

장고 차근차근 시작하기 2/E

당신의 파이썬/장고 페이스메이커가 되겠습니다. ☺

EP-08. 장고 셸

Python Interactive Shell

- 기본 파이썬 셸
- IPython : <https://ipython.org/>
- Jupyter Notebook with Python Kernel
- BPython : <https://bpython-interpreter.org/>

IP[y]:



일반 파이썬 쉘에서 장고 프로젝트에 접근하면 ~

```
Windows PowerShell
PS C:\dev\askcompany> python
Python 3.6.5 |Anaconda, Inc.| (default, Mar 29 2018, 13:32:41) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> from django.contrib.auth import get_user_model
>>> User = get_user_model()
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
  File "C:\Anaconda3\lib\site-packages\django\contrib\auth\__init__.py", line 165, in get_user_model
    return django_apps.get_model(settings.AUTH_USER_MODEL, require_ready=False)
  File "C:\Anaconda3\lib\site-packages\django\conf\__init__.py", line 57, in __getattr__
    self._setup(name)
  File "C:\Anaconda3\lib\site-packages\django\conf\__init__.py", line 42, in _setup
    % (desc, ENVIRONMENT_VARIABLE))
django.core.exceptions.ImproperlyConfigured: Requested setting AUTH_USER_MODEL, but settings are not configured. You must either define the environment variable DJANGO_SETTINGS_MODULE or call settings.configure() before accessing settings.
>>>
```

장고 프로젝트 설정이 로딩된 파이썬 셸

셸> python manage.py shell

- 우선순위 : ipython, bpython, python
- 옵션
 - -i (--interface) : 인터프리터 인터페이스 커스텀 지정
 - -c (--command) : 실행할 파이썬 코드를 문자열로 지정

```
Python: C:\dev\askcompany
PS C:\dev\askcompany> python manage.py shell
Python 3.6.5 |Anaconda, Inc.| (default, Mar 29 2018, 13:32:41) [MSC v.1900 64 bit (AMD64)]
Type 'copyright', 'credits' or 'license' for more information
IPython 6.4.0 -- An enhanced Interactive Python. Type '?' for help.

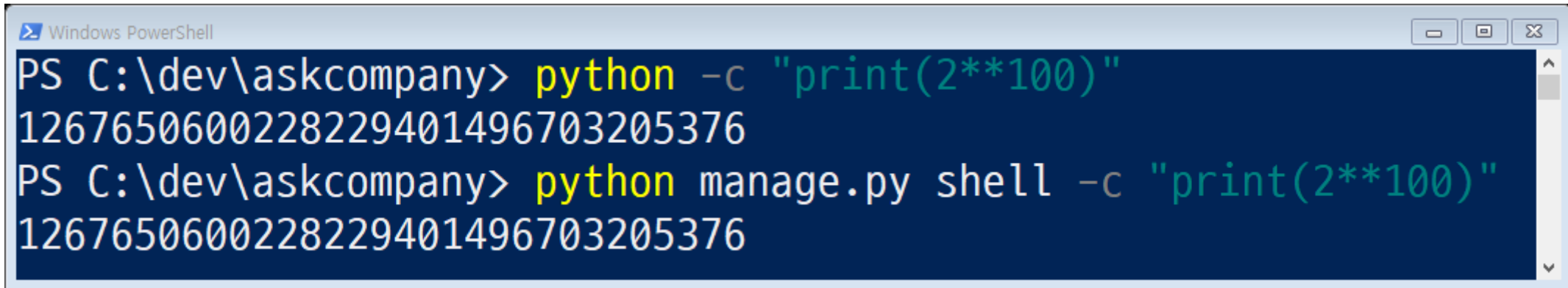
In [1]: from django.contrib.auth import get_user_model

In [2]: User = get_user_model()

In [3]: User.objects.all()
Out[3]: <QuerySet [<User: allieus>]>

In [4]:
```

