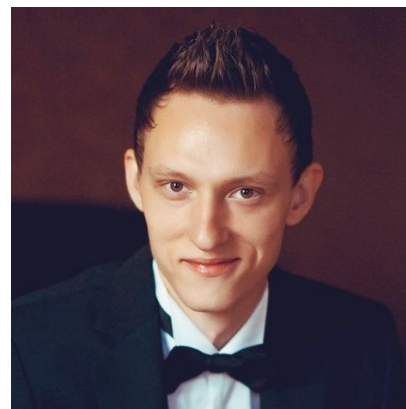


From CRUD to Hypermedia APIs with





Vladimir Tsukur



**software
engineering
manager @**



CIKLUM
EMPOWERING COLLABORATION



partner @

EASYHUNT

frost°

**program
committee @**



Why Should I Care?

● web api
Search term

● rest api
Search term

+ Add comparison

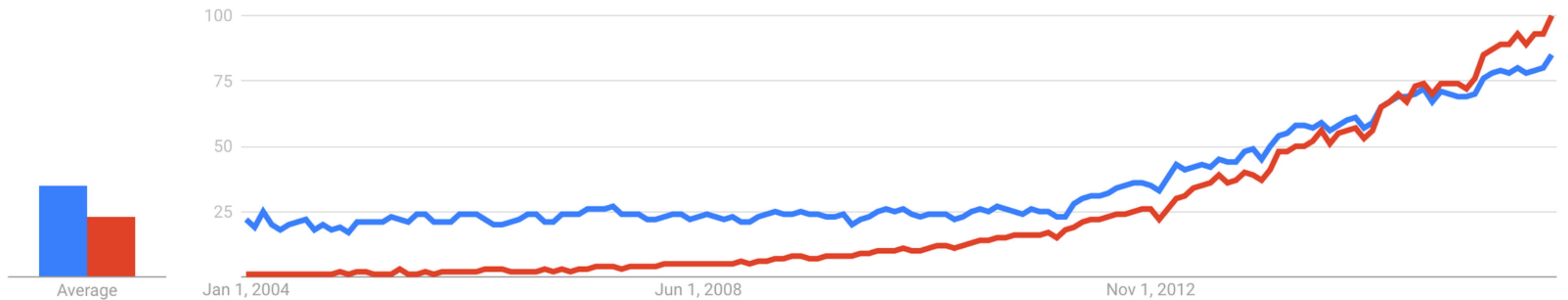
Worldwide ▼

2004 - present ▼

All categories ▼

Web Search ▼

Interest over time ?



A photograph of two men in business suits. The man on the left is older, with thinning hair, wearing a dark suit, light blue shirt, and a striped tie. He is gesturing with his right hand. The man on the right is younger, with dark hair, wearing a dark suit, white shirt, and a dark tie. He is looking towards the older man. A large green speech bubble is overlaid on the right side of the image, containing white text.

**Идея! ЧЕРНЫЙ
РЫНОК ВАЛЮТ!**

РЫНОК НАЛИЧНОЙ ВАЛЮТЫ

КупитьПродать

100USD за RUB

Альфа Форекс

Рекомендованный курс для обмена:

