

# Apresentação Final

Unidade Curricular (UC): Gestão e qualidade de software - 1º sem/2024

Professores:

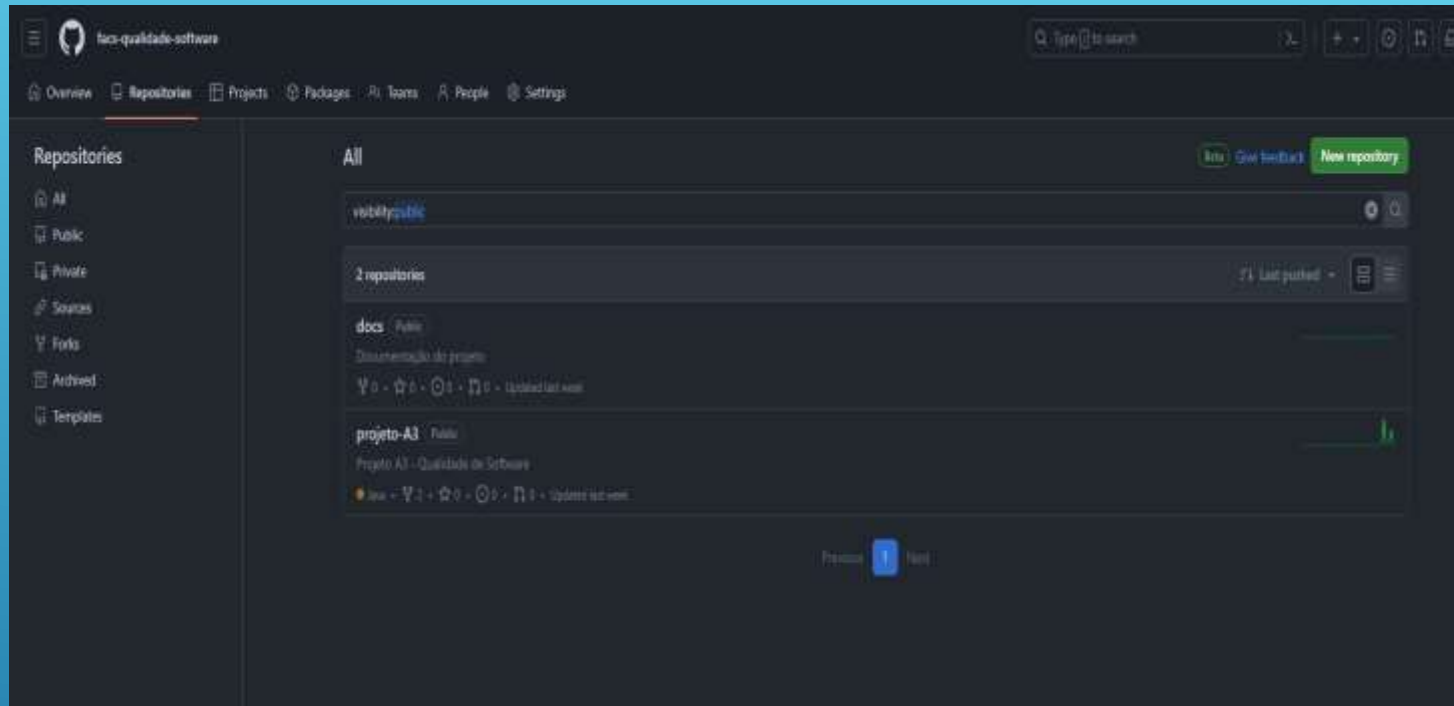
João Batista da Silva Júnior,  
Thiago Dotto Fiuza Neves.

## Projeto prático (A3) - mercadinho.app

Equipe:

Bruno Sales Fiaes Carneiro,  
Marcelo Miranda Cavalcanti,  
Zanoni Campos Fernandes,  
Eduardo Belinelli,  
Diego Ferreira,  
George Gebers,  
Levi Dourado.

## Visão geral do projeto:



Repositório de código:  
**Github**

Sistema de controle de  
versões: **GIT**

```
Terminal  Git Bash  + -
$ git log
commit 788ce9b307c31a8a631a02bc71b05a1e721e00d2 (HEAD -> dev, origin/dev, origin/HEAD)
Author: Zanoni Fernandes <zanoni.c.fernandes@gmail.com>
Date: Tue Jun 4 17:58:49 2024 +0300

    test: add tests to increase coverage

commit e70912ef39884f99708b5d4fd84167341bd10009
Author: Marcelo Cavalcanti <19808040+mccav@users.noreply.github.com>
Date: Fri May 24 21:54:18 2024 +0300

    ni: adding back the ftp upload commands in the release job

...skipping...
commit 788ce9b307c31a8a631a02bc71b05a1e721e00d2 (HEAD -> dev, origin/dev, origin/HEAD)
Author: Zanoni Fernandes <zanoni.c.fernandes@gmail.com>
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    ni: adding back the ftp upload commands in the release job

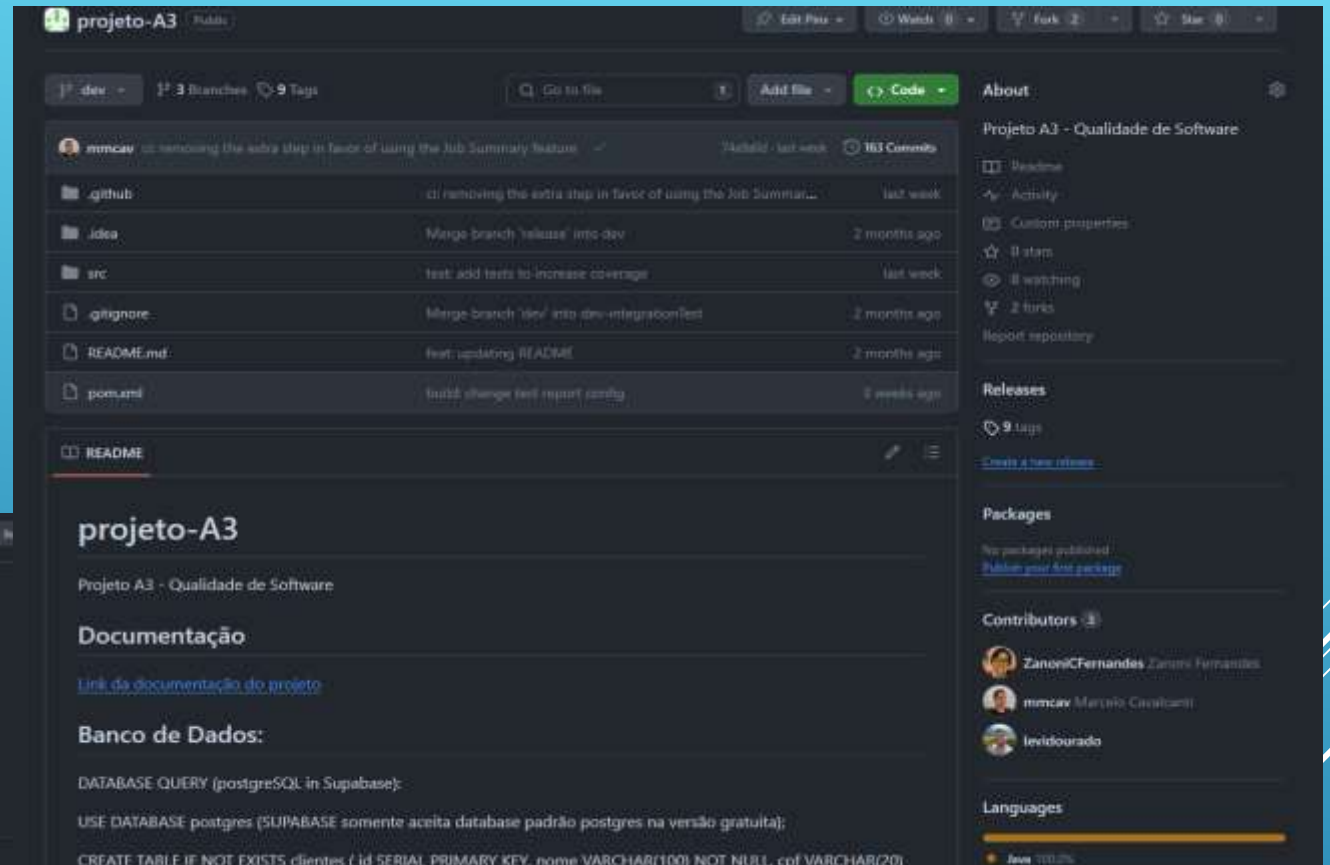
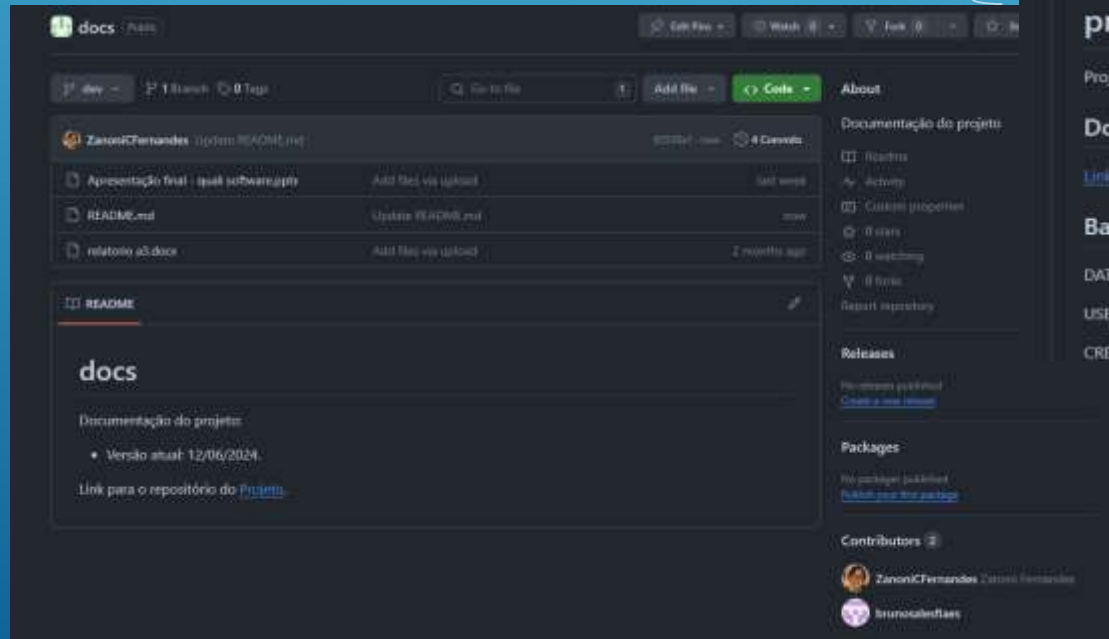
commit 3a6c7ff655389aefeb14097c730443e8ba2b9e
Author: Marcelo Cavalcanti <19808040+mccav@users.noreply.github.com>
```

