TestContainers

Docker Docker Docker... и тесты

Sergei @bsideup Egorov

Про меня

- Работаю в Uvita GmbH, Berlin
- Apache Groovy committer
- Участник проекта TestContainers
- Использую Docker с 2013 года

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О чем поговорим сегодня?

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План

- Поговорим о Docker-е!

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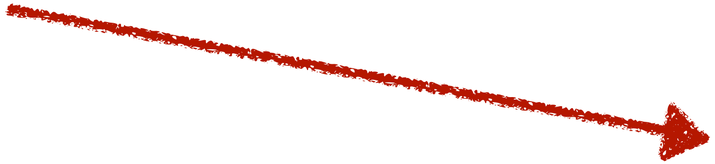

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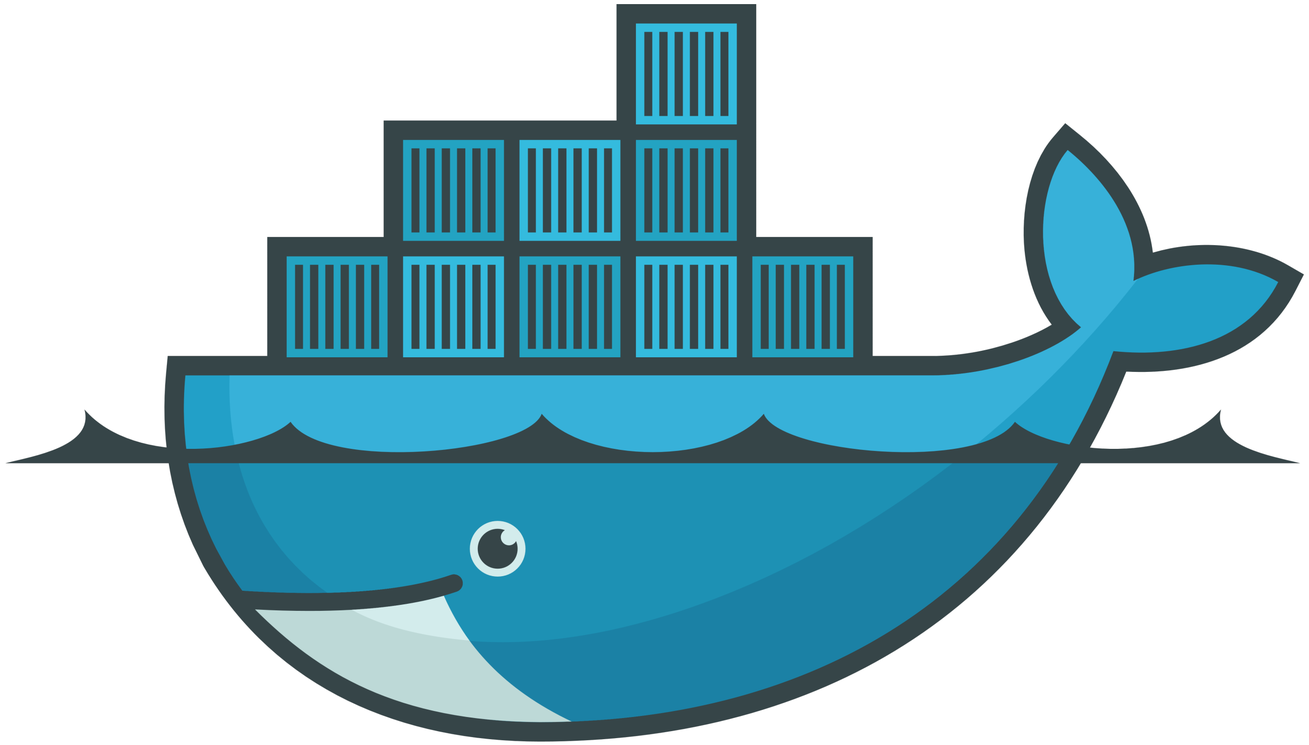
- ~~Насколько сложно мыть дреды~~



docker

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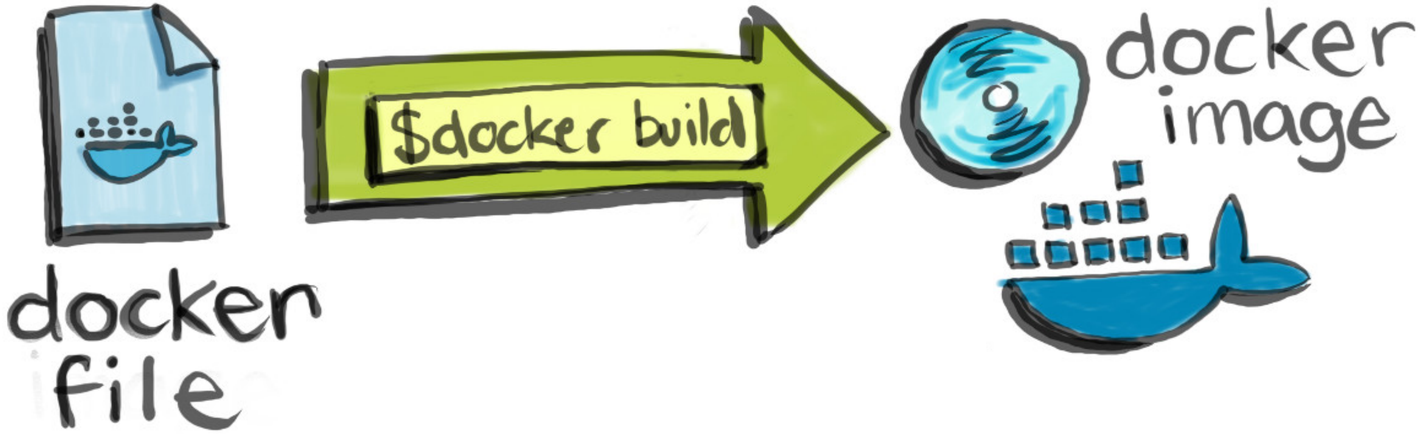
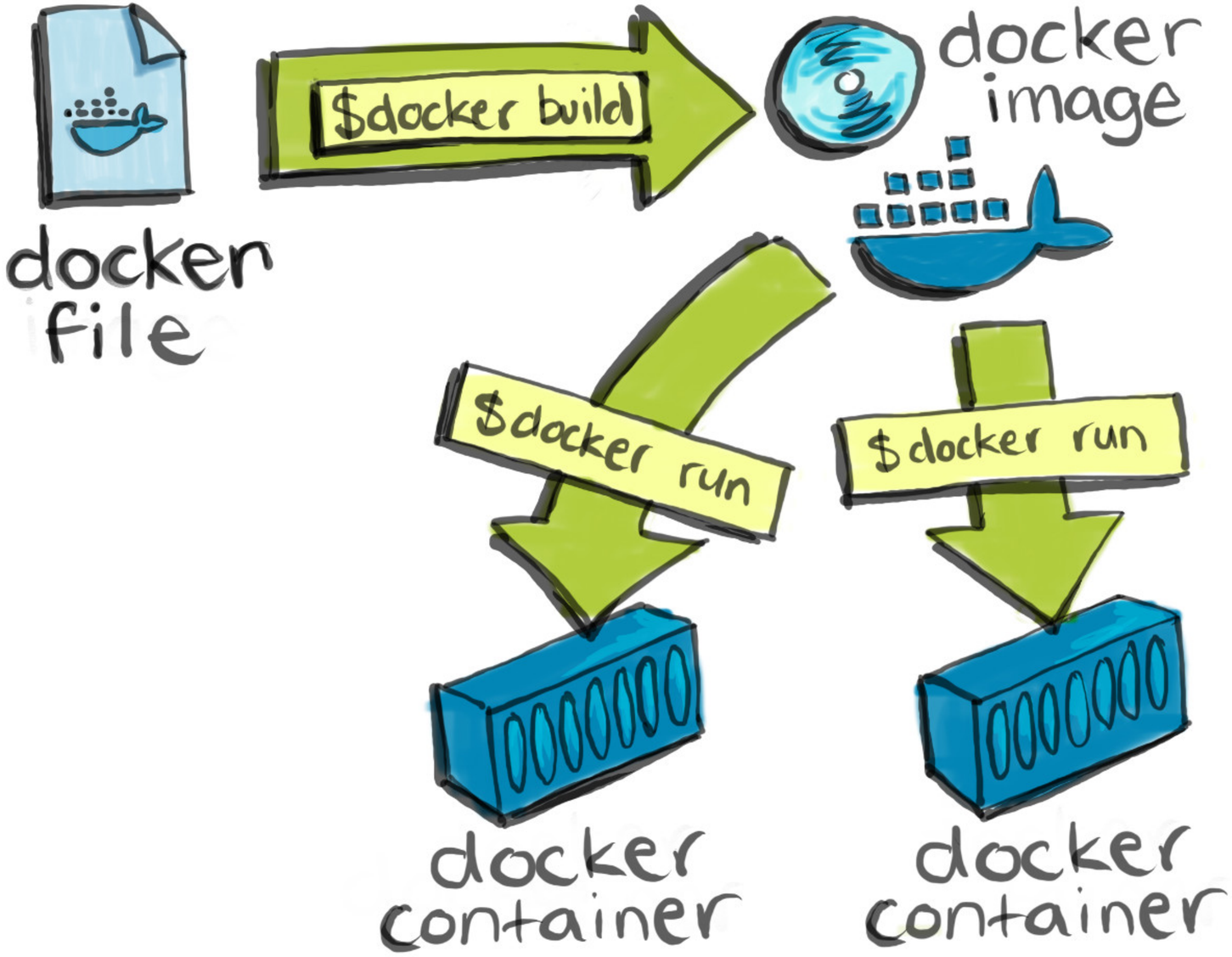
docker
file


