# Accelerating Information Technology

http://aiti.mit.edu

Ghana Summer 2012
Lecture DJ06– Django Forms

# Forms

- How do we add data to the database?
  - admin interface
  - command line
  - forms (user-submitted)
- Forms are typically submitted using HTTP POST or GET protocols

# Let’s look at HTML forms

# Forms step-by-step

1. Modify template so that it contains your form

# Forms – template

```
<html>
  <form action=“” method=“POST”>
      {{ form.as_p }}
      <input type=“submit” value=“Submit!”>
  </form>
</html>
```

- We can render the form context variable a few different ways
- Try looking at the page source to see what HTML django is using behind the scenes in each case...
- Try `{{form.as_ul}}` instead

# Forms step-by-step

1. Modify template so that it contains your form
2. Create your Form class in forms.py or views.py

# Django `Form` class

```
class TextForm(forms.Form):
  text_message = forms.CharField()
  phone_number = forms.CharField()
```

# Forms step-by-step

1. Modify template so that it contains your form
2. Create your Form class
3. Modify your View

# Remember Http request?

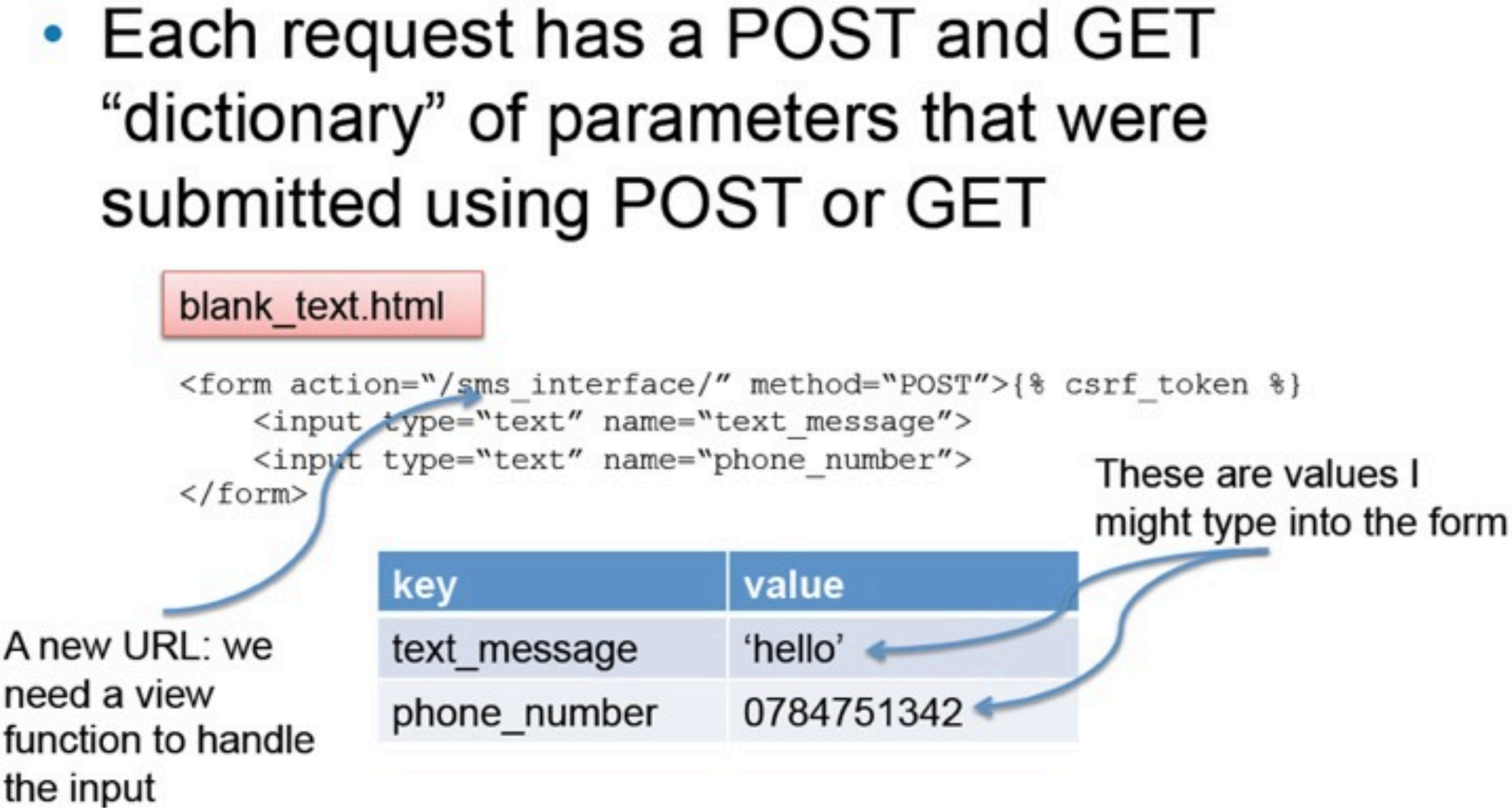
```
from django.http import HttpResponse

def hello(request):
    return HttpResponse("Hello world")
```