\$

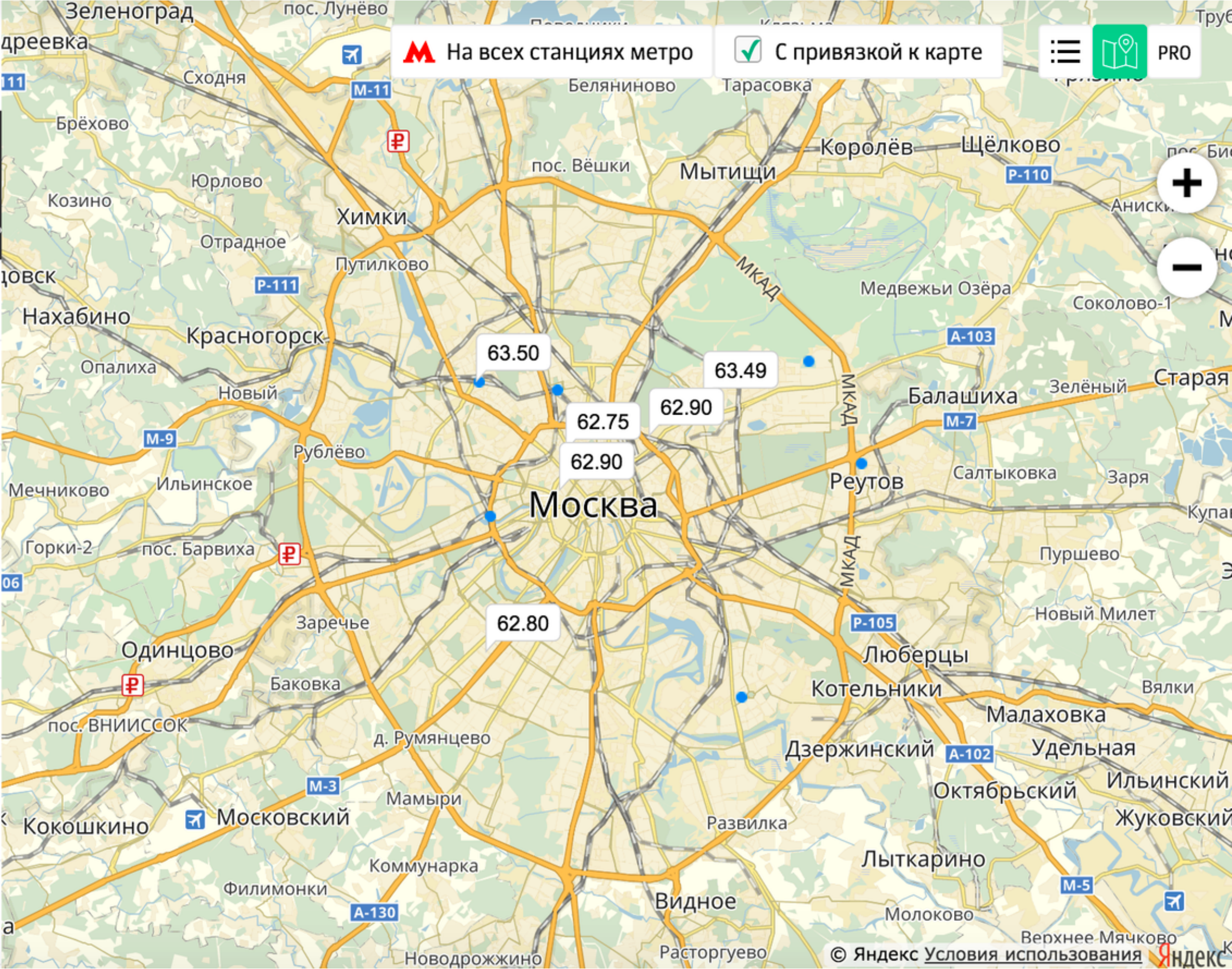
ПОКУПКА62.06

ПРОДАЖА62.48

Обменять

"Alfa-Forex" являются брендом компании Alfa Capital Holdings. Предлагаемые к заключению договоры или финансовые инструменты являются высокорискованными и могут привести к потере внесенных денежных средств в полном объеме. До совершения сделок следует ознакомиться с рисками, с которыми они связаны.

★ Банк	Телефон	Курс	Сумма
★ КБ Метрополь оквку Маяковская	+7 905 722-77-62	62.75	6274.90
★ АКБ РФА оквку ПРЕОБРАЖЕНСКАЯ ПЛОЩАДЬ	+7 929 975-57-10	63.49	6349.00
★ АКБ Новый Кредитный Союз оквку №40 КРАСНОПРУДНАЯ 22-24	+7 926 660-80-01	62.90	6290.00
★ КБ ЮНИСТРИМ оквку № 269	+7 495 776-85-39	62.90	6290.00
★ Банк Новый Символ оквку Сокол	+7 495 980-01-61	63.50	6350.00
★ КБ ЮНИСТРИМ оквку № 292 Ленинский 95	+7 495 729-44-51	62.80	6280.00



Ad Creation

Новое объявление

! — обязательные поля

Хочу

купить



Сумма

!

