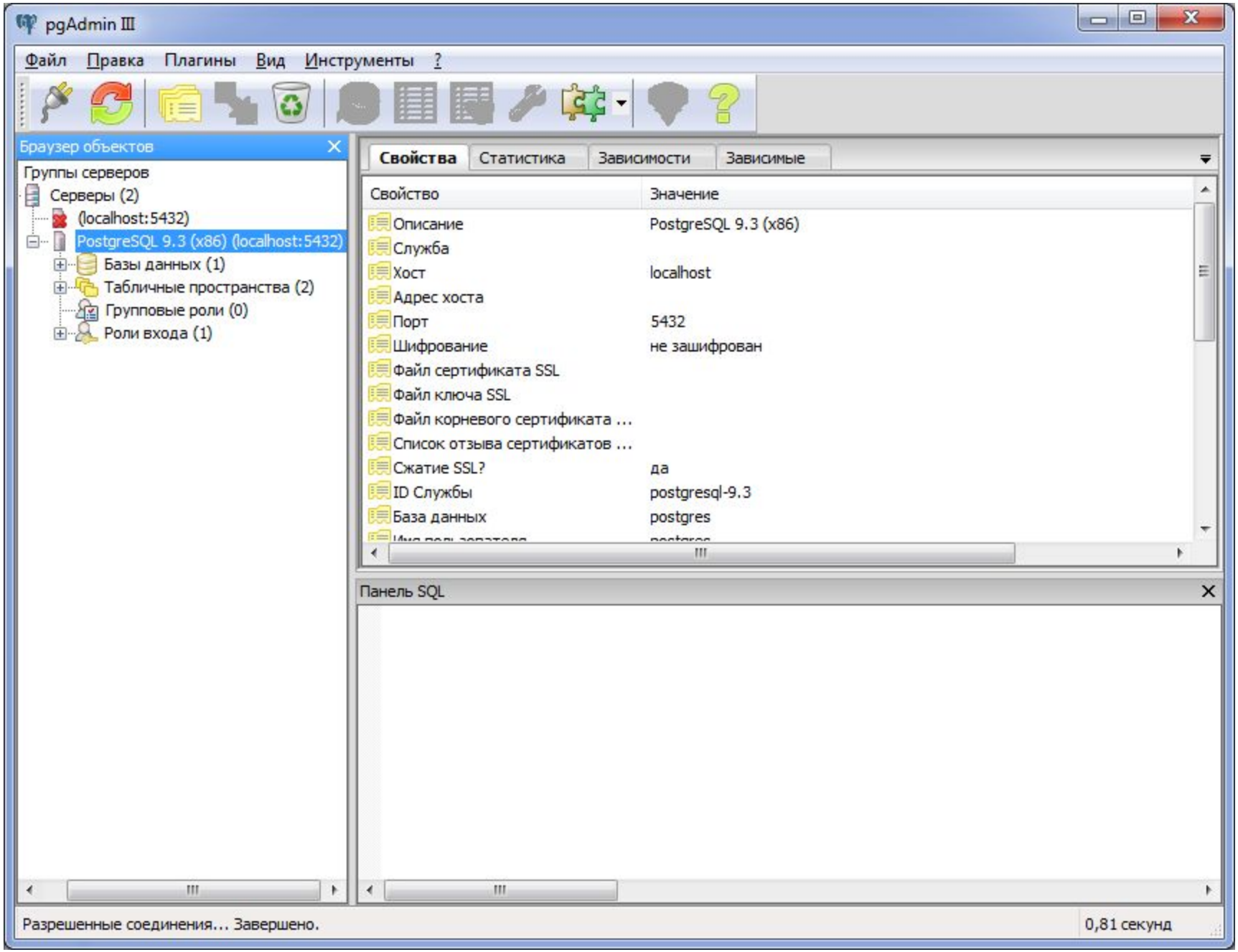
http://postgresql.ru.net/

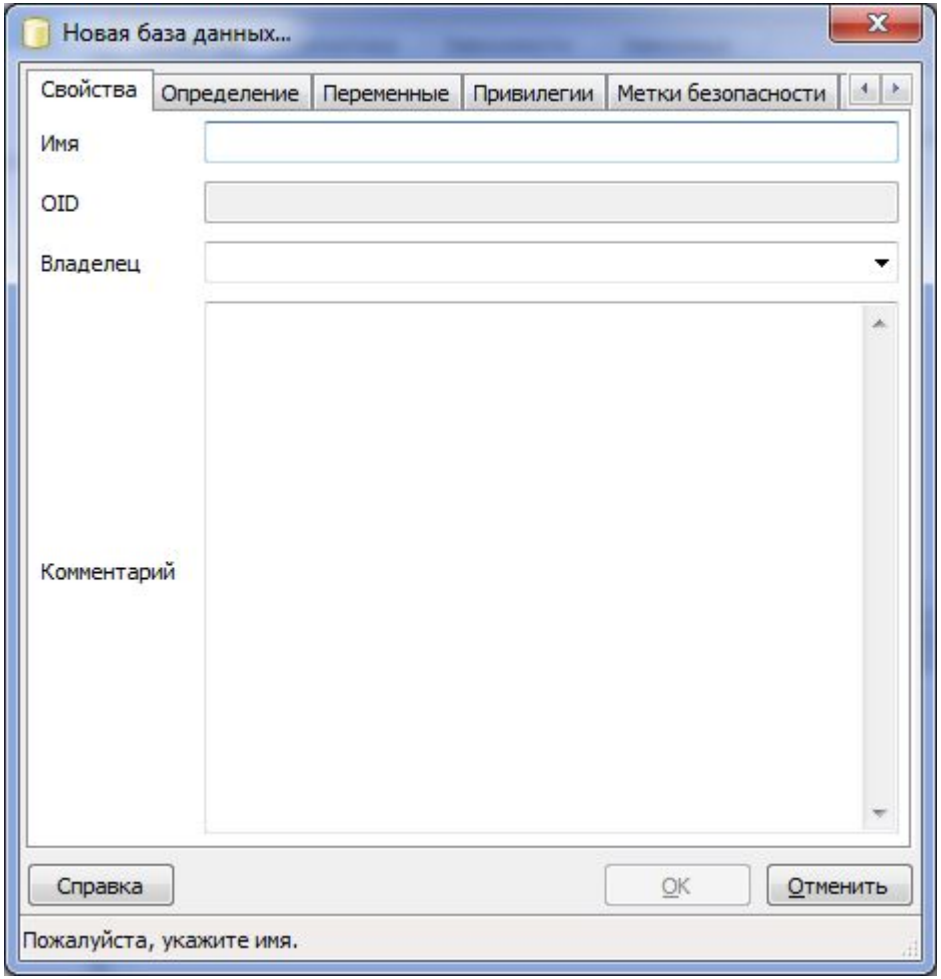


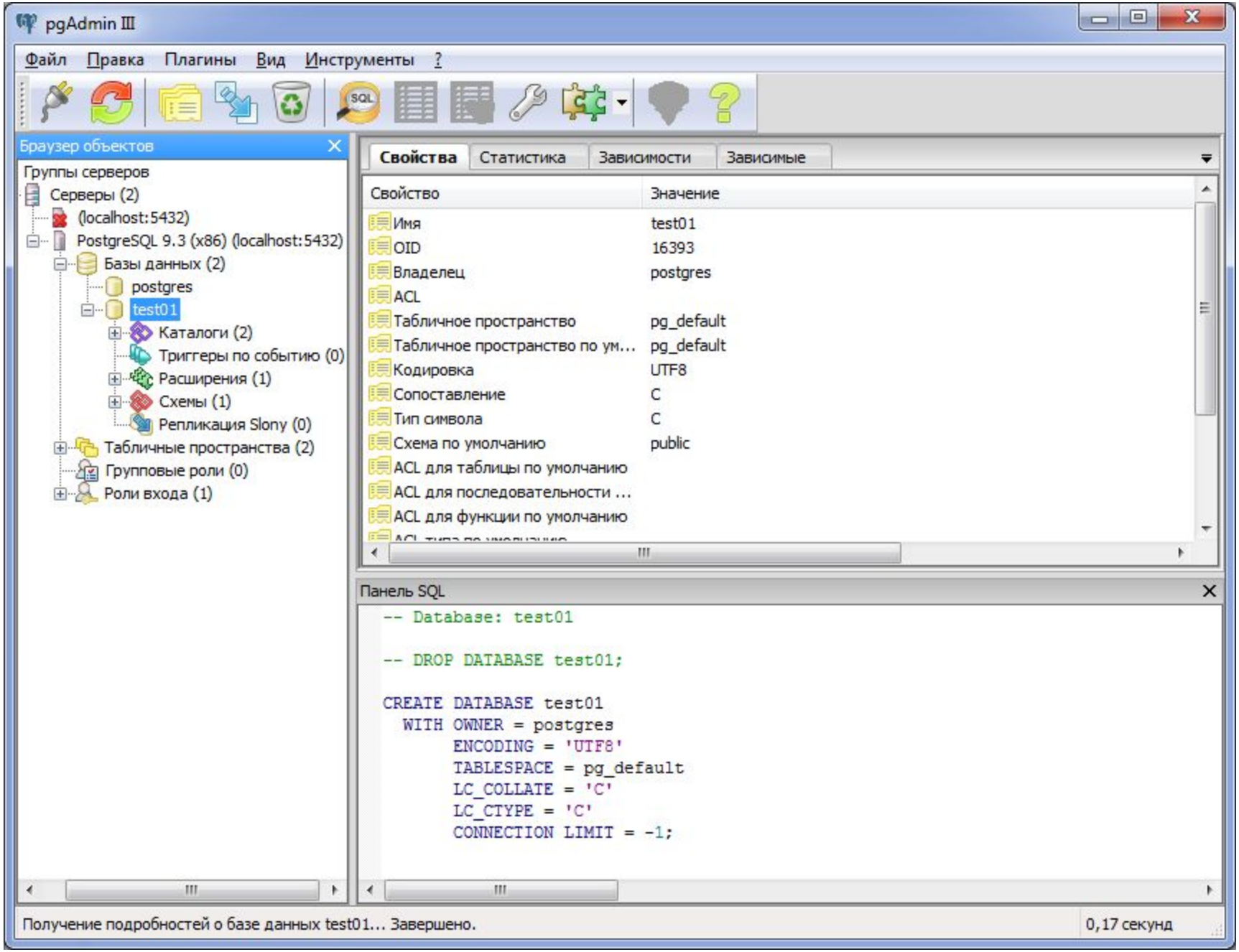

pgAdmin III
Файл
Правка
Плагины
Вид
Инструменты
?
Браузер объектов
Группы серверов
Серверы (2)
(localhost:5432)
PostgreSQL 9.3 (x86) (localhost:54
Свойства
Статистика
Зависимости
Зависимые
Свойства
Нет свойств для выделенного объекта
Панель SQL
Получение подробностей о серверах... Завершено.
0,00 секунд


pgAdmin III
Файл Правка Плагины Вид Инструменты ?
Браузер объектов
Группы серверов
Серверы (2)
(localhost:5432)
PostgreSQL 9.3 (x86) (localhost:54
Свойства Статистика Зависимости Зависимые
Свойство
Значение
Описание
PostgreSQL 9.3 (x86)
Служба
Подключиться к серверу
Пожалуйста, введите пароль для пользователя postgres
для сервера PostgreSQL 9.3 (x86) (localhost)
Сохранять пароль
Справка
OK
Отменить
Получение подробностей о сервере localhost... Завершено.
0,04 секунд

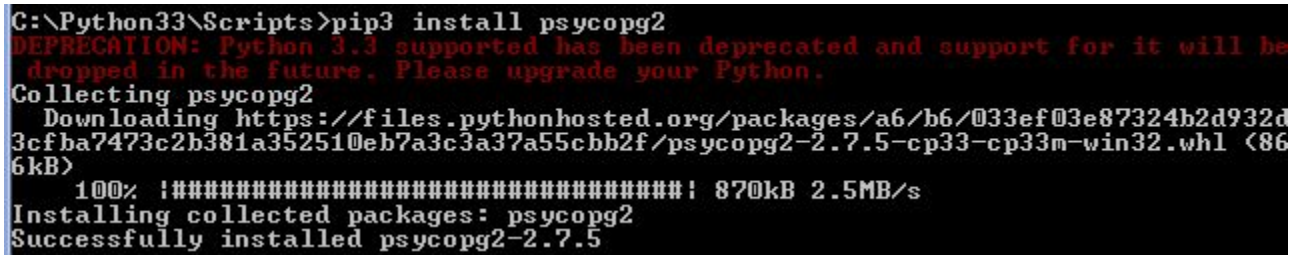

Подключиться к серверу
Пожалуйста, введите пароль для пользователя postgres
для сервера PostgreSQL 9.3 (x86) (localhost)
Сохранять пароль
Справка
OK
Отменить


pgAdmin III
Файл Правка Плагины Вид Инструменты ?
Браузер объектов
Группы серверов
Серверы (2)
(localhost:5432)
PostgreSQL 9.3 (x86) (localhost:5432)
Базы данных (1)
Табличные пространства (2)
Групповые роли (0)
Роли входа (1)
Свойства
Статистика
Зависимости
Зависимые
Свойство
Значение
Описание
PostgreSQL 9.3 (x86)
Служба
Хост
localhost
Адрес хоста
Порт
5432
Шифрование
не зашифрован
Файл сертификата SSL
Файл ключа SSL
Файл корневого сертификата ...
Список отзыва сертификатов ...
Сжатие SSL?
да
ID Службы
postgresql-9.3
База данных
postgres
Панель SQL
Разрешенные соединения... Завершено.
0,81 секунд


Новая база данных...
Свойства
Определение
Переменные
Привилегии
Метки безопасности
Имя
OID
Владелец
Комментарий
Справка
OK
Отменить
Пожалуйста, укажите имя.


pgAdmin III
Файл Правка Плагины Вид Инструменты ?
Браузер объектов
Группы серверов
Серверы (2)
(localhost:5432)
PostgreSQL 9.3 (x86) (localhost:5432)
Базы данных (2)
postgres
test01
Каталоги (2)
Триггеры по событию (0)
Расширения (1)
Схемы (1)
Репликация Slony (0)
Табличные пространства (2)
Групповые роли (0)
Роли входа (1)
Свойства
Статистика
Зависимости
Зависимые
Свойство
Значение
Имя
test01
OID
16393
Владелец
postgres
ACL
Табличное пространство
pg_default
Табличное пространство по ум...
pg_default
Кодировка
UTF8
Сопоставление
C
Тип символа
C
Схема по умолчанию
public
ACL для таблицы по умолчанию
ACL для последовательности ...
ACL для функции по умолчанию
Панель SQL
-- Database: test01
-- DROP DATABASE test01;
CREATE DATABASE test01
WITH OWNER = postgres
ENCODING = 'UTF8'
TABLESPACE = pg_default
LC_COLLATE = 'C'
LC_CTYPE = 'C'
CONNECTION LIMIT = -1;
Получение подробностей о базе данных test01... Завершено.
0,17 секунд

pip install psycopg2



pip install psycopg2-binary

```
C:\Python33\Scripts>pip3 install psycopg2-binary
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
 dropped in the future. Please upgrade your Python.
Collecting psycopg2-binary
  Downloading https://files.pythonhosted.org/packages/10/f0/315e888be02421a189d3
19d4eee21b3d3b144947a10e51c05c89ad07c482/psycopg2_binary-2.7.5-cp33-cp33m-win32.
whl (866kB)
    100% |################################| 870kB 2.4MB/s
Installing collected packages: psycopg2-binary
Successfully installed psycopg2-binary-2.7.5
```

pip freeze

```
C:\Python33\Scripts>pip freeze
DEPRECATION: Python 3.3 supported has been deprecated and support for it will be
 dropped in the future. Please upgrade your Python.
beautifulsoup4==4.6.3
lxml==4.2.5
peewee==3.7.1
psycopg2==2.7.5
psycopg2-binary==2.7.5
```

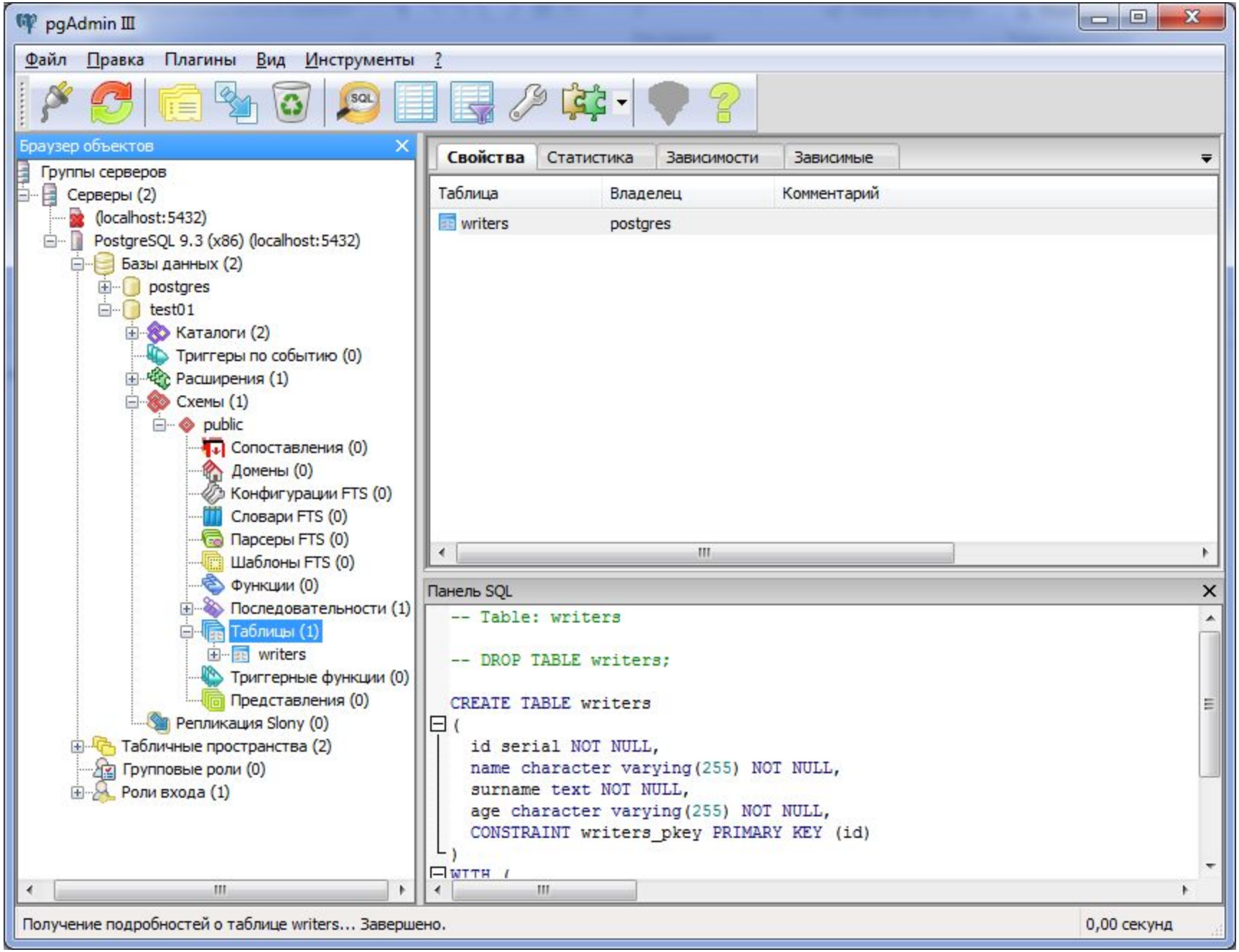
Чтение csv

```
import csv

with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    for i in reader:
        print (i)
```

