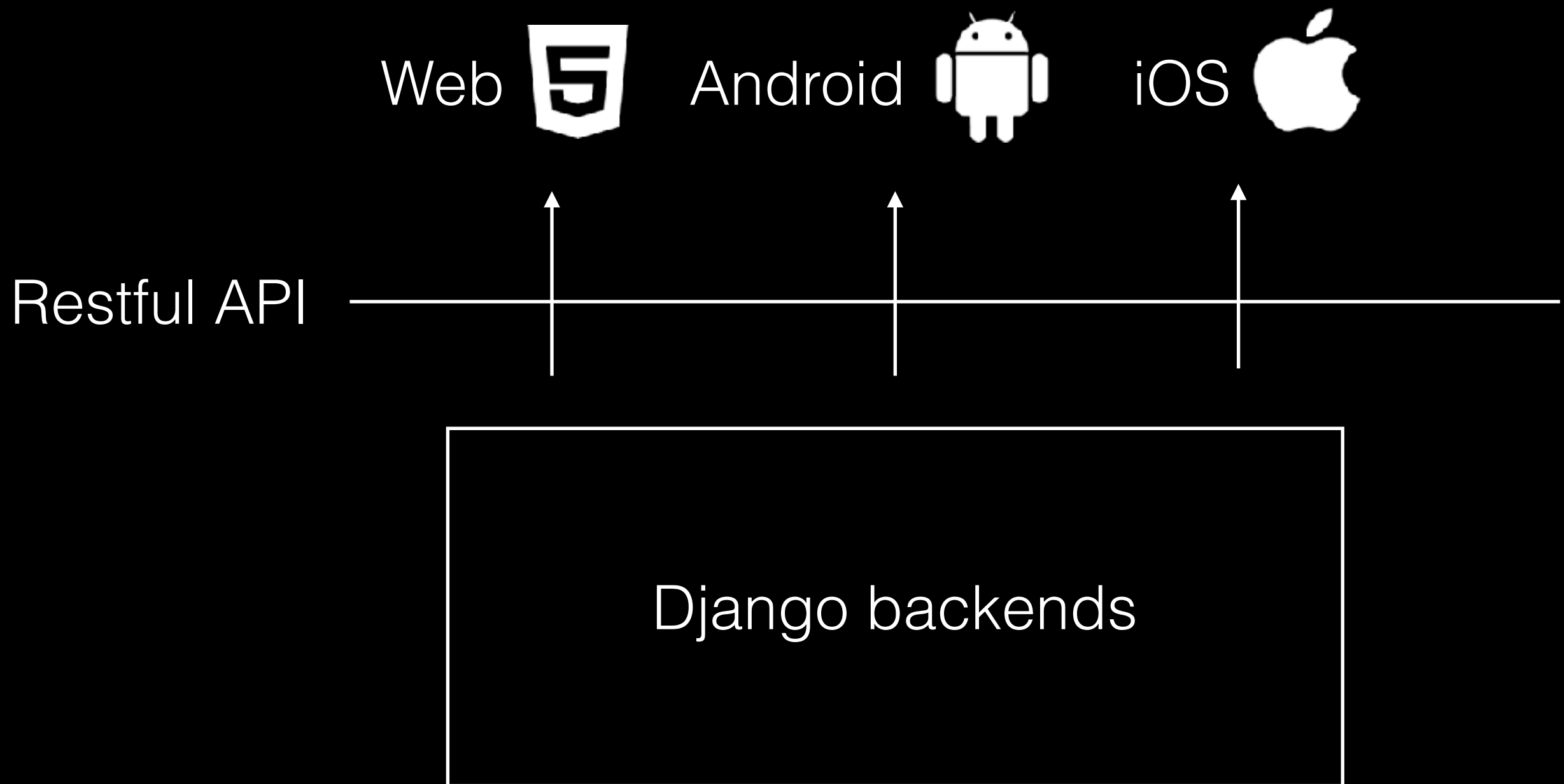


Backend working group

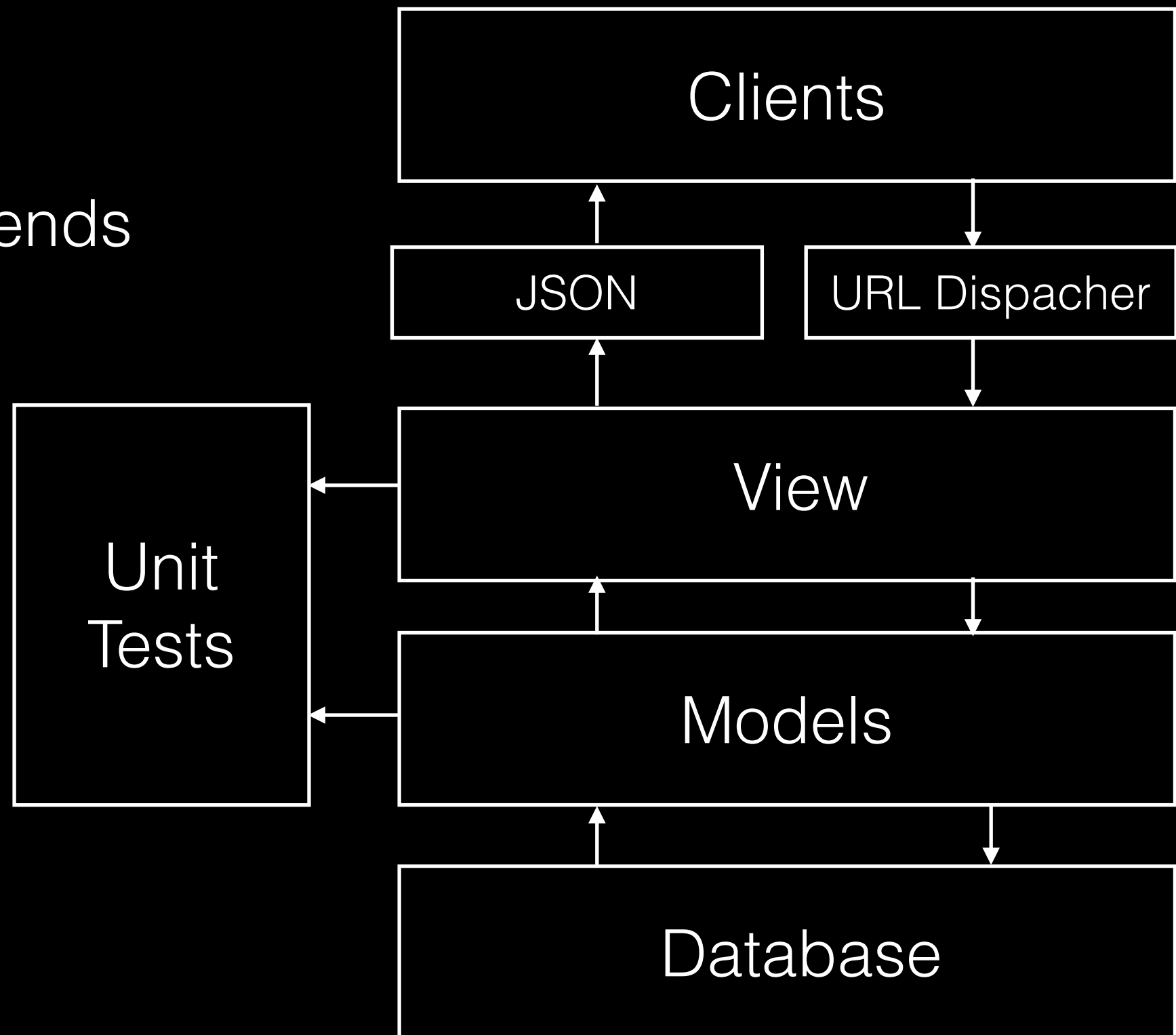
Nov 30

Well-designed architecture



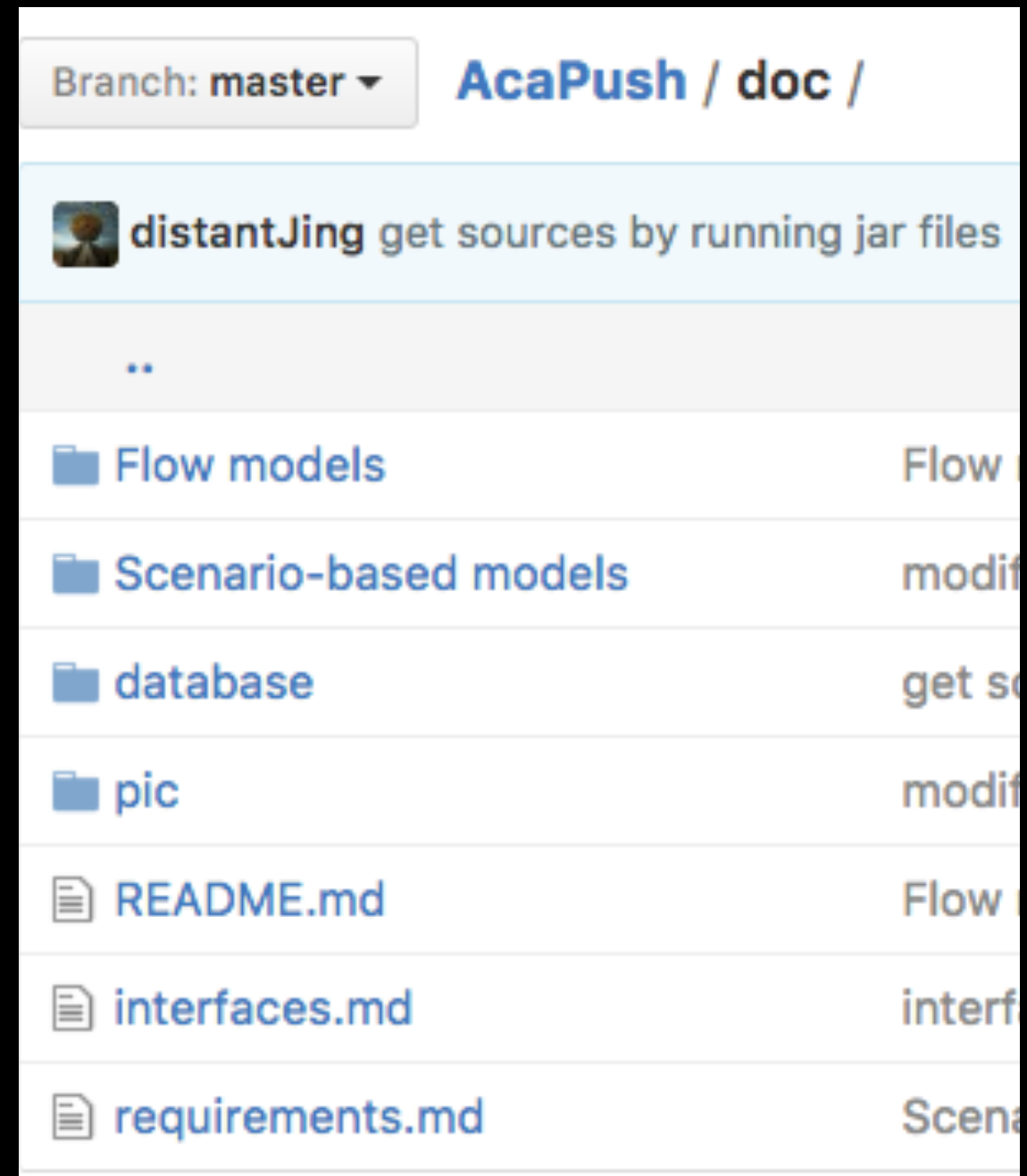
Well-designed architecture

Django backends



Detailed Documentation

- Scenario-based Model
- Interfaces Design
- Database design



Test-driven Development

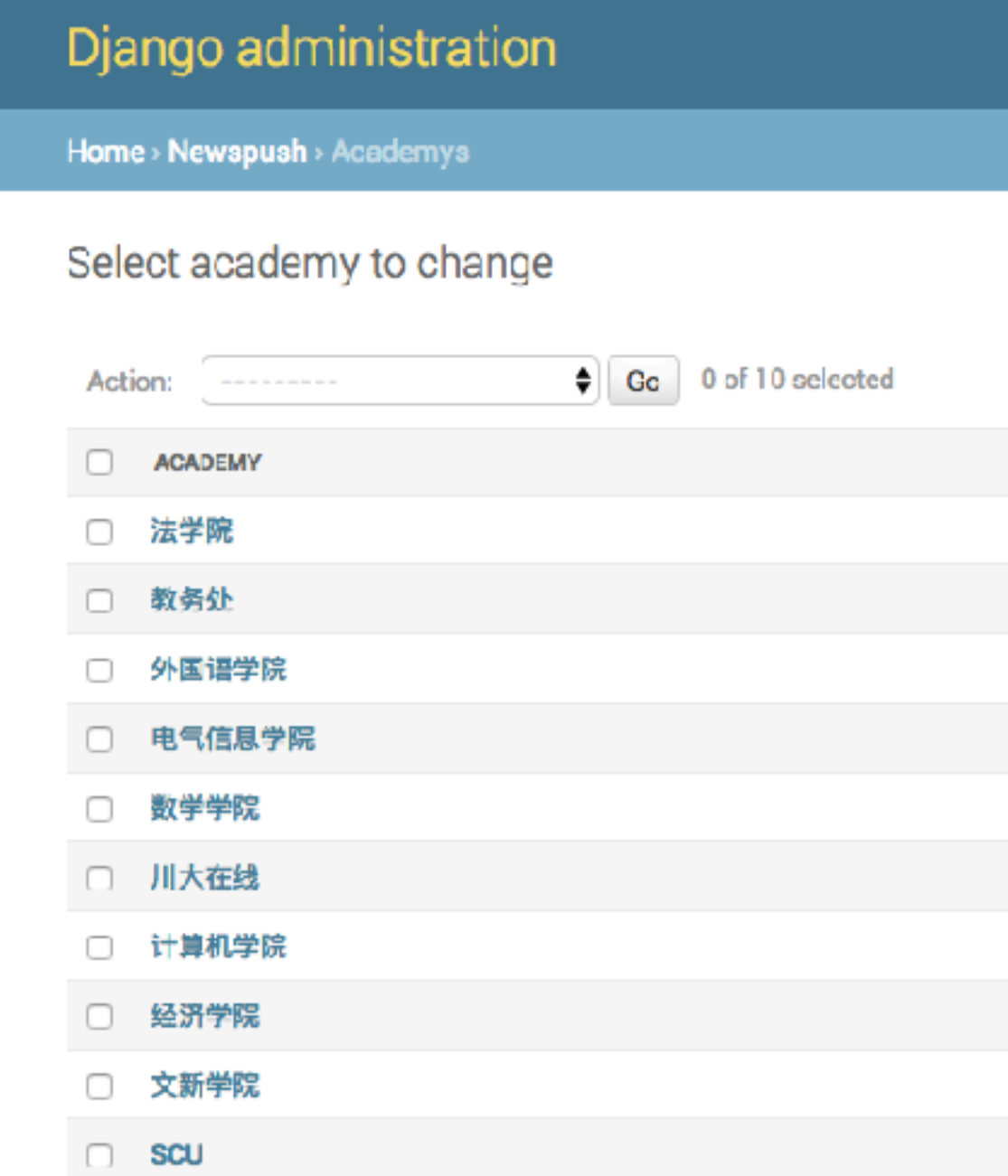
- Unit tests of models
- Unit tests of views
- Unit tests of forms
- Unit tests of data up

```
CommentFormTest(TestCase):
    def test_form_validation_for_blank_items(self):
        student_ = StudentInfo.objects.create(student_id=1)
        form = CommentForm(data={'content': '',
                                'ip': '127.0.0.1'})
        self.assertFalse(form.is_valid())
        self.assertEqual(form.errors['content'], [EM])

    def test_form_save_handles_saving_to_a_news(self):
        academy_ = Academy.objects.create()
        news_ = News.objects.create(academy=academy_)
        student_ = StudentInfo.objects.create(student_id=1)
        form = CommentForm(data={'content': 'This is',
                                'ip': '127.0.0.1'})
        self.assertTrue(form.is_valid())
        new_comment = form.save(for_news=news_, for_student=student_)
        self.assertEqual(new_comment, NewsComment.objects.get())
        self.assertEqual(new_comment.content, 'This is')
        self.assertEqual(new_comment.ip, '127.0.0.1')
        self.assertEqual(new_comment.news, news_)
        self.assertEqual(new_comment.studentInfo, student_)
```

