

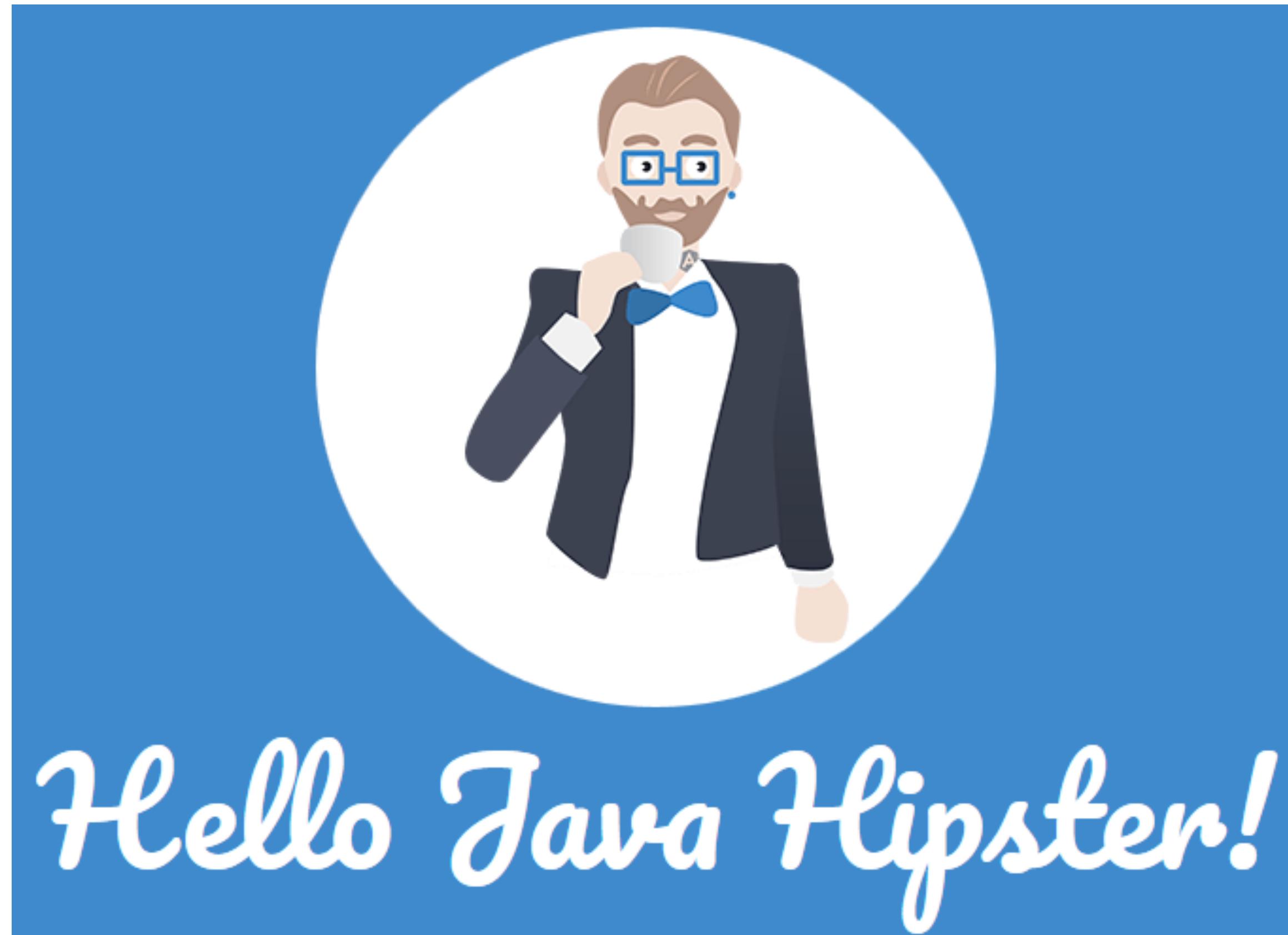


All About & Hipster

Use Case: Generating Monolithic Fullstack Application

Gaëtan Bloch for geekle.us



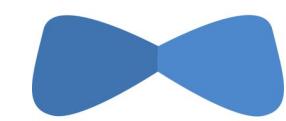


Better,
Faster,
lighter



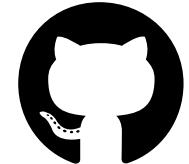
With
jHipster

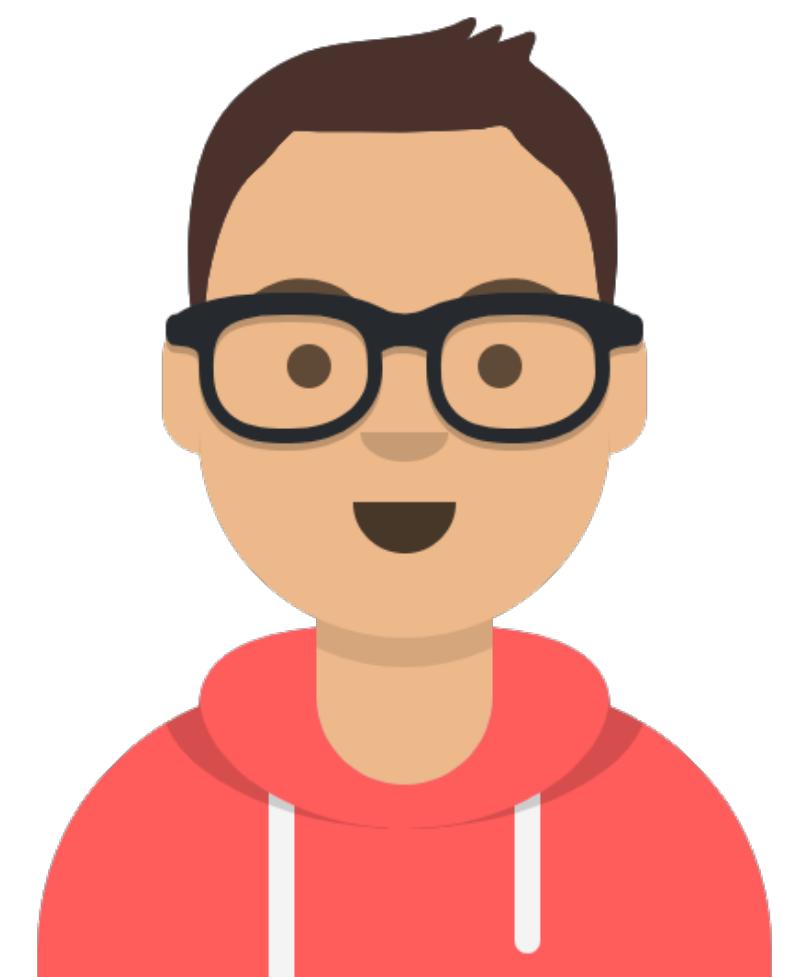


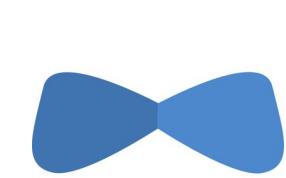


Just a bit about me

Software Engineer

- Tech Lead & Solution Architect @Eole Consulting
 - Several professional and personal projects with French Government
- gaetan.bloch@gbloch.io 
- <https://github.com/gaetanbloch> 
- <https://gbloch.tech> 
- <https://www.linkedin.com/in/gaetanbloch> 
- https://twitter.com/bloch_gaetan 

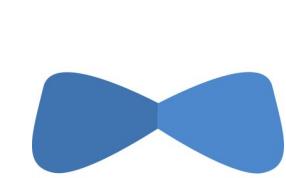




About JHipster

Code Generator

- Cross-platform Java-based Web application framework
- Initiated by Julien Dubois in 2013
- <https://github.com/jhipster/generator-jhipster>
- <https://www.jhipster.tech>
- <https://www.youtube.com/c/JHipsterDevelopersAssociation>
- <https://www.jhipster.tech/presentation/>



About JHipster

Main Team of Hipsters

Team

JHipster is developed by a team of people around the world. We have a lot of contributors ([top 100 list here](#)), but members of the core team are listed here.

If you want to join the team, or see how we work, our community rules are at the end of this page.