docker
file
$docker build
docker
image


docker file
$docker build
docker image
$docker run
$docker run
docker container
docker container

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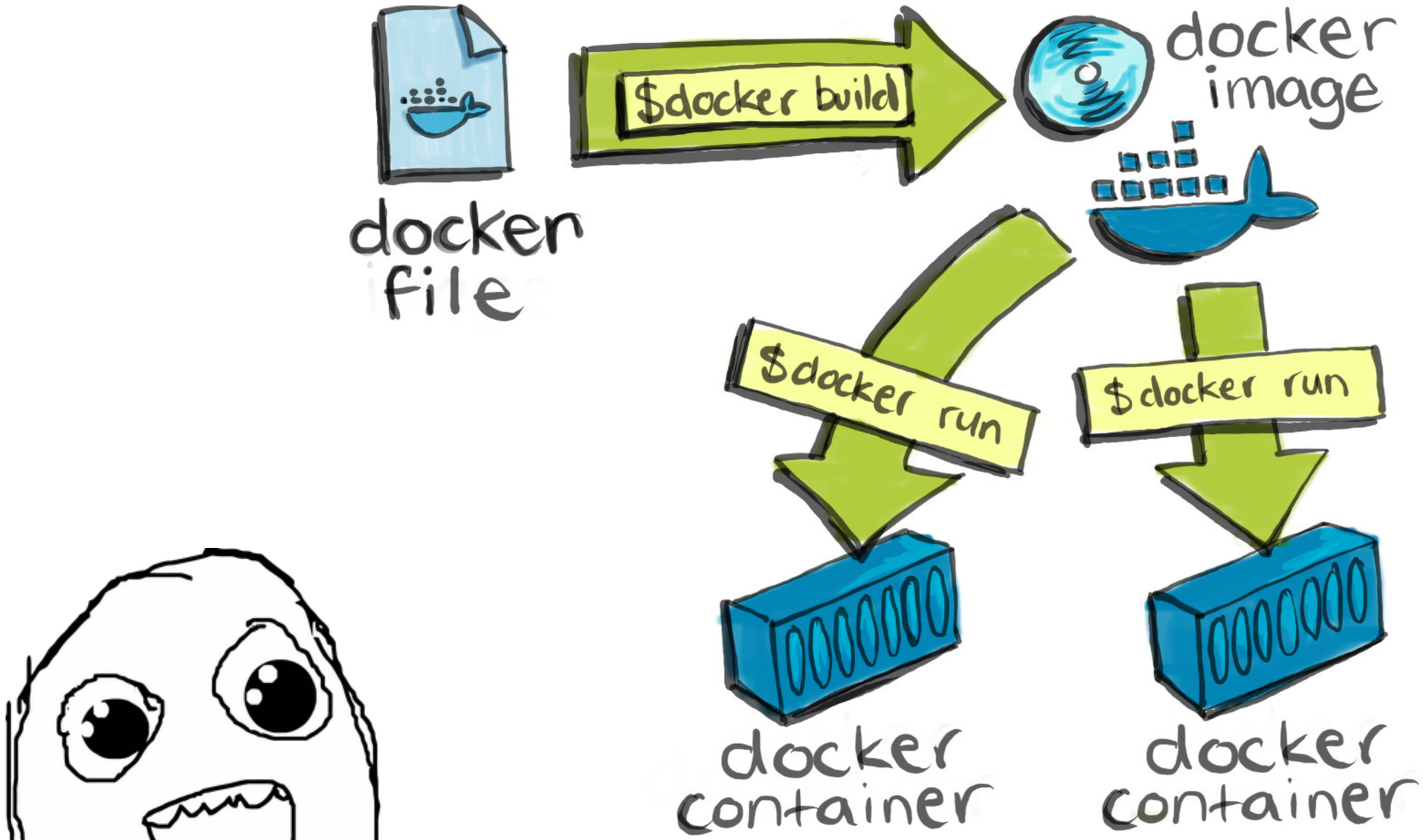
docker file
$docker build
docker image
$docker run
$docker run
docker container
docker container