5000

USD



Курс

!

70

Телефон

+79341230943

Город

!

Санкт-Петербург



Район

Пушкинский

Комментарий

могу подъехать

целиком

можно частями

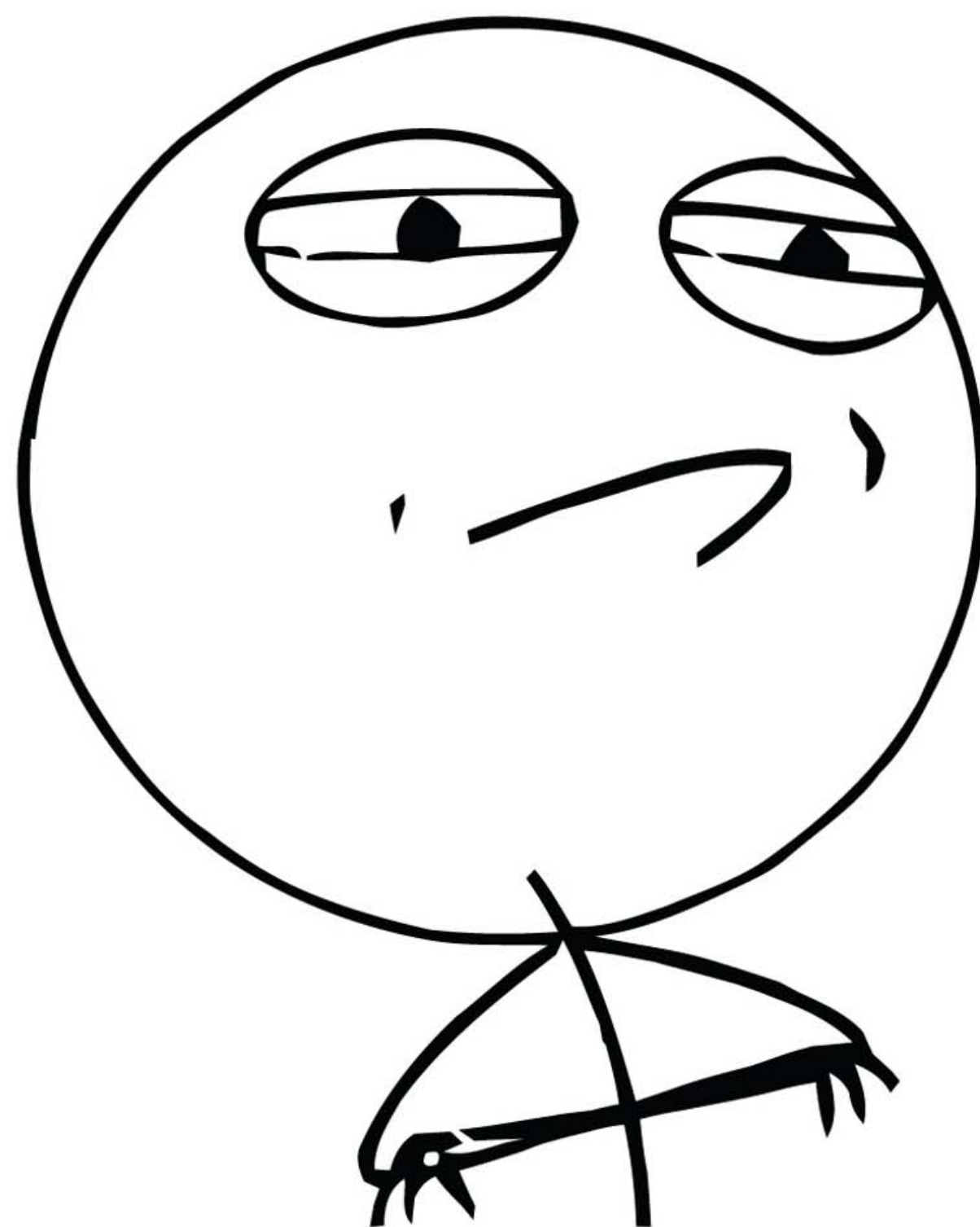
могу подъехать

Актуально до

22:00



Сохранить



CHALLENGE ACCEPTED