Project leads



Julien Dubois

Project lead

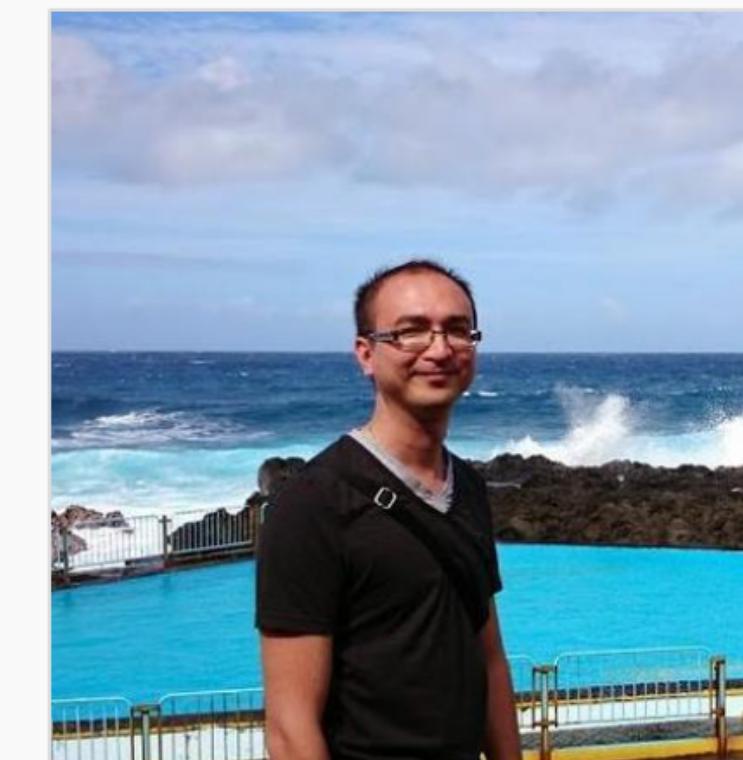
[@juliendubois](#)



Deepu K Sasidharan

Project co-lead

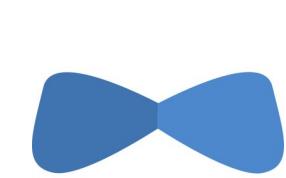
[@deepu105](#)



Pascal Grimaud

Project co-lead

[@pascalgrimaud](#)



<https://www.jhipster.tech/companies-using-jhipster/>

Sponsors



[Octo Consulting Group](#)



[Micro Frontend Platform for Kubernetes](#)



[DataStax is the open, multi-cloud stack for modern data apps.](#)

<https://opencollective.com/generator-jhipster/donate>



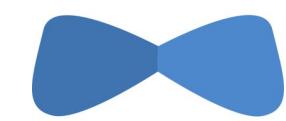
18690 

On GitHub



3.7K

Forks



9.2K

Pull Requests



~130K

Downloads per week



600+

Contributors



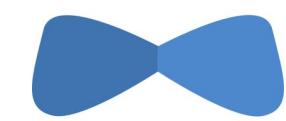
Why JHipster?

- Completely free and open-source
- Huge Community with world-class contributors
- Create -> Build -> Deploy = production-ready Web Application
- Days of work reduced to hours
- Great up-to-date documentation
- Generated code is documented and follows industry best practices
- Numerous resources: tutorials, books, videos, etc.



Who asked again?

- Microservices architectures
- Security & Authentication
- CI / CD pipelines
- QA best practices
- SQL / NoSQL / Graph databases support
- Highly used tools like ElasticSearch, Kafka, Prometheus, Grafana bundled
- Generated REST APIs following OpenAPI Specification
- Monitoring, caching, logging, containerisation etc.
- Cloud-ready deployments (AWS, GCP, Azure, OpenShift, Heroku etc.)



Client Side Single Page Application

- Angular / React / Vue.js
- SASS support
- Modern browsers compatibility
- i18n out of the box
- Usage of <https://html5boilerplate.com/>
- Responsive design with <https://bootswatch.com/> themes



Server Side

Spring boot backend

- Spring profiles (dev / prod)
- Spring Security
- Spring Data JPA
- Spring MVC Rest / Reactive with webflux
- Jackson serialization
- Database versioning with <https://www.liquibase.org/>



Time for demo

TODO List Application base

- <https://github.com/gaetanBloch/todo-demo-angular>

The screenshot shows the homepage of the Todo Demo application. At the top, there is a dark header bar with the logo "TodoDemo v0.0.1-SNAPSHOT" on the left and navigation links "Home", "Language", and "Account" on the right. The main content area has a yellow background. On the left side, there is a cartoon illustration of a person with red hair tied in a braid, wearing a white shirt and a blue bowtie. The text on the page includes:

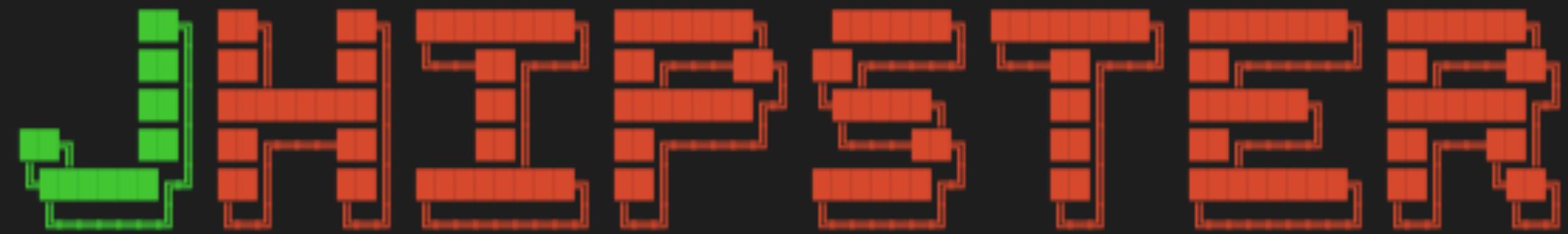
- "Welcome, Java Hipster! (Todo Demo)"
- "This is your homepage"
- "If you want to **sign in**, you can try the default accounts:
 - Administrator (login="admin" and password="admin")
 - User (login="user" and password="user").
- "You don't have an account yet? **Register a new account**"
- "If you have any question on JHipster:
 - **JHipster homepage**
 - **JHipster on Stack Overflow**
 - **JHipster bug tracker**
 - **JHipster public chat room**
 - **follow @jhipster on Twitter**
- "If you like JHipster, don't forget to give us a star on **GitHub!**"

Project generation

\$ jhipster



```
gbloch at Gaetans-MBP in ~/dev/todo-demo-angular on main [+?]
$ jhipster
INFO! Using JHipster version installed globally
```



<https://www.jhipster.tech>

```
Welcome to JHipster v7.1.0
Application files will be generated in folder: /Users/gbloch/dev/todo-demo-angular
```

```
Documentation for creating an application is at https://www.jhipster.tech/creating-an-app/
If you find JHipster useful, consider sponsoring the project at https://opencollective.com/generator-jhipster
```

```
? Which *type* of application would you like to create? Monolithic application (recommended for simple projects)
? What is the base name of your application? todoDemo
? Do you want to make it reactive with Spring WebFlux? No
? What is your default Java package name? io.gbloch.tododemo
? Which *type* of authentication would you like to use? JWT authentication (stateless, with a token)
? Which *type* of database would you like to use? SQL (H2, PostgreSQL, MySQL, MariaDB, Oracle, MSSQL)
? Which *production* database would you like to use? PostgreSQL
? Which *development* database would you like to use? PostgreSQL
? Which cache do you want to use? (Spring cache abstraction) Ehcache (local cache, for a single node)
? Do you want to use Hibernate 2nd level cache? No
? Would you like to use Maven or Gradle for building the backend? Maven
? Do you want to use the JHipster Registry to configure, monitor and scale your application? No
? Which other technologies would you like to use?
? Which *Framework* would you like to use for the client? Angular
? Do you want to generate the admin UI? Yes
? Would you like to use a Bootswatch theme (https://bootswatch.com/)? Default JHipster
? Would you like to enable internationalization support? Yes
? Please choose the native language of the application English
? Please choose additional languages to install French, Japanese
? Besides JUnit and Jest, which testing frameworks would you like to use? Cypress, Gatling, Cucumber
? Would you like to install other generators from the JHipster Marketplace? No
? Would you like to generate code coverage for Cypress tests? [Experimental] Yes
```