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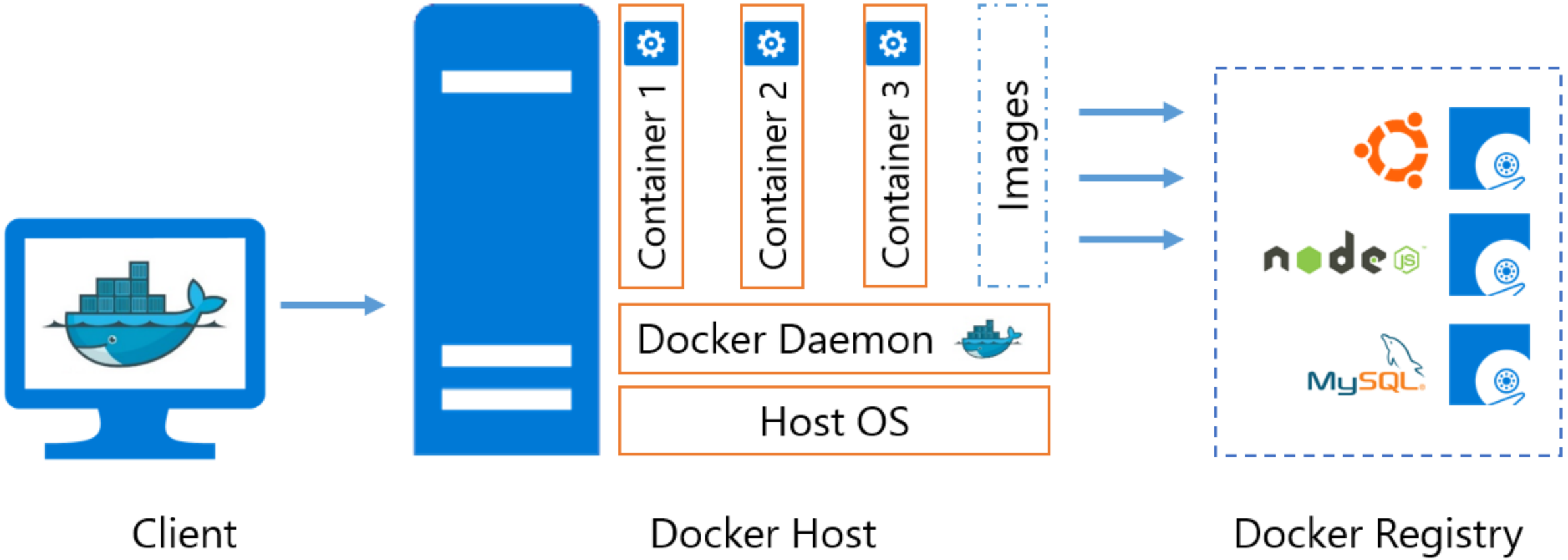
Абстракция



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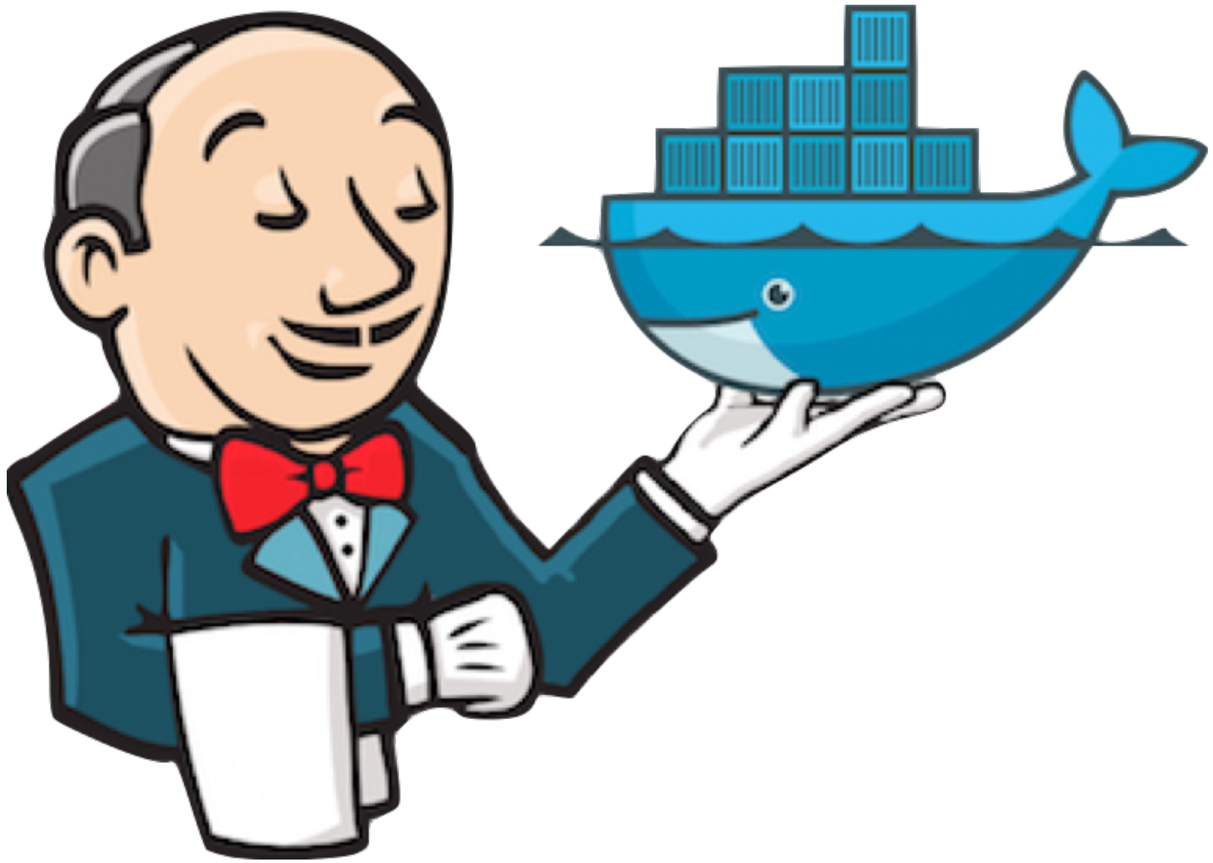
CI friendly



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Кросс-платформенный

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Service Providers
rackspace
the open cloud company
DEIS
Google Cloud Platform
amazon web services
IBM
SOFTLAYER
an IBM Company
openstack
Yandex
OPENSHIFT
Microsoft Azure
DigitalOcean
CLOUD FOUNDRY
linode
Quay.io
Baidu 百度
Baremetal Industries
clever cloud
Google Compute Engine
stackato
ActiveState
Google
domino
StackDock
Gilliam
tutum
ORCHARD
Flynn
VOXOZ
Operating Systems
redhat
boot2docker
CoreOS
ubuntu
debian
fedora
CentOS
Configuration Management
puppet labs
Chef
Jenkins
Capistrano
DotCi
Packer
ANSIBLE
SALTSTACK
docker
Big Data
OpenCore
INTEGRATING BIG DATA... SMARTER
syncsort
hadoop
Dev Tools
Fig
VAGRANT
heroku
Shippable
runnable
NODECHECKER
wercker
drone.io
Service Discovery
NETFLIX
Eureka
etcd
SkyDNS
Official Repositories
mongoDB
MySQL
PostgreSQL
Ruby
WordPress
Java
debian
CentOS
ubuntu
RAILS
redis
NGINX
node
Orchestration
MESOS
Shipper
CONSUL
VNS3
Marathon
fleet
ATOMIC
System Integrators
OpDemand
Wiredcraft
MomentumSI
InfoSiftr
Flux7
SHADOW SOFT
Dev9
relevance lab
IZURI