Tools



Spring Boot



Spring Data



Spring Data REST

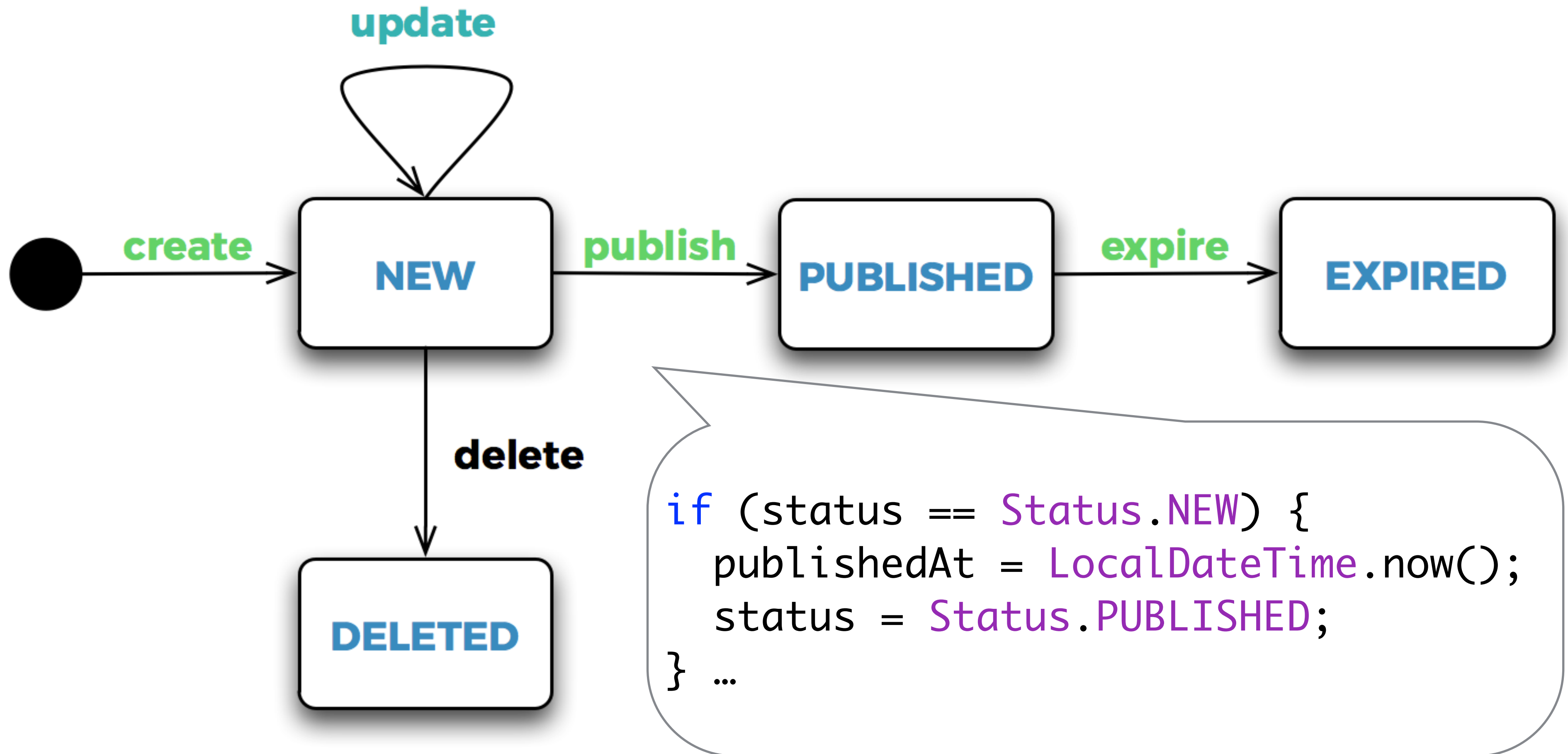
CRUD Style API

Method	URL	Task
POST	/ads	Create new ad
GET	/ads	View ads
GET	/ads/{id}	Get ad
PATCH / PUT	/ads/{id}	Update ad
DELETE	/ads/{id}	Delete ad