--command 옵션 활용

A screenshot of a Windows PowerShell terminal window. The title bar says "Windows PowerShell". The command prompt shows two commands being executed. The first command is `python -c "print(2**100)"` and the second is `python manage.py shell -c "print(2**100)"`. Both commands result in the same large number: 1267650600228229401496703205376.

```
Windows PowerShell
PS C:\dev\askcompany> python -c "print(2**100)"
1267650600228229401496703205376
PS C:\dev\askcompany> python manage.py shell -c "print(2**100)"
1267650600228229401496703205376
```

--command 옵션과 유사한 활용

```
Windows PowerShell
PS C:\dev\askcompany> echo "print(2**100)" | python
1267650600228229401496703205376
PS C:\dev\askcompany>
PS C:\dev\askcompany> echo "print(2**100)" | python manage.py shell
Python 3.6.5 |Anaconda, Inc.| (default, Mar 29 2018, 13:32:41) [MSC v.1900 64 bit (AMD64)]
Type 'copyright', 'credits' or 'license' for more information
IPython 6.4.0 -- An enhanced Interactive Python. Type '?' for help.

In [1]: 1267650600228229401496703205376

In [2]: Do you really want to exit ([y]/n)?
PS C:\dev\askcompany>
PS C:\dev\askcompany> echo "print(2**100)" | python manage.py shell --interface python
Python 3.6.5 |Anaconda, Inc.| (default, Mar 29 2018, 13:32:41) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
(InteractiveConsole)
>>> 1267650600228229401496703205376
>>>
now exiting InteractiveConsole...
PS C:\dev\askcompany>
```

파이썬 코드에서도 번거로우나, 가능

```
import os
# DJANGO_SETTINGS_MODULE 환경변수 미지정 시에, "askcompany.settings"로 지정
os.environ.setdefault('DJANGO_SETTINGS_MODULE', 'askcompany.settings')
# 경우에 따라 강제로 환경변수 값을 설정하기도 합니다.
# os.environ['DJANGO_SETTINGS_MODULE'] = 'askcompany.settings'

# 다른 경로에 장고 프로젝트가 있다면,
# import sys
# sys.path.insert(0, '장고 프로젝트 경로')

import django
django.setup()

# 지금부터 현재 장고 프로젝트에 대한 모든 리소스에 접근 가능
from django.contrib.auth import get_user_model

User = get_user_model()
print(User.objects.all())
```

