Modern Websites with Django and React

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2016-08-23

Introduction

- 1. Django tutorial
- 2. JSON APIs with Django REST framework
- 3. Interactivity with React.js

Conclusion

▶ I don't know a lot about this

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If you know a better way to do this, please give a talk on it

Introduction

1. Django tutorial

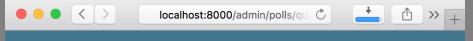
2. JSON APIs with Django REST framework

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Django tutorial

https://docs.djangoproject.com/en/1.10/intro/tutorial01/



Django administration

Home > Polls > Questions

Select question to change

Acti	ion: Go 0 of 2 selected
	QUESTION
	What is your favourite number?
	What is your favourite colour?
2 questions	



- What is your favourite number?
- What is your favourite colour?



What is your favourite colour?

- Red
- Green
- Blue

Vote

Getting it running

- 1. Install Python 3
- 2. git clone
 https://github.com/andrewdotn/django-react.git
- 3. cd django-react
- 4. pip3 install --user -r requirements.txt
- cd polls_tutorial
- 6. ./manage.py migrate
- 7. ./manage.py createsuperuser
- 8. ./manage.py runserver

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Browser needs to retrieve updated state

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Standard way of doing this: JSON REST APIs

Browser needs to retrieve updated state GET

Browser needs to update state POST

Standard way of doing this: JSON REST APIs

Add serializer and view to show questions

curl http://localhost:8000/polls/api/questions/

- Add serializer and view to show questions
- Wire rest_framework router to URLsSee next slide









Django REST framework

andrew

Question List

OPTIONS

GET

```
GET /polls/api/questions/
```

```
HTTP 200 OK
 Allow: GET, POST, HEAD, OPTIONS
 Content-Type: application/json
 Vary: Accept
```

```
"id": 1,
"question_text": "What is your favourite colour?",
```

"pub date": "2016-08-17T05:06:15Z"

- Add serializer and view to show questions
- ▶ Wire rest_framework router to URLs
- Expose full model to API
 Hack to workaround namespace issues

- Add serializer and view to show questions
- Wire rest_framework router to URLs
- Expose full model to API
- Add increment verb

```
$ curl -X POST http://localhost:8000/polls/api/choices/2/increment/; echo
{"choice_text":"0","votes":26,"question":"http://localhost:8000/polls/api/quest:
$ curl -X POST http://localhost:8000/polls/api/choices/2/increment/; echo
{"choice_text":"0","votes":27,"question":"http://localhost:8000/polls/api/quest:
$ curl -X POST http://localhost:8000/polls/api/choices/2/increment/; echo
{"choice_text":"0","votes":28,"question":"http://localhost:8000/polls/api/quest:
```

- Add serializer and view to show questions
- Wire rest_framework router to URLs
- Expose full model to API
- Add increment verb

Your turn!

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The new standard for JS frontend work

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 Components render HTML as a function of properties and state

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The new standard for JS frontend work

Rules:

- Components render HTML as a function of properties and state
- Properties can only be changed by parent components
- Visual updates only happen when properties or state change in a way that affects the output of the render function

► React hello world

React hello world Note that including the initial JSON in the response saves round-trips aka progress spinner time

- ► React hello world
- Format questions

- React hello world
- ► Format questions
- ► Render vote counts in tables

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 key allows for insertions, deletions, and reordering

- React hello world
- Format questions
- ► Render vote counts in tables
- Add polling for data updates

- ► React hello world
- Format questions
- Render vote counts in tables
- Add polling for data updates excellent separation of concerns

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- Format questions
- ► Render vote counts in tables
- Add polling for data updates
- Implement increment call with react

- ► React hello world
- Format questions
- Render vote counts in tables
- Add polling for data updates
- Implement increment call with react normally you'd use callbacks instead of componentWillReceiveProps

Demo

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Conclusions

 Exposing an API for your existing models is pretty straightforward

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- Exposing an API for your existing models is pretty straightforward
- React.js is an in-browser template layer that lets you add live updates without changing rendering code

► Replicate

- Replicate
- Pause/faster/slower controls on polling

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- Permissions

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- WebSockets