# Repositórios:

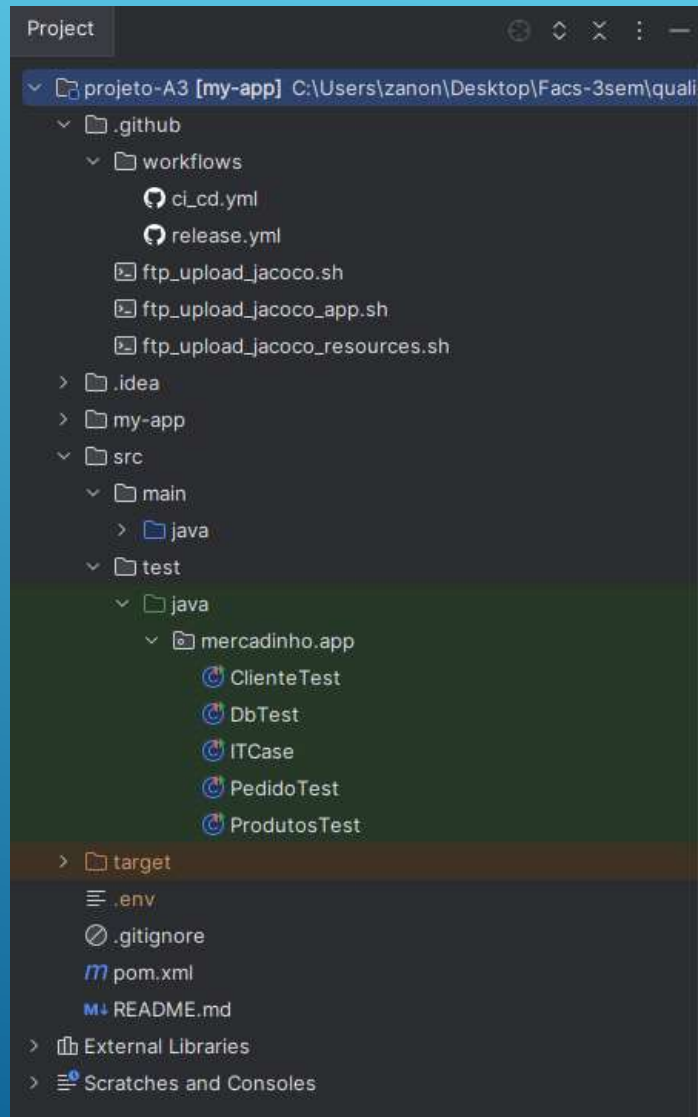
## Estrutura de Pastas:

código do projeto

documentação  
do projeto



## Estrutura geral do código:



Arquivos de workflow da pipeline no github actions e scripts de execução

Arquivos fonte do app

Arquivos de teste do código (unitários e de integração)

Pasta de relatórios de teste, arquivo de variáveis de ambiente, arquivo de configuração do gitignore, controle de dependências do maven, etc...

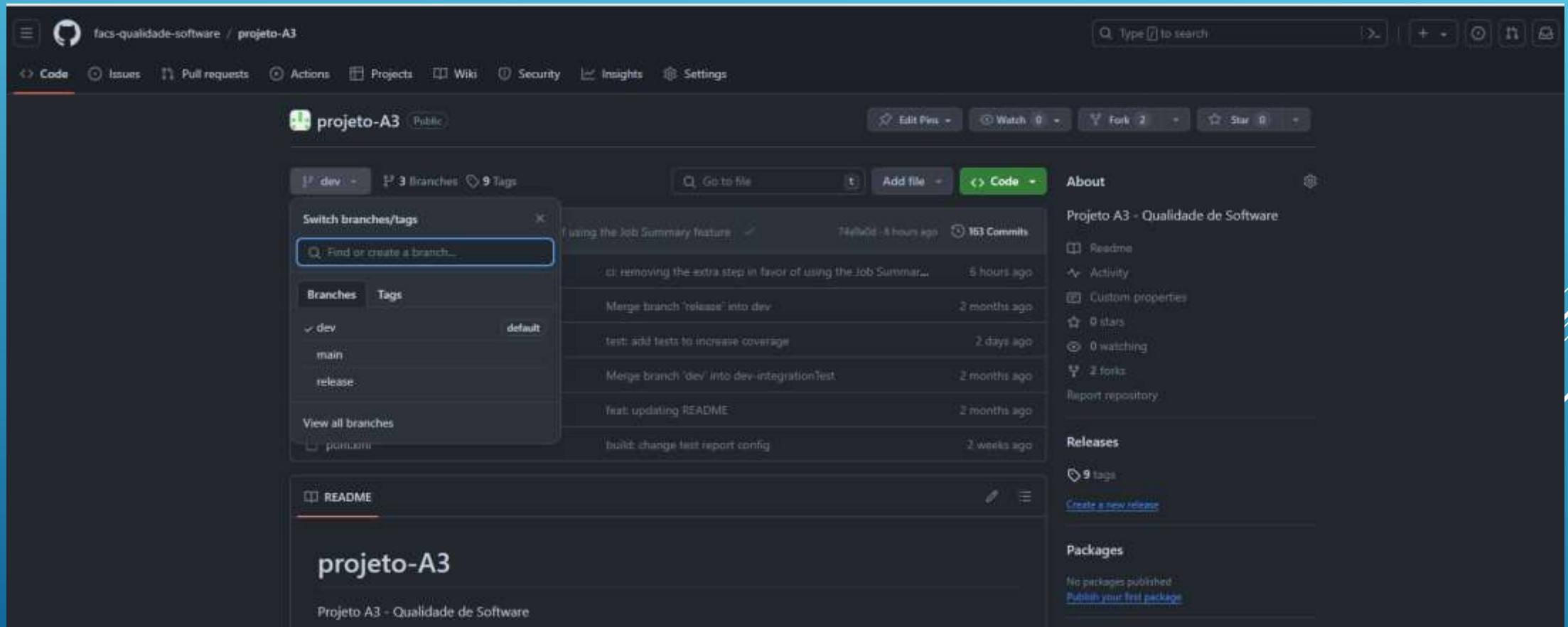
## Controle de dependências:

Projeto em **Maven**, com dependências declaradas em arquivo 'pom.xml'.

```
projeto-A3 / pom.xml
ZanoniCFernandes build: change text report config ✓
Code Blame 138 lines (124 lnc) - 4.18 KB
1 <?xml version="1.0" encoding="UTF-8"?>
2
3 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
4   xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
5   <modelVersion>4.0.0</modelVersion>
6
7   <groupId>mercadinho.app</groupId>
8   <artifactId>my-app</artifactId>
9   <version>1.0.0</version>
10
11   <name>my-app</name>
12   <url>http://www.example.com</url>
13
14   <properties>
15     <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
16     <maven.compiler.source>1.8</maven.compiler.source>
17     <maven.compiler.target>1.8</maven.compiler.target>
18   </properties>
19
20   <dependencies>
21     <dependency>
22       <groupId>org.junit.jupiter</groupId>
23       <artifactId>junit-jupiter-api</artifactId>
24       <version>5.10.0</version>
25       <scope>test</scope>
26     </dependency>
27     <dependency>
28       <groupId>org.mockito</groupId>
29       <artifactId>mockito-core</artifactId>
30       <version>5.4.0</version>
31       <scope>test</scope>
32     </dependency>
33     <dependency>
34       <groupId>org.mockito</groupId>
35       <artifactId>mockito-junit-jupiter</artifactId>
36       <version>5.3.1</version>
```

## Branchs ativas do projeto:

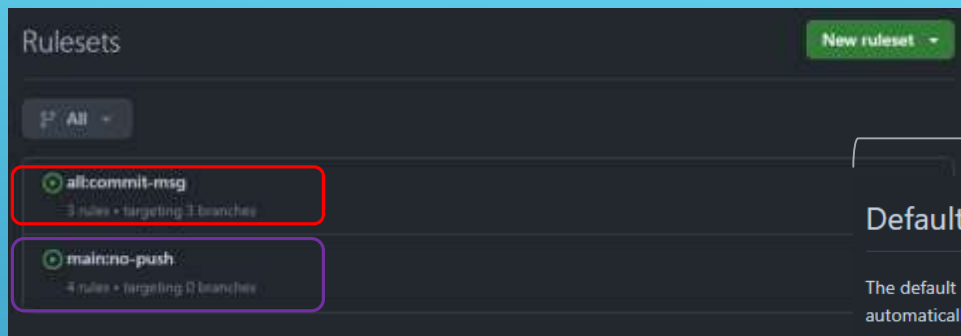
- 1: **dev** – desenvolvimento;
- 2: **release** – entrega;
- 3: **main** – deploy;



# Regras e configurações das branches:

Regras aplicadas às branches do projeto

Regex de conventional commits para todas as branches

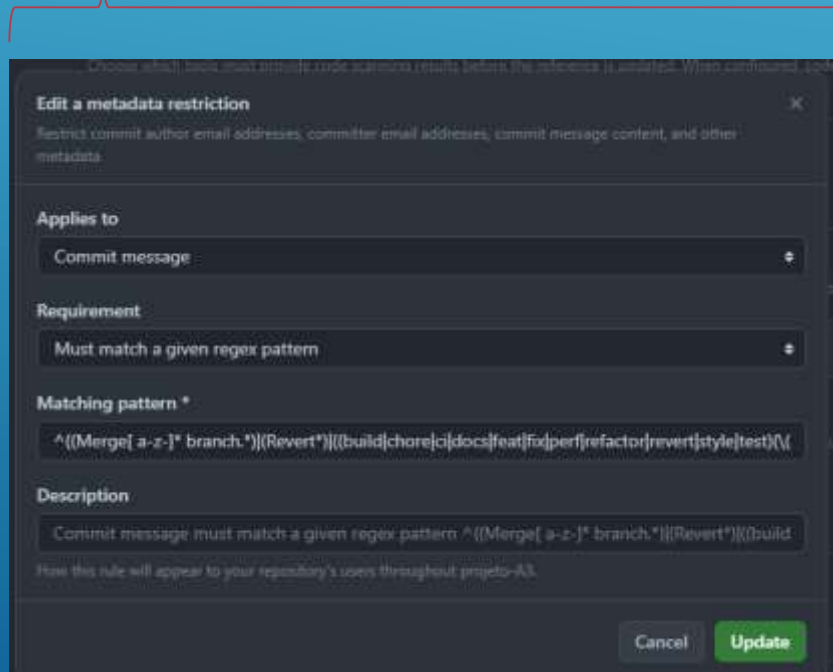


Default Branch: dev

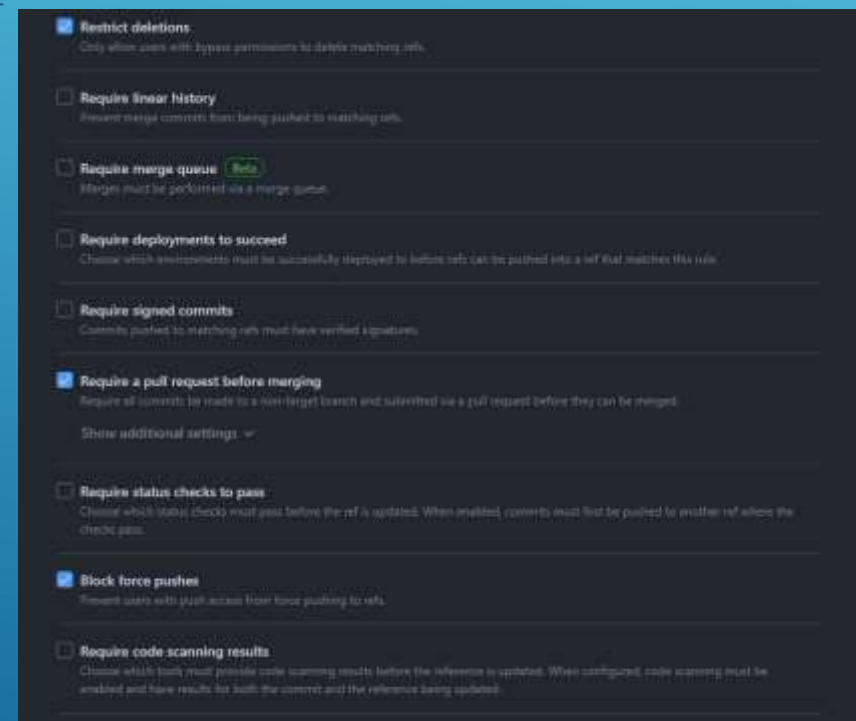
## Default branch

The default branch is considered the "base" branch in your repository, against which all pull requests and code commits are automatically made, unless you specify a different branch.

dev



Regra negando git pushes direto na branch main





## Workflow runs da pipeline:

Arquivos de configuração ('yaml') das pipelines

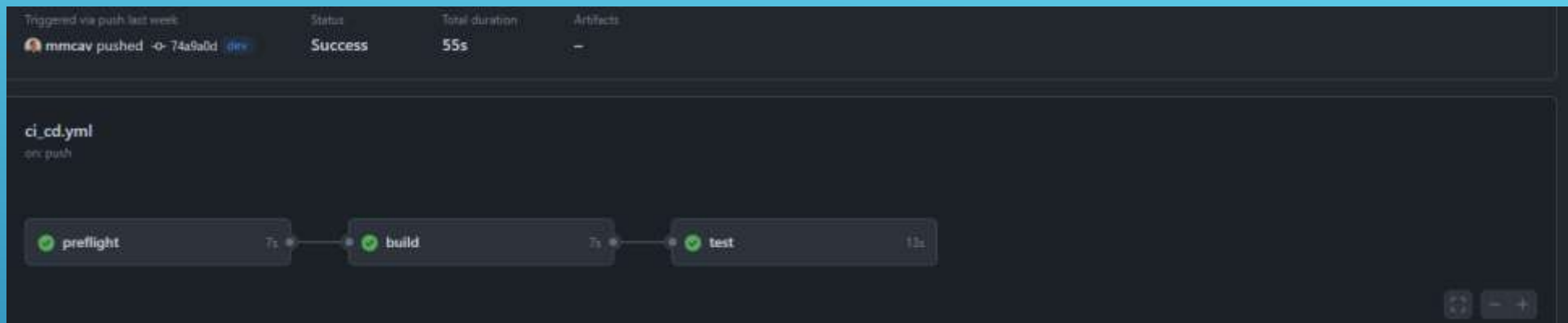
The screenshot displays the GitHub Actions interface for the repository 'facs-qualidade-software / projeto-A3'. The left sidebar shows the 'Actions' tab with a list of workflow types: 'All workflows', 'CI/CD Pipeline', 'Release pipeline', 'Management', 'Caches', 'Attestations', and 'Runners'. The main area, titled 'All workflows', shows a list of workflow runs. A red box highlights the '354 workflow runs' count. The list of runs includes:

- Release pipeline** (Release pipeline #130, completed by mimcar, 6 hours ago, 12s)
- Merge pull request #56 from facs-qualidade-software/release** (CI/CD Pipeline #208, Commit 25c9e38 pushed by mimcar, 6 hours ago, 57s)
- Release pipeline** (Release pipeline #149, completed by mimcar, 6 hours ago, 1m 32s)
- Merge pull request #55 from facs-qualidade-software/dev** (CI/CD Pipeline #207, Commit 2a3bf30 pushed by mimcar, 6 hours ago, 1m 8s)
- Release pipeline** (Release pipeline #148, completed by mimcar, 6 hours ago, 3s)
- ci: removing the extra step in favor of using the Job Summary feature** (CI/CD Pipeline #206, Commit 74e9af0 pushed by mimcar, 6 hours ago, 53s)
- Release pipeline** (Release pipeline #147, completed by mimcar, 7 hours ago, 1m 37s)
- Merge pull request #54 from facs-qualidade-software/dev** (CI/CD Pipeline #205, Commit 89b7bf pushed by mimcar, 7 hours ago, 1m 10s)
- Release pipeline** (Release pipeline #146, completed by mimcar, 7 hours ago, 1m 10s)



## Workflow runs da pipeline:

Passos do workflow run gerado pelo arquivo de configuração da pipeline de ci\_cd – aplicável em todas as branches



### preflight

succeeded last week in 7s

- > ✓ Set up job
- > ✓ Run actions/checkout@v4
- > ✓ Validação da mensagem de commit
- > ✓ Instalação do JDK for x64
- > ✓ Post Instalação do JDK for x64
- > ✓ Post Run actions/checkout@v4
- > ✓ Complete job

### build

succeeded last week in 7s

- > ✓ Set up job
- > ✓ Run actions/checkout@v4
- > ✓ Fase compilação do Maven
- > ✓ Post Run actions/checkout@v4
- > ✓ Complete job

### test

succeeded last week in 13s

- > ✓ Set up job
- > ✓ Run actions/checkout@v4
- > ✓ Rodar testes unitários
- > ✓ Post Run actions/checkout@v4
- > ✓ Complete job

## Workflow runs da pipeline:

```
1 name: CI/CD Pipeline
2
3 on:
4   push:
5     branches: [main, release, dev, dev*, dev-*]
6
7 jobs:
8   preflight:
9     runs-on: ubuntu-latest
10    steps:
11      - uses: actions/checkout@v4
12      - name: Validação da mensagem de commit
13        run: |
14          echo "Validando mensagens de commit..."
15
16          # Se a tag de base não existir, use o primeiro commit do repositório
17          REGEX="^((Merge.*)|(Revert.*))(((build|chore|ci|docs|feat|fix|perf|refactor|revert|style|test)((\.(.*))?)?: .*))"
18
19          # Se a tag de base não existir, use o primeiro commit do repositório
20          BASE_TAG=your-base-tag # Substitua com o nome da sua tag de base
21          if git rev-parse $BASE_TAG >/dev/null 2>&1; then
22            COMMIT_RANGE=$BASE_TAG..HEAD
23          else
24            COMMIT_RANGE=$(git rev-list --max-parents=0 HEAD)
25          fi
26
27          # Loop para validar todas as mensagens de commit no intervalo
28          for COMMIT_HASH in $(git rev-list --no-merges $COMMIT_RANGE); do
29            MESSAGE=$(git log --format=%B -n 1 $COMMIT_HASH)
30            echo "Commit Message: ${MESSAGE}"
31            if ! [[ "$MESSAGE" =~ $REGEX ]]; then
32              echo >&2 "ERROR: Commit aborted for not following the Conventional Commit standard."
33              exit 1
34            else
35              echo "Valid commit message."
36            fi
37          done
38      - name: Instalação do JDK for x64
39        uses: actions/setup-java@v4
40        with:
41          java-version: "20"
42          distribution: "temurin"
```

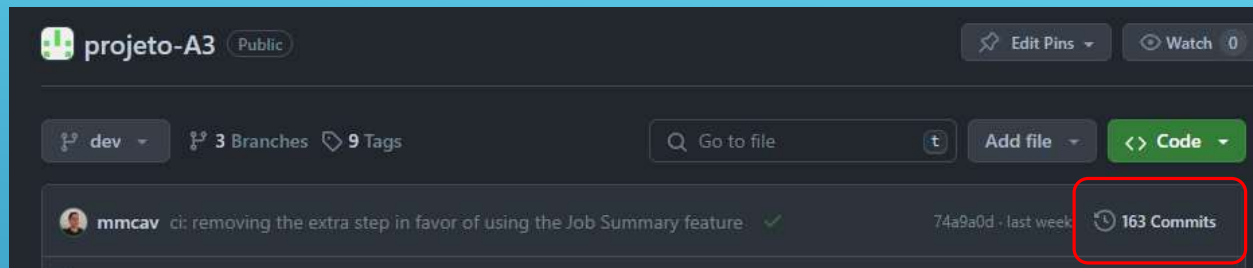
Detalhe da validação de commit message via conventional commits também aplicado na workflow run do git actions

### preflight

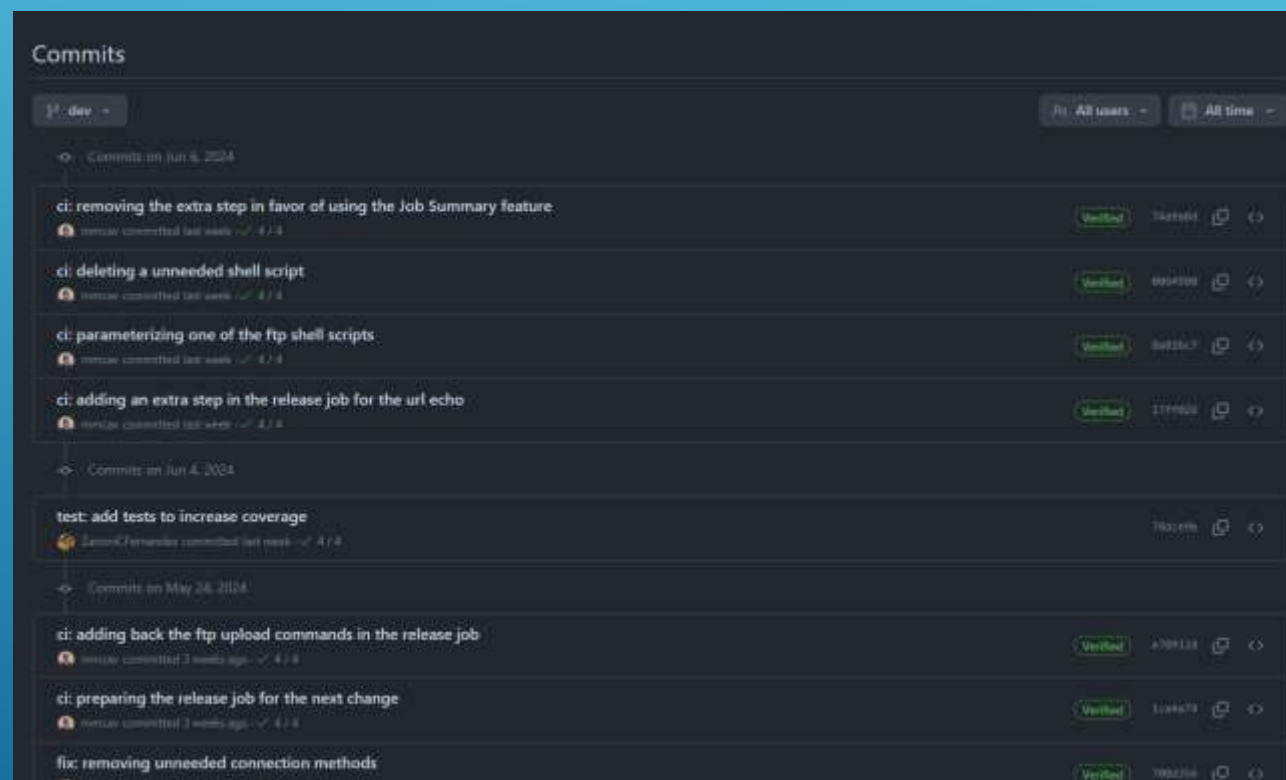
succeeded last week in 7s

- > ☒ Set up job
- > ☒ Run actions/checkout@v4
- ▼ ☒ Validação da mensagem de commit
  - 1 ▶ Run echo "Validando mensagens de commit..."
  - 27 Validando mensagens de commit...
  - 28 Commit Message: ci: removing the extra step in favor of using the Job Summary feature
  - 29 Valid commit message.
- > ☒ Instalação do JDK for x64
- > ☒ Post Instalação do JDK for x64
- > ☒ Post Run actions/checkout@v4
- > ☒ Complete job