django-extensions 내 shell_plus 명령

- <https://django-extensions.readthedocs.io>
- 구동 시에 자동 임포트 : 장고 앱의 모델들, 주요 함수들

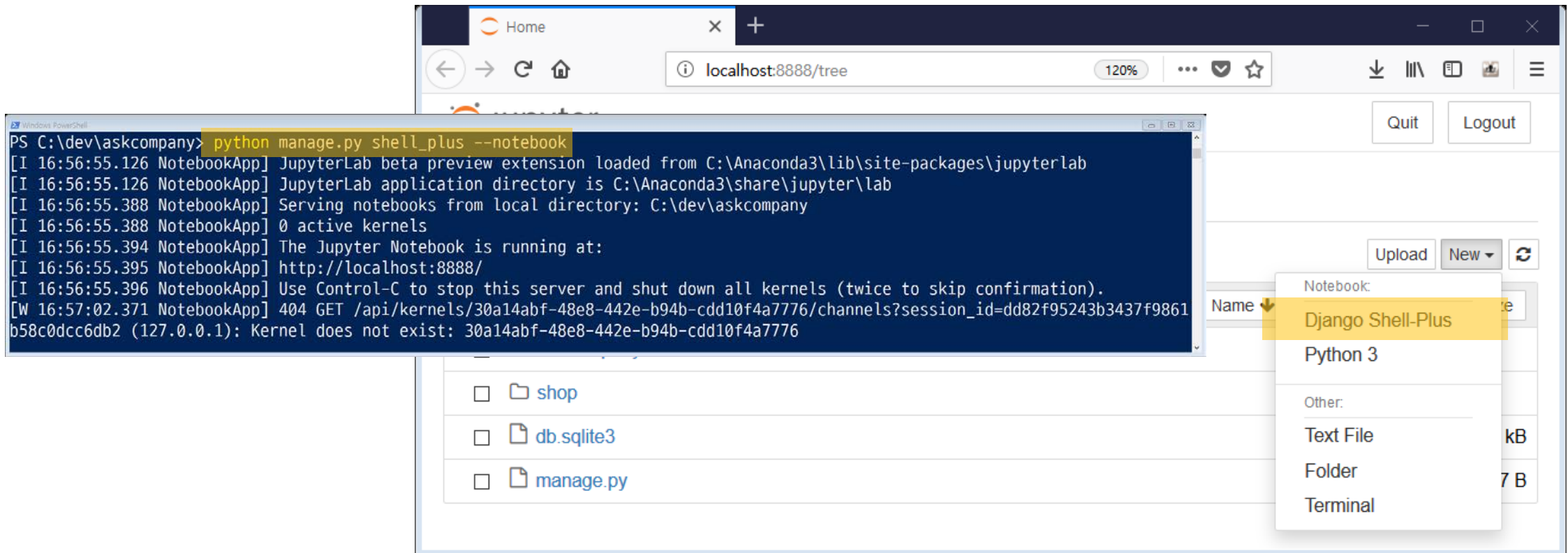
```
PS C:\dev\askcompany> python manage.py shell_plus
# Shell Plus Model Imports
from django.contrib.admin.models import LogEntry
from django.contrib.auth.models import Group, Permission, User
from django.contrib.contenttypes.models import ContentType
from django.contrib.sessions.models import Session
# Shell Plus Django Imports
from django.core.cache import cache
from django.conf import settings
from django.contrib.auth import get_user_model
from django.db import transaction
from django.db.models import Avg, Case, Count, F, Max, Min, Prefetch, Q, Sum, When, Exists, OuterRef, Subquery
from django.utils import timezone
from django.urls import reverse
Python 3.6.5 |Anaconda, Inc.| (default, Mar 29 2018, 13:32:41) [MSC v.1900 64 bit (AMD64)]
Type 'copyright', 'credits' or 'license' for more information
IPython 6.4.0 -- An enhanced Interactive Python. Type '?' for help.

In [1]:
```


django-extensions 설치 및 구동

- 설치 : [공식문서](#)
 - 셸 > `pip install django-extensions`
 - 프로젝트 `settings.INSTALLED_APPS`에 "`django_extensions`" 추가
- 다양한 `shell_plus` 실행 옵션 ([공식문서](#))
 - `python manage.py shell_plus`
 - `python manage.py shell_plus --notebook`
 - Jupyter Notebook을 통한 실행