Docker images

```
$cd src/main/docker
```

Start PostgreSQL dev DB

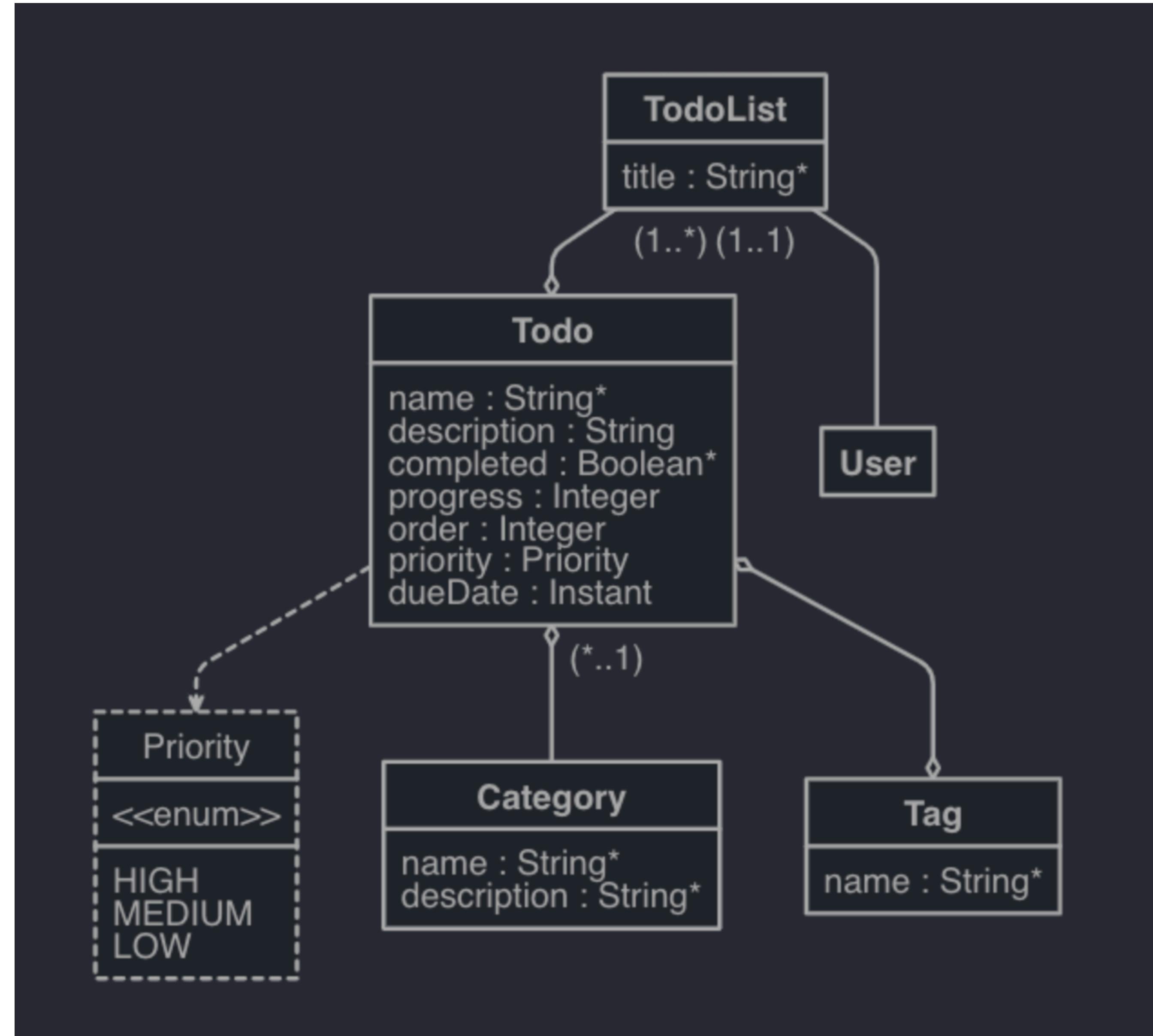
```
$docker-compose -f src/main/docker/postgresql.yml up -d  
$npm run db:up
```

Run project locally

```
$ ./mvnw
```

JDL Schema Generation

<https://start.jhipster.tech/jdl-studio>



Apply schema to application

```
$ jhipster todo-demo.jdl
```

Run project locally

```
$ ./mvnw
```

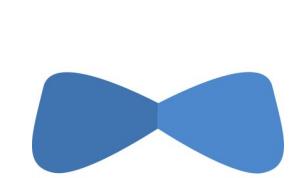
Run app in docker container

```
$npm run java:docker:dev
```

```
$./mvnw -ntp verify -DskipTests jib:dockerBuild
```

```
$docker-compose -f src/main/docker/app.yml up -d
```