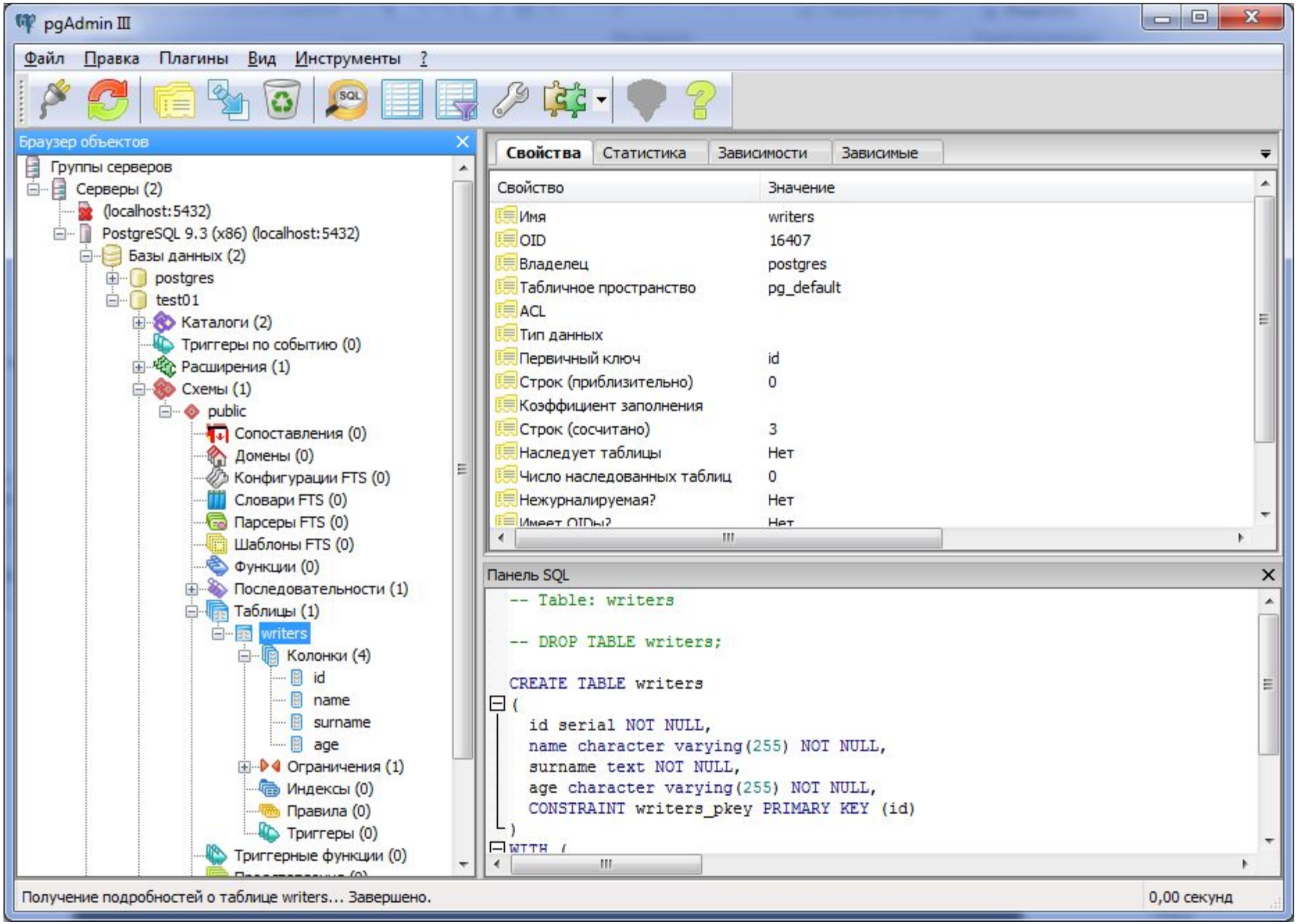
```
C:\Python33>python pg001.py
{'age': '44', 'surname': 'Romanov', 'name': 'Pert'}
{'age': '34', 'surname': 'Lenin', 'name': 'Vlodimir'}
{'age': '74', 'surname': 'Tolstoy', 'name': 'Lev'}
```

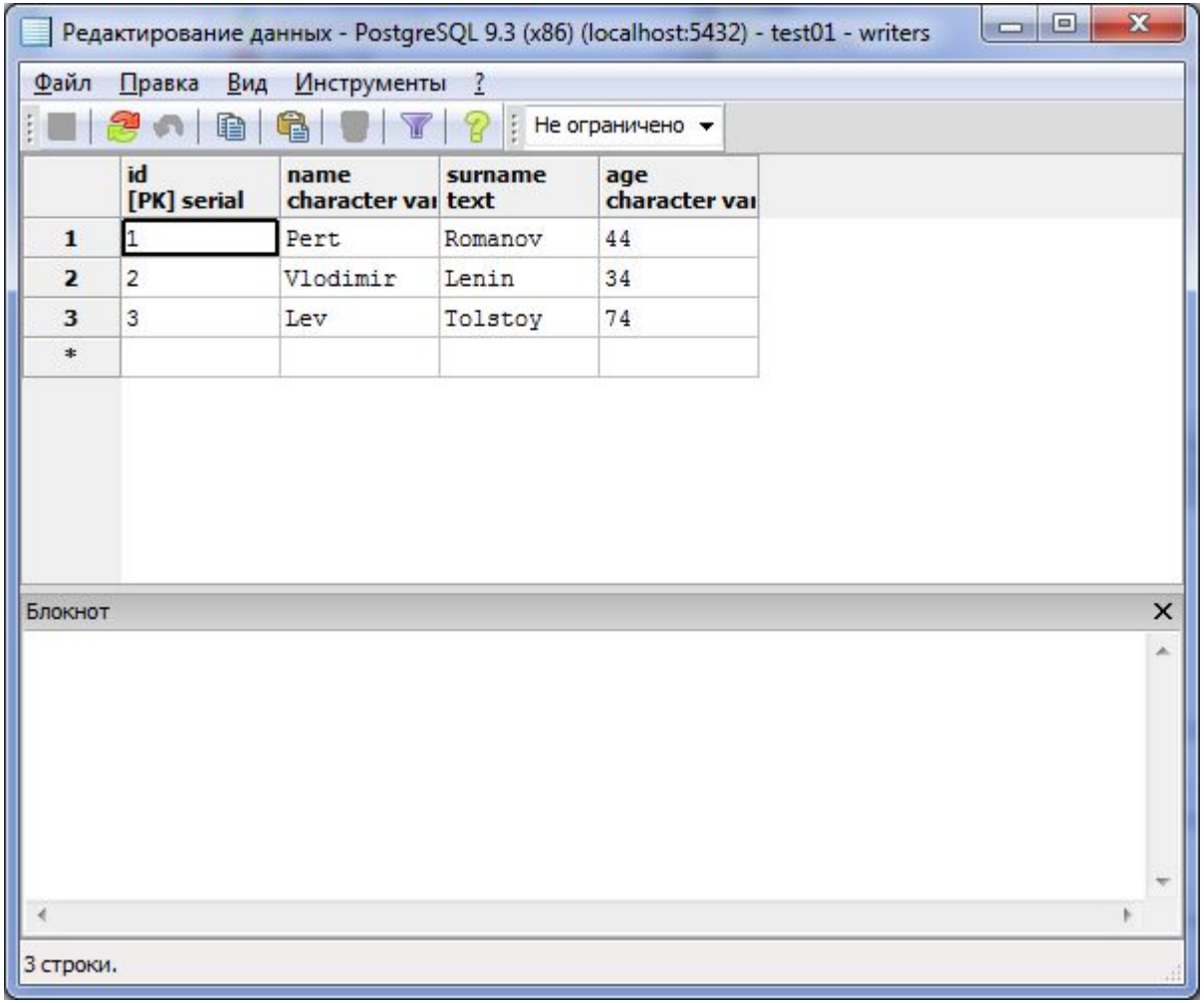
Соединение с БД и создание таблицы

```
import csv
from peewee import *

db=PostgresqlDatabase(database='test01',user='postgres',password='12345',host='localhost')

class Writers(Model):
    name=CharField(max_length=255)
    surname=TextField()
    age=CharField()

    class Meta:
        database=db


db.connect()
db.create_tables([Writers])

with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    for i in reader:
        print (i)
```


pgAdmin III
Файл Правка Плагины Вид Инструменты ?
Браузер объектов
Группы серверов
Серверы (2)
(localhost:5432)
PostgreSQL 9.3 (x86) (localhost:5432)
Базы данных (2)
postgres
test01
Каталоги (2)
Триггеры по событию (0)
Расширения (1)
Схемы (1)
public
Сопоставления (0)
Домены (0)
Конфигурации FTS (0)
Словари FTS (0)
Парсеры FTS (0)
Шаблоны FTS (0)
Функции (0)
Последовательности (1)
Таблицы (1)
writers
Триггерные функции (0)
Представления (0)
Репликация Slony (0)
Табличные пространства (2)
Групповые роли (0)
Роли входа (1)
Свойства
Статистика
Зависимости
Зависимые
Таблица
Владелец
Комментарий
writers
postgres
Панель SQL
-- Table: writers
-- DROP TABLE writers;
CREATE TABLE writers
(
id serial NOT NULL,
name character varying(255) NOT NULL,
surname text NOT NULL,
age character varying(255) NOT NULL,
CONSTRAINT writers_pkey PRIMARY KEY (id)
)
Получение подробностей о таблице writers... Завершено.
0,00 секунд

```
db.connect()
db.create_tables([Writers])

with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    writers=list(reader)

    for i in writers:
        writer=Writers(name=i['name'], surname=i['surname'],age=i['age'])
        writer.save()
```


pgAdmin III
Файл Правка Плагины Вид Инструменты ?
Браузер объектов
Группы серверов
Серверы (2)
(localhost:5432)
PostgreSQL 9.3 (x86) (localhost:5432)
Базы данных (2)
postgres
test01
Каталоги (2)
Триггеры по событию (0)
Расширения (1)
Схемы (1)
public
Сопоставления (0)
Домены (0)
Конфигурации FTS (0)
Словари FTS (0)
Парсеры FTS (0)
Шаблоны FTS (0)
Функции (0)
Последовательности (1)
Таблицы (1)
writers
Колонки (4)
id
name
surname
age
Ограничения (1)
Индексы (0)
Правила (0)
Триггеры (0)
Триггерные функции (0)
Свойства Статистика Зависимости Зависимые
Свойство Значение
Имя writers
OID 16407
Владелец postgres
Табличное пространство pg_default
ACL
Тип данных
Первичный ключ id
Строк (приблизительно) 0
Коэффициент заполнения
Строк (сосчитано) 3
Наследует таблицы Нет
Число наследованных таблиц 0
Нежурналируемая? Нет
Панель SQL
-- Table: writers
-- DROP TABLE writers;
CREATE TABLE writers
(
id serial NOT NULL,
name character varying(255) NOT NULL,
surname text NOT NULL,
age character varying(255) NOT NULL,
CONSTRAINT writers_pkey PRIMARY KEY (id)
)
Получение подробностей о таблице writers... Завершено.
0,00 секунд


Редактирование данных - PostgreSQL 9.3 (x86) (localhost:5432) - test01 - writers
Файл Правка Вид Инструменты ?
Не ограничено
id [PK] serial
name character var
surname text
age character var
1 1 Pert Romanov 44
2 2 Vlodimir Lenin 34
3 3 Lev Tolstoy 74
*
Блокнот
3 строки.

db.atomic снижение нагрузки при записи БД

```
db.connect()
db.create_tables([Writers])

with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    writers=list(reader)

    with db.atomic():
        for i in writers:
            Writers.create(**i)
```

```
with open('writers2.csv') as file:
    order=['name','surname','age']
    reader=csv.DictReader(file, fieldnames=order)

    writers=list(reader)

    with db.atomic():
        for index in range(0,len(writers),100)
            Writers.insert_many(writers[index:index+100]).execute()
```

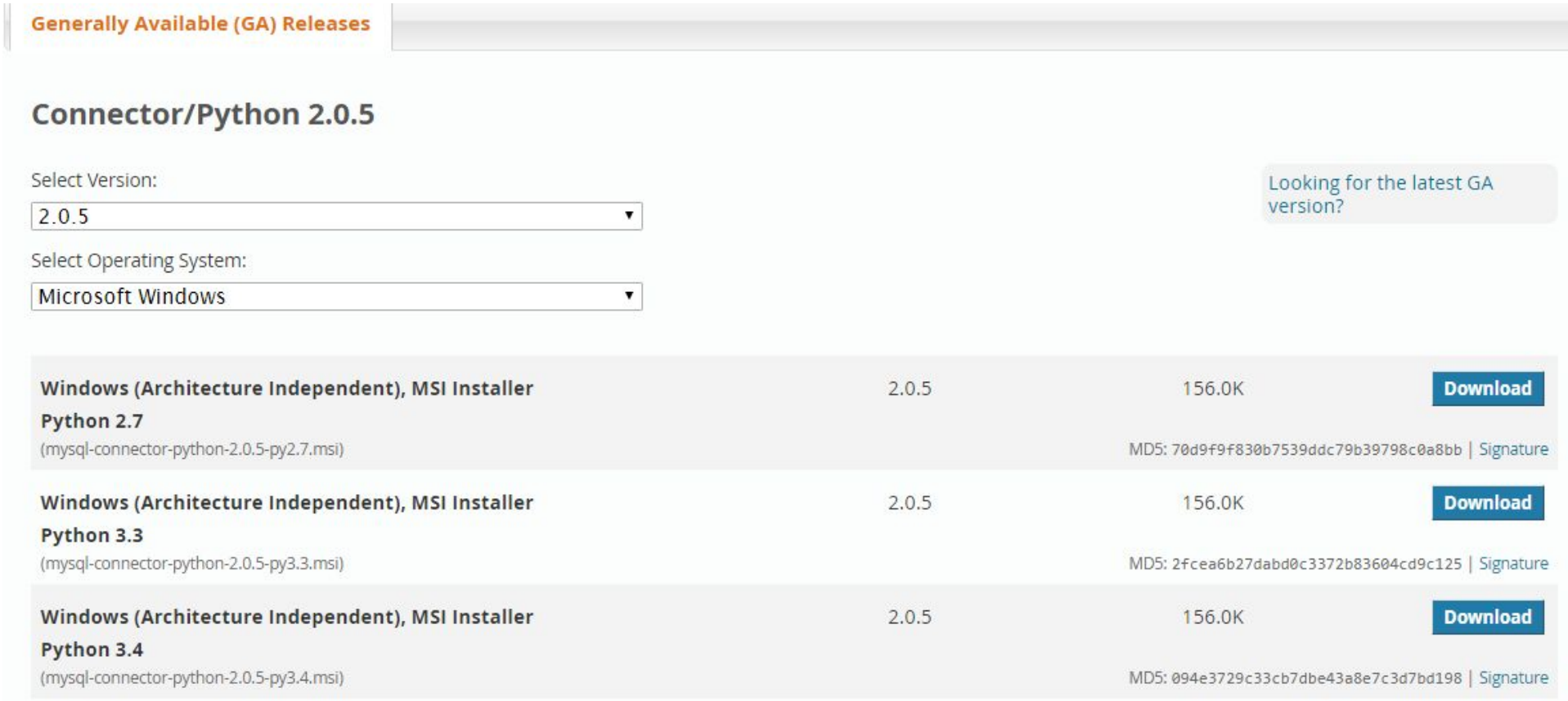
Наследование в ORM

- psql_db = PostgresqlDatabase('my_database', user='postgres')
- **class BaseModel**(Model):
- *pass*
- **class Meta**:
- database = psql_db
- **class User**(BaseModel):
- username = CharField()

MySQL

Коннектор

- https://dev.mysql.com/downloads/connector/python/2.0.html



https://www.mysql.com/downloads/

MySQL Community Downloads

MySQL Community Server (GPL)

(Current Generally Available Release: 8.0.13)

MySQL Community Server is the world's most popular open source database.

DOWNLOAD

Generally Available (GA) Releases

MySQL Community Server 8.0.13

Select Operating System:

Microsoft Windows

Looking for previous GA versions?