A man and a woman are shown from the chest up, looking upwards with expressions of anticipation or hope. They are surrounded by a large number of Russian 5000 ruble banknotes falling from the top of the frame. In the bottom right corner, there is a large, stylized 5000 ruble banknote that appears to be on fire. A black speech bubble with white text is positioned in the upper right area of the image.

Должен же быть
БИЗНЕС-ПРОЦЕСС !!!

CRUD is NOT enough



API Changes

Method	URL	Task
PUT	/ads/{id}/publishing	Publish ad
PUT	/ads/{id}/expiration	Expire ad
GET	/ads/search/published	Get published ads

/uri Style Adoption?

43%



ЗНАНИЕ

нет более сильного стремления

URI Binding & Construction

Task	Method	URL
Update ad	PATCH	<u>/ads/{id}</u>
Delete ad	DELETE	<u>/ads/{id}</u>
Publish ad	PUT	<u>/ads/{id}/publishing</u>
Expire ad	PUT	<u>/ads/{id}/expiration</u>

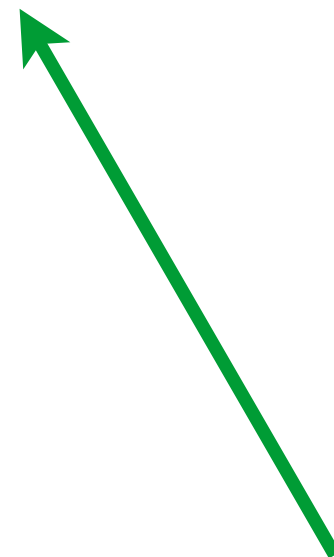
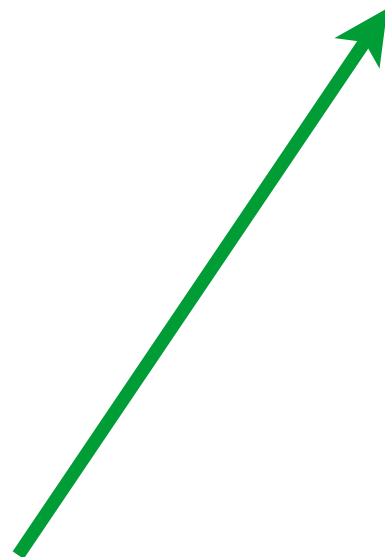
"Figuring" Out the Flow

Task	Method	URL
Update ad (only if NEW)	PATCH	/ads/{id}
Delete ad (only if NEW)	DELETE	/ads/{id}
Publish ad (only if NEW)	PUT	/ads/{id}/publishing
Expire ad (only if PUBLISHED)	PUT	/ads/{id}/expiration



**Должно работать на
моем iPhone 7!!!**

http://API



iOS



"Hypermedia" = links

data

```
{  
  "amount": 3000,  
  "currency": "USD",  
  ...  
}
```

+

```
{  
  ...  
  "_links": {  
    "publishing": {  
      "href": "/ads/1/publishing"  
    },  
    "update": {  
      "href": "/ads/1"  
    },  
    "deletion": {  
      "href": "/ads/1"  
    }  
  }  
}
```


Hypermedia API

Link Relation	Task	Method
update	Update ad	PATCH
deletion	Delete ad	DELETE
publishing	Publish ad	PUT
expiration	Expire ad	PUT