Swagger Documentation



Swagger
Supported by SMARTBEAR

Select a definition default ▾

todoDemo API 0.0.1 OAS3

/v3/api-docs

todoDemo API documentation

unlicensed

Servers

http://localhost:8080 - Inferred Url ▾

todo

todo-list-resource Todo List Resource ^

GET /api/todo-lists getAllTodoLists

POST /api/todo-lists createTodoList

GET /api/todo-lists/{id} getTodoList

PUT /api/todo-lists/{id} updateTodoList

DELETE /api/todo-lists/{id} deleteTodoList

PATCH /api/todo-lists/{id} partialUpdateTodoList

Application monitoring



Application Metrics

JVM Metrics

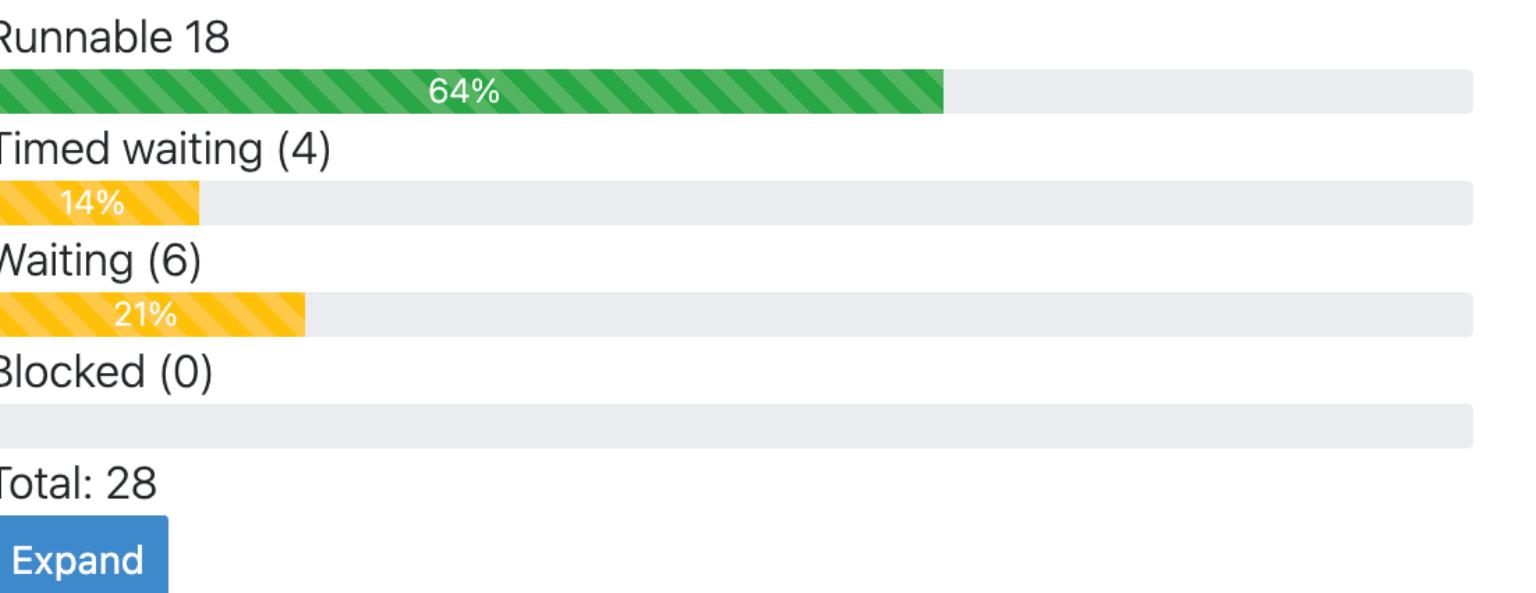
Memory

CodeHeap 'non-nmethods' (1M / 7M)
Committed : 2M
18%
CodeHeap 'non-profiled nmethods' (17M / 233M)
Committed : 17M
7%
Compressed Class Space (12M / 1,024M)
Committed : 14M
1
G1 Eden Space 8M
Committed : 185M
G1 Old Gen (42M / 4,096M)
Committed : 114M
1
G1 Survivor Space 9M
Committed : 9M
Metaspace 90M
Committed : 94M

Garbage collections

GC Live Data Size/GC Max Data Size (42M / 4,096M)
1

Threads



System

Uptime	1 hour 9 minutes 6 seconds
Start time	Tuesday, August 3, 2021 at 8:00:13 AM
Process CPU usage	0 %
System CPU usage	0 %
System CPU count	12
System 1m Load average	3.04
Process files max	10,240
Process files open	206

GC Memory Promoted/GC Memory Allocated (35M / 1,706M)
2.

