1. Vytvoření nového projektu v PyCharm
2. Pravé tlačítko myši na složce projektu a Open in terminal.
3. Instalace Django: pip install django
4. File / Settings / Project Django / Project Interpreter / - kontrola balíčků
5. Vytvoření nového projektu:

(django) C:\Users\ml\PycharmProjects\django>django-admin startproject movies .

Konfigurace projektu - settings.py

1. Změnit časovou zónu:

TIME\_ZONE = **'Europe/Prague'**

1. Nastavit cestu pro statické soubory:

STATIC\_URL = '/static/'

**STATIC\_ROOT = os.path.join(BASE\_DIR, 'static')**

Nastavení databáze a spuštění webserveru

1. V settings.py je defaultně nastaveno SQLITE3

DATABASES = {

'default': {

'ENGINE': 'django.db.backends.sqlite3',

'NAME': os.path.join(BASE\_DIR, 'db.sqlite3'),

}

}

1. Spuštění migrace

(django) C:\Users\ml\PycharmProjects\django>python manage.py migrate

1. Spuštění webserveru

(django) C:\Users\ml\PycharmProjects\django>python manage.py runserver

1. Ověření v prohlížeči - kliknutí na odkaz

Vytvoření samostatné aplikace

1. Vytvoření aplikace filmoteka:

(django) C:\Users\ml\PycharmProjects\django>python manage.py startapp filmoteka

1. Zařazení aplikace v settings.py:

INSTALLED\_APPS = [  
 'django.contrib.admin',  
 'django.contrib.auth',  
 'django.contrib.contenttypes',  
 'django.contrib.sessions',  
 'django.contrib.messages',  
 'django.contrib.staticfiles',  
 **'filmoteka'**,  
]

Vytvoření modelu

<https://developer.mozilla.org/en-US/docs/Learn/Server-side/Django/Models>

<https://docs.djangoproject.com/en/3.0/ref/models/fields/>

**from** django.db **import** models  
**from** django.utils **import** timezone  
**from** django.urls **import** reverse *# Used to generate URLs by reversing the URL patterns***class** Film(models.Model):  
 *# Fields* title = models.CharField(max\_length=200, verbose\_name=**"Title"**)  
 plot = models.TextField(blank=**True**, null=**True**, verbose\_name=**"Plot"**)  
 release\_date = models.DateField(default=timezone.now, help\_text=**"Please use the following format: <em>YYYY-MM-DD</em>."**, verbose\_name=**"Release date"**)  
 runtime = models.IntegerField(blank=**True**, verbose\_name=**"Runtime"**)  
 rate = models.FloatField(default=5.0, verbose\_name=**"Rate"**)  
 poster = models.ImageField(blank=**True**, null=**True**, verbose\_name=**"Poster"**)  
  
 *# Metadata* **class** Meta:  
 ordering = [**"-release\_date"**, **"title"**]  
  
 *# Methods* **def** \_\_str\_\_(self):  
 *"""String for representing the MyModelName object (in Admin site etc.)."""* **return** self.title  
  
 **def** get\_absolute\_url(self):  
 *"""Returns the url to access a particular instance of Film."""* **return** reverse(**'film-detail'**, args=[str(self.id)])

(django) C:\Users\ml\PycharmProjects\django>python -m pip install Pillow

(django) C:\Users\ml\PycharmProjects\django>python manage.py makemigrations filmoteka

(django) C:\Users\ml\PycharmProjects\django>python manage.py migrate filmoteka

Django admin

<https://docs.djangoproject.com/en/1.8/ref/contrib/admin/>

1. Úprava souboru filmoteka/admin.py

**from** django.contrib **import** admin  
**from** .models **import** Film  
  
admin.site.register(Film)

1. Vytvoření superuživatele

(django) C:\Users\ml\PycharmProjects\django>python manage.py createsuperuser

Username (leave blank to use 'ml'): admin

Email address: admin@admin.com

Password:

Password (again):

The password is too similar to the username.

This password is too short. It must contain at least 8 characters.

This password is too common.

Bypass password validation and create user anyway? [y/N]: y

Superuser created successfully.