## Workflow runs aplicando conventional commits:



Commit messages  
controladas pelas regras  
impostas diretamente nas  
configurações do github e  
também pela workflow run



## Workflow runs da pipeline:

Triggered via workflow run last week  
mmcav completed - 74a9a0d

Status  
**Success**

Total duration  
**1m 32s**

Artifacts  
—

**release.yml**  
on: workflow\_run

✓ integration-tests 1m 21s

⌚ versioning 0s

integration-tests summary

### Link para o Relatório do Jacoco

[https://joaobsjunior.com.br/trabalho-a3/facs-qualidade-software-projetoA3/relatorio\\_jacoco\\_\\_2024-06-06\\_\\_15-13-21/](https://joaobsjunior.com.br/trabalho-a3/facs-qualidade-software-projetoA3/relatorio_jacoco__2024-06-06__15-13-21/)

Job summary generated at run-time

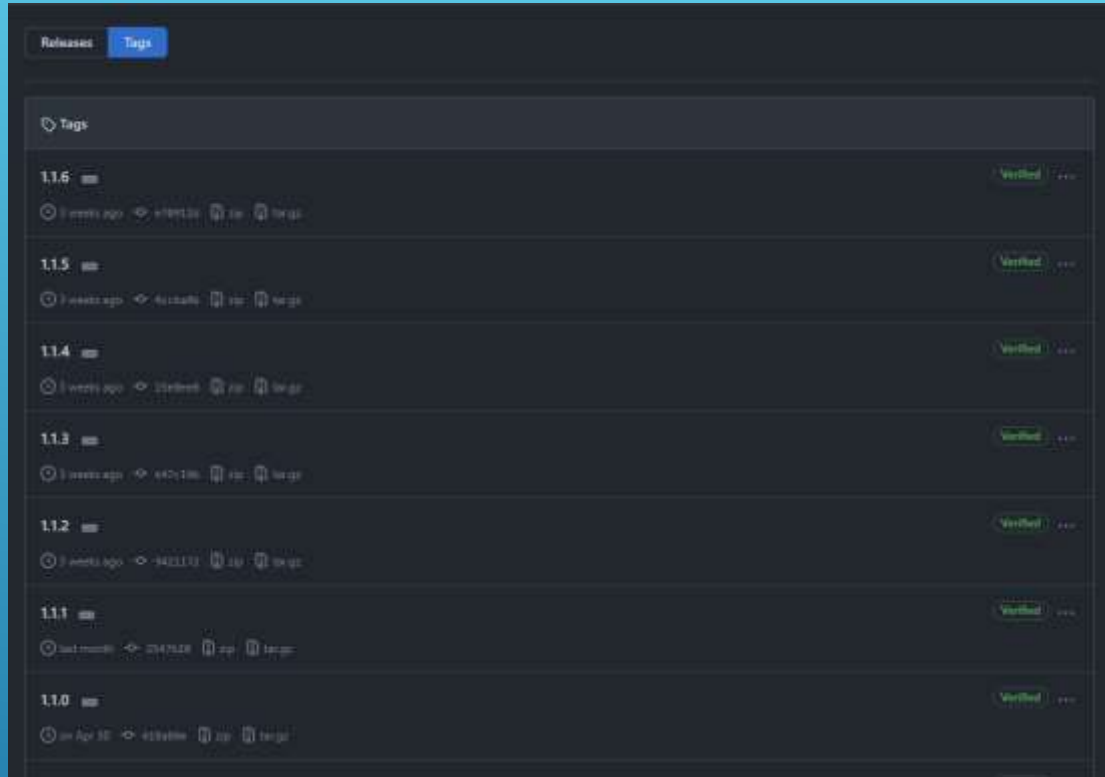
Link dinâmico gerado pelo workflow run, após envio do relatório de testes do Jacoco para servidor FTP disponibilizado.

Passos do workflow run gerado pelo arquivo de configuração da pipeline de release, com testes integrados, aplicado somente na branch release.

**integration-tests**  
succeeded last week in 1m 21s

- > ✓ Set up job
- > ✓ Run actions/checkout@v4
- > ✓ Rodar testes de integração
- > ✓ Envio de relatório do Jacoco via FTP
- > ✓ Post Run actions/checkout@v4
- > ✓ Complete job

# Workflow run e geração de tag semântica:



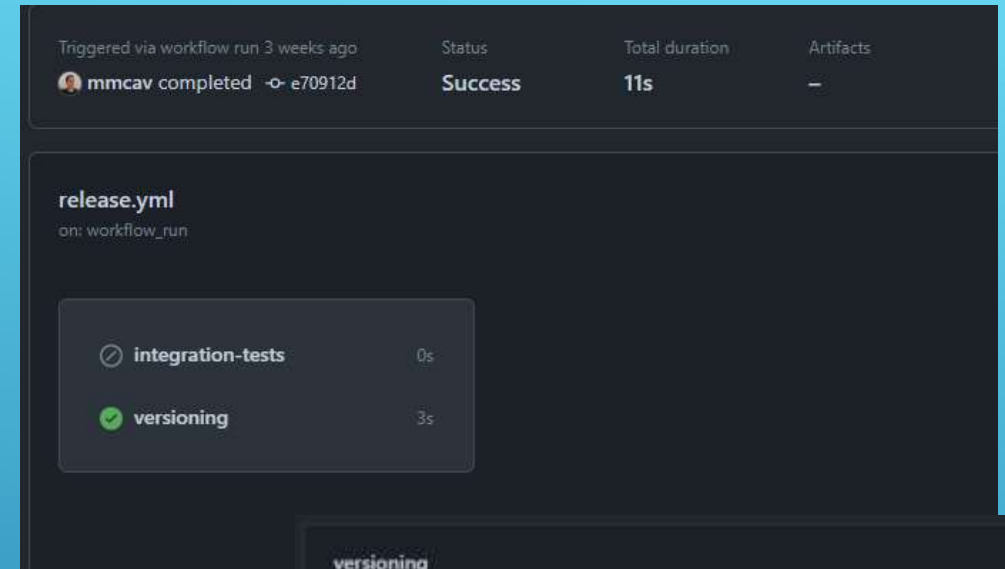
Tags geradas ao longo da implementação do projeto.

Versão atual – 1.1.6

Major: 1;

Minor: 1;

Patch: 6



Geração de tag realizada via workflow run no github actions – aplicável apenas na Branch main



# Aspectos de controle de qualidade:

## Relatório de testes utilizando Jacoco (relatório de 06/06/2024):

Cobertura de  
gerais instruções:  
78%

Cobertura de  
ramificações do código:  
63%

my-app > mercadinho.app												
mercadinho.app												
Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
Pedido.java		62%		50%	6	11	8	19	3	7	0	1
Produto.java		75%		71%	5	20	10	33	1	13	0	1
Cliente.java		89%		61%	13	33	7	64	0	15	0	1
DbConexao.java		50%		n/a	1	2	6	11	1	2	0	1
App.java		0%		n/a	2	2	7	7	2	2	1	1
DbSelecao.java		84%		75%	2	8	4	23	1	6	0	2
DbAtualizacao.java		77%		50%	2	6	4	19	1	5	0	1
DbInsercao.java		72%		50%	2	3	4	14	1	2	0	1
DbDelecao.java		58%		50%	2	3	4	11	1	2	0	1
ControladorEntidades.java		0%		n/a	2	2	2	2	2	2	1	1
ProdutoUnidade.java		93%		75%	1	7	1	17	0	5	0	1
ProdutoPeso.java		91%		50%	1	5	1	14	0	4	0	1
ClienteReaderDb.java		100%		100%	0	4	0	7	0	3	0	1
Total	179 of 814	78%	28 of 76	63%	39	106	58	241	13	68	2	14

# Aspectos de controle de qualidade:

Descrição detalhada da sessão de testes realizada pelo Jacoco, com identificação das classes e arquivos fonte testados