Как я встретил вашу Docker

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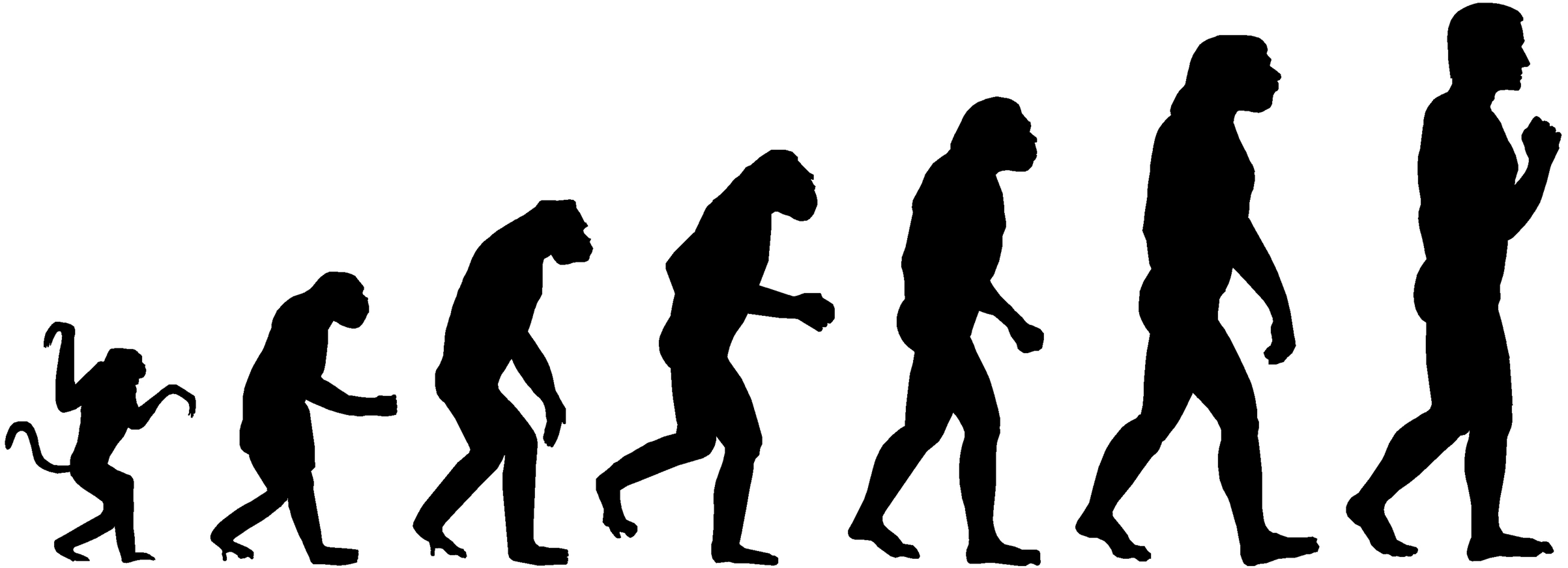
Я кодил на PHP...



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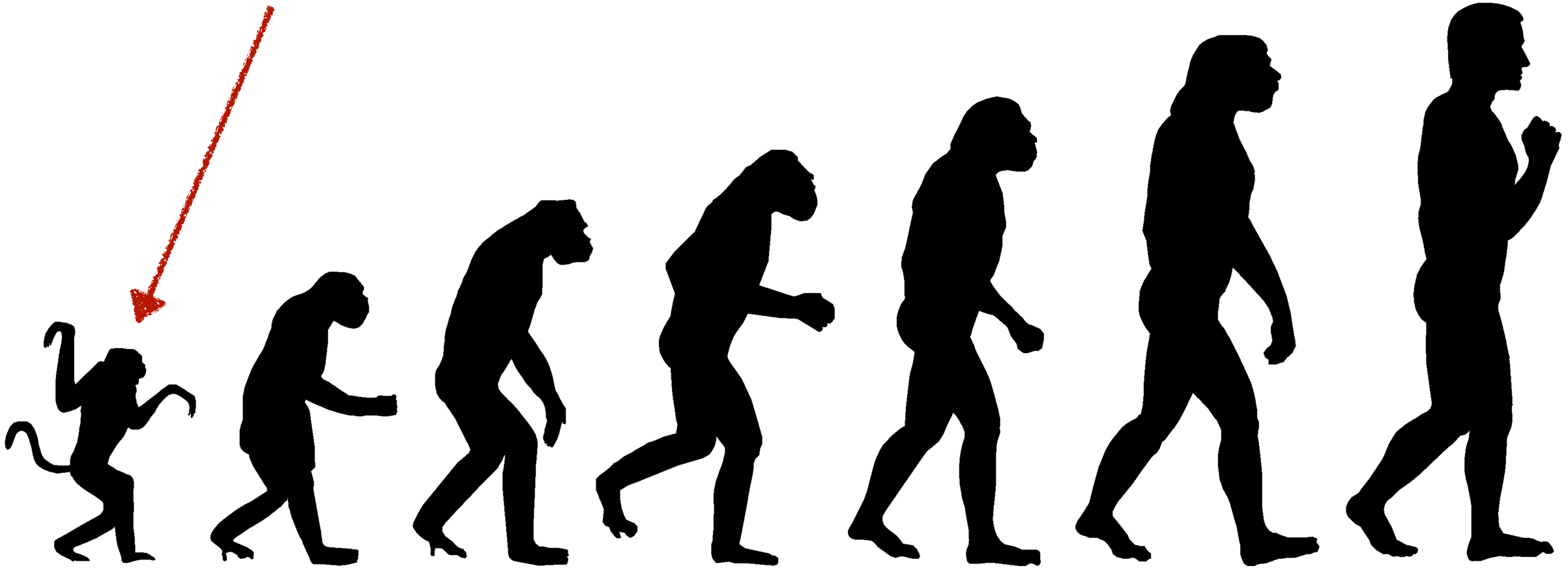
Я кодил на PHP...



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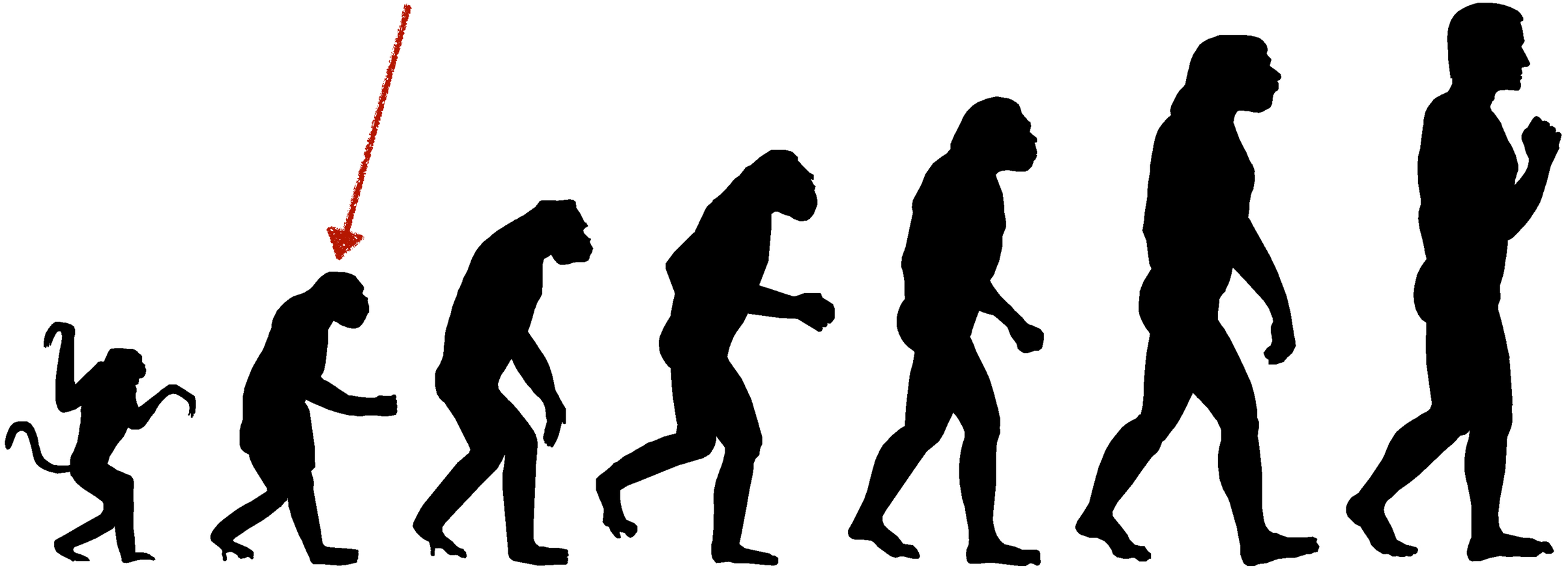
Без тестов...