Convenient Database Management

- Web-based User Interface
- Group Management
- Log system



The screenshot shows the Django administration interface for a system named 'Newspush'. The page title is 'Django administration'. The breadcrumb trail is 'Home > Newspush > Academics'. The main heading is 'Select academy to change'. Below this, there is an 'Action:' dropdown menu with a 'Go' button and a status indicator '0 of 10 selected'. A list of academies follows, each with a checkbox and a label. The labels are: ACADEMY, 法学院, 教务处, 外国语学院, 电气信息学院, 数学学院, 川大在线, 计算机学院, 经济学院, 文新学院, and SCU.

Action:	Go	0 of 10 selected
<input type="checkbox"/>	ACADEMY	
<input type="checkbox"/>	法学院	
<input type="checkbox"/>	教务处	
<input type="checkbox"/>	外国语学院	
<input type="checkbox"/>	电气信息学院	
<input type="checkbox"/>	数学学院	
<input type="checkbox"/>	川大在线	
<input type="checkbox"/>	计算机学院	
<input type="checkbox"/>	经济学院	
<input type="checkbox"/>	文新学院	
<input type="checkbox"/>	SCU	

Load balancer - Nginx

- Flawless Application Delivery for the Modern Web
- Powering half of the world's busiest sites, NGINX is the heart of the modern web. We help you deploy and deliver your sites and apps with performance, reliability, security, and scale through our all-in-one application delivery platform.

The NGINX logo is displayed in a bold, green, sans-serif font. The letters are thick and blocky, with a slight shadow effect. The 'N' and 'G' are particularly prominent, with the 'G' having a unique, angular shape. The 'I' and 'N' are also thick, and the 'X' is composed of two thick, intersecting lines.

Server Runner - Gunicorn

- Gunicorn 'Green Unicorn' is a Python WSGI HTTP Server for UNIX. It's a pre-fork worker model ported from Ruby's Unicorn project. The Gunicorn server is broadly compatible with various web frameworks, simply implemented, light on server resources, and fairly speedy.



Deployment Automation

- One line to deploy
- Specific error report
- Outstanding reusability
- Idempotent Operations



Difficulty We Faced

- Isomorous code combinations
- Common API Design
- Robust Database Design

Team Work

- Minghao Xie
- Zhijing Wu
- Zhoufan Jia

More info in Github

- <https://github.com/Yetocome/AcaPush>

Thank you!

–Backends working group