Recommended Download:

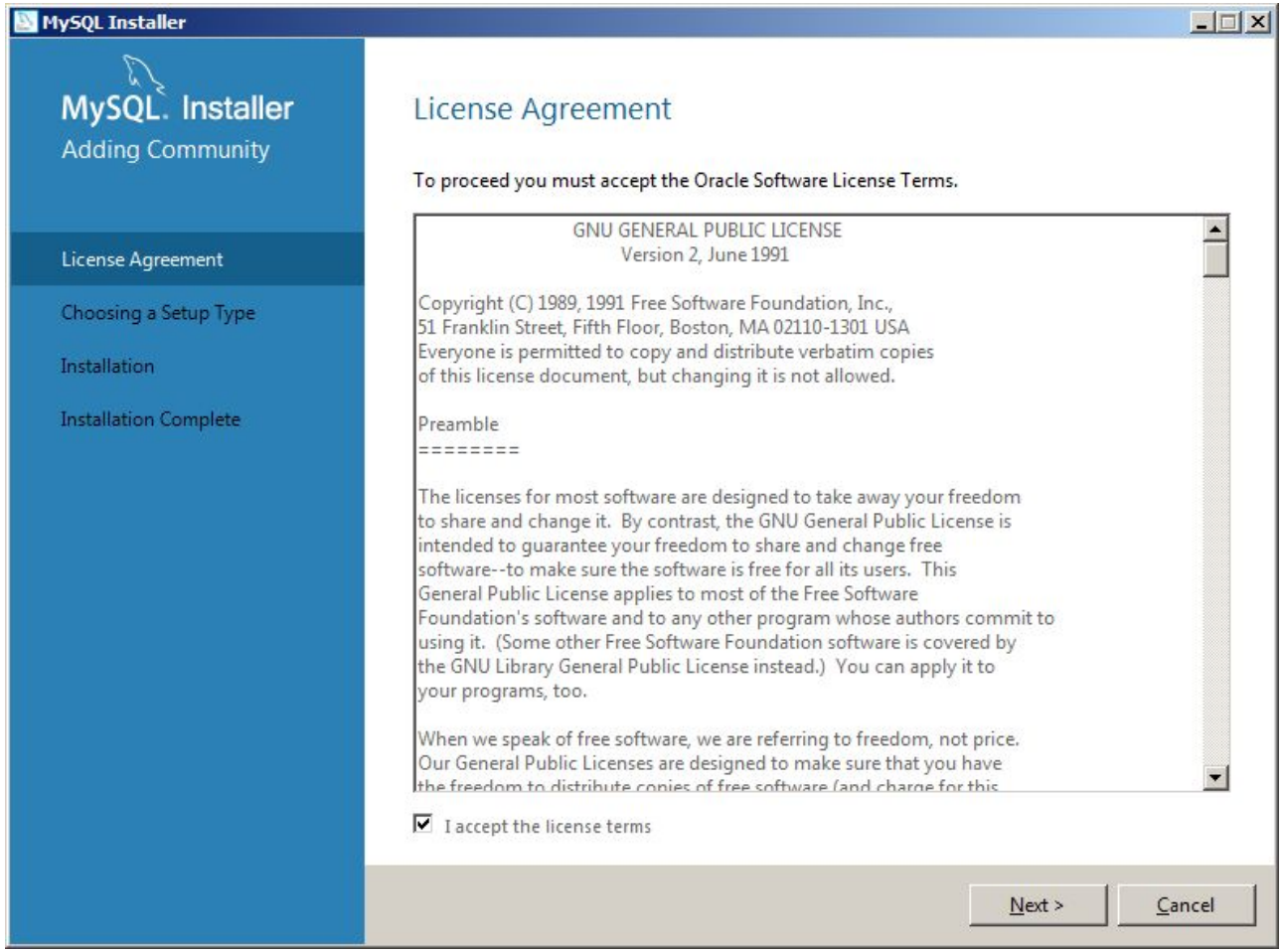
Windows (x86, 32 & 64-bit), MySQL Installer MSI — Go to Download Page >

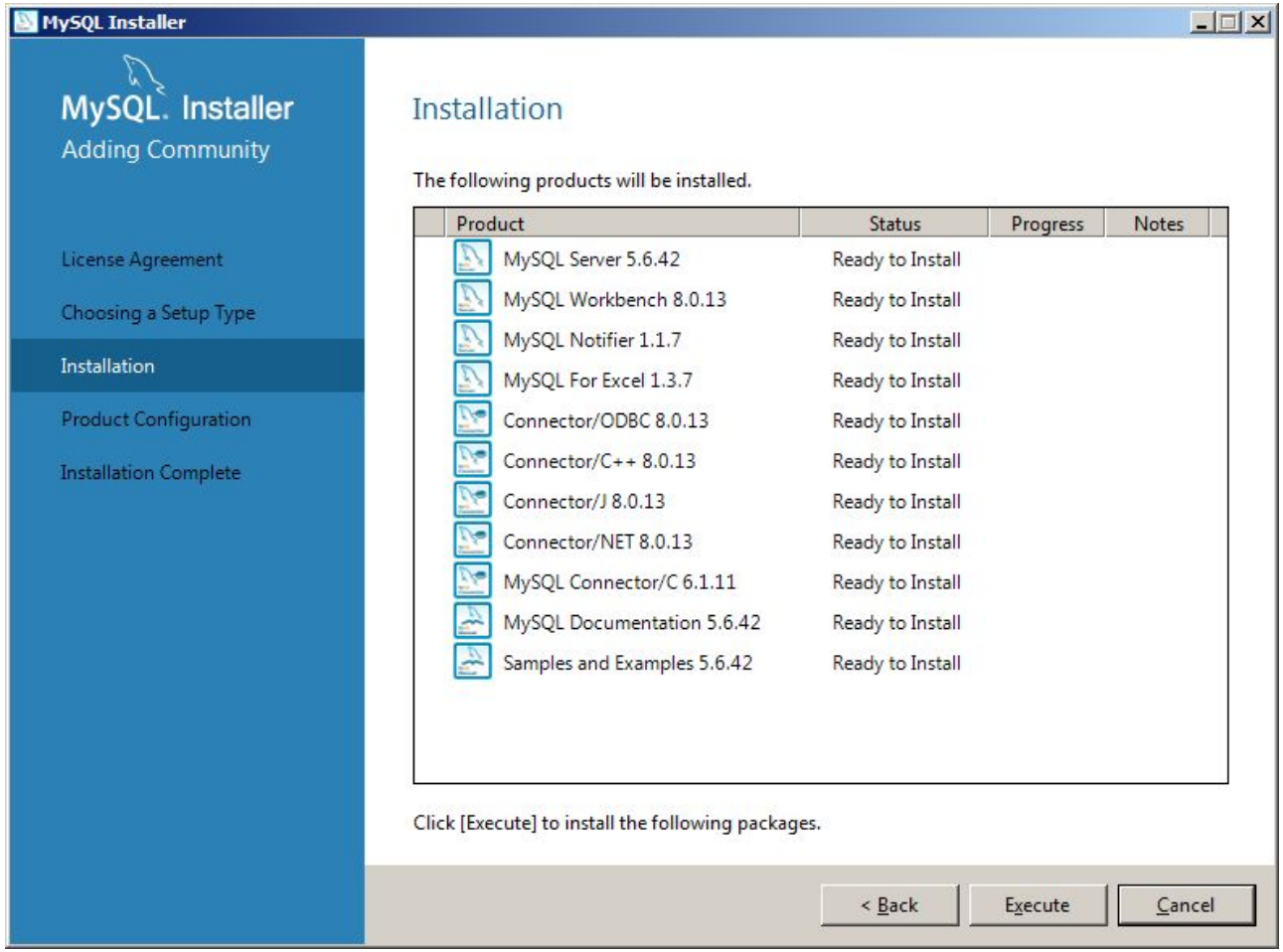
Other Downloads:

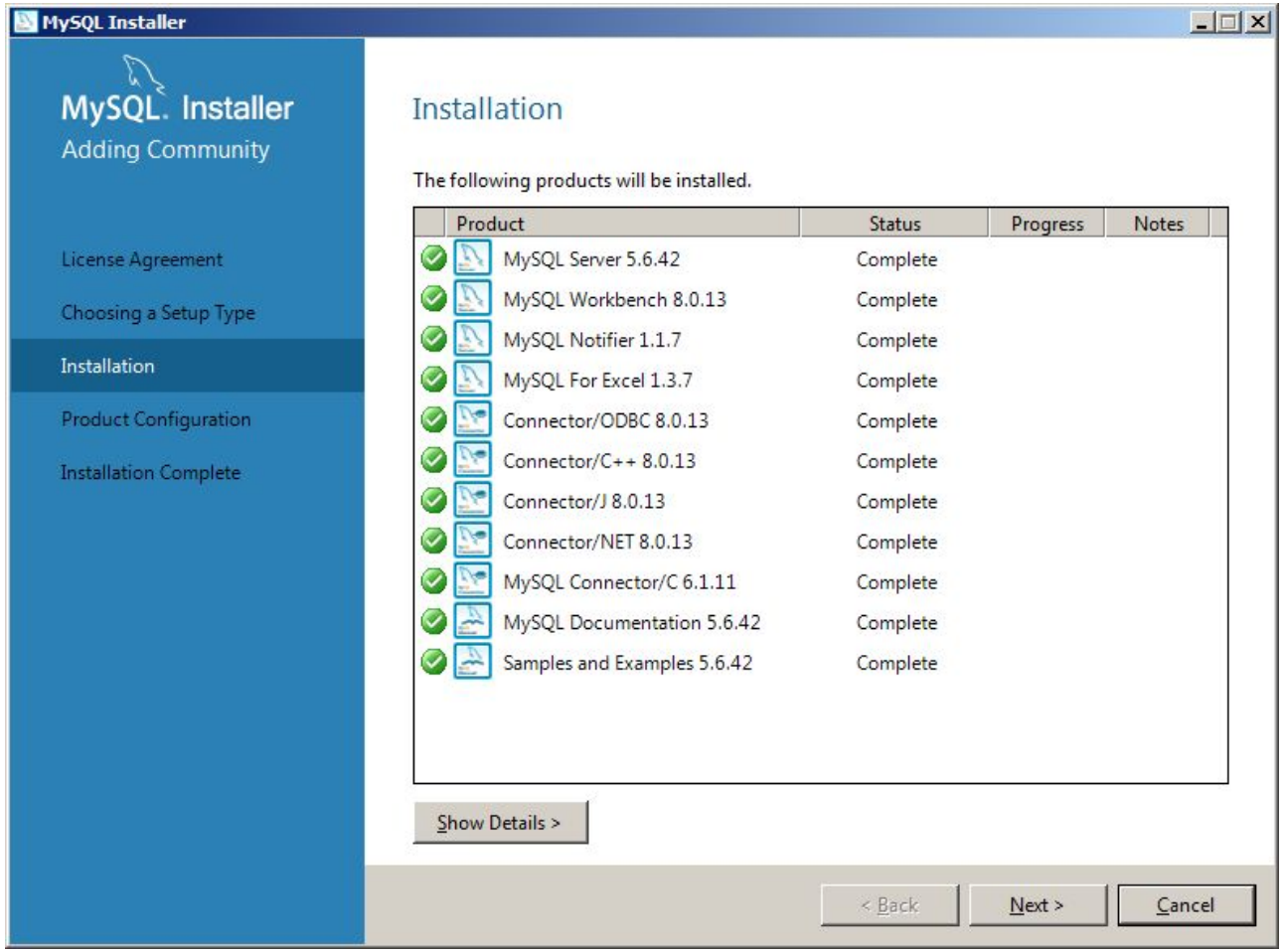
Windows (x86, 64-bit), ZIP Archive	8.0.13	192.3M	Download
(mysql-8.0.13-winx64.zip)	MD5: 34a5983273314c99fdbc4a17b01d5859 | Signature		
Windows (x86, 64-bit), ZIP Archive Debug Binaries & Test Suite	8.0.13	274.5M	Download
(mysql-8.0.13-winx64-debug-test.zip)	MD5: 459f7a900a7ec15171c85f7bc3506d03 | Signature		

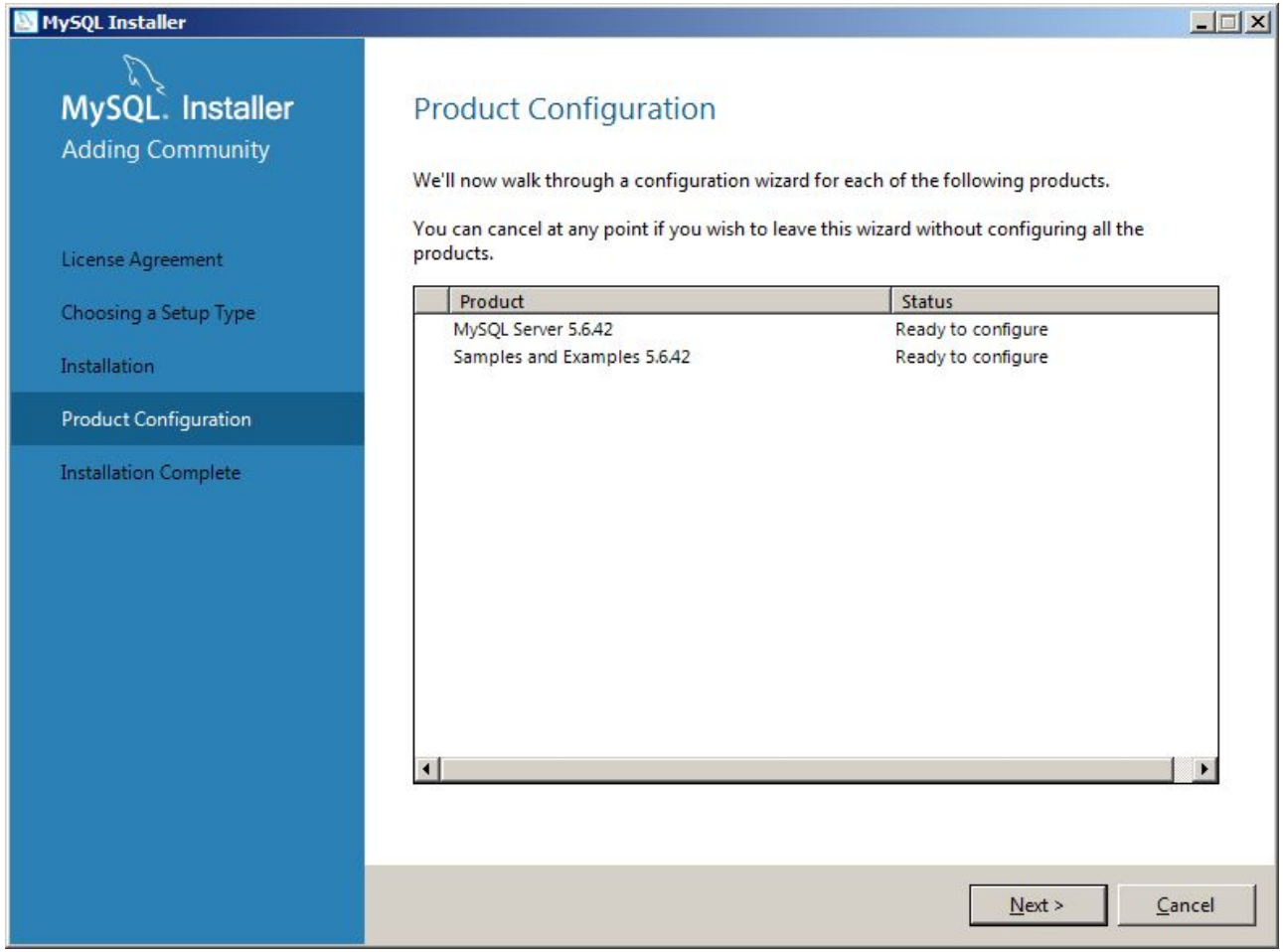
Looking for previous GA versions?