1. Přihlášení do administrace

<http://127.0.0.1:8000/admin/>

Validace

<https://docs.djangoproject.com/en/3.0/ref/models/instances/#validating-objects>

Uložení na Github

Nastavení routování - URLs

1. V souboru movies/urls.py:

**from** django.conf.urls **import** url, include  
**from** django.contrib **import** admin  
  
urlpatterns = [  
 url(**r'^admin/'**, admin.site.urls),  
 url(**r''**, include(**'filmoteka.urls'**)),  
]

1. V souboru filmoteka/urls.py

**from** django.conf.urls **import** url  
**from** . **import** views  
  
urlpatterns = [  
 url(**r'^$'**, views.film\_list, name=**'film\_list'**),  
]

Vytvoření úvodní stránky

1. V souboru filmoteka/views.py:

**from** django.shortcuts **import** render  
**from** .models **import** Film  
  
**def** film\_list(request):  
 films = Film.objects.all()  
 **return** render(request, **'filmoteka/film\_list.html'**, {**'films'**: films})

1. Vytvoření složky filmoteka/templates/filmoteka a souboru film\_list.html
2. V souboru film\_list.html:

<!doctype **html**>  
<**html lang="cs"**>  
 <**head**>  
 <**title**>Filmotéka</**title**>  
 *<!-- Required meta tags -->* <**meta charset="utf-8"**>  
 <**meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no"**>  
  
 *<!-- Bootstrap CSS -->* <**link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css" integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQUOhcWr7x9JvoRxT2MZw1T" crossorigin="anonymous"**>  
 </**head**>  
 <**body**>  
 <**header class="jumbotron-fluid bg-primary text-white text-center"**>  
 <**h1 class="display-2"**>Filmotéka</**h1**>  
 </**header**>  
 <**main class="container"**>  
 <**table class="table table-bordered"**>  
 <**thead**>  
 <**tr**>  
 <**th**>Název filmu</**th**>  
 <**th**>Rok</**th**>  
 <**th**>Hodnocení</**th**>  
 </**tr**>  
 </**thead**>  
 <**tbody**>  
 {% for film in films %}  
 <**tr**>  
 <**td**>{{ film.title }}</**td**>  
 <**td**>{{ film.release\_date.year }}</**td**>  
 <**td**>{{ film.rate }}</**td**>  
 </**tr**>  
 {% endfor %}  
 </**tbody**>  
 </**table**>  
 </**main**>  
  
 *<!-- Optional JavaScript -->  
 <!-- jQuery first, then Popper.js, then Bootstrap JS -->* <**script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo" crossorigin="anonymous"**></**script**>  
 <**script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js" integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JDZwrnQq4sF86dIHNDz0W1" crossorigin="anonymous"**></**script**>  
 <**script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js" integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM" crossorigin="anonymous"**></**script**>  
 </**body**>  
</**html**>

Django ORM

Zdroj informací:

<https://books.agiliq.com/projects/django-orm-cookbook/en/latest/index.html>

Spuštění interaktivní konzole aplikace:

python manage.py shell

>>> **from filmoteka.models import \***

>>> **Film.objects.all()**

<QuerySet [<Film: Parazit>, <Film: Terminátor>, <Film: Marketa Lazarová>]>

>>> **Genre.objects.all()**

<QuerySet [<Genre: drama>, <Genre: fantasy>, <Genre: historie>, <Genre: komedie>, <Genre: romantika>, <Genre: sci-fi>]>

>>> **Attachment.objects.all()**

<QuerySet [<Attachment: Terminátor - fotka z filmu 1>, <Attachment: Terminátor - fotka z filmu 2>, <Attachment: Terminátor - fotka z filmu 3>]>

>>> **from django.contrib.auth.models import User**

>>> **User.objects.all()**

<QuerySet [<User: admin>]>

>>> **Film.objects.filter(title\_\_contains='er')**

<QuerySet [<Film: Terminátor>]>

>>> **Film.objects.filter(title\_\_contains='r')**

<QuerySet [<Film: Parazit>, <Film: Terminátor>, <Film: Marketa Lazarová>]>

>>> **Film.objects.filter(title\_\_contains='r').order\_by('-rate')**

<QuerySet [<Film: Terminátor>, <Film: Parazit>, <Film: Marketa Lazarová>]>

>>> **exit()**

>>> **from filmoteka.models import \***

>>> **Film.objects.all()**

<QuerySet [<Film: Parazit, year: 2019, rate: 8.4>, <Film: Terminátor, year: 1984, rate: 8.7>, <Film: Marketa Lazarová, year: 1967, rate: 8.2>]>

>>> **film = Film(title="Pelíšky", rate=8.8, runtime=108)**

>>> **film.save()**

>>> **Film.objects.all()**

<QuerySet [<Film: Pelíšky, year: 2020, rate: 8.8>, <Film: Parazit, year: 2019, rate: 8.4>, <Film: Terminátor, year: 1984, rate: 8.7>, <Film: Marketa Lazarová, year: 1967, rate: 8.2>]>

>>> **film.id**

4

>>> **film.title**

'Pelíšky'