Tools



Spring HATEOAS

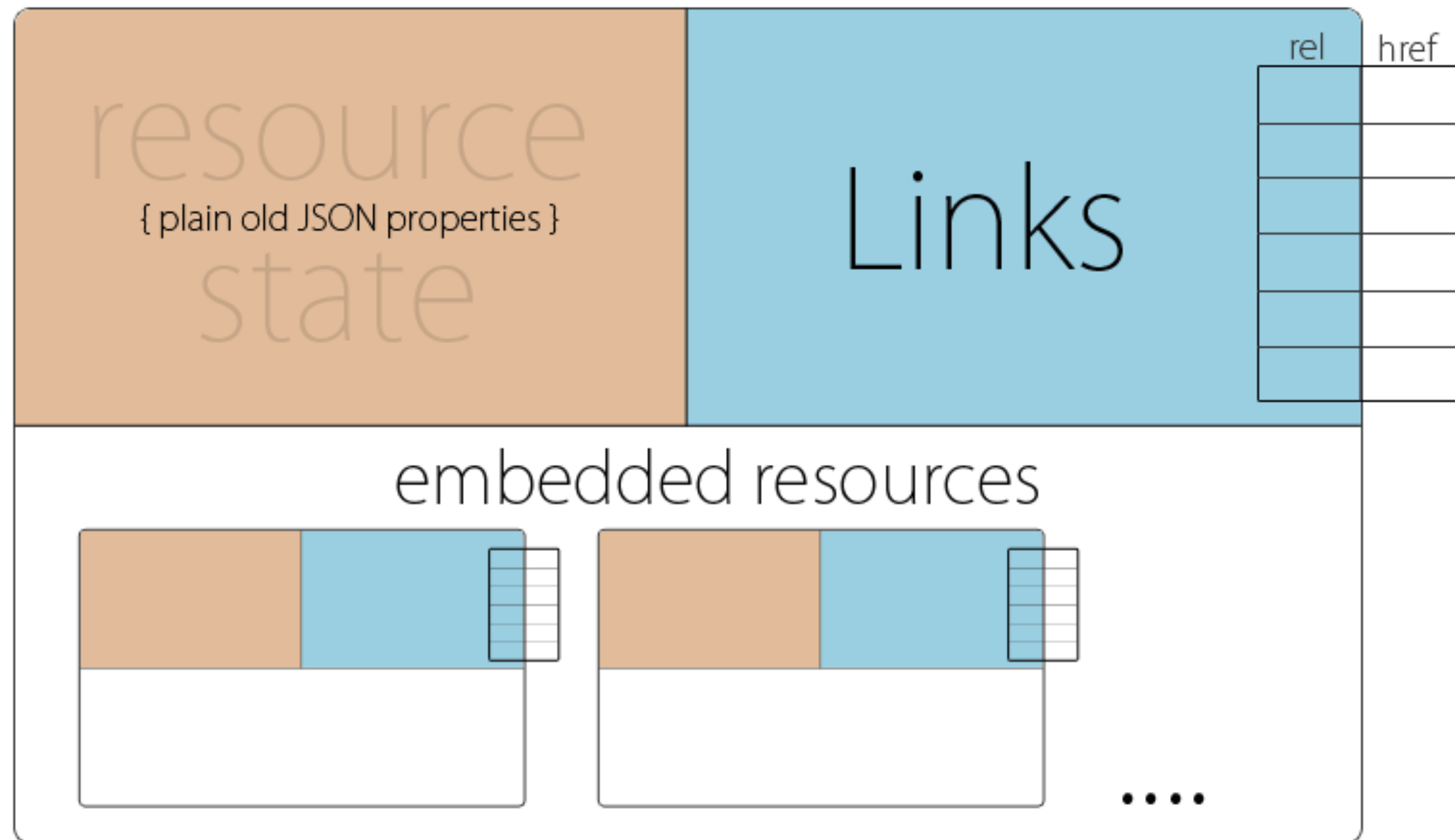
Features

- Model classes for link, resource representation models
- Link builder API to create links pointing to Spring MVC controller methods
- Support for hypermedia formats like HAL

CODING TIME !