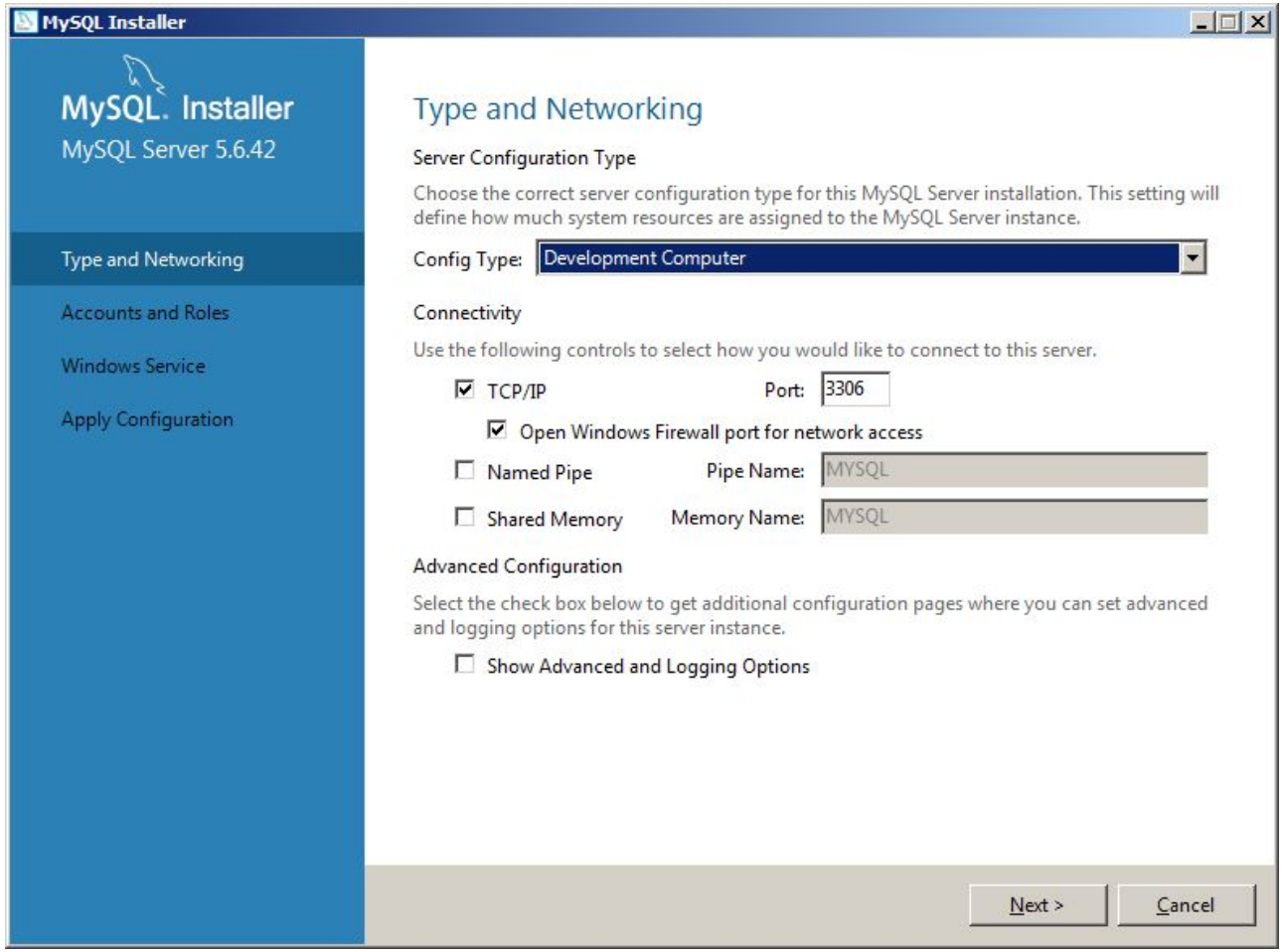
- MySQL Community Server 5.7 »
- MySQL Community Server 5.6 »
- MySQL Community Server 5.5 »
- Archived versions »

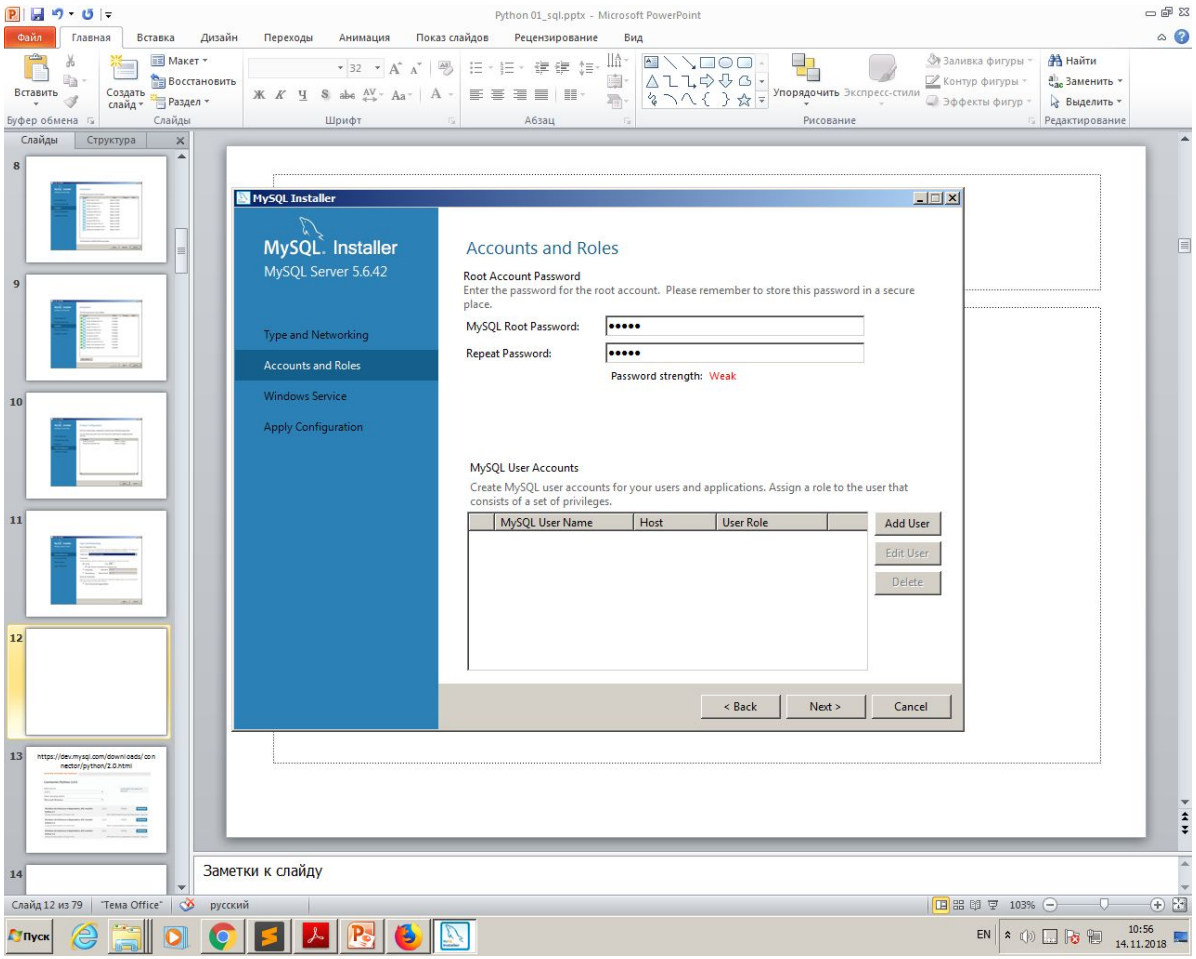

MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Installation
Installation Complete
License Agreement
To proceed you must accept the Oracle Software License Terms.
GNU GENERAL PUBLIC LICENSE
Version 2, June 1991
Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.
Preamble
========
The licenses for most software are designed to take away your freedom
to share and change it. By contrast, the GNU General Public License is
intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.
When we speak of free software, we are referring to freedom, not price.
Our General Public Licenses are designed to make sure that you have
I accept the license terms
Next >
Cancel

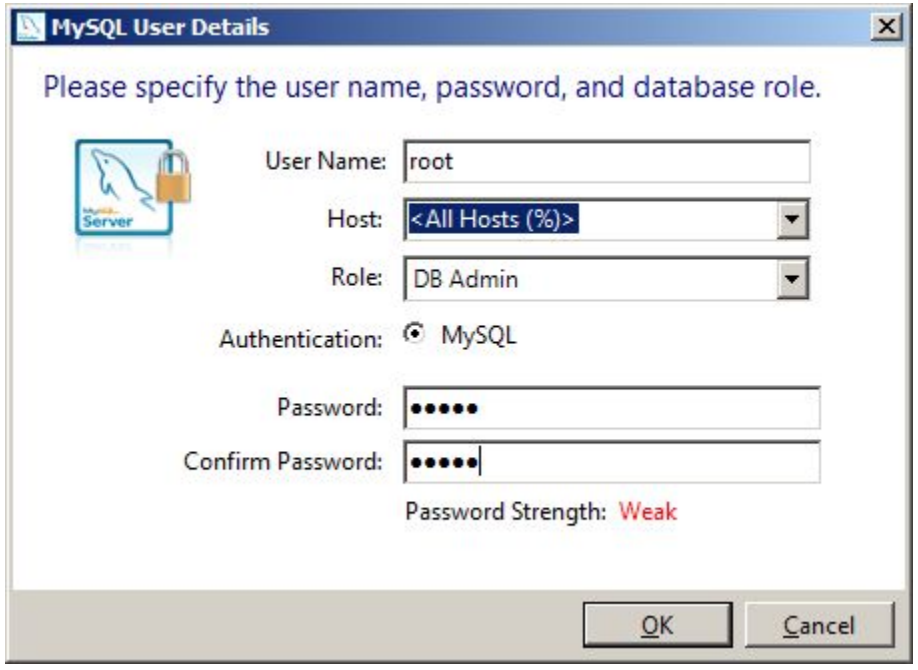

MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Installation
The following products will be installed.
Product
Status
Progress
Notes
MySQL Server 5.6.42
Ready to Install
MySQL Workbench 8.0.13
Ready to Install
MySQL Notifier 1.1.7
Ready to Install
MySQL For Excel 1.3.7
Ready to Install
Connector/ODBC 8.0.13
Ready to Install
Connector/C++ 8.0.13
Ready to Install
Connector/J 8.0.13
Ready to Install
Connector/NET 8.0.13
Ready to Install
MySQL Connector/C 6.1.11
Ready to Install
MySQL Documentation 5.6.42
Ready to Install
Samples and Examples 5.6.42
Ready to Install
Click [Execute] to install the following packages.
< Back
Execute
Cancel

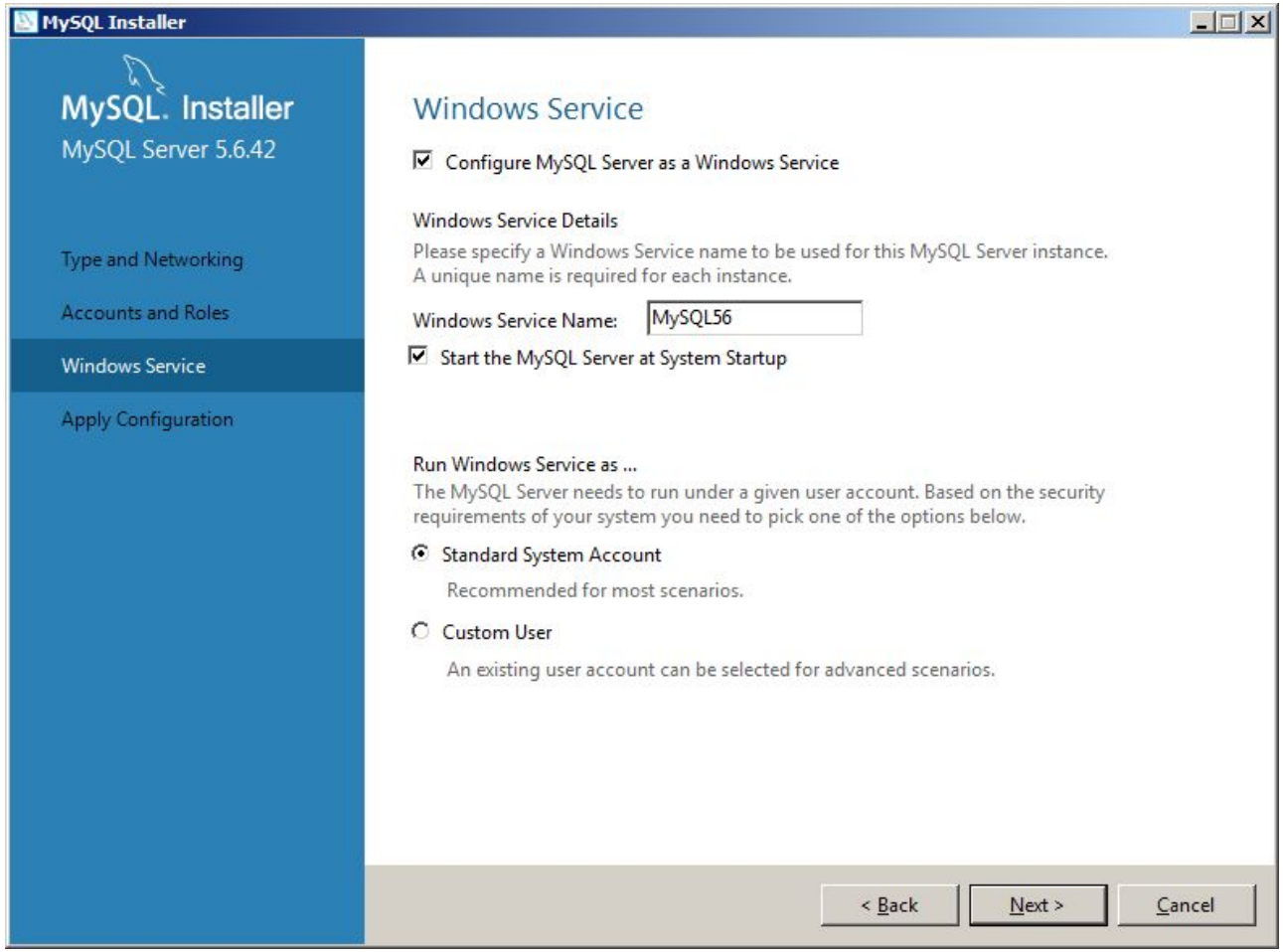

MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Installation
The following products will be installed.
Product
Status
Progress
Notes
MySQL Server 5.6.42
Complete
MySQL Workbench 8.0.13
Complete
MySQL Notifier 1.1.7
Complete
MySQL For Excel 1.3.7
Complete
Connector/ODBC 8.0.13
Complete
Connector/C++ 8.0.13
Complete
Connector/J 8.0.13
Complete
Connector/NET 8.0.13
Complete
MySQL Connector/C 6.1.11
Complete
MySQL Documentation 5.6.42
Complete
Samples and Examples 5.6.42
Complete
Show Details >
< Back
Next >
Cancel

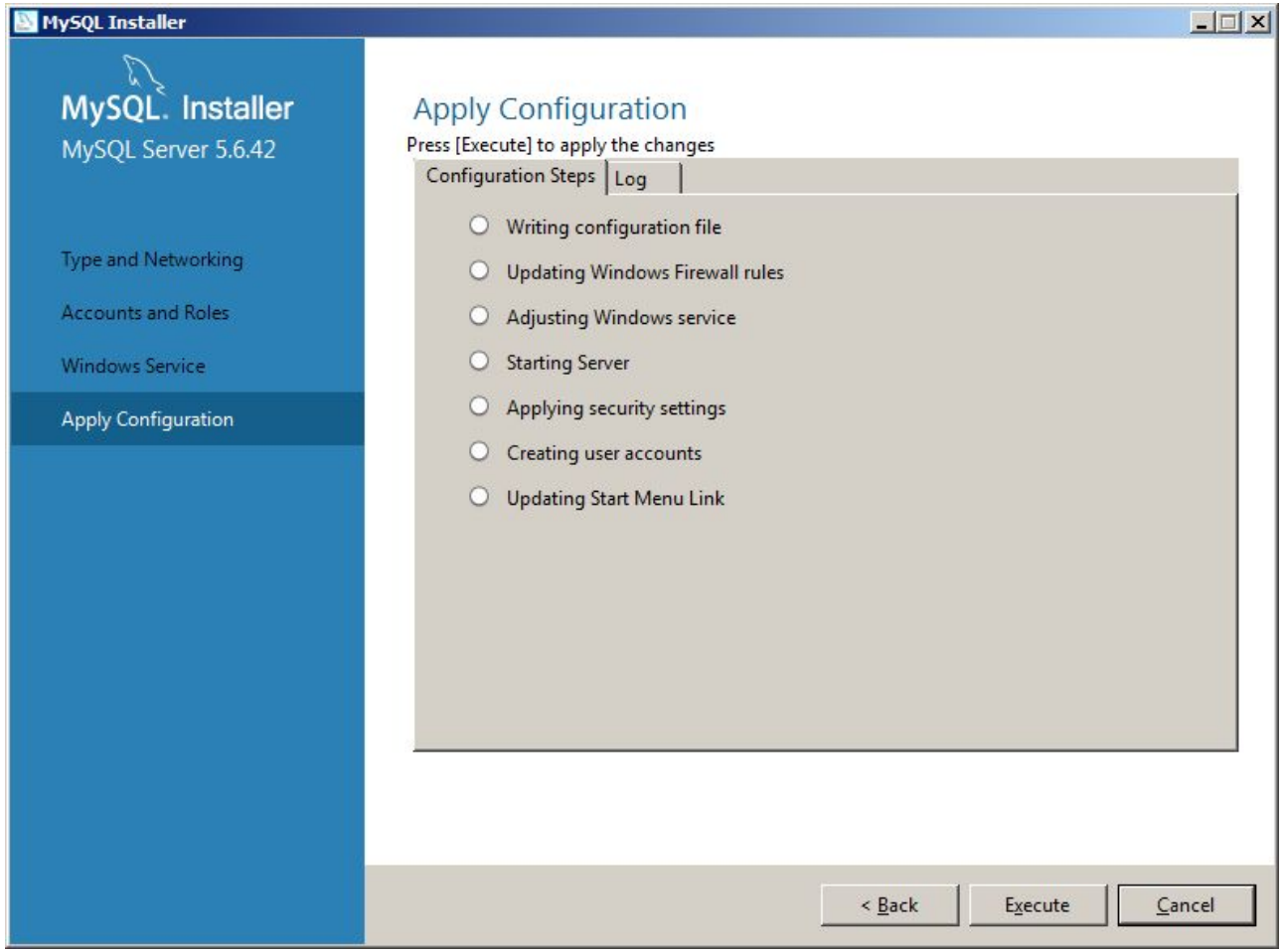

MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Product Configuration
We'll now walk through a configuration wizard for each of the following products.
You can cancel at any point if you wish to leave this wizard without configuring all the products.
Product
Status
MySQL Server 5.6.42
Ready to configure
Samples and Examples 5.6.42
Ready to configure
Next >
Cancel