- HttpRequest has a lot of interesting functions
- Today, we care about: POST and GET

# POST and GET

- Contain information submitted by the user
- “dictionary-like” objects
- GET = when you only want to display data
- POST = when you do other things as well, like change your database

# Forms



- Each request has a POST and GET "dictionary" of parameters that were submitted using POST or GET

blank_text.html

```
<form action="/sms_interface/" method="POST">{% csrf_token %}
    <input type="text" name="text_message">
    <input type="text" name="phone_number">
</form>
```

These are values I might type into the form

| key | value |
|---|---|
| text_message | 'hello' |
| phone_number | 0784751342 |

A new URL: we need a view function to handle the input

# `POST` data

- Using the `request.POST` dictionary, we can access the attributes we want to use…

```
def mirror_response(request):
   if request.method == “POST”:
      text_string =request.POST[‘text_mesage’]
      phone_number = request.POST[‘phone_number’]
      return HttpResponse(‘%s sent the text message %s’)
   else:
      return HttpResponse(“This is not a helpful way to
      handle non-POST requests”)
```

# Django `Form` class

- The `Form` class can help us out…

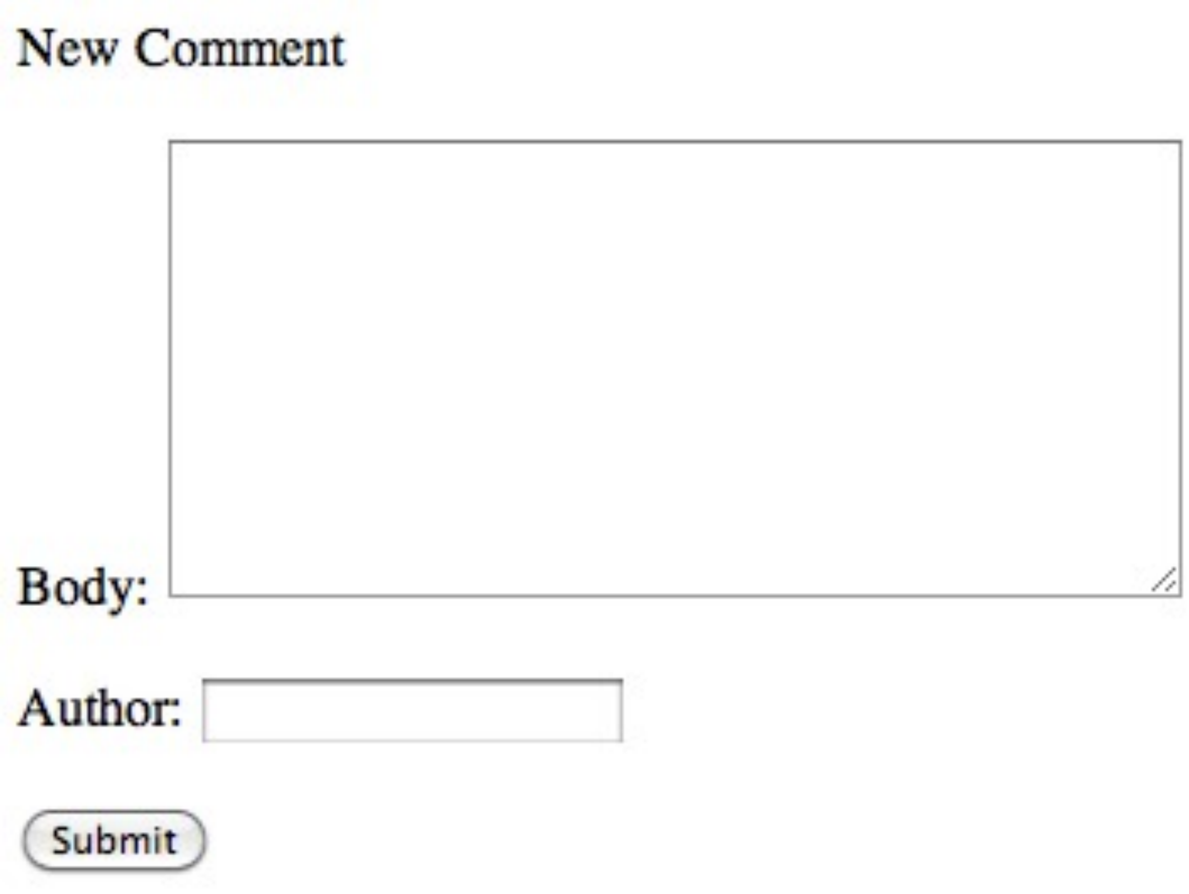
```
class TextForm(forms.Form):
   text_message = forms.CharField()
   phone_number = forms.CharField()
```

```
def sms_handler(request):
   if request.method == “POST”:
      text_info = TextForm(request.POST)
      if text_info.is_valid():
         form_data = text_info.cleaned_data
         text_body = text_info[‘text_message’]
         phone_number = text_info[‘phone_number’]
         return HttpResponse(“%s sent %s” %
         (phone_number,text_body))
   else:
      my_rc = RequestContext(request,{‘form’:TextForm()}
      render_to_response(‘blank_window.html’,my_rc)
```