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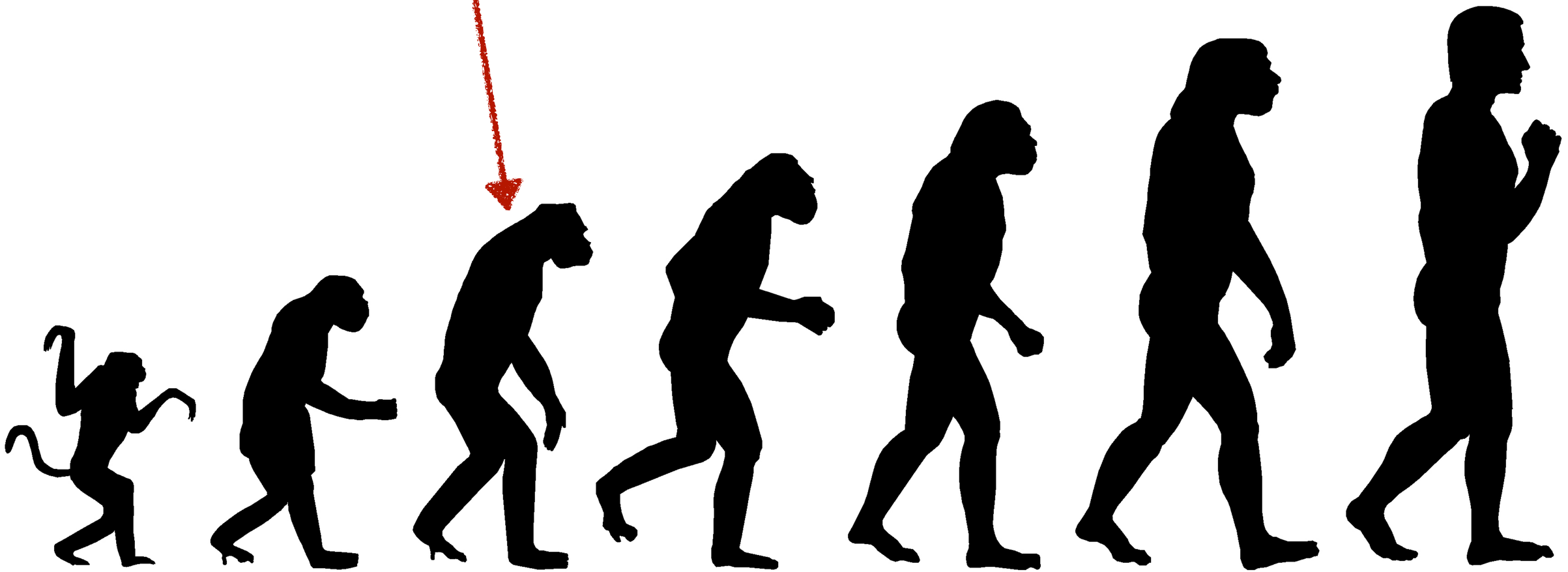
Тестировал “в проде”...



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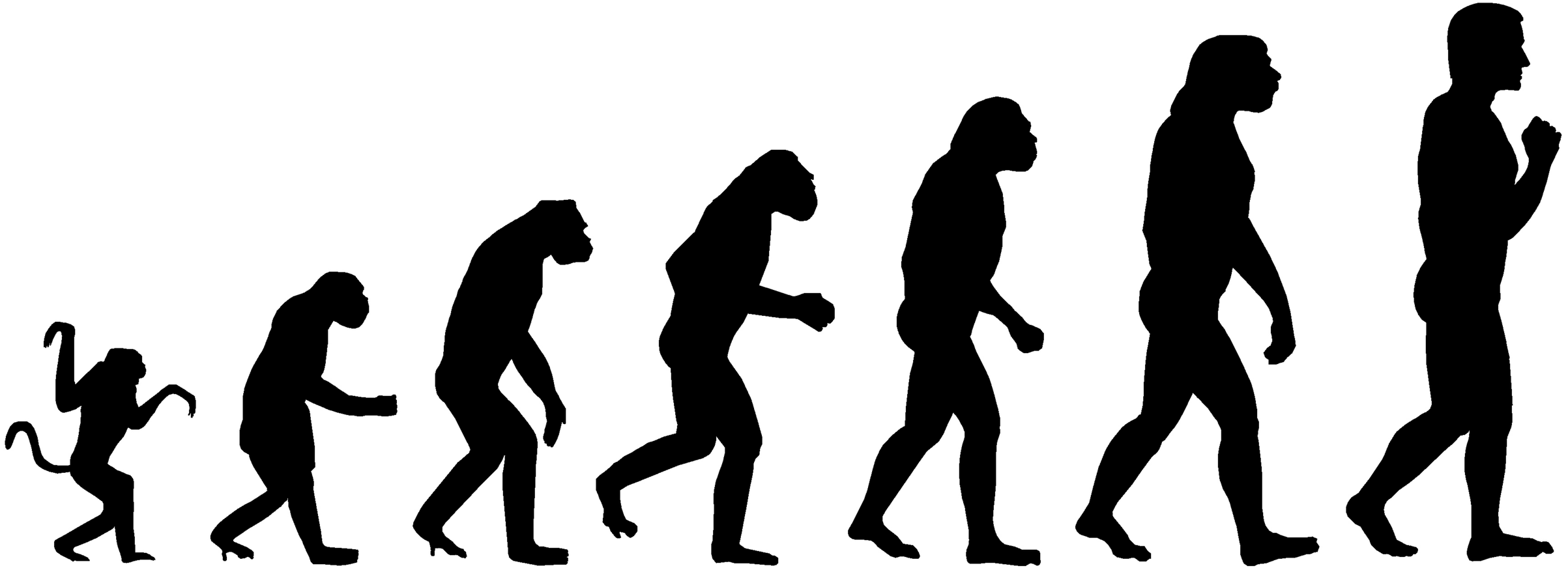
Но потом...