Sessions		
This coverage report is based on execution data from the following sessions:		
Session	Start Time	Dump Time
fv-az1442-780-364920b0	Jun 6, 2024, 3:12:42 PM	Jun 6, 2024, 3:12:44 PM
fv-az1442-780-d36e3d2e	Jun 6, 2024, 3:12:45 PM	Jun 6, 2024, 3:13:21 PM
Execution data for the following classes is considered in this report:		
Class	Id	
com.sun.security.sasl.gsskerb.JdkSASL	0c62ff01c63adfc3	
com.sun.security.sasl.gsskerb.JdkSASL.1	05a8c4f68b01922c	
com.sun.security.sasl.gsskerb.JdkSASL.ProviderService	a9af044e12647567	
io.github.cdimaasio.dotenv.Dotenv	c597e60395331b0	
io.github.cdimaasio.dotenv.DotenvBuilder	b5ebb448e141f180	
io.github.cdimaasio.dotenv.DotenvBuilder.DotenvImpl	55feed443b18a1e7	
io.github.cdimaasio.dotenv.DotenvEntry	f5bdab76bc330668	
io.github.cdimaasio.dotenv.Internal.DotenvParser	969d8f39910bb05c	
io.github.cdimaasio.dotenv.Internal.DotenvReader	5041ffffc4799ab9	
java.sql.DriverInfo	44f75193308f0c19	
java.sql.DriverManager	13615e5ad9d1beb3	
java.sql.DriverManager.1	c70d55e794c51bbb	
java.sql.DriverManager.2	34493d3678b61277	
java.sql.SQLPermission	94274bbd575e2111	
mercadinho.app.Cliente	c206c45f8d0e74a6	
mercadinho.app.ClienteReaderDb	61ba310f586dc826	
mercadinho.app.ClienteTest	6c1d7f3810654837	
mercadinho.app.DbAtualizacao	feccb97595d998d3	
mercadinho.app.DbConexao	b20d851b336dceb2	
mercadinho.app.DbDelecao	3e57e1bd4657b021	
mercadinho.app.DbInsercao	76eb480a5c2611a6	
mercadinho.app.DbSelecao	e5f2238e73d6f807	
mercadinho.app.DbSelecao.1	b1780b914d9d4d6a	
mercadinho.app.DbTest	dde3143be43b63be	
mercadinho.app.ITCase	9a071df045bcc7e8	
mercadinho.app.Pedido	8804bbff91fe121b	
mercadinho.app.PedidoTest	f47f44443333fe30	
mercadinho.app.Produto	35a6c46dc3b6538e	
mercadinho.app.ProdutoPeso	cee2321121292a12	
mercadinho.app.ProdutoUnidade	4ba7cc3fcea8a9c7	
mercadinho.app.ProdutosTest	d19c37f929d5fc13	
net.bytebuddy.ByteBuddy	d4e5f2084d059ff9	
net.bytebuddy.ClassFileVersion	f841dc1e8a5b7cb1	
net.bytebuddy.ClassFileVersion.VersionLocator.Resolved	02295be967e000ed	



# Aspectos de controle de qualidade:

```
1 Run mvn --batch-mode --update-snapshots test
2 [INFO] Scanning for projects...
3 [INFO]
4 [INFO] -----< mercadinho.app:my-app >-----
5 [INFO] Building my-app 1.0.0
6 [INFO] from pom.xml
7 [INFO] -----[ jar ]-----
8 [INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/jacoco/jacoco-maven-plugin/0.8.10/jacoco-maven-plugin-0.8.10.pom
9 [INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/jacoco/jacoco-maven-plugin/0.8.10/jacoco-maven-plugin-0.8.10.pom (3.0 kB at 19 kB/s)
10 [INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/jacoco/org.jacoco.build/0.8.10/org.jacoco.build-0.8.10.pom
11 [INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/jacoco/org.jacoco.build/0.8.10/org.jacoco.build-0.8.10.pom (44 kB at 1.6 MB/s)
12 [INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/ow2/asm/asm-bom/9.5/asm-bom-9.5.pom
```

## Testes unitários

28 testes realizados no workflow run da pipeline ci\_cd, sem falhas encontradas.

```
800 [INFO]
801 [INFO] -----
802 [INFO] T E S T S
803 [INFO] -----
804 [INFO] Running mercadinho.app.ClienteTest
805 [INFO] Tests run: 10, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.114 s - in mercadinho.app.ClienteTest
806 [INFO] Running mercadinho.app.PedidoTest
807 [INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.004 s - in mercadinho.app.PedidoTest
808 [INFO] Running mercadinho.app.ProdutosTest
809 [INFO] Tests run: 14, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.042 s - in mercadinho.app.ProdutosTest
810 [INFO] Running mercadinho.app.DbTest
811 [INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 1.39 s - in mercadinho.app.DbTest
812 [INFO]
813 [INFO] Results:
814 [INFO]
815 [INFO] Tests run: 28, Failures: 0, Errors: 0, Skipped: 0
816 [INFO]
817 [INFO] -----
818 [INFO] BUILD SUCCESS
819 [INFO] -----
820 [INFO] Total time: 7.383 s
821 [INFO] Finished at: 2024-06-06T15:07:24Z
822 [INFO] -----
```

# Aspectos de controle de qualidade:

```
integration-tests
succeeded last week in 1m 21s

> ✓ Set up job 1s
> ✓ Run actions/checkout@v4 0s
v ✓ Rodar testes de integração 51s

1 ▶ Run touch .env
18 [INFO] Scanning for projects...
19 [INFO]
20 [INFO] -----< mercadinho.app:my-app >-----
21 [INFO] Building my-app 1.0.0
22 [INFO]   from pom.xml
23 [INFO] -----[ jar ]-----
24 [INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/jacoco/jacoco-maven-plugin/0.8.10/jacoco-mav
```

## Testes de integração

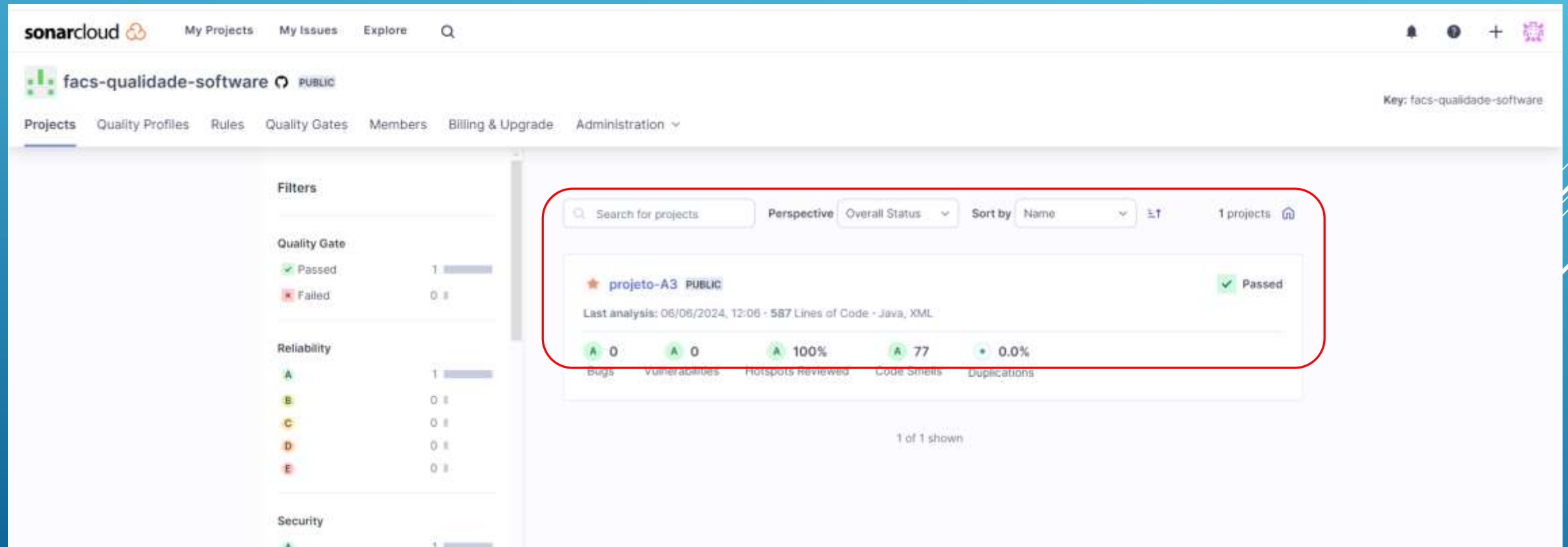
9 testes realizados no workflow run da pipeline release, sem falhas encontradas\*.