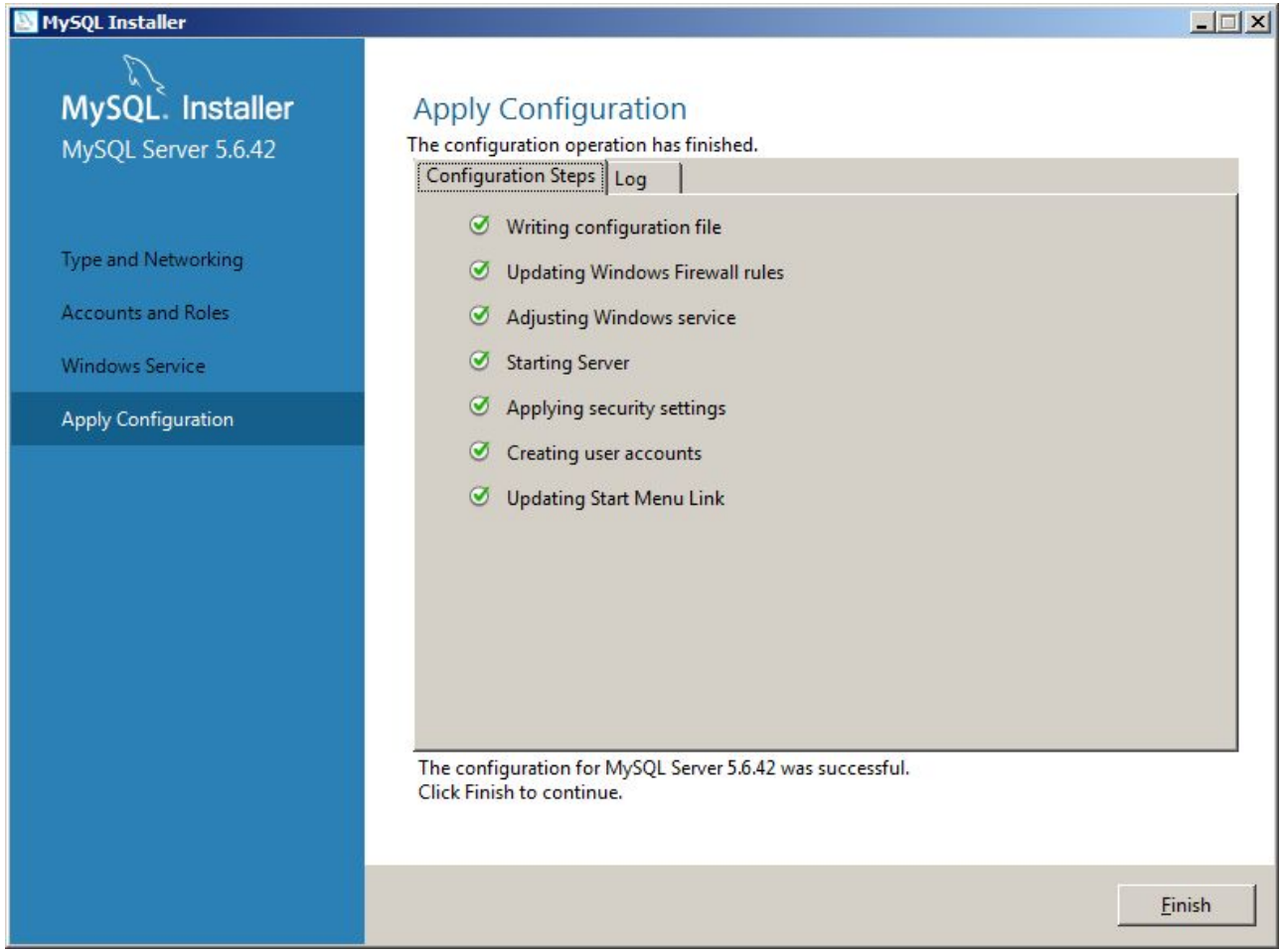

MySQL Installer
MySQL. Installer
MySQL Server 5.6.42
Type and Networking
Accounts and Roles
Windows Service
Apply Configuration
Type and Networking
Server Configuration Type
Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server instance.
Config Type: Development Computer
Connectivity
Use the following controls to select how you would like to connect to this server.
TCP/IP
Port: 3306
Open Windows Firewall port for network access
Named Pipe
Pipe Name: MYSQL
Shared Memory
Memory Name: MYSQL
Advanced Configuration
Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.
Show Advanced and Logging Options
Next >
Cancel

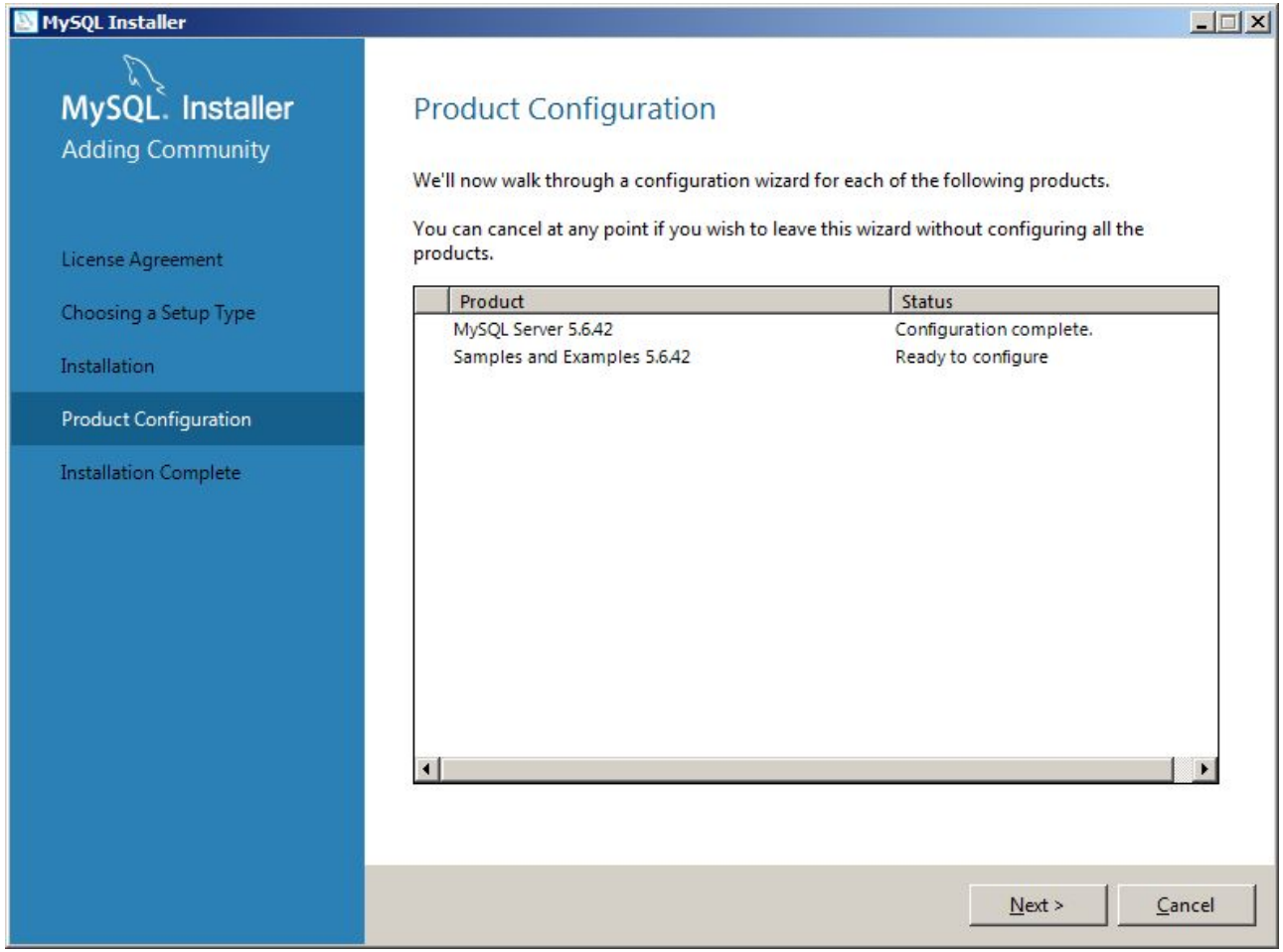

Python 01_sql.pptx - Microsoft PowerPoint
Файл
Главная
Вставка
Дизайн
Переходы
Анимация
Показ слайдов
Рецензирование
Вид
Слайды
Структура
MySQL Installer
MySQL. Installer
MySQL Server 5.6.42
Type and Networking
Accounts and Roles
Windows Service
Apply Configuration
Accounts and Roles
Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.
MySQL Root Password:
Repeat Password:
Password strength: Weak
MySQL User Accounts
Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.
MySQL User Name
Host
User Role
Add User
Edit User
Delete
< Back
Next >
Cancel
Заметки к слайду
Слайд 12 из 79
"Тема Office"
русский
103%
Пуск
EN
10:56
14.11.2018

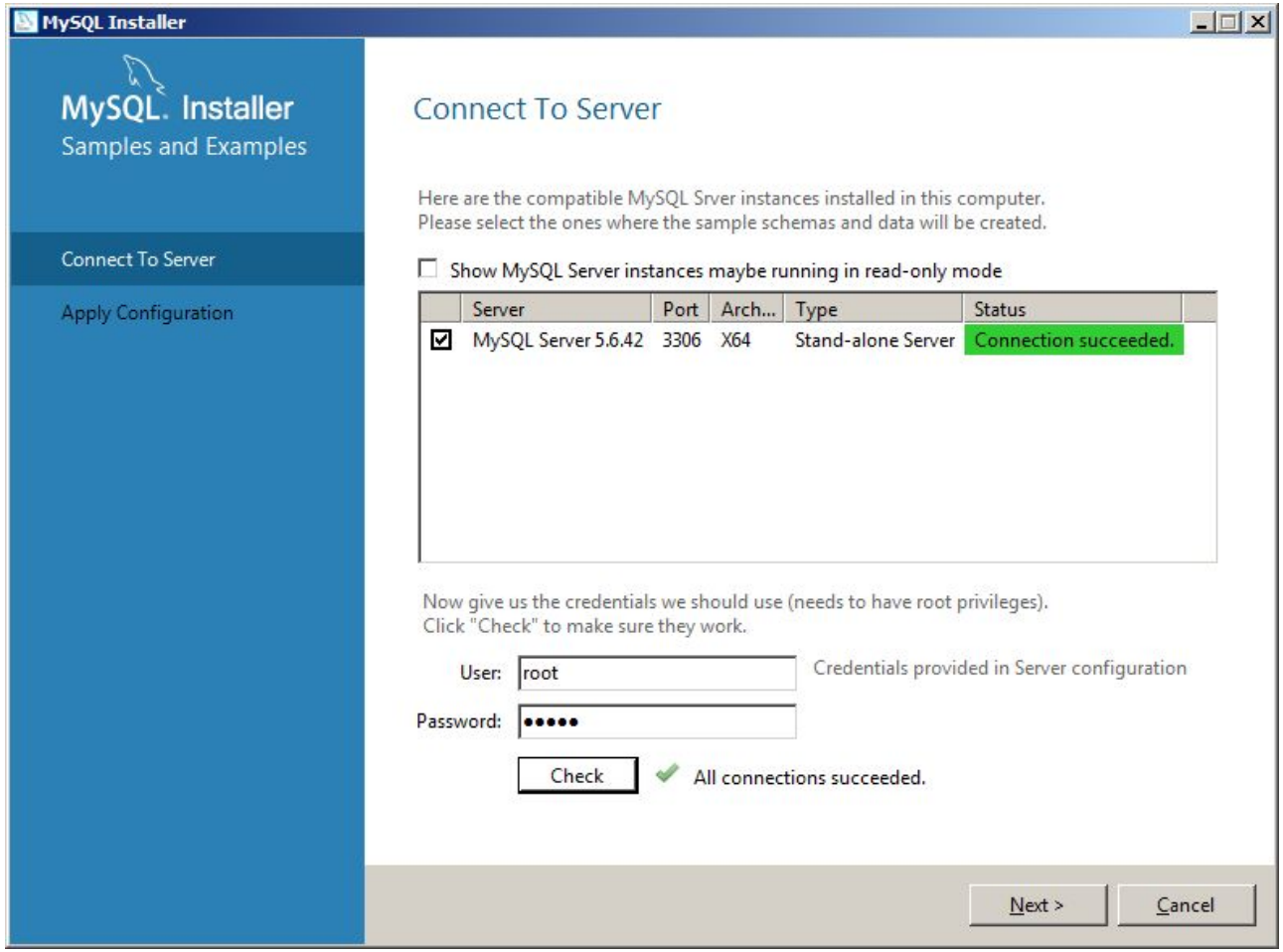

MySQL User Details
Please specify the user name, password, and database role.
User Name:
root
Host:
<All Hosts (%)>
Role:
DB Admin
Authentication:
MySQL
Password:
Confirm Password:
Password Strength:
Weak
OK
Cancel

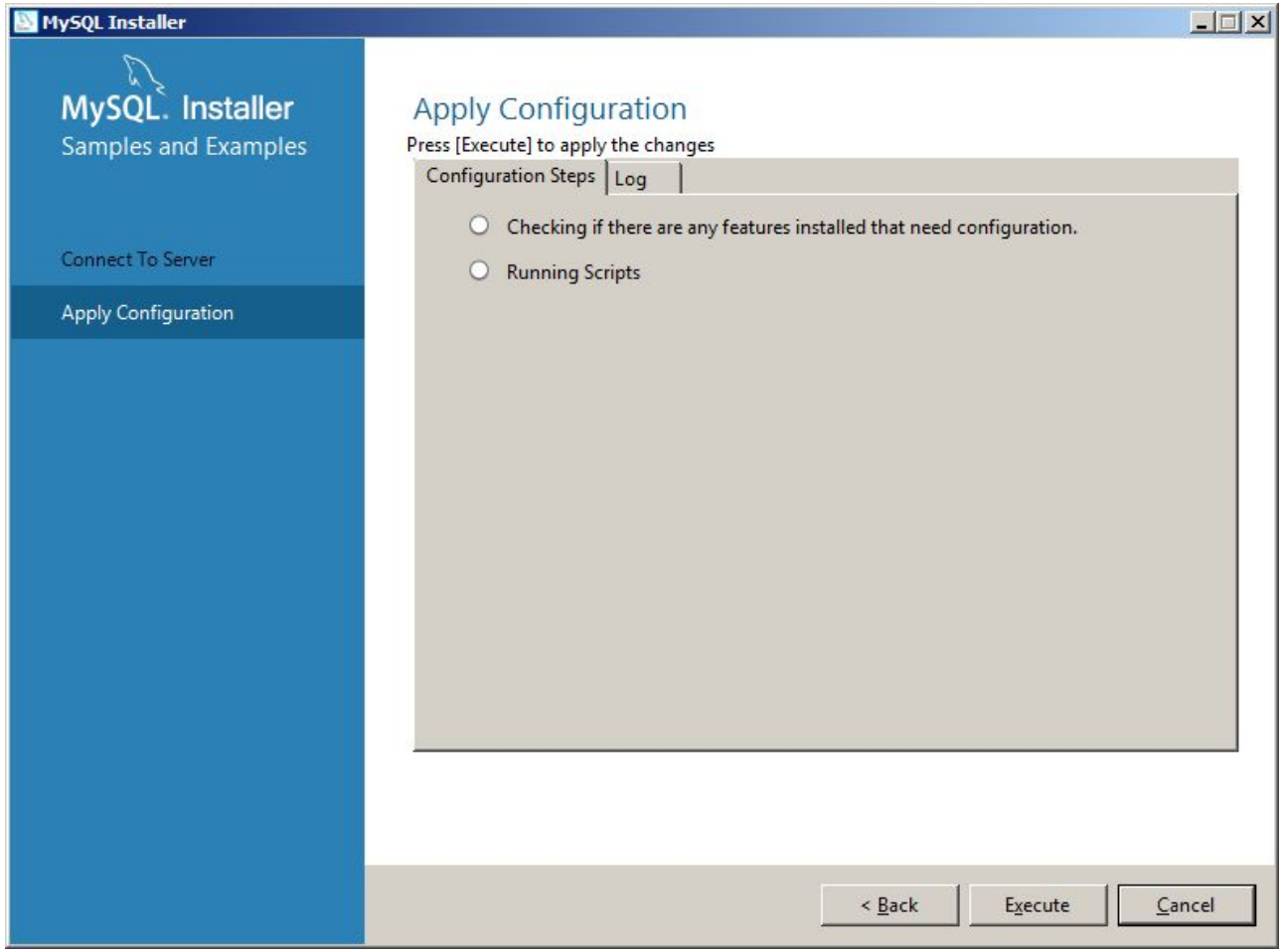

MySQL Installer
MySQL. Installer
MySQL Server 5.6.42
Type and Networking
Accounts and Roles
Windows Service
Apply Configuration
Windows Service
Configure MySQL Server as a Windows Service
Windows Service Details
Please specify a Windows Service name to be used for this MySQL Server instance.
A unique name is required for each instance.
Windows Service Name:
MySQL56
Start the MySQL Server at System Startup
Run Windows Service as ...
The MySQL Server needs to run under a given user account. Based on the security requirements of your system you need to pick one of the options below.
Standard System Account
Recommended for most scenarios.
Custom User
An existing user account can be selected for advanced scenarios.
< Back
Next >
Cancel