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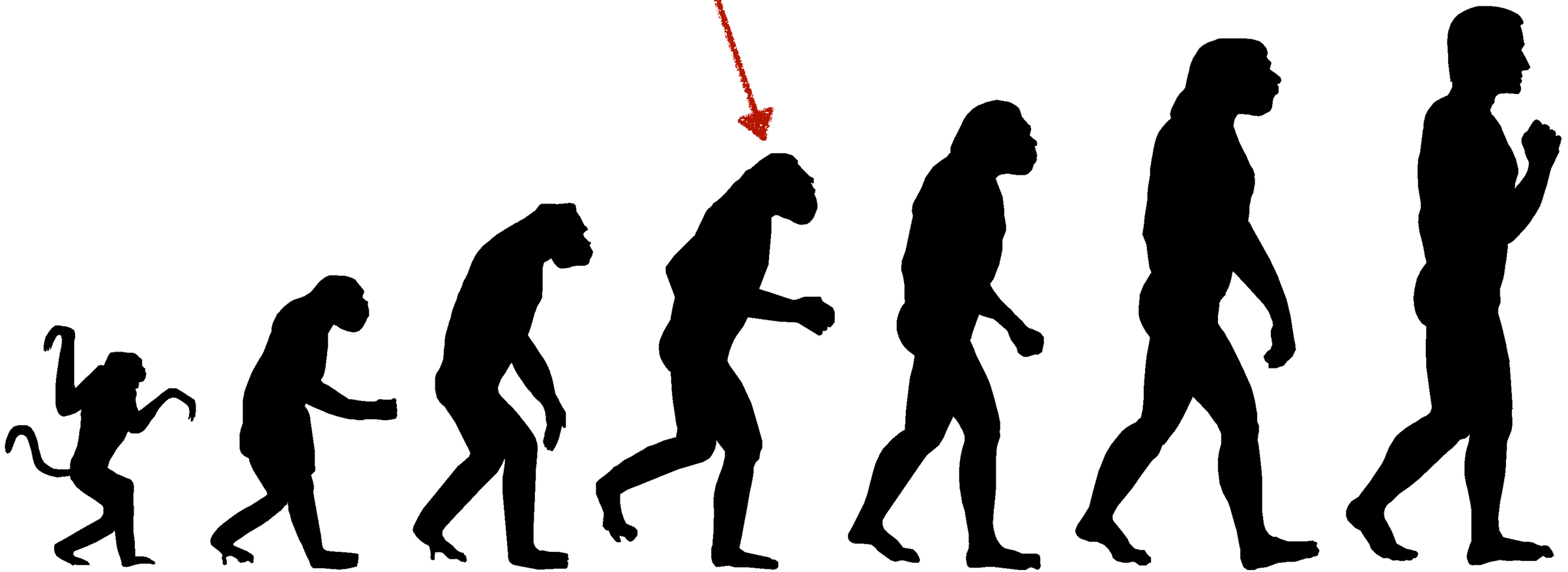
Я открыл для себя Java...



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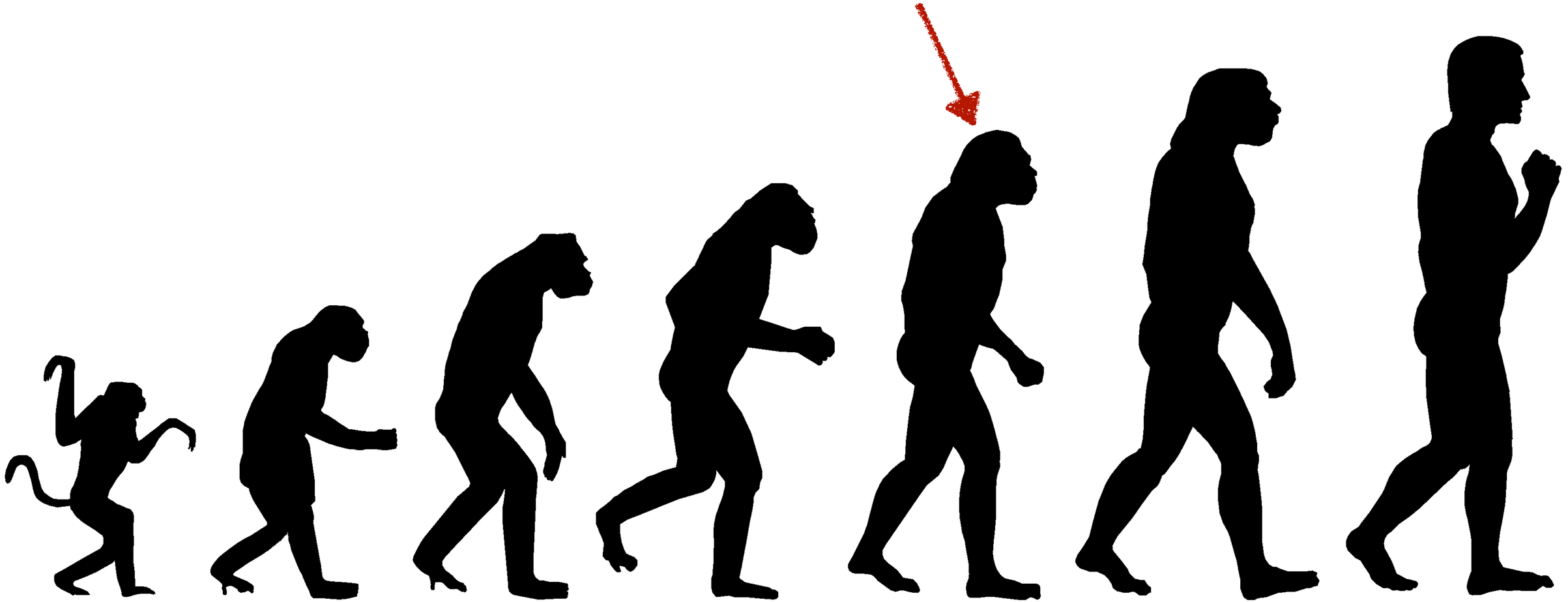
Начал писать Unit тесты...



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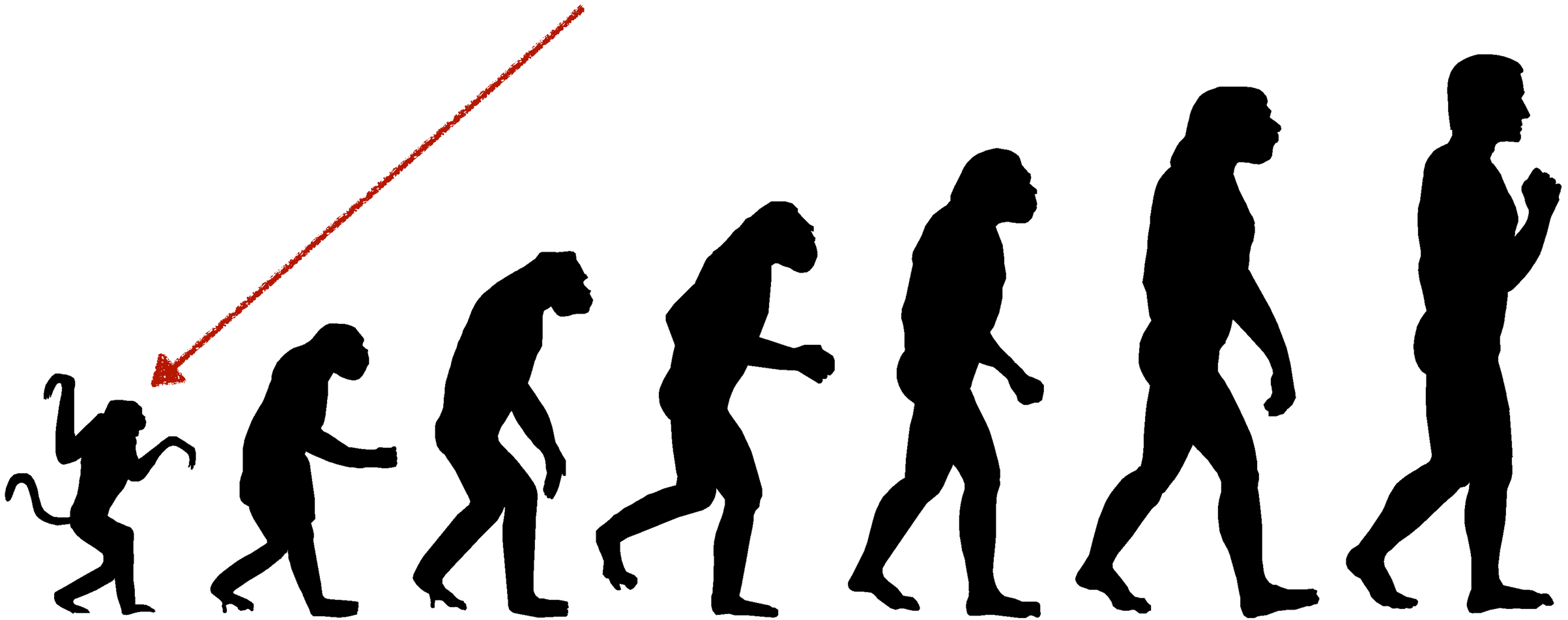
И стал “мокать” базы данных >_<