Bônus: construção do relatório com a ferramenta Jacoco.

```
979 [INFO]
980 [INFO] -----
981 [INFO] T E S T S
982 [INFO] -----
983 [INFO] Running mercadinho.app.ITCase
984 [INFO] Tests run: 9, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 34.50 s -- in mercadinho.app.ITCase
985 [INFO]
986 [INFO] Results:
987 [INFO]
988 [INFO] Tests run: 9, Failures: 0, Errors: 0, Skipped: 0
989 [INFO]
990 [INFO]
991 [INFO] --- jacoco-maven-plugin:0.8.10:report (report) @ my-app ---
992 [INFO] loading execution data file /home/runner/work/projeto-A3/projeto-A3/target/jacoco.exec
993 [INFO] Analyzed bundle 'my-app' with 14 classes
994 [INFO]
995 [INFO] --- maven-failsafe-plugin:3.2.5:verify (default) @ my-app ---
996 [INFO]
997 [INFO] BUILD SUCCESS
998 [INFO] -----
999 [INFO] Total time: 48.529 s
1000 [INFO] Finished at: 2024-06-06T15:13:21Z
1001 [INFO] -----
```

## Aspectos de controle de qualidade:

Sincronização do repositório do projeto (Branch dev) com a ferramenta de qualidade da Sonar em nuvem (SonarCloud)



## Aspectos de controle de qualidade:

Quality Gates ? [Create](#)

Sonar way [DEFAULT](#) [BUILT-IN](#) [Copy](#)

☑ The only quality gate you need to practice [Clean as You Code](#)

### Conditions

Your new code will be clean if: ?

No new bugs are introduced	Reliability rating is <b>A</b>
No new vulnerabilities are introduced	Security rating is <b>A</b>
New code has limited technical debt	Maintainability rating is <b>A</b>
All new security hotspots are reviewed	
New code is sufficiently covered by test	Coverage is greater than or equal to <b>80.0%</b> ?
New code has limited duplication	Duplicated Lines (%) is less than or equal to <b>3.0%</b> ?

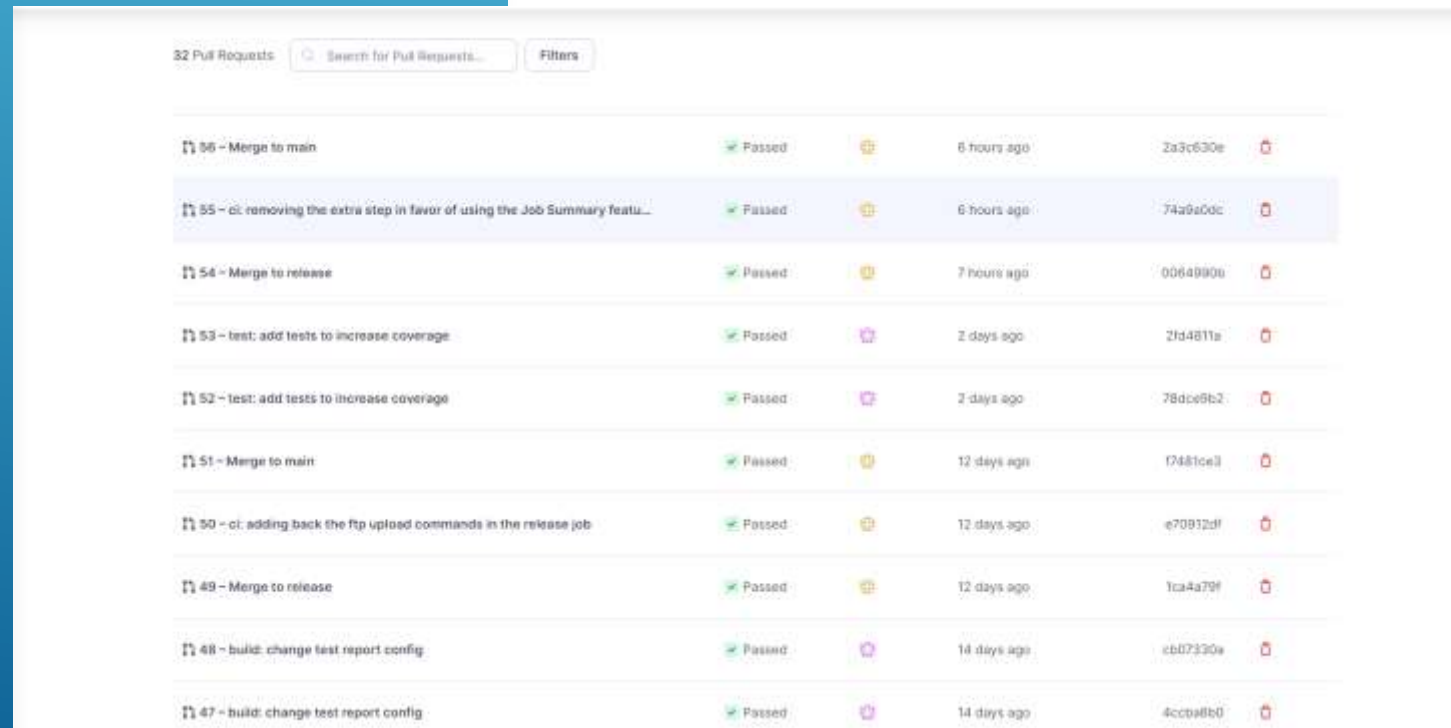
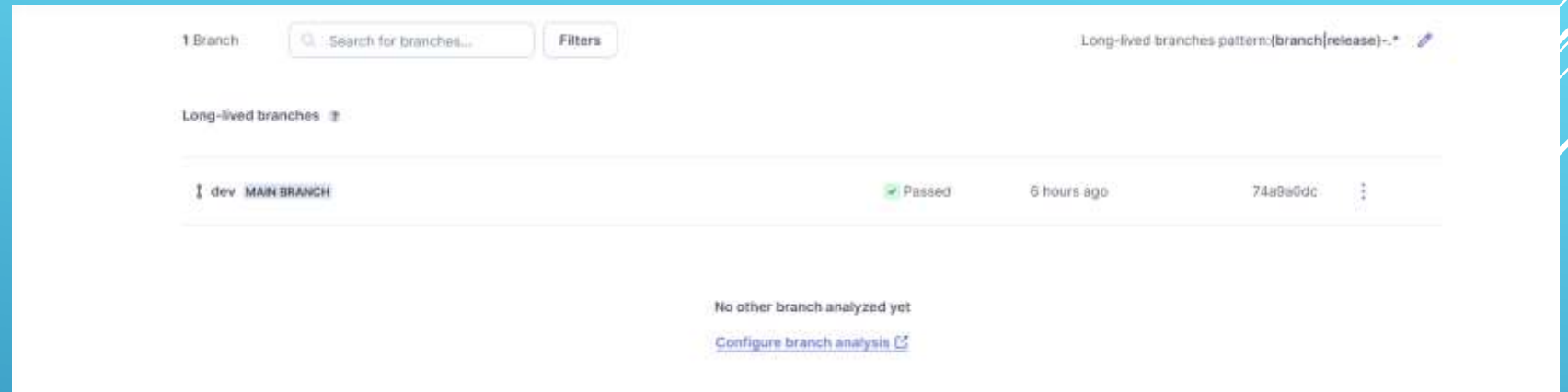
These conditions apply to the new code of all branches and to pull requests.

### Projects ?

Every project not specifically associated to a Quality Gate will be associated to this one by default.

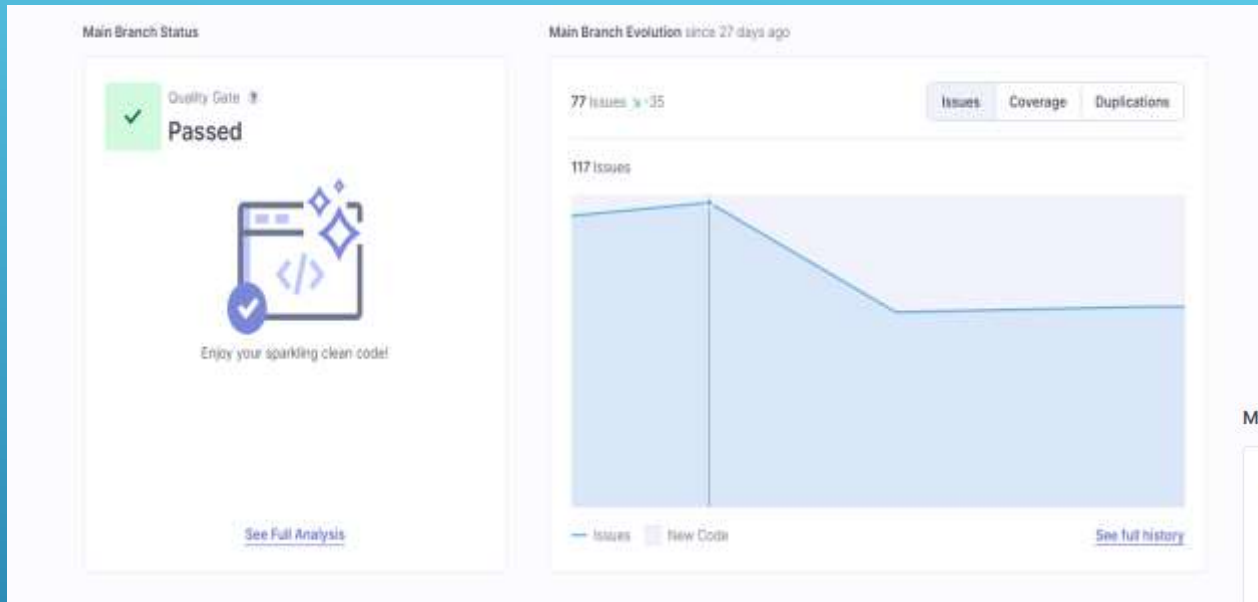
Quality gate utilizado no projeto: Sonar way, padrão disponibilizado pela própria ferramenta, default para projetos sem quality gates específicos.