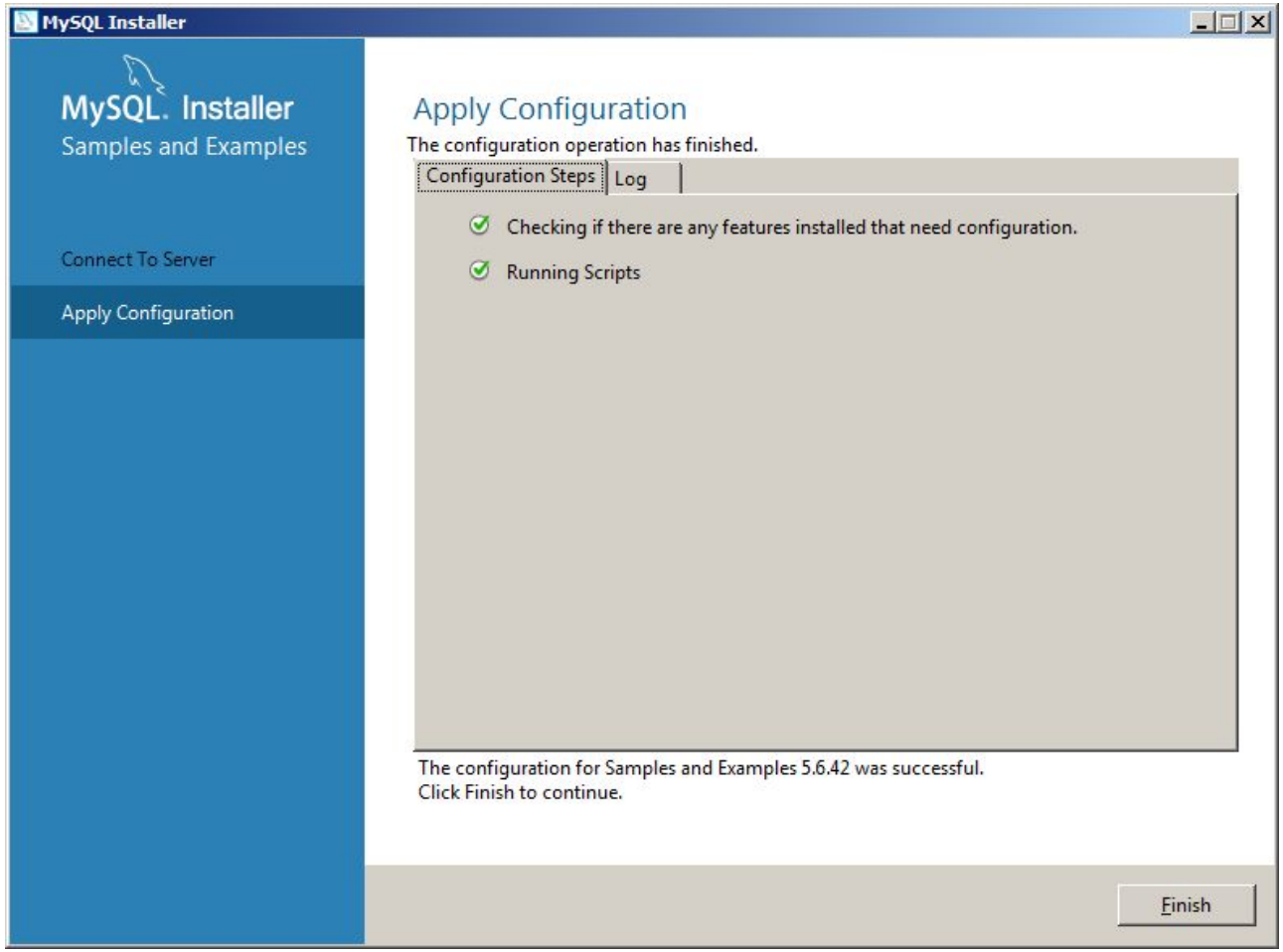

MySQL Installer
MySQL. Installer
MySQL Server 5.6.42
Type and Networking
Accounts and Roles
Windows Service
Apply Configuration
Apply Configuration
Press [Execute] to apply the changes
Configuration Steps
Log
Writing configuration file
Updating Windows Firewall rules
Adjusting Windows service
Starting Server
Applying security settings
Creating user accounts
Updating Start Menu Link
< Back
Execute
Cancel

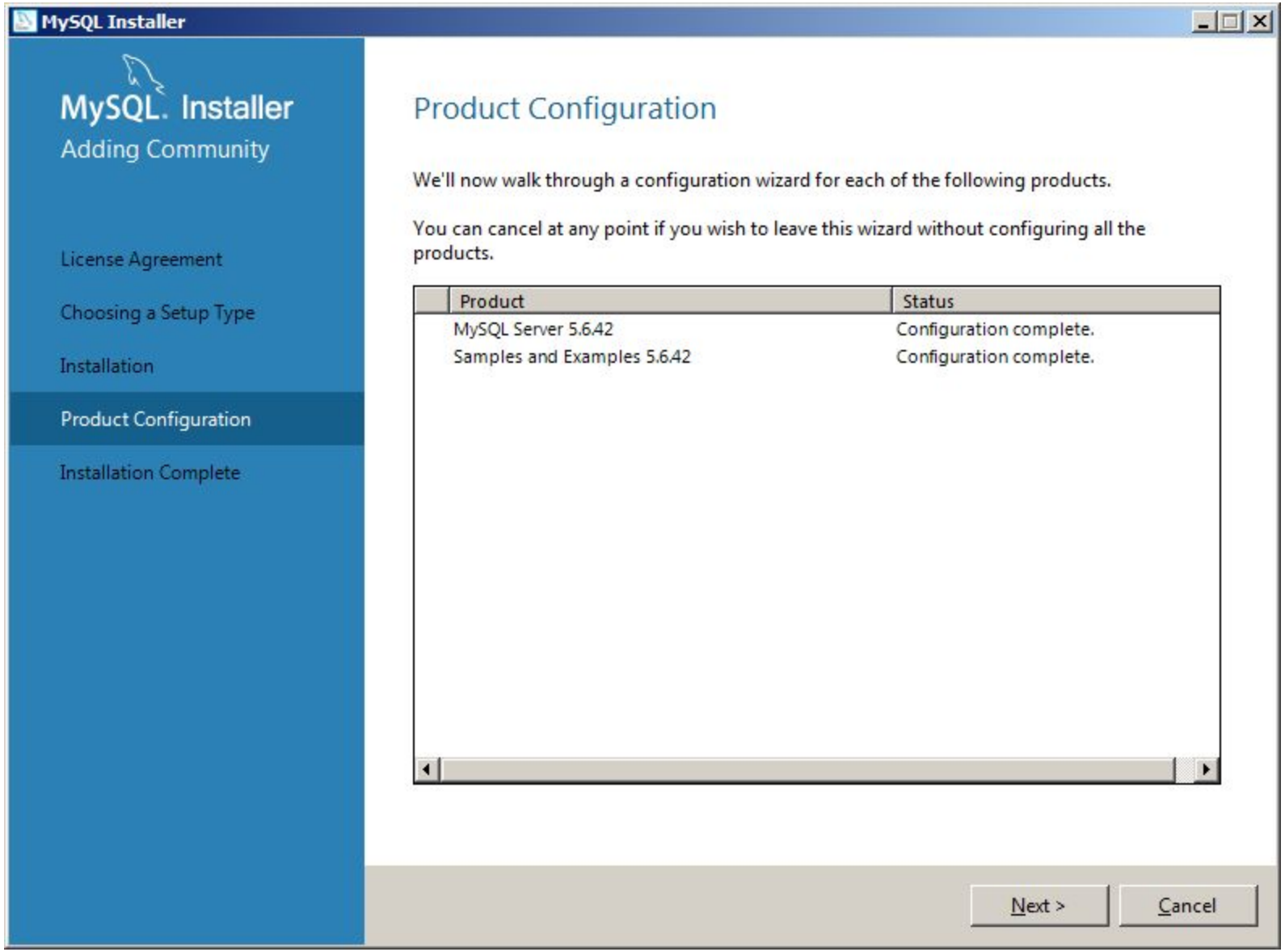

MySQL Installer
MySQL. Installer
MySQL Server 5.6.42
Type and Networking
Accounts and Roles
Windows Service
Apply Configuration
Apply Configuration
The configuration operation has finished.
Configuration Steps
Log
Writing configuration file
Updating Windows Firewall rules
Adjusting Windows service
Starting Server
Applying security settings
Creating user accounts
Updating Start Menu Link
The configuration for MySQL Server 5.6.42 was successful.
Click Finish to continue.
Finish

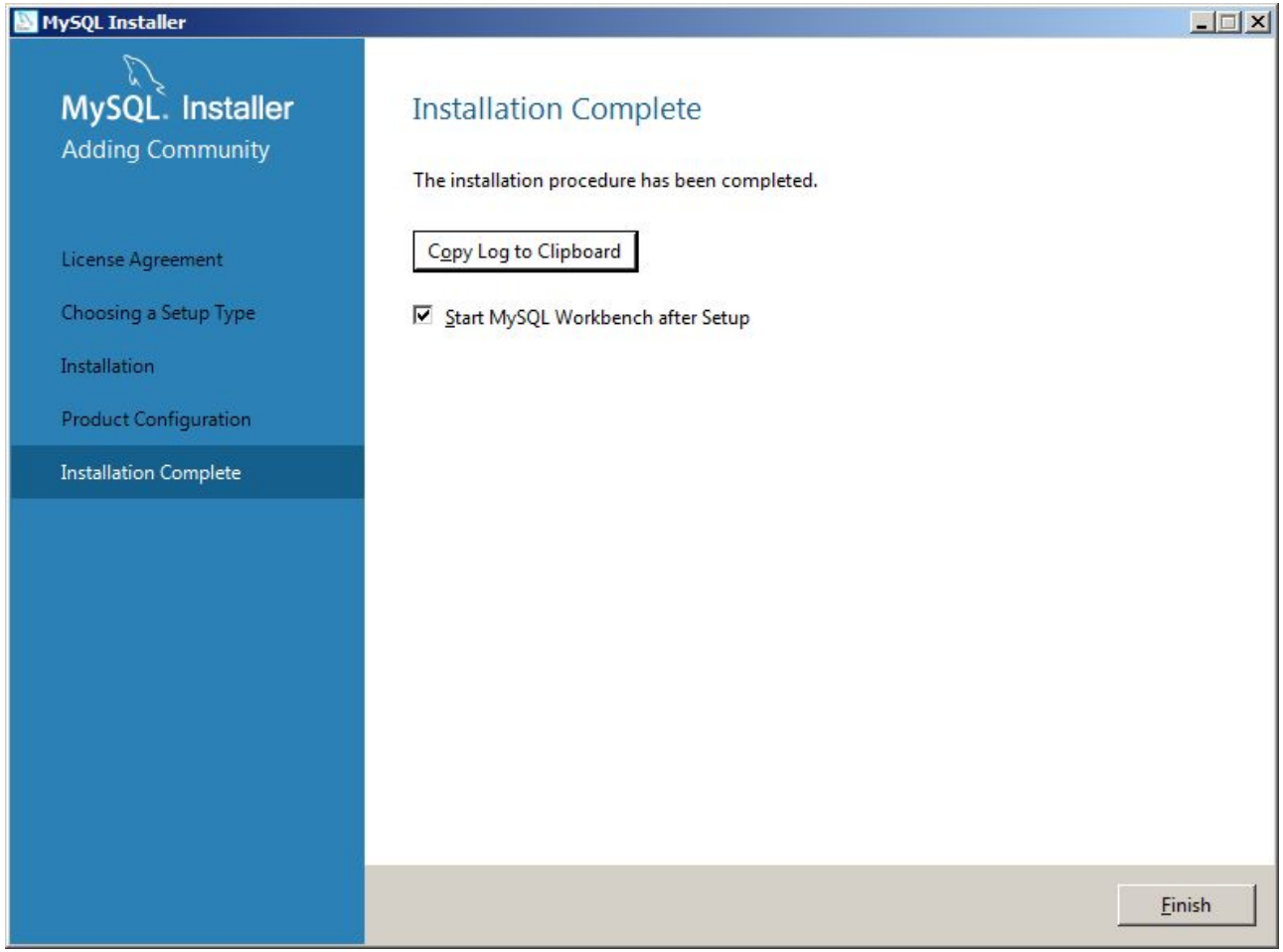

MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Product Configuration
We'll now walk through a configuration wizard for each of the following products.
You can cancel at any point if you wish to leave this wizard without configuring all the products.
Product
Status
MySQL Server 5.6.42
Configuration complete.
Samples and Examples 5.6.42
Ready to configure
Next >
Cancel

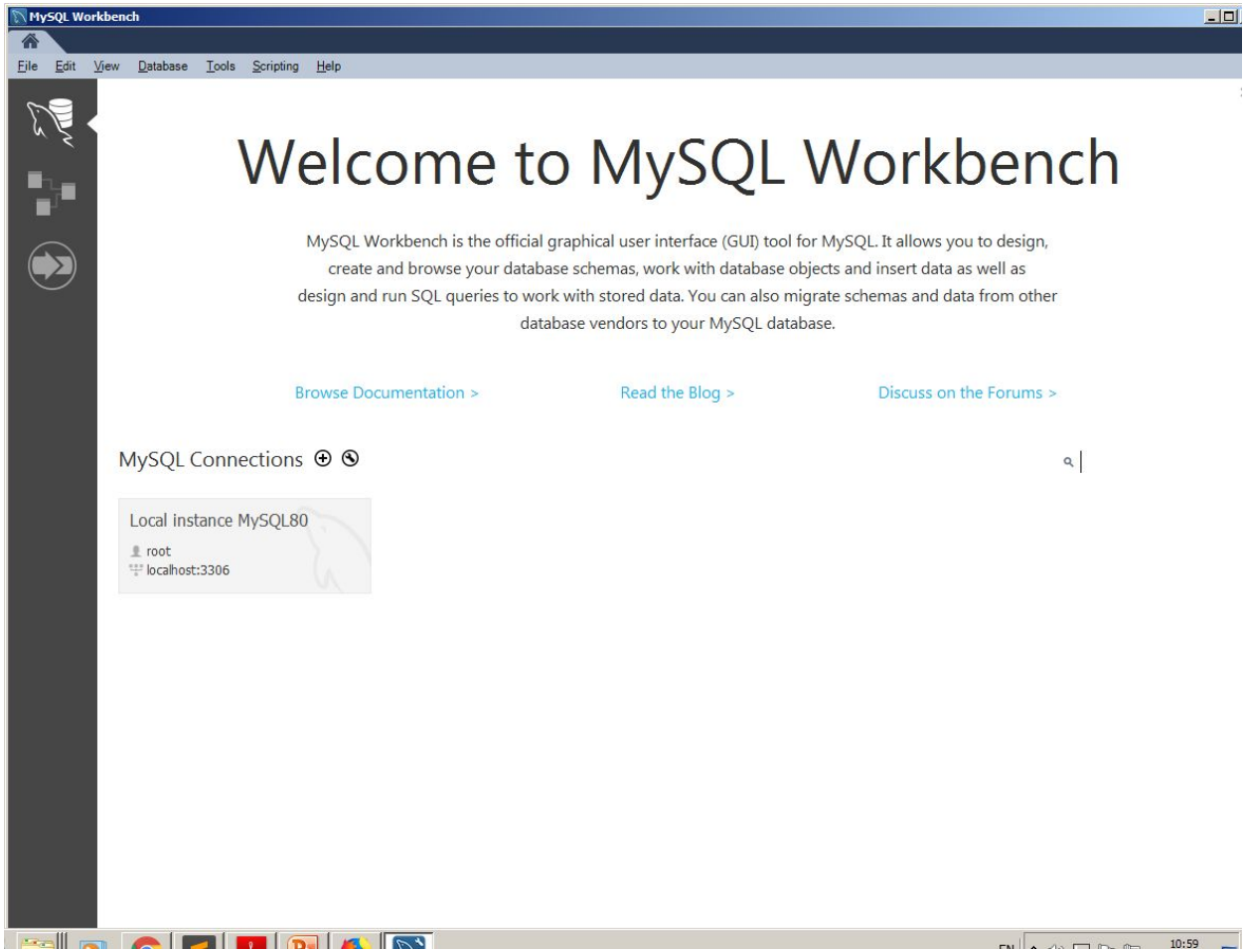

MySQL Installer
MySQL. Installer
Samples and Examples
Connect To Server
Apply Configuration
Connect To Server
Here are the compatible MySQL Srver instances installed in this computer.
Please select the ones where the sample schemas and data will be created.
Show MySQL Server instances maybe running in read-only mode
Server
Port
Arch...
Type
Status
MySQL Server 5.6.42
3306
X64
Stand-alone Server
Connection succeeded.
Now give us the credentials we should use (needs to have root privileges).
Click "Check" to make sure they work.
User:
root
Credentials provided in Server configuration
Password:
Check
All connections succeeded.
Next >
Cancel

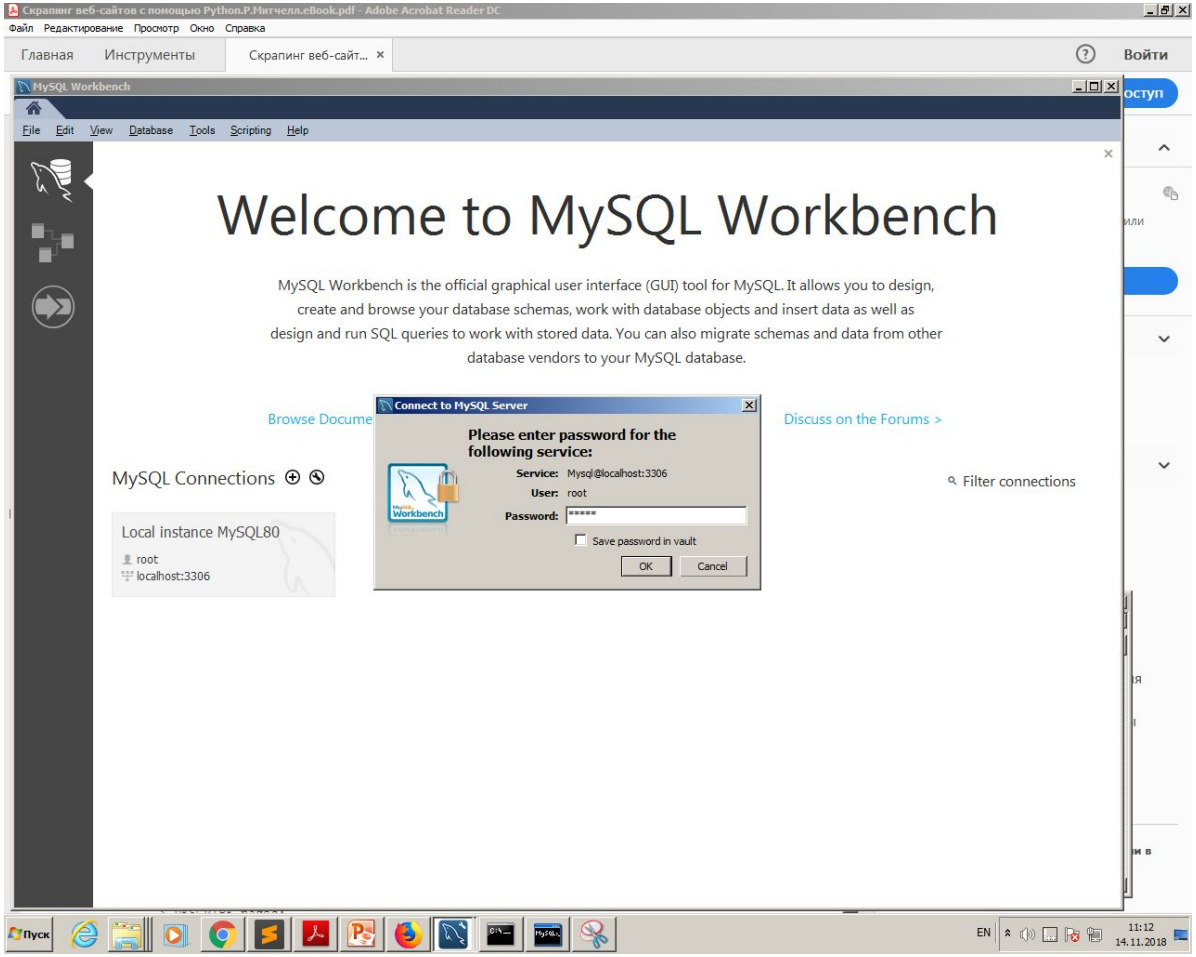

MySQL Installer
MySQL. Installer
Samples and Examples
Connect To Server
Apply Configuration
Apply Configuration
Press [Execute] to apply the changes
Configuration Steps
Log
Checking if there are any features installed that need configuration.
Running Scripts
< Back
Execute
Cancel