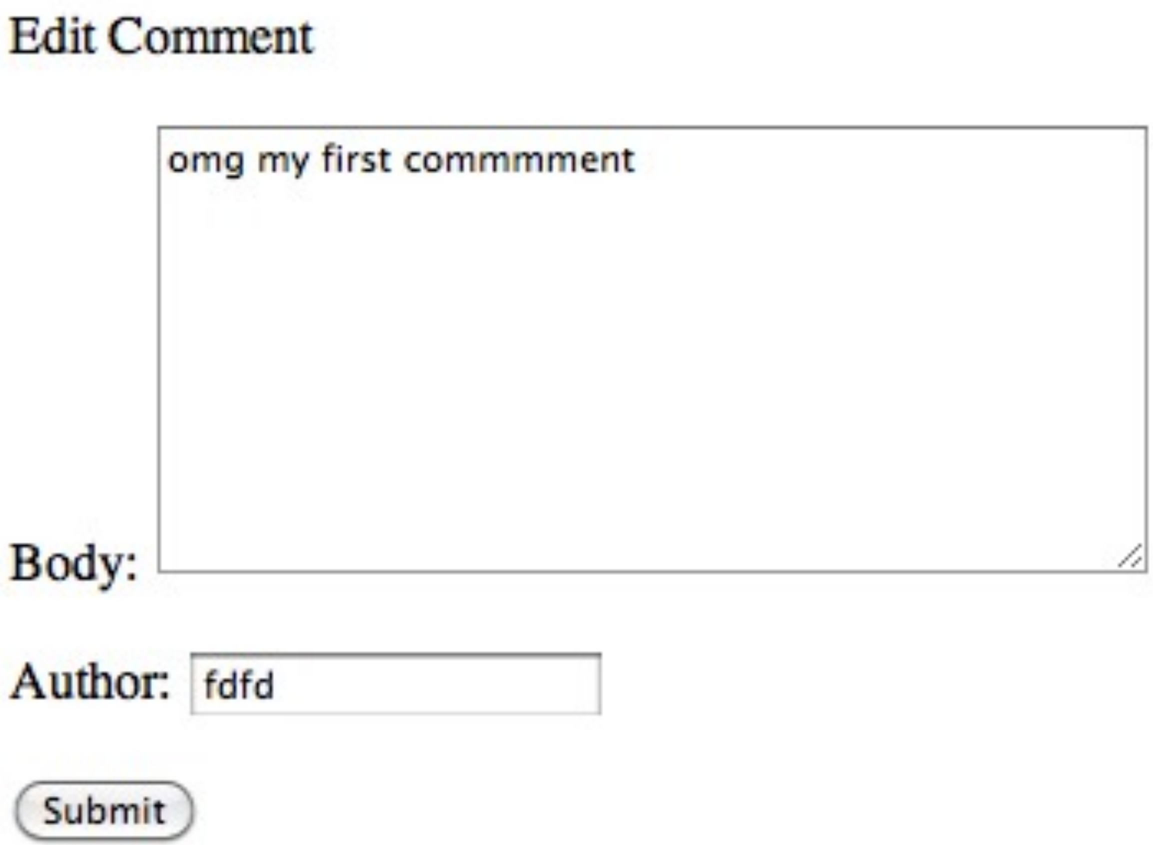
# Forms and Models

- What if we want to let users add data to our database?
- Add a book
- Add a comment to our blog
- Remember that you already have your model defined, now you want a way to represent that model through a form