>>> **film.release\_date**

datetime.datetime(2020, 3, 9, 21, 53, 34, 310260, tzinfo=<UTC>)

>>> **from datetime import datetime**

>>> **date\_str = "1999-03-11"**

**>>> film.release\_date = datetime.strptime(date\_str, "%Y-%m-%d").date()**

**>>> film.release\_date**

datetime.date(1999, 3, 11)

**>>> film.save()**

**>>> film**

<Film: Pelíšky, year: 1999, rate: 8.8>

**>>> film = Film.objects.get(pk=2)**

**>>> film**

<Film: Parazit, year: 2019, rate: 8.4>

**>>> from django.db.models import \***

**>>> Film.objects.filter(pk=2).update(rate = F("rate") - 1)**

1

**>>> Film.objects.all()**

<QuerySet [<Film: Parazit, year: 2019, rate: 7.4>, <Film: Pelíšky, year: 1999, rate: 8.8>, <Film: Terminátor, year: 1984, rate: 8.7>, <Film: Marketa Lazarová, year: 1967, rate: 8.2>]>

>>> f = Film.objects.get(pk=4)

>>> f

<Film: Pelíšky, year: 1999, rate: 8.8>

>>> f.genres

<django.db.models.fields.related\_descriptors.create\_forward\_many\_to\_many\_manager.<locals>.ManyRelatedManager object at 0x0000021AECCD5988>

>>> f.genres.all()

<QuerySet []>

>>> f.genres.create(name="drama")

<Genre: drama>

>>> f.genres.create(name="horror")

<Genre: horror>

>>> f.genres.all()

<QuerySet [<Genre: drama>, <Genre: horror>]>

>>> Genre.objects.all()

<QuerySet [<Genre: drama>, <Genre: drama>, <Genre: fantasy>, <Genre: historie>, <Genre: horror>, <Genre: komedie>, <Genre: romantika>, <Genre: sci-fi>]>

**Vygenerování models.py z existující databáze**

(pokus) C:\Users\ml\PycharmProjects\pokus>pip install django

Collecting django

Downloading https://files.pythonhosted.org/packages/12/68/8c125da33aaf0942add5095a7a2a8e064b3812d598e9fb5aca9957872d71/Django-3.0.4-py3-none-any.whl (7.5MB)

100% |████████████████████████████████| 7.5MB 3.3MB/s

Collecting asgiref~=3.2 (from django)

Using cached https://files.pythonhosted.org/packages/a5/cb/5a235b605a9753ebcb2730c75e610fb51c8cab3f01230080a8229fa36adb/asgiref-3.2.3-py2.py3-none-any.whl

Collecting sqlparse>=0.2.2 (from django)

Using cached https://files.pythonhosted.org/packages/85/ee/6e821932f413a5c4b76be9c5936e313e4fc626b33f16e027866e1d60f588/sqlparse-0.3.1-py2.py3-none-any.whl

Collecting pytz (from django)

Using cached https://files.pythonhosted.org/packages/e7/f9/f0b53f88060247251bf481fa6ea62cd0d25bf1b11a87888e53ce5b7c8ad2/pytz-2019.3-py2.py3-none-any.whl

Installing collected packages: asgiref, sqlparse, pytz, django

Successfully installed asgiref-3.2.3 django-3.0.4 pytz-2019.3 sqlparse-0.3.1

(pokus) C:\Users\ml\PycharmProjects\pokus>django-admin startproject mysite .

(pokus) C:\Users\ml\PycharmProjects\pokus>python manage.py startapp strelba

(pokus) C:\Users\ml\PycharmProjects\pokus>pip install mysqlclient

Collecting mysqlclient

Using cached https://files.pythonhosted.org/packages/5d/b3/a753b836eab49c865651eb2bc7203d070c58e5f22b33015b48fa6112bd7a/mysqlclient-1.4.6-cp37-cp37m-win\_amd64.whl

Installing collected packages: mysqlclient

Successfully installed mysqlclient-1.4.6

(pokus) C:\Users\ml\PycharmProjects\pokus>python manage.py inspectdb > models.py

Nutné konfigurovat databázi v SETTINGS:

DATABASES = {  
**'default'**: {  
 **'NAME'**: **'strelba'**,  
 **'ENGINE'**: **'django.db.backends.mysql'**,  
 **'USER'**: **'root'**,  
 **'PASSWORD'**: **''**,  
 **'OPTIONS'**: {  
 **'init\_command'**: **"SET sql\_mode='STRICT\_TRANS\_TABLES'"**,  
 },  
 }  
}

Django 3.0 oficiální dokumentace

<https://docs.djangoproject.com/en/3.0/>