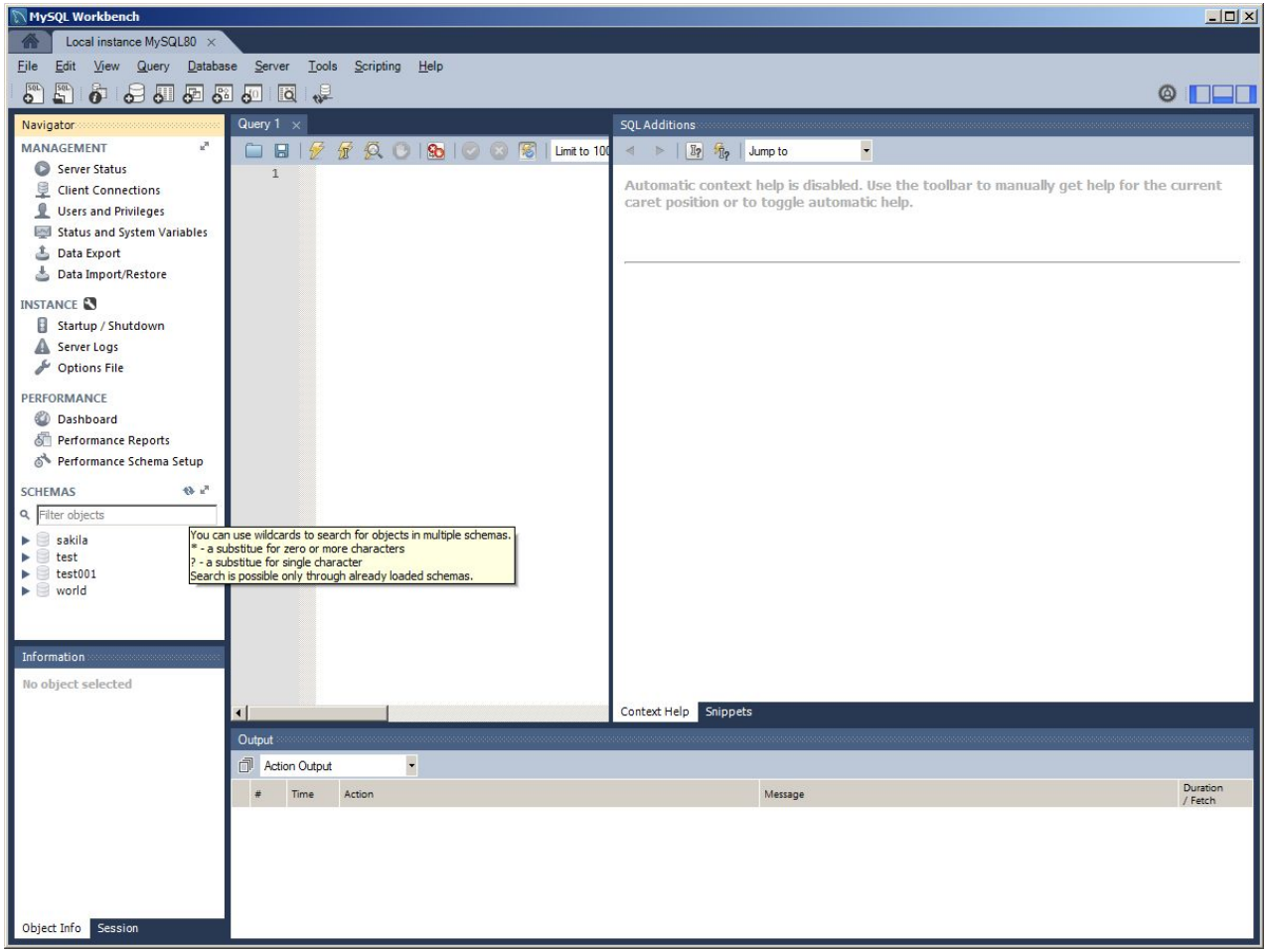

MySQL Installer
MySQL. Installer
Samples and Examples
Connect To Server
Apply Configuration
Apply Configuration
The configuration operation has finished.
Configuration Steps
Log
Checking if there are any features installed that need configuration.
Running Scripts
The configuration for Samples and Examples 5.6.42 was successful.
Click Finish to continue.
Finish


MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Product Configuration
We'll now walk through a configuration wizard for each of the following products.
You can cancel at any point if you wish to leave this wizard without configuring all the products.
Product
Status
MySQL Server 5.6.42
Configuration complete.
Samples and Examples 5.6.42
Configuration complete.
Next >
Cancel


MySQL Installer
MySQL. Installer
Adding Community
License Agreement
Choosing a Setup Type
Installation
Product Configuration
Installation Complete
Installation Complete
The installation procedure has been completed.
Copy Log to Clipboard
Start MySQL Workbench after Setup
Finish


MySQL Workbench
File Edit View Database Tools Scripting Help
Welcome to MySQL Workbench
MySQL Workbench is the official graphical user interface (GUI) tool for MySQL. It allows you to design, create and browse your database schemas, work with database objects and insert data as well as design and run SQL queries to work with stored data. You can also migrate schemas and data from other database vendors to your MySQL database.
Browse Documentation >
Read the Blog >
Discuss on the Forums >
MySQL Connections
Local instance MySQL80
root
localhost:3306


Скрапинг веб-сайтов с помощью Python.P.Митчелл.eBook.pdf - Adobe Acrobat Reader DC
Файл Редактирование Просмотр Окно Справка
Главная Инструменты
Скрапинг веб-сайт...
Войти
MySQL Workbench
File Edit View Database Tools Scripting Help
Welcome to MySQL Workbench
MySQL Workbench is the official graphical user interface (GUI) tool for MySQL. It allows you to design, create and browse your database schemas, work with database objects and insert data as well as design and run SQL queries to work with stored data. You can also migrate schemas and data from other database vendors to your MySQL database.
Browse Docume
Discuss on the Forums >
MySQL Connections
Filter connections
Local instance MySQL80
root
localhost:3306
Connect to MySQL Server
Please enter password for the following service:
Service: Mysql@localhost:3306
User: root
Password: *****
Save password in vault
OK
Cancel
Пуск
EN
11:12
14.11.2018


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
MANAGEMENT
Server Status
Client Connections
Users and Privileges
Status and System Variables
Data Export
Data Import/Restore
INSTANCE
Startup / Shutdown
Server Logs
Options File
PERFORMANCE
Dashboard
Performance Reports
Performance Schema Setup
SCHEMAS
Filter objects
sakila
test
test001
world
You can use wildcards to search for objects in multiple schemas.
* - a substitue for zero or more characters
? - a substitue for single character
Search is possible only through already loaded schemas.
Information
No object selected
Object Info
Session
Query 1
Limit to 100
1
SQL Additions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch

MySQL Connectors

MySQL provides standards-based drivers for JDBC, ODBC, and .Net enabling developers to bu
allows developers to embed MySQL directly into their applications.

Developed by MySQL	
ADO.NET Driver for MySQL (Connector/NET)	Download
ODBC Driver for MySQL (Connector/ODBC)	Download
JDBC Driver for MySQL (Connector/J)	Download
Node.js Driver for MySQL (Connector/Node.js)	Download
Python Driver for MySQL (Connector/Python)	Download
C++ Driver for MySQL (Connector/C++)	Download
C Driver for MySQL (Connector/C)	Download
C API for MySQL (mysqlclient)	Download

Generally Available (GA) Releases

Connector/Python 8.0.13

Select Operating System:

Microsoft Windows

Select OS Version:

Windows (x86, 32-bit)

Looking for previous GA versions?

MSI Installer	8.0.13	276.0K	**Download**
(mysql-connector-python-8.0.13-py3.7-windows-x86-32bit.msi)		MD5: fe9f28e6c4d9bcabc77d536824064641 | Signature	
MSI Installer, Python 2.7	8.0.13	276.0K	**Download**
(mysql-connector-python-8.0.13-py2.7-windows-x86-32bit.msi)		MD5: 81858b9c229c65fe742019f58215ce52 | Signature	
MSI Installer, Python 3.5	8.0.13	276.0K	**Download**
(mysql-connector-python-8.0.13-py3.5-windows-x86-32bit.msi)		MD5: cb0329475464a2e1f2366bac375145e2 | Signature	
MSI Installer	8.0.13	276.0K	**Download**
(mysql-connector-python-8.0.13-py3.6-windows-x86-32bit.msi)		MD5: f7e84fcec13d60939576a750ca37acde | Signature	

Generally Available (GA) Releases

Connector/Python 2.1.8

Select Version:

2.1.8

Select Operating System:

Microsoft Windows

Select OS Version:

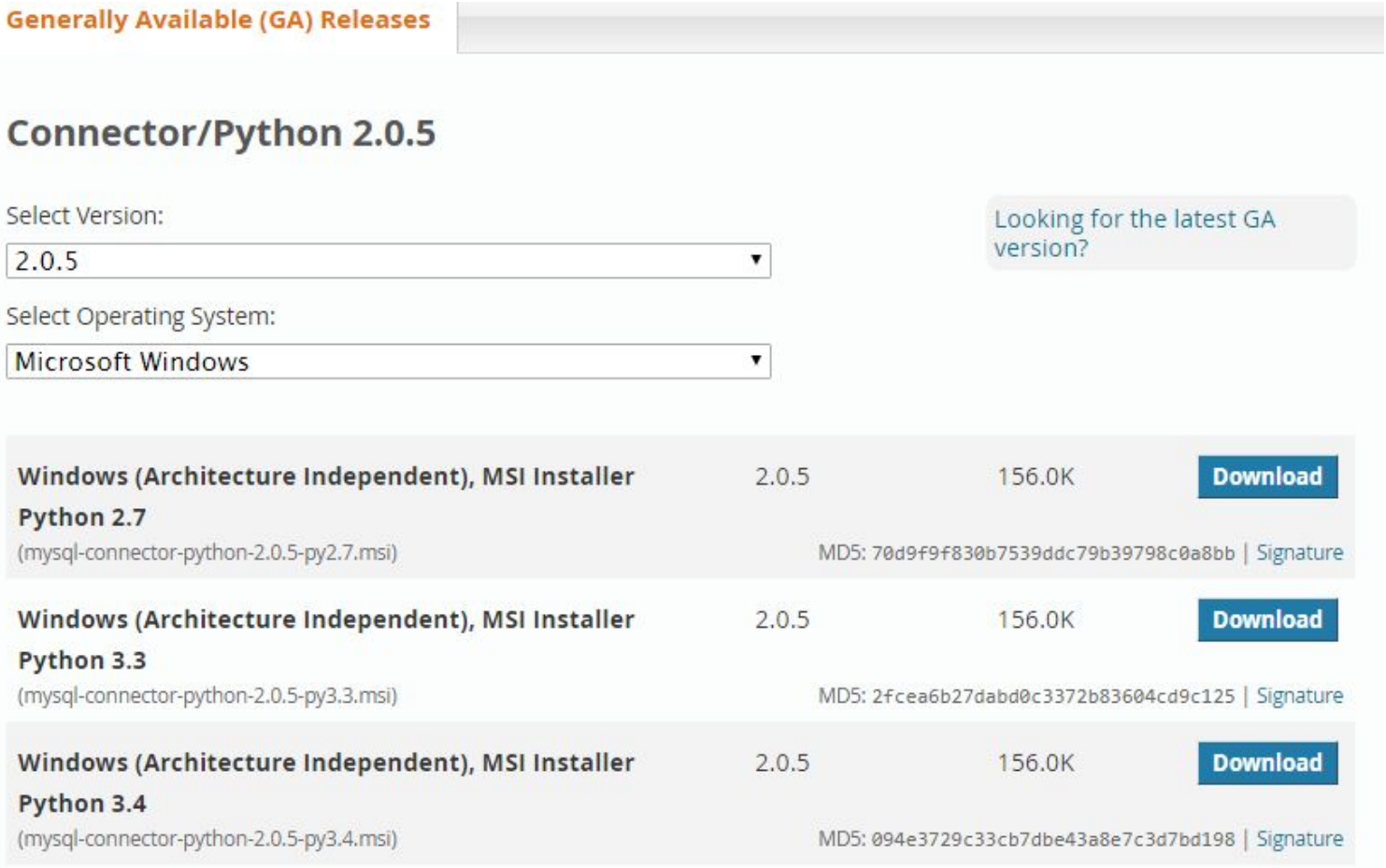
Windows (x86, 32-bit)

Looking for the latest GA version?

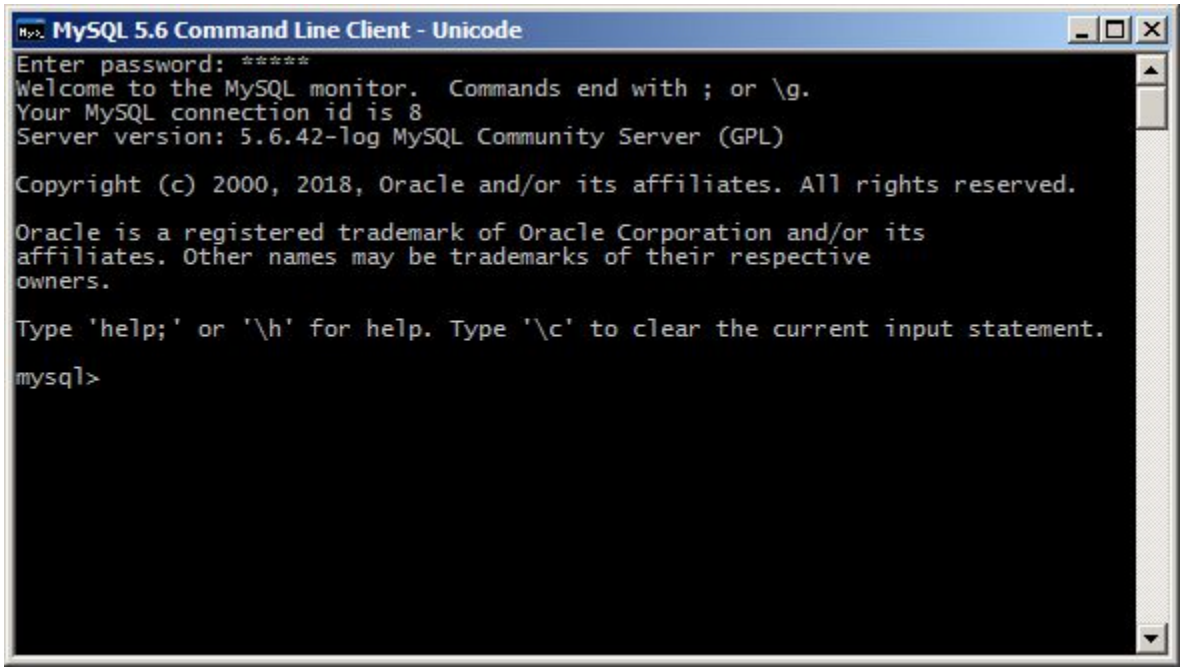
MSI Installer	2.1.8	200.0K	Download
(mysql-connector-python-2.1.8-py3.6-windows-x86-32bit.msi)		MD5: 255911f8659a9b942ba3c9674cd6476a | Signature	
MSI Installer, Python 2.7	2.1.8	200.0K	Download
(mysql-connector-python-2.1.8-py2.7-windows-x86-32bit.msi)		MD5: 84de80bf841f3df72b3a2bd18e37446e | Signature	
MSI Installer, Python 3.4	2.1.8	200.0K	Download
(mysql-connector-python-2.1.8-py3.4-windows-x86-32bit.msi)		MD5: 884918ca997369aecc1adfb272e7e91f | Signature	
MSI Installer, Python 3.5	2.1.8	200.0K	Download
(mysql-connector-python-2.1.8-py3.5-windows-x86-32bit.msi)		MD5: 46aded919353b4f4719f1ff94064ac88 | Signature	