# We want this (but hopefully prettier)



# We want this (but hopefully prettier)



Edit Comment

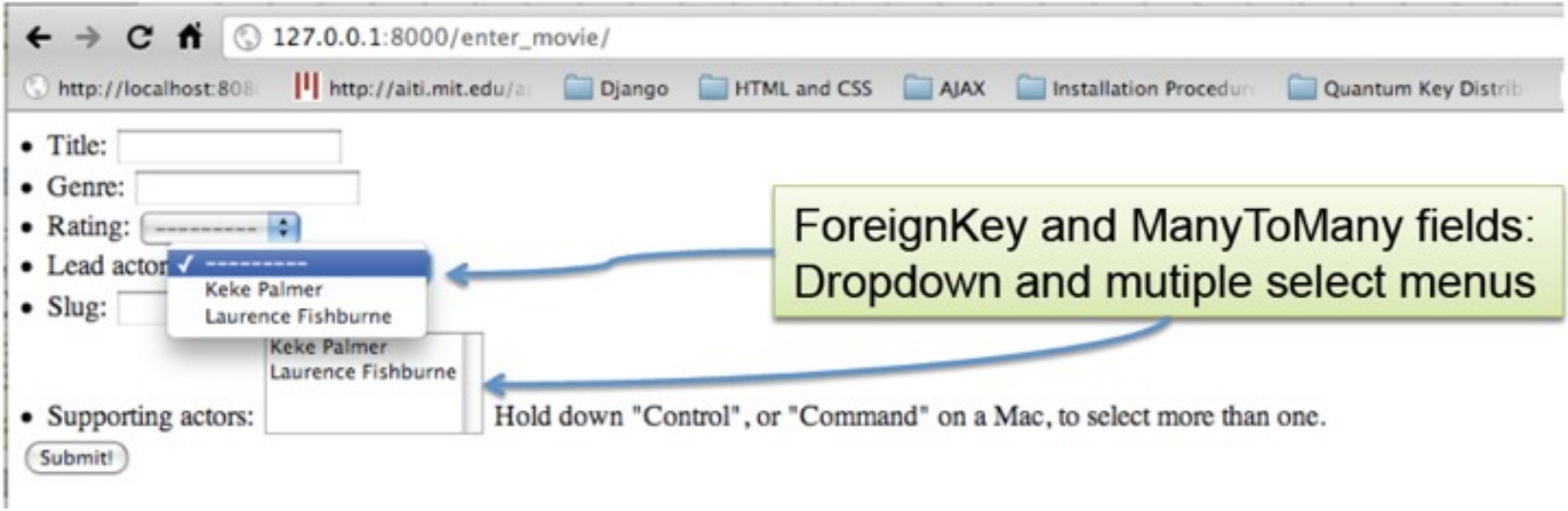
Body: omg my first commmment

Author: fdfd

# Remember Movie example?

```
class Movie(models.Model):
    rating = models.IntegerField()
    title = models.CharField(max_length=100)
    genre = models.CharField()
    lead_actor = models.ForeignKey(Actor,related_name=‘lead
    actor’)
    support_actors = models.ManyToManyField
    (Actor,related_name=‘support’)
```

# We want this:



127.0.0.1:8000/enter_movie/

- Title:
- Genre:
- Rating: ---------
- Lead actor: ✓ ---------
- Slug:
- Supporting actors: Hold down "Control", or "Command" on a Mac, to select more than one.

ForeignKey and ManyToMany fields: Dropdown and mutiple select menus

# Bad solution

```
class MovieForm(forms.Form):
  title = forms.CharField()
  genre = forms.CharField()
  rating = forms.IntegerField()
  # what should we do for lead actor and
  # supporting actors?
  lead_name = forms.CharField()
  support_names = forms.CharField()
```

How do we create a Movie instance now and put it in our database?