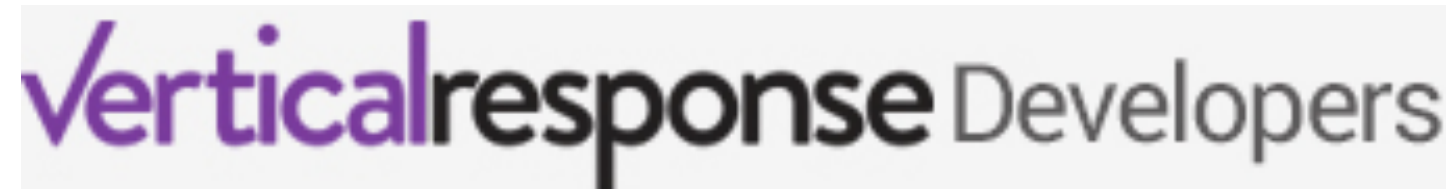
Hypertext Application Language

Resource



"I want hypermedia!"

40%



Siren Actions

```
"actions": [  
  {  
    "name": "create-ad",  
    "method": "POST",  
    "href": "/ads",  
    "type": "application/json",  
    "fields": [  
      { "name": "type", "type": "radio" },  
      { "name": "quantity", "type": "number" },  
      { "name": "currency", "type": "radio" },  
      ...  
    ]  
  }  
]
```


**А тестирование?
Документация?**



Spring REST Docs!

Document RESTful services using Asciidoctor and Spring MVC Test

97 commits

2 branches

0 releases

11 contributors



branch: master

spring-restdocs / +



Add support for documenting fields in array payloads ...



wilkinsona authored on 15 May

latest commit f98bec317e



buildSrc/src/main	Add a task that verifies the includes in a sample's .adoc files	2 months ago
gradle/wrapper	Update the main project and Gradle samples to use Gradle 2.3	2 months ago
samples	Default snippet encoding to UTF-8 and make it configurable	a month ago
spring-restdocs	Add support for documenting fields in array payloads	a month ago
.gitignore	Add the files that were accidentally excluded by .gitignore	2 months ago
.travis.yml	Update samples to make them compatible with Java 7	a month ago
CONTRIBUTING.md	Add CONTRIBUTING.md	4 months ago
README.md	Default snippet encoding to UTF-8 and make it configurable	a month ago
build.gradle	Add support for post-processing a response before it is documented	2 months ago
gradle.properties	Increase MaxPermSize so that the build passes when using Java 7	a month ago
gradlew	Initial commit	8 months ago
gradlew.bat	Initial commit	8 months ago
settings.gradle	Improve code structure, javadoc, and build configuration	4 months ago

<> Code

Issues 11

Pull requests 1

Wiki

Pulse

Graphs

HTTPS clone URL

https://github.com



You can clone with HTTPS, SSH, or Subversion. ?

Clone in Desktop

Download ZIP

Outcomes – spring

1. Spring Data REST – simple, CRUD-y
and HATEOAS-y; extensible

PRO TIP: won't solve everything

2. Spring MVC – always there to help

3. Link stuff with Spring HATEOAS

4. Document with Spring REST Docs

Project @ GitHub

Demo project using Spring Data REST to implement simple currency black market service — Edit

259 commits

3 branches

0 releases

2 contributors

branch: master **spring-rest-black-market** / +

Marking AdService as @Transactional.

 **vtsukur** authored 10 hours ago

latest commit bdd1c3fb75

etc/hack/java/org/vtsukur/sprin...	Updating custom REST MVC configuration to match initial expectations.	9 days ago
gradle/wrapper	Initial check-in.	16 days ago
src	Marking AdService as @Transactional.	10 hours ago
.gitignore	Initial check-in.	16 days ago
.travis.yml	Initial check-in.	16 days ago
LICENSE	Initial commit	16 days ago
README.md	Updated index.html page witch fetch the ads.	11 days ago
build.gradle	Excluding document generation by default.	9 days ago
gradlew	gradlew should be executable.	15 days ago
gradlew.bat	Initial check-in.	16 days ago

<> Code

Issues 0

Pull requests 0

Wiki

Pulse

Graphs

Settings

HTTPS clone URL

https://github.com

You can clone with [HTTPS](#), [SSH](#), or [Subversion](#).

Clone in Desktop

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<https://github.com/vtsukur/spring-rest-black-market>

Спасибо!

Держитесь!



References

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