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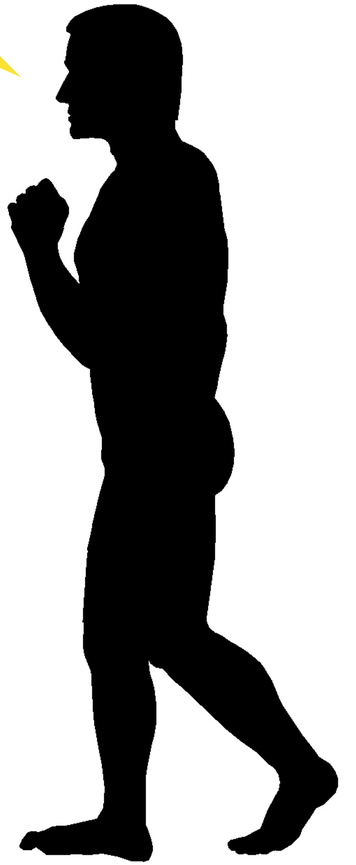
21 век на дворе!



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Я

MySQL

redis

elasticsearch

kafka

PostgreSQL

Selenium

RabbitMQ

Image

docker

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TOOLING
NEED FOR SPEED™
RIVALS
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+ TOOLING
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Docker Compose рулит!

```
redis:
  image: redis
  ports:
    - "6379:6379"
postgres:
  image: postgres
  ports:
    - "5432:5432"
elasticsearch:
  image: elasticsearch:5.0.0
  ports:
    - "9200:9200"
```

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Ho...

Декларативный YAML

```yaml
redis:
  image: redis
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  image: postgres
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elasticsearch:
  image: elasticsearch:5.0.0
  ports:
    - "9200:9200"
```

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Фиксированные порты

```
redis:
  image: redis
  ports:
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postgres:
  image: postgres
  ports:
    - "5432:5432"
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Подмножества контейнеров?

```
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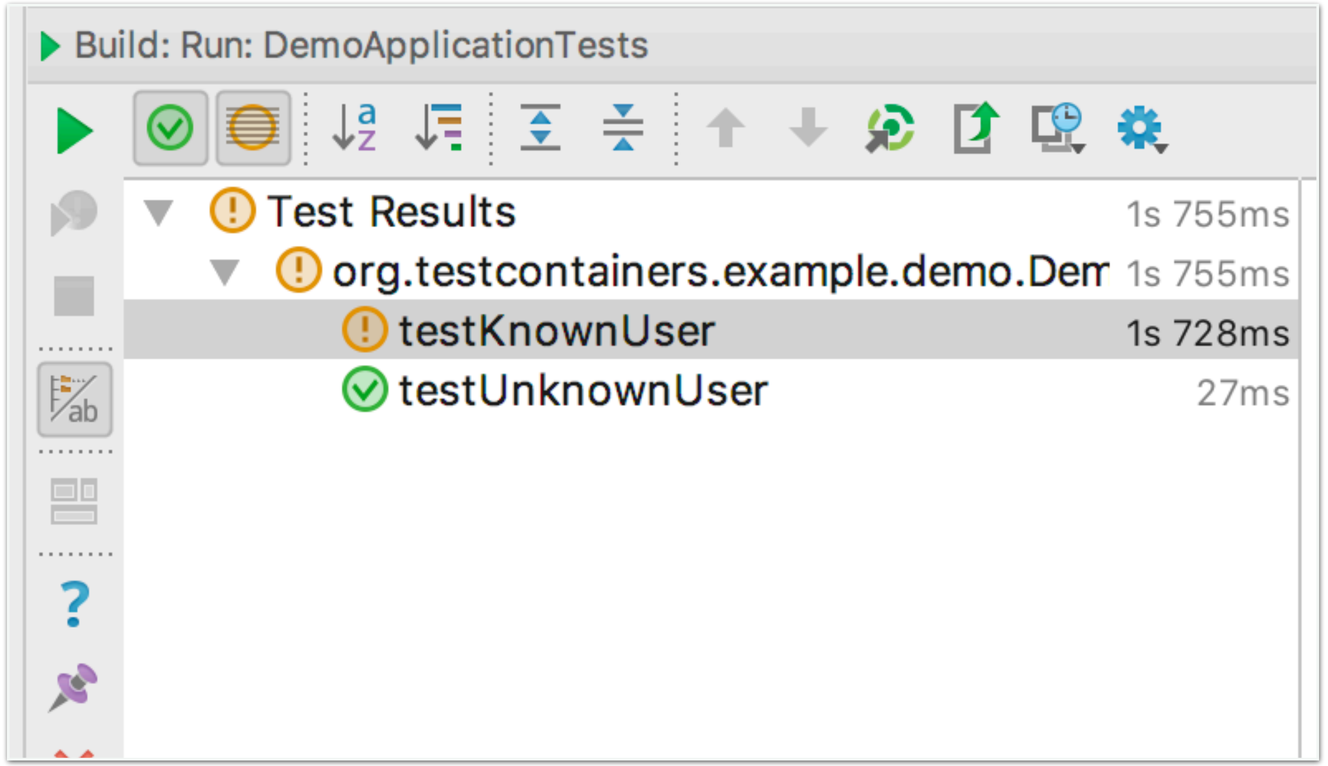
Запуск из IDE?



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TESTCONTAINERS

TestContainers

- **http://github.com/testcontainers/testcontainers-java**
- Обёртка вокруг **docker-java library**
- Работает везде где есть Docker (Win, Mac, Linux)
- Останавливает контейнеры при JVM shutdown

Проще некуда!

```
new PostgreSQLContainer()

new BrowserWebDriverContainer()
      .withDesiredCapabilities(DesiredCapabilities.chrome())

new GenericContainer(“redis:3”)

new DockerComposeContainer(“docker-compose.yml”)
```

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Кто использует

zalando

Пример: Docker как Selenium драйвер

- Selenium/Selenide тесты
- Не требуется устанавливать Chrome/Firefox/etc
- CI friendly

```
@Rule
public BrowserWebDriverContainer chrome =
  new BrowserWebDriverContainer()
    .withDesiredCapabilities(DesiredCapabilities.chrome())
    .withRecordingMode(RECORD_ALL, new File("target"));
```

```
@Rule
public BrowserWebDriverContainer chrome =
  new BrowserWebDriverContainer()
    .withDesiredCapabilities(DesiredCapabilities.chrome())
    .withRecordingMode(RECORD_ALL, new File("target"));

RemoteWebDriver driver = chrome.getWebDriver();
```

```
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RemoteWebDriver driver = chrome.getWebDriver();
```

```
import org.openqa.selenium.remote.RemoteWebDriver;
```