# Aspectos de controle de qualidade:



Análises são geradas automaticamente após a realização de alterações no repositória, seja via push ou merge em pull request.

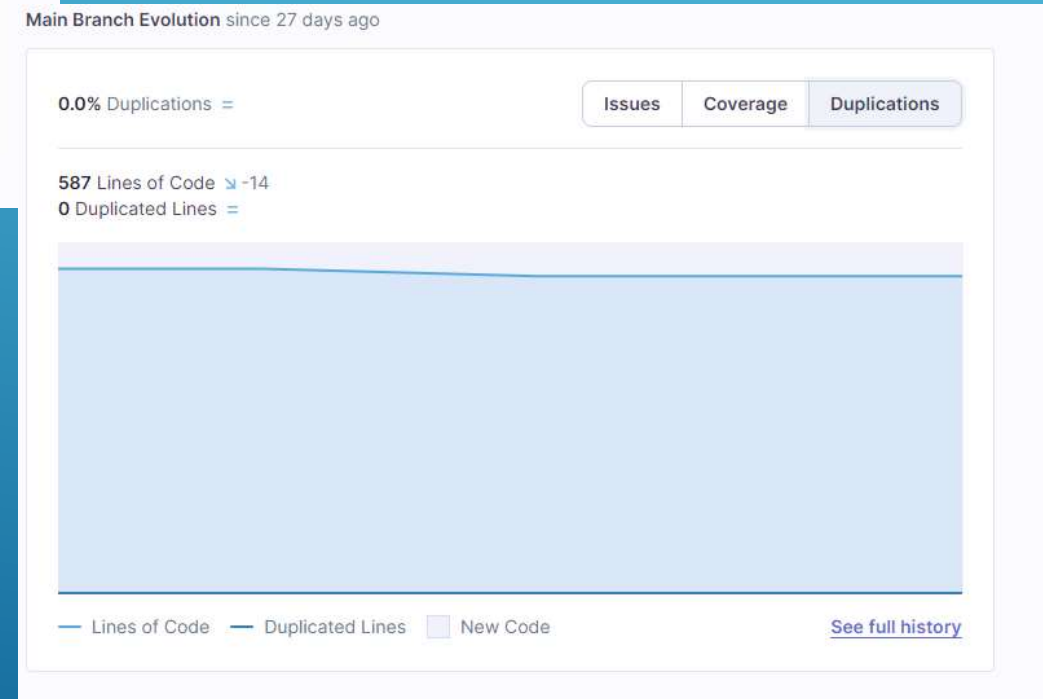
## Aspectos de controle de qualidade:



Históricos de análise de  
qualidade de código

Resultados:

- 1: Aprovado no quality gate;
- 2: Número atual de issue reduzido de 177 (máx) para 77 (atual);
- 3: Sem duplicação de linha de código;
- 4: Quantidade de linhas de código do projeto reduzida de 601 para 587 – mantendo qualidade.



# Aspectos de controle de qualidade:

Continuação dos resultados:

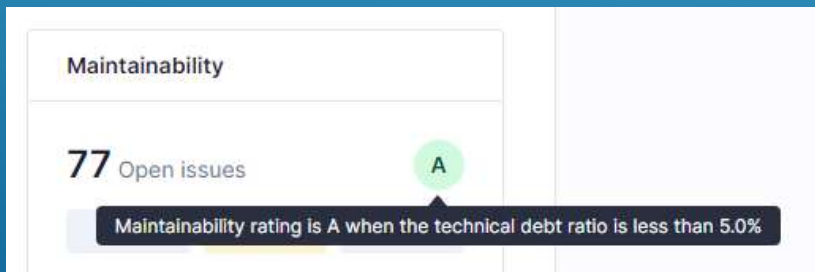
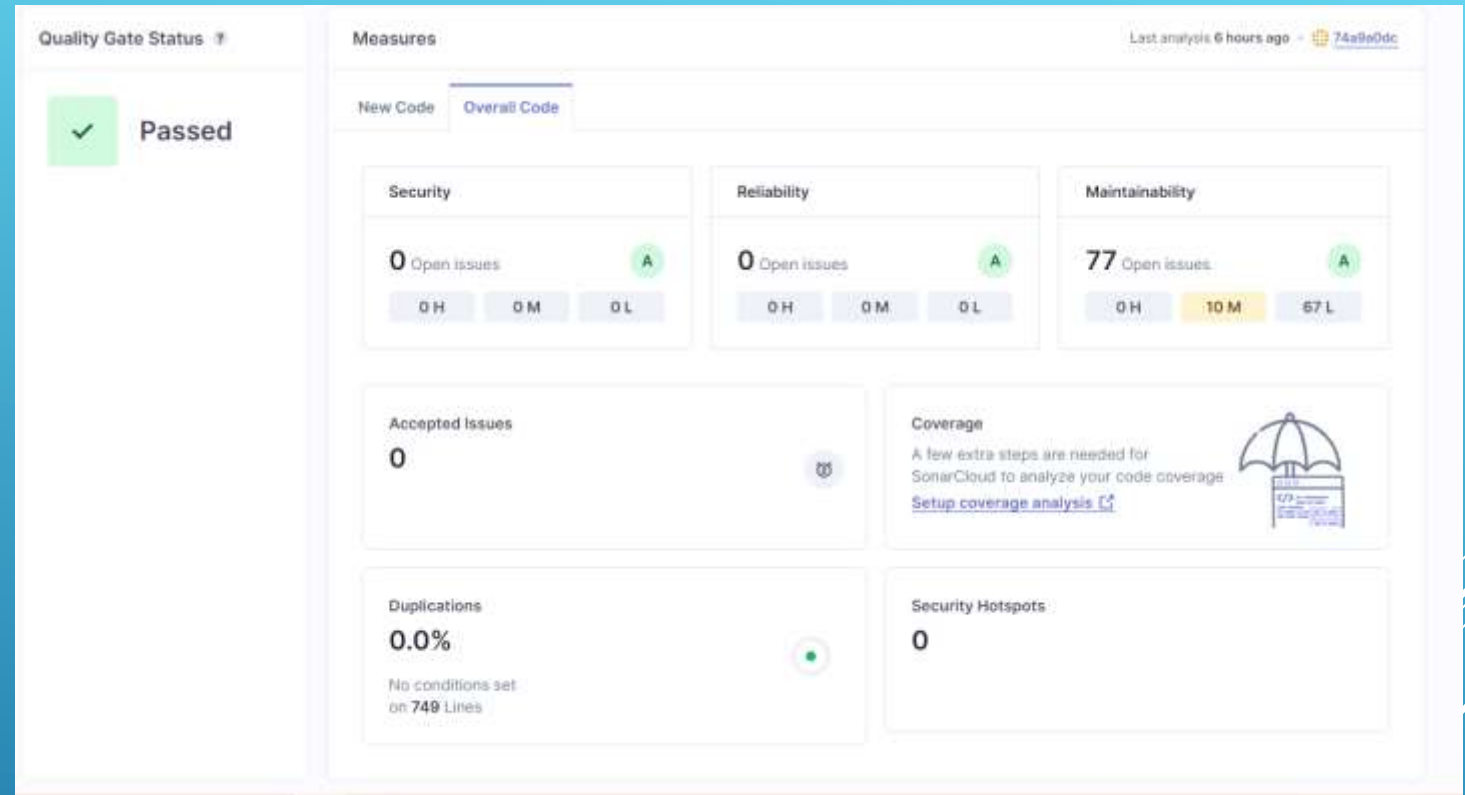
1: Zero problemas de security hotspot, inclusive para dependências;

2: Zero problemas tolerados por iniciativa dos usuários;

3: Nota "A" em segurança, sem problemas relatados;

4: Nota "A" em confiabilidade, sem problemas relatados;

5: Nota "A" em manutenibilidade, sem problemas graves relatados, com apenas dez tickets de critério médio e 67 de critério baixo - débito técnico abaixo de 5% do código analisado;





# OBRIGADO!

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