

Python & API

Université Toulouse Paul Sabatier - KEAT9AA1

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2025-09-11

About this presentation

Available at

<https://homepages.laas.fr/gsaurel/>

<https://nim65s.github.io/>

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PRE-REQUISITE

```
class Point:
    def __init__(self, x: int, y: int):
        self.x = x
        self.y = y

    def __str__(self):
        return f"{self.x} {self.y}"

if __name__ == "__main__":
    p = Point(3, 4)
    print(p)
```

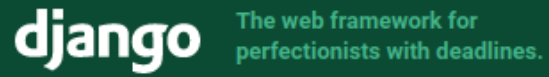
```
https://docs.astral.sh/uv/
```

```
$ uv --version
```

```
$ pipx install uv
```

```
$ pip install uv
```

```
$ curl -LsSf https://astral.sh/uv/install.sh | sh
```



<https://www.djangoproject.com/>

```
$ uv init mysite
$ cd mysite
$ uv add django
$ uv run django-admin startproject mysite .
$ uv run ./manage.py runserver
$ uv run ./manage.py migrate
$ uv run ./manage.py startapp election
```

```
> edit manage.py:
```

```
-#!/usr/bin/env python
```

```
+#!/usr/bin/env -S uv run
```

MODELS

```
# election/models.py
from django.db import models

class Election(models.Model):
    title = models.CharField(max_length=200)
    pub_date = models.DateTimeField()

class Candidate(models.Model):
    election = models.ForeignKey(
        Election,
        on_delete=models.CASCADE,
    )
    name = models.CharField(max_length=200)
    votes = models.IntegerField(default=0)
```

```
> add election in INSTALLED_APPS in mysite/settings.py
```

```
$ ./manage.py makemigrations election
```

```
$ ./manage.py migrate
```

```
$ ./manage.py shell
```

```
In [1]: from election.models import *
In [2]: from django.utils.timezone import now
In [3]: e = Election.objects.create(
    title="Qui est le meilleur chat ?",
    pub_date=now())
In [4]: Candidate.objects.create(
    election=e, name="Doc")
Out[4]: <Candidate: Candidate object (1)>
In [5]: Candidate.objects.create(
    election=e, name="Mallow")
Out[5]: <Candidate: Candidate object (2)>
```

```
# election/models.py
class Election(models.Model):
    ...
    def __str__(self):
        return self.title

class Candidate(models.Model):
    ...
    def __str__(self):
        return self.name
```

```
# election/admin.py
from django.contrib import admin

from . import models

admin.site.register(models.Election)
admin.site.register(models.Candidate)

$ ./manage.py createsuperuser
$ ./manage.py runserver
```

VIEWS

```
# election/views.py
from django.views.generic import DetailView, ListView
from .models import Election

class ElectionListView(ListView):
    model = Election

class ElectionDetailView(DetailView):
    model = Election
```

```
# mysite/urls.py urlpatterns = [ ...

    path(
        "",
        election.views.ElectionListView.as_view(),
        name="elections",
    ),
    path(
        "election/<int:pk>",
        election.views.ElectionDetailView.as_view(),
        name="election",
    ),
```

```
# election/views.py
class CandidateDetailView(DetailView):
    model = Candidate

# election/urls.py
urlpatterns = [
    ...
    path(
        "candidate/<int:pk>",
        election.views.CandidateDetailView.as_view(),
        name="candidate",
    ),
]
```

```
# election/views.py
from django.views.generic import RedirectView
from django.views.generic.detail import SingleObjectMixin

class VoteView(SingleObjectMixin, RedirectView):
    model = Candidate

    def get_redirect_url(self, *args, **kwargs):
        candidate = self.get_object()
        candidate.votes += 1
        candidate.save()
        return f"/candidate/{candidate.id}"
```