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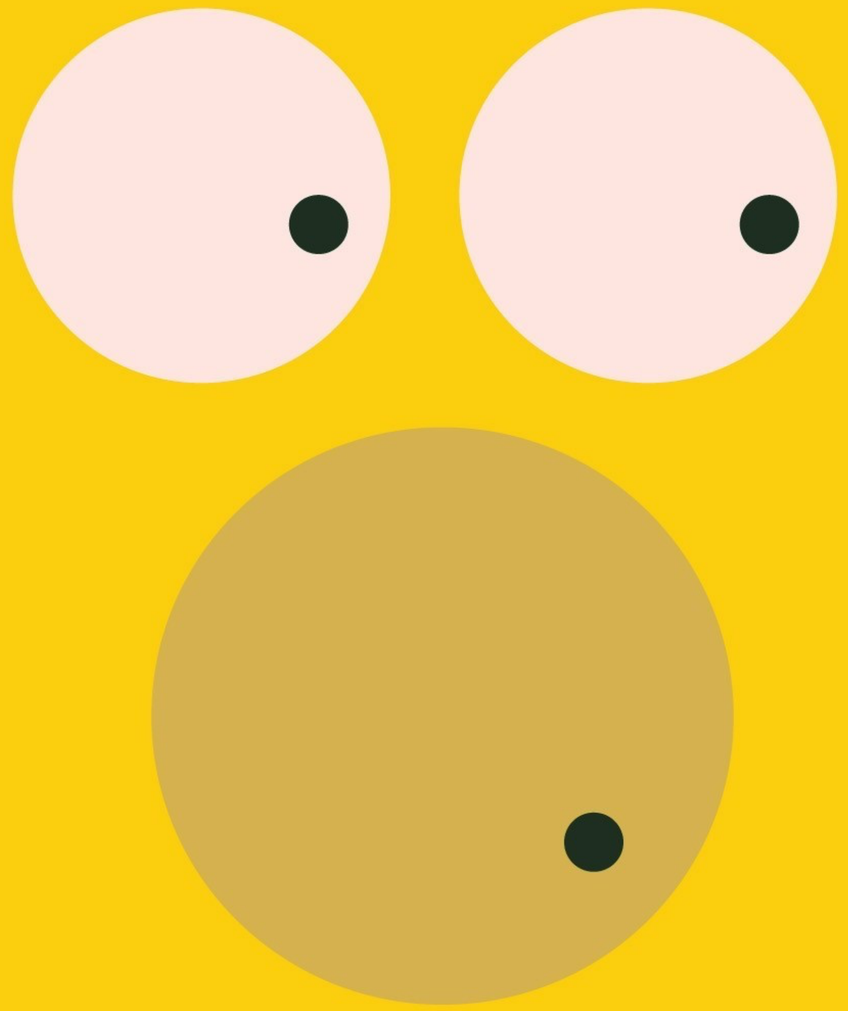
```
@Rule
public BrowserWebDriverContainer chrome =
  new BrowserWebDriverContainer()
    .withDesiredCapabilities(DesiredCapabilities.chrome());


RemoteWebDriver driver = chrome.getWebDriver();

driver.get("https://wikipedia.org");
WebElement searchInput = driver.findElementByName("search");

searchInput.sendKeys("Rick Astley");
searchInput.submit();

driver.findElementByLinkText("Rickrolling").click();

assert driver.findElementsByCssSelector("p")
      .stream()
      .anyMatch(element -> element.getText().contains("meme"));
```



Demo

- **http://testcontainers.org**
- **testcontainers/testcontainers-java-examples**
- Docker отлично подходит для тестирования
- И для разработки, и для CI

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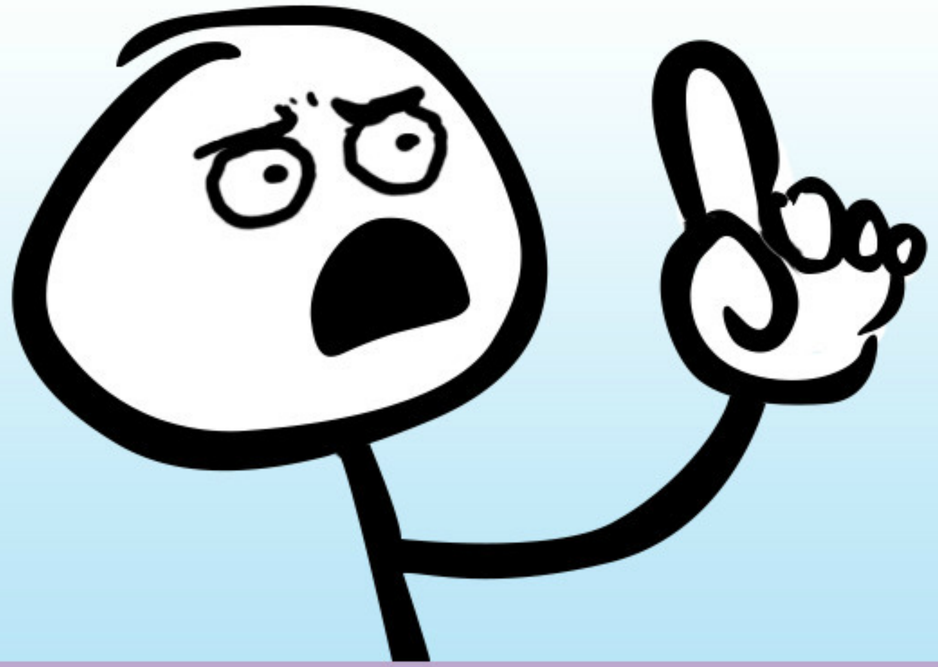
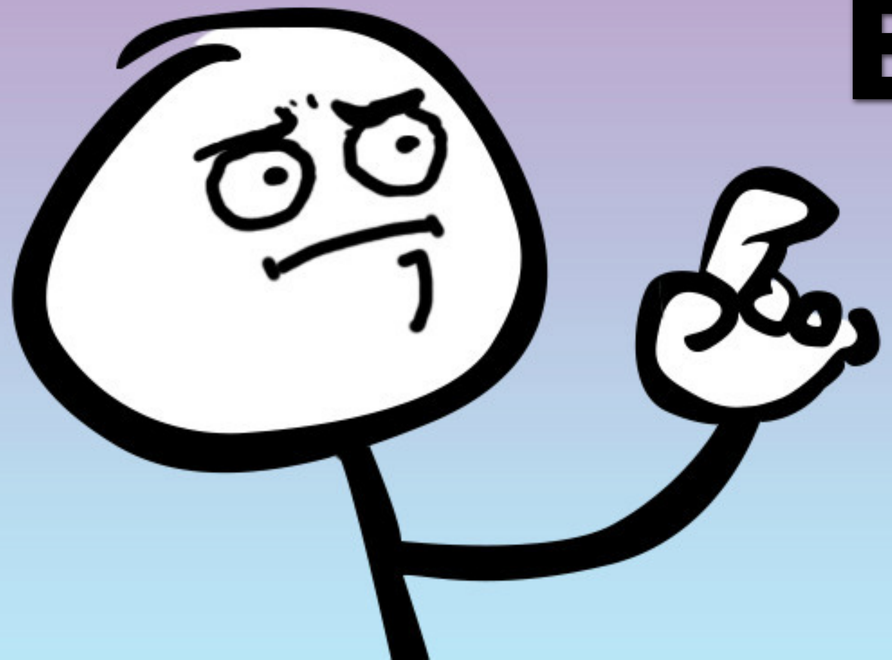
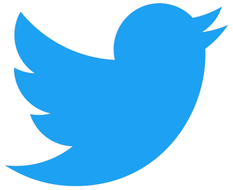




Вопросы?



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