Classes loaded	18353
Classes unloaded	0

Authentication - JWT

Backend tests - JUnit / Cucumber UT + IT + ArchTests + BDD

```
$ ./mvnw verify
```



Feature: User management

Scenario: Retrieve administrator user

When I search user 'admin'

Then the user is found

And his last name is 'Administrator'

Frontend tests - Jest UT

```
$npm test
```

e2e tests - Cypress

```
$npm run e2e
```

```
$npm run cypress
```

Performance tests - Gatling

```
$ ./mvnw gatling:test
```

Updating UI with Webpack and BrowserSync

```
$npm start
```

QA - SonarQube

```
$docker-compose -f src/main/docker/sonar.yml up -d  
$./mvnw -Pprod clean verify sonar:sonar  
-Dsonar.host.url=http://localhost:9001
```

QA - OWASP vulnerabilities

```
$ ./mvnw verify
```



```
<profile>
    <id>dep-check</id>
    <activation>
        <activeByDefault>false</activeByDefault>
    </activation>
    <build>
        <plugins>
            <plugin>
                <groupId>org.owasp</groupId>
                <artifactId>dependency-check-maven</artifactId>
                <version>6.2.2</version>
                <executions>
                    <execution>
                        <goals>
                            <goal>check</goal>
                        </goals>
                    </execution>
                </executions>
            </plugin>
        </plugins>
    </build>
</profile>
```