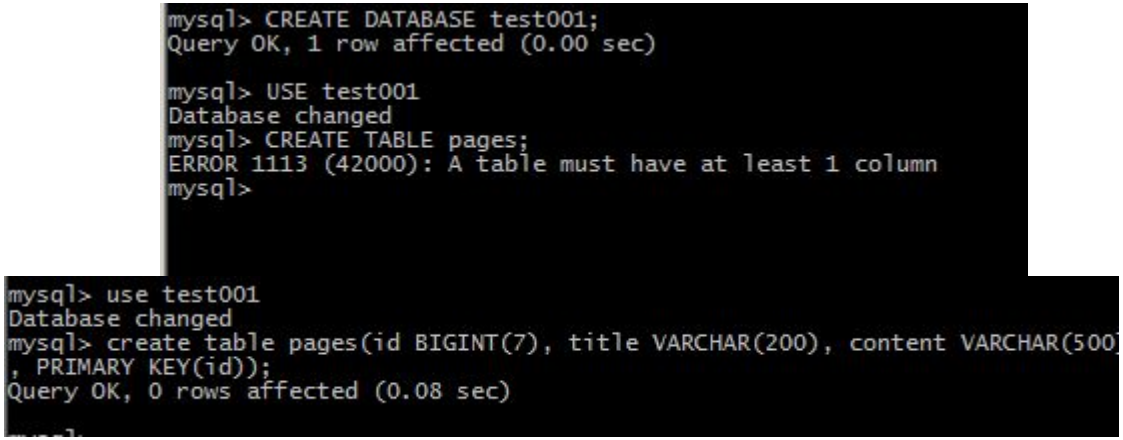
We suggest that you use the MD5 checksums and GnuPG signatures to verify the integrity of the packages you download.

https://dev.mysql.com/downloads/connector/python/2.0.html

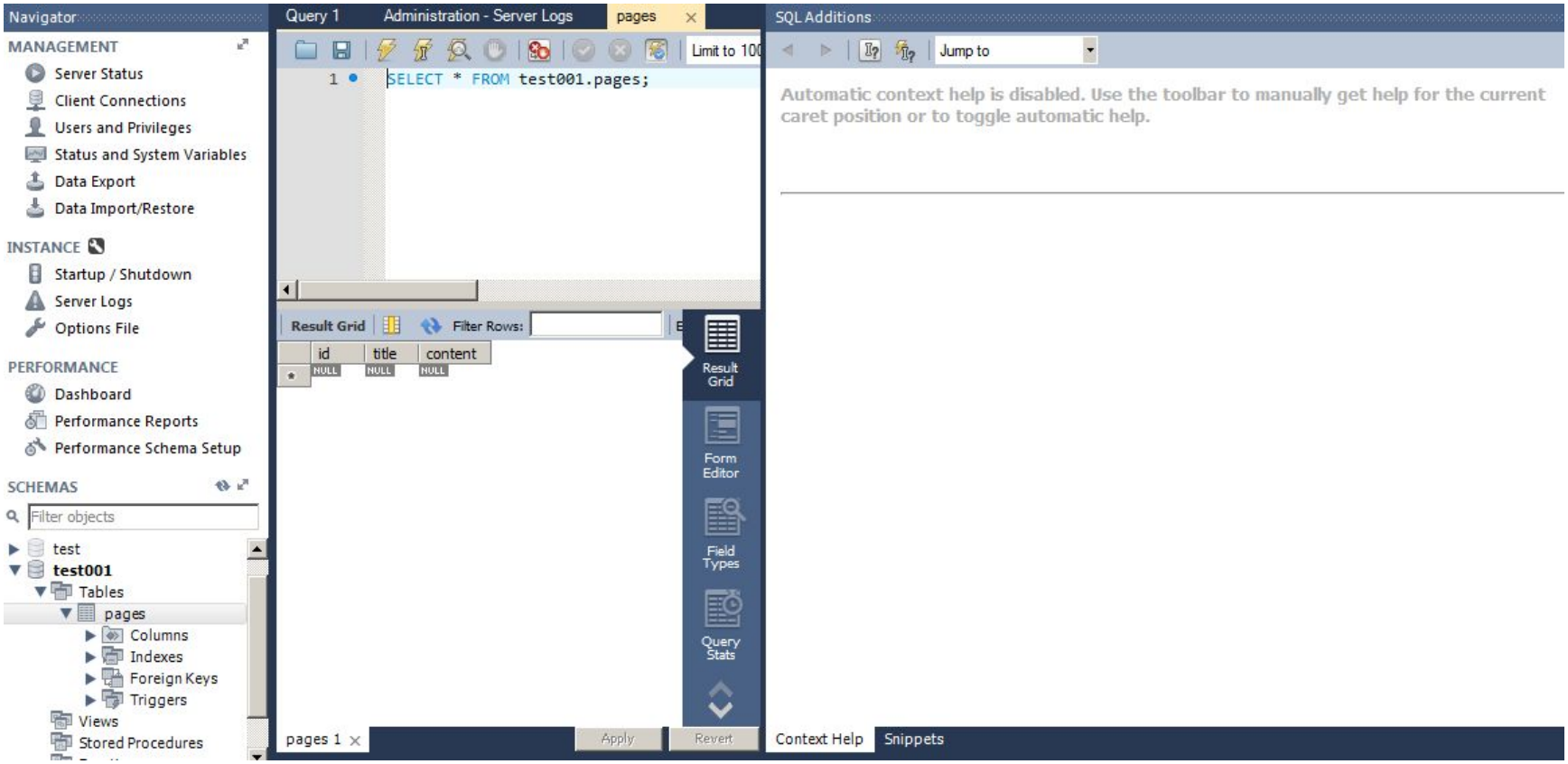


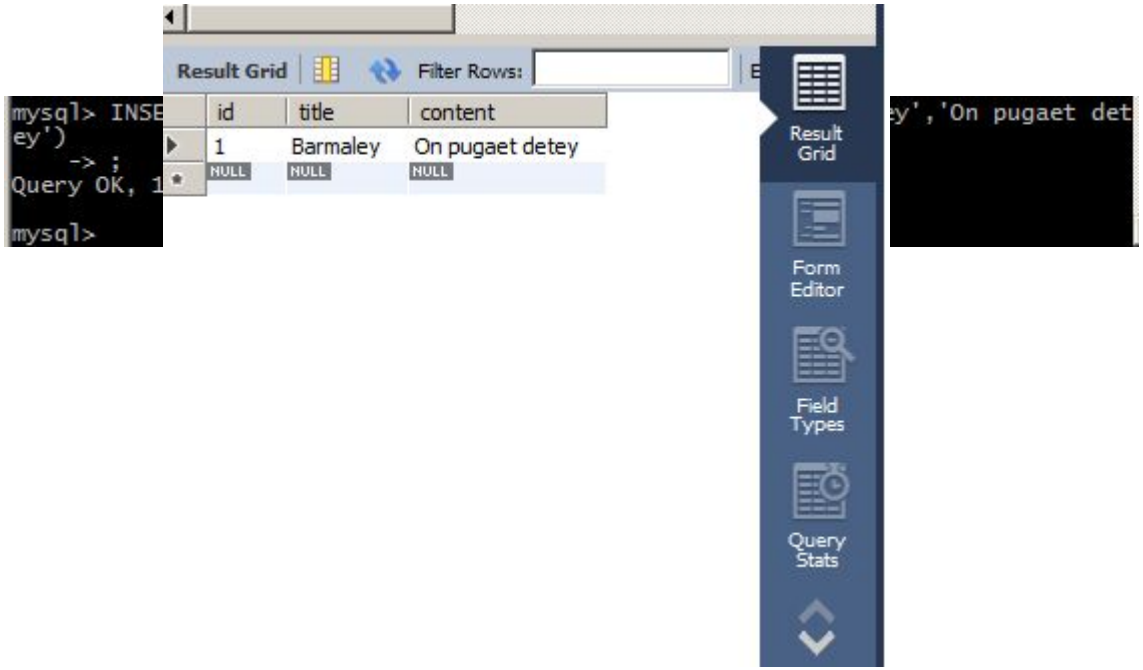
Работа в командной строке

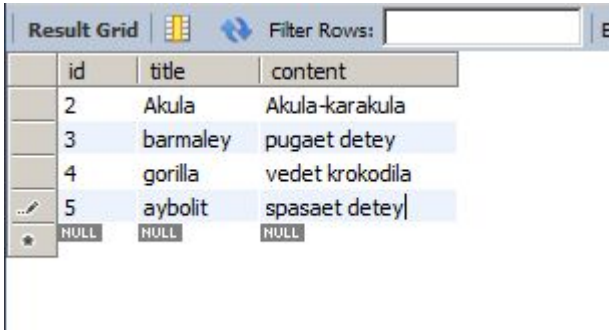



mysql> CREATE DATABASE test001;
Query OK, 1 row affected (0.00 sec)
mysql> USE test001
Database changed
mysql> CREATE TABLE pages;
ERROR 1113 (42000): A table must have at least 1 column
mysql>
mysql> use test001
Database changed
mysql> create table pages(id BIGINT(7), title VARCHAR(200), content VARCHAR(500)
, PRIMARY KEY(id));
Query OK, 0 rows affected (0.08 sec)

```
mysql> DESCRIBE pages
    ->
    ->
    ->
    ->
    ->
    ->
    ->
    -> ;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| id      | bigint(7)   | NO   | PRI | 0       |       |
| title   | varchar(200) | YES  |     | NULL    |       |
| content | varchar(500) | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
3 rows in set (0.03 sec)
```

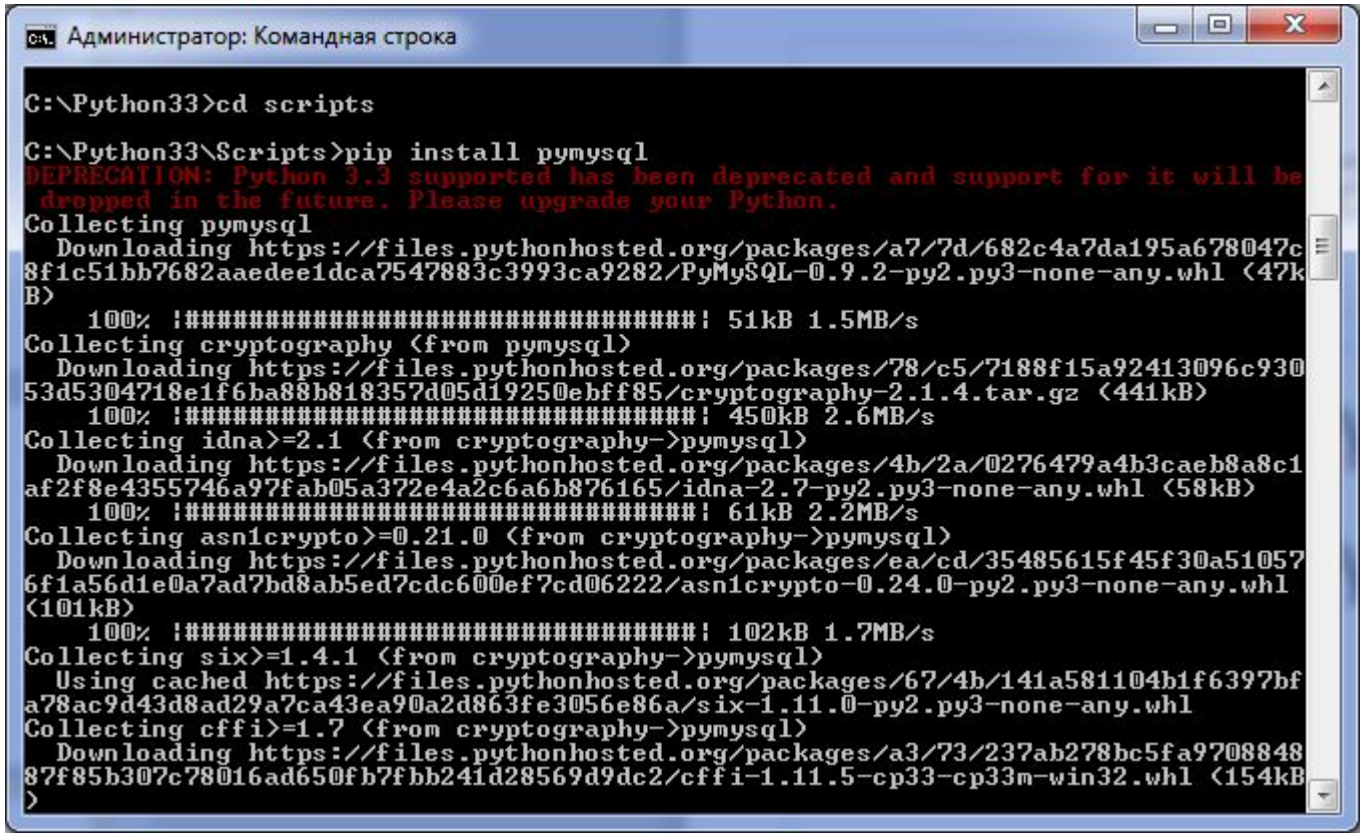

Navigator
MANAGEMENT
Server Status
Client Connections
Users and Privileges
Status and System Variables
Data Export
Data Import/Restore
INSTANCE
Startup / Shutdown
Server Logs
Options File
PERFORMANCE
Dashboard
Performance Reports
Performance Schema Setup
SCHEMAS
Filter objects
test
test001
Tables
pages
Columns
Indexes
Foreign Keys
Triggers
Views
Stored Procedures
Query 1
Administration - Server Logs
pages
Limit to 100
1 SELECT * FROM test001.pages;
Result Grid
Filter Rows:
id
title
content
NULL
Result Grid
Form Editor
Field Types
Query Stats
pages 1
Apply
Revert
SQL Additions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help
Snippets


mysql> INSE
ey')
-> ;
Query OK, 1
mysql>
Result Grid
Filter Rows:
id
title
content
1
Barmaley
On pugaet detey
NULL
NULL
NULL
Result Grid
Form Editor
Field Types
Query Stats
y','On pugaet det

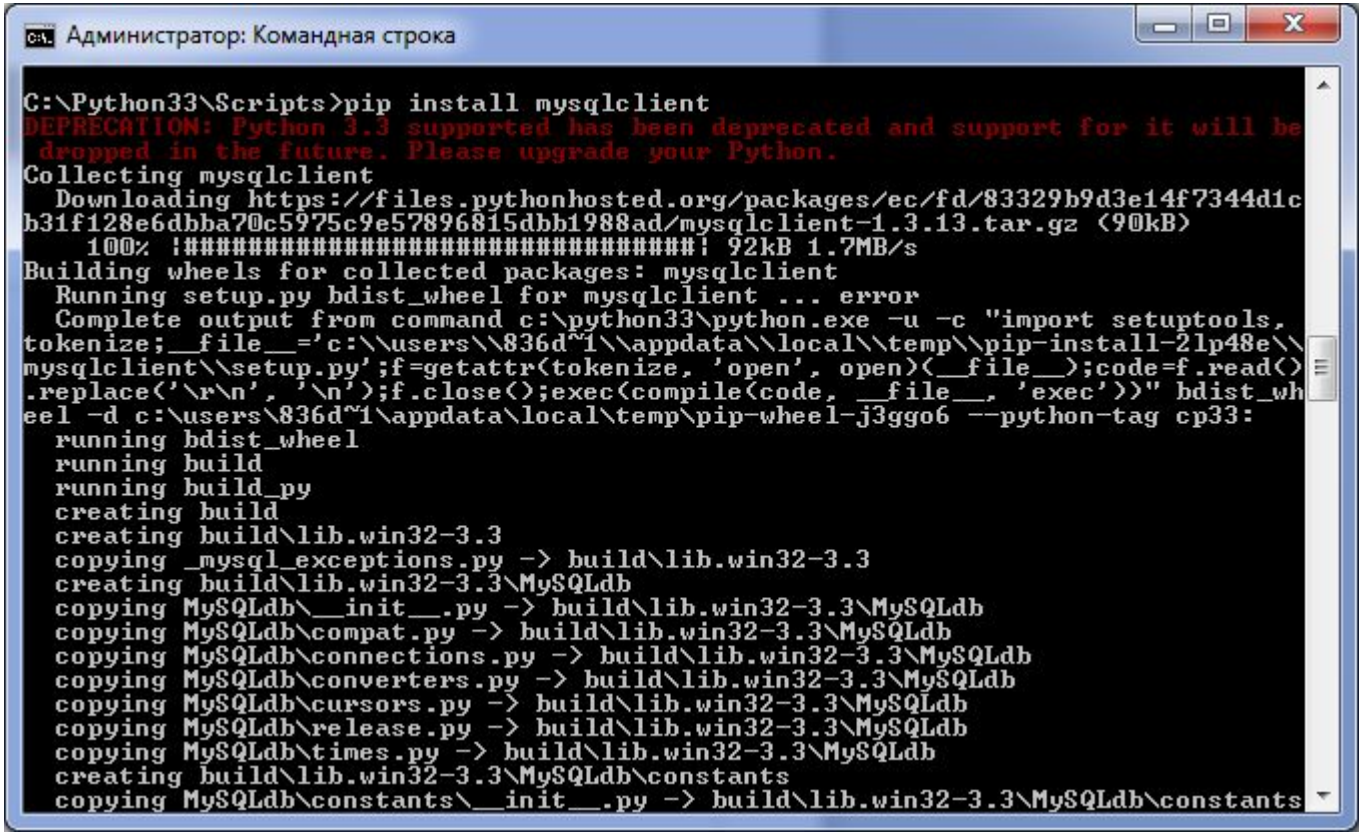



```
mysql> select * from pages where id=2
    -> ;
+----+-------+----------------+
| id | title | content        |
+----+-------+----------------+
|  2 | Akula | Akula-karakula |
+----+-------+----------------+
1 row in set (0.01 sec)
```

- pip install pymysql



pip install mysqlclient



- MySQLdb1 – не совместим пока с 3
- MySQLdb2 - не совместим пока с 3
- moist - будет

Совместимые с 3

- mysql-connector-python
- pymysql
- CyMySQL
- mysqlclient

- PHP MySQL
- Python Django PostgreSQL
- Node.js MongoDB
- SQLite