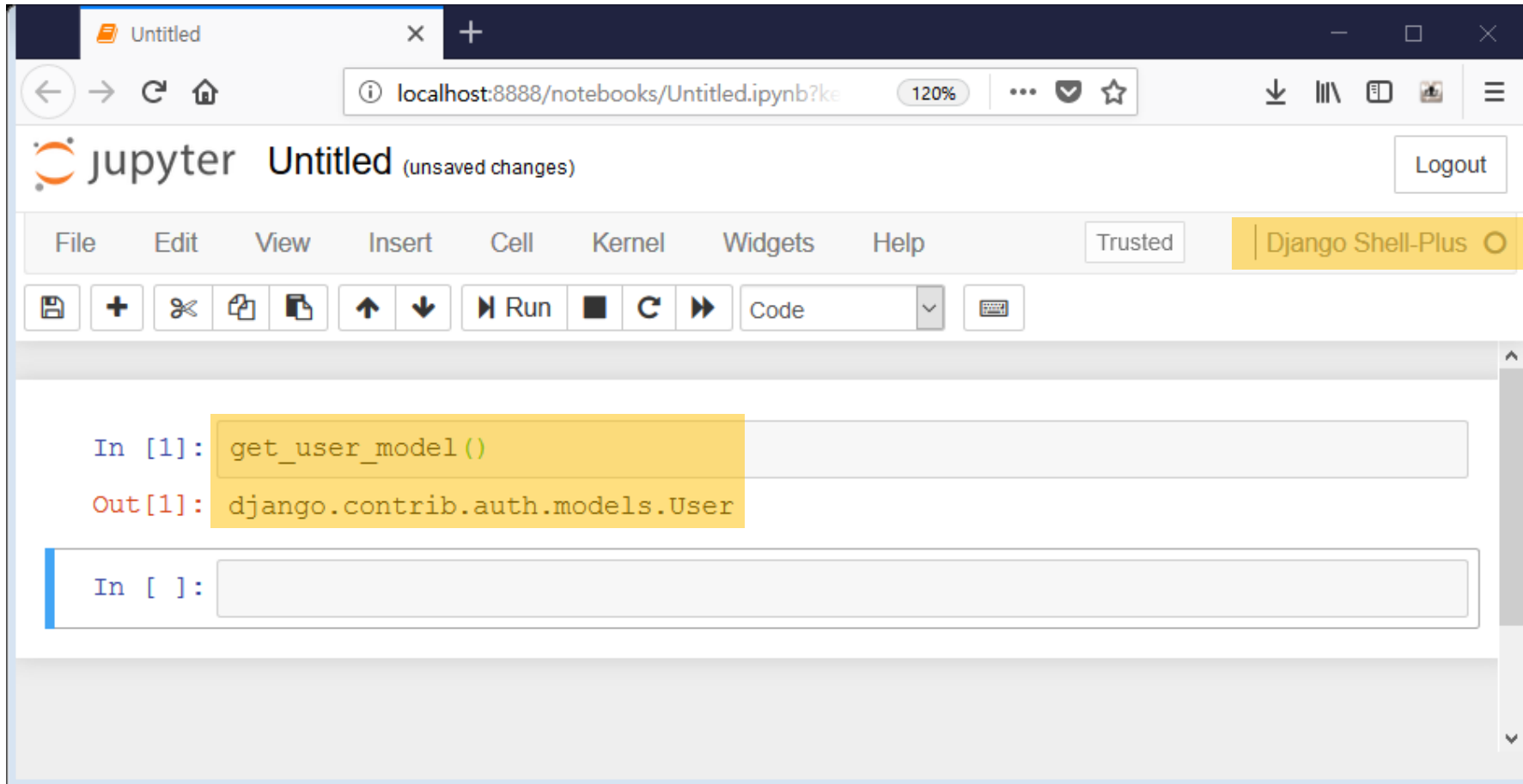
Jupyter Notebook을 통해, 장고 셸 구동



The screenshot displays the Jupyter Notebook interface in a web browser at `localhost:8888/tree`. A terminal window is open in the foreground, showing the command `python manage.py shell_plus --notebook` and its output. The output indicates that the JupyterLab beta preview extension is loaded, the application directory is `C:\Anaconda3\share\jupyter\lab`, and the Jupyter Notebook is running at `http://localhost:8888/`. A 404 error is also shown: `404 GET /api/kernels/30a14abf-48e8-442e-b94b-cdd10f4a7776/channels?session_id=dd82f95243b3437f9861b58c0dcc6db2 (127.0.0.1): Kernel does not exist: 30a14abf-48e8-442e-b94b-cdd10f4a7776`.

In the background, the Jupyter Notebook interface shows a file browser with a list of files: `shop`, `db.sqlite3`, and `manage.py`. A dropdown menu is open, showing the "New" button and a list of options: "Notebook:", "Django Shell-Plus", "Python 3", "Other:", "Text File", "Folder", and "Terminal".

생성된 노트북은 필히 커널을 확인



SQL 출력 옵션

- 쉘 > `python manage.py shell_plus --print-sql`
- 혹은 `settings.SHELL_PLUS_PRINT_SQL = True`
- 하지만, Jupyter Notebook에서는 동작하지 않는 버그.

```
In [1]: get_user_model().objects.all()
Out[1]: SELECT "auth_user"."id", "auth_user"."password", "auth_user"."last_login", "auth_user"."is_superuser", "auth_user"."username", "auth_user"."first_name", "auth_user"."last_name", "auth_user"."email", "auth_user"."is_staff", "auth_user"."is_active", "auth_user"."date_joined" FROM "auth_user" LIMIT 21
```

```
Execution time: 0.001018s [Database: default]
```

```
<QuerySet [User: allieus]>
```

인생은 짧습니다.
파이썬/장고를 쓰세요.