CI / CD - Github Actions

```
$ jhipster ci-cd
```

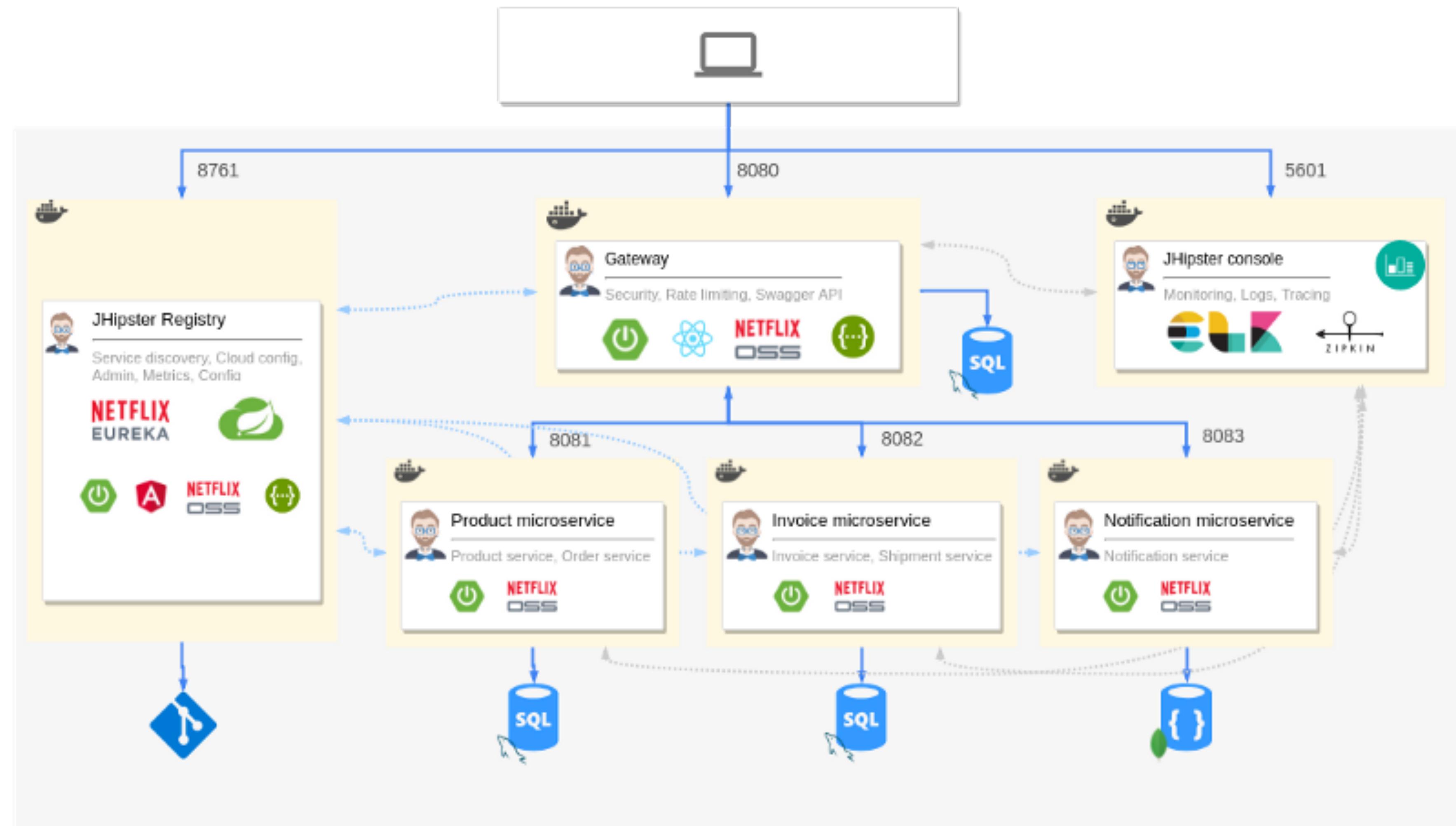


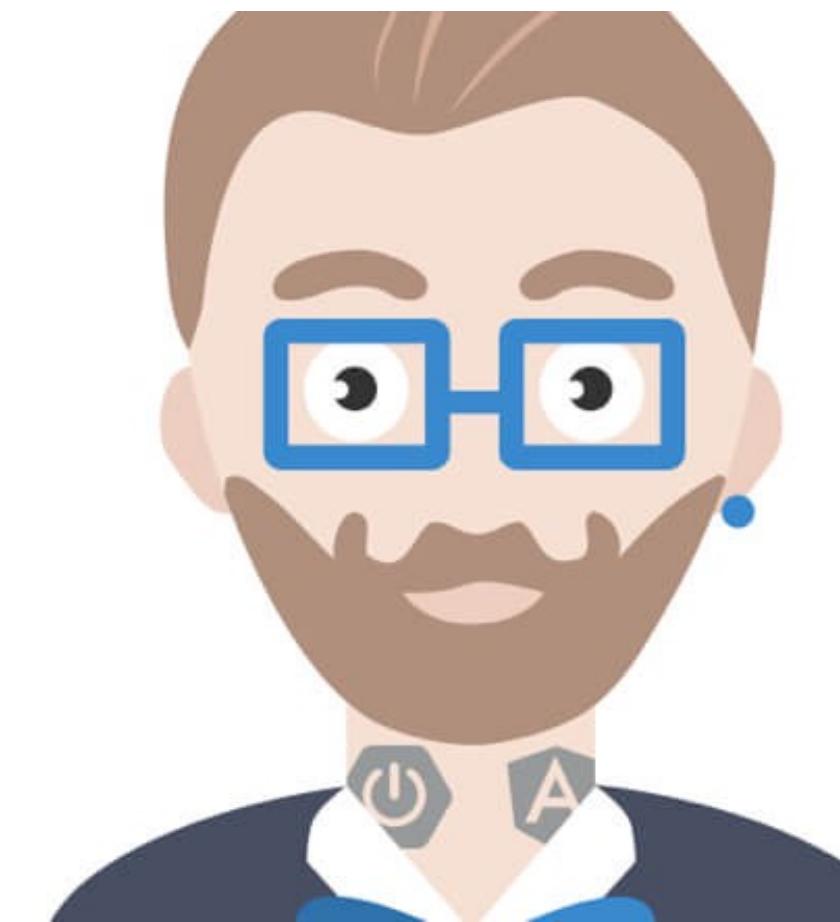
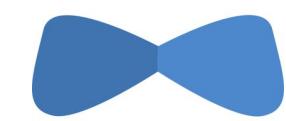
todoDemo pipeline
succeeded 12 hours ago in 14m 28s

- > Set up job
- > Run actions/checkout@v2
- > Run actions/setup-node@v1
- > Run actions/setup-java@v2
- > Install node.js packages
- > Run backend test
- > Run frontend test
- > Analyze code with SonarQube
- > Package application
- > Deploy to Heroku
- > E2E: Package
- > E2E: Prepare
- > E2E: Run
- > E2E: Teardown
- > Post Run actions/setup-java@v2
- > Post Run actions/checkout@v2
- > Complete job

Going further

Complex microservices architecture





jHipster

<https://start.jhipster.tech/>

A photograph of three hot air balloons against a clear blue sky. In the foreground, a large balloon is partially visible with a pattern of red, orange, yellow, green, and blue. In the middle ground, another balloon is mostly obscured by the first. In the background, two more balloons are visible: one is dark blue with a crescent moon and star emblem, and the other is a large, vibrant balloon with vertical stripes of yellow, orange, red, and blue.

Thank You ALL!