# Bad solution

```
def get_movie_data(request):
    if request.method == “POST”:
        movie_form = MovieForm(request.POST)
        my_movie = Movie(title=movie_form.title,
        rating=movie_form.rating, genre
        = movie_form.genre)
        lead_actor = Actor.objects.get(name=movie_form.name)
        all_support_names = movie.support_names.split(“,”)
        my_movie.save()
        for some_name in all_support_names:
            my_movie.supporting_actors.add(Actor.objects.get
            (name=some_name))
            my_movie.save()
```

# Bad solution

- Advantages:
  - Exercise our QuerySet API Skills
- Disadvantages:
  - That was miserable

# `ModelForm` Class

- Let’s create a form based on our `Movie` model

```
from django.forms import ModelForm
from models import Movie
class MovieForm(ModelForm):
  class Meta:
    model = Movie
```

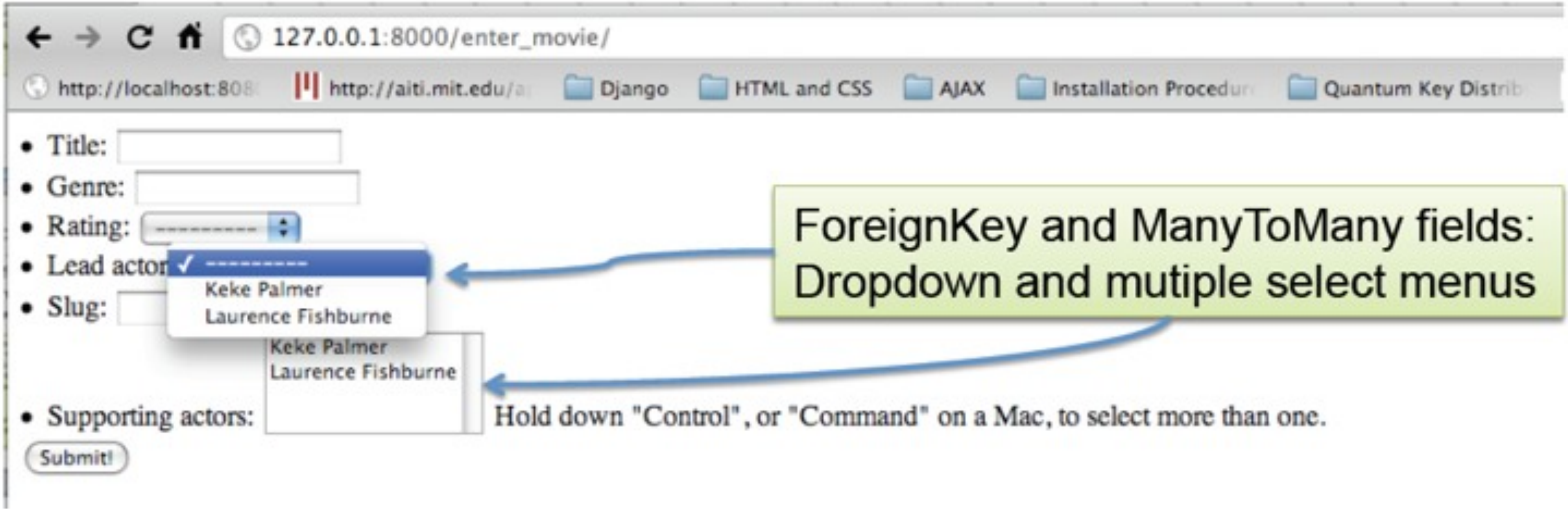
# `ModelForm` Class

- One view function for two cases:
  - the user has submitted the form
  - the user wants to fill out the form

```
def get_movie_data(request):
   if request.method == “POST”:
      movie_form = MovieForm(request.POST)
      my_movie = movie_form.save()
      return HttpResponse(“The movie %s was successfully entered
      in the database”)
   else:
      my_form = MovieForm()
      my_rc = RequestContext(request,{‘form’:my_form})
      return render_to_response(‘movie_app/
      movie_form.html’,my_rc)
```

# `ModelForm` Class

- Django does a ridiculous amount of HTML work on our behalf



- Title:
- Genre:
- Rating: ---------
- Lead actor: ✓ ---------<br>Keke Palmer<br>Laurence Fishburne
- Slug:
- Supporting actors: Keke Palmer<br>Laurence Fishburne Hold down "Control", or "Command" on a Mac, to select more than one.

ForeignKey and ManyToMany fields: Dropdown and mutiple select menus