Jenkins Integration

Class	Software Quality Management & Assurance
Assignment	Jobs in Jenkins
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Date	December 16, 2022

Contents

Homework 1 - Description:

- Create a Jenkins job that connects to a GitHub repository where you have a minimum 2 tests.
- The Jenkins user should decide by a parameter which one of these tests to run. (you can have the tests in different TestCases).
- The repository name should be in the format: SQMA_SecondName_FirstName. Example: SQMA_Zamfiroiu_Alin
- Create a document with every step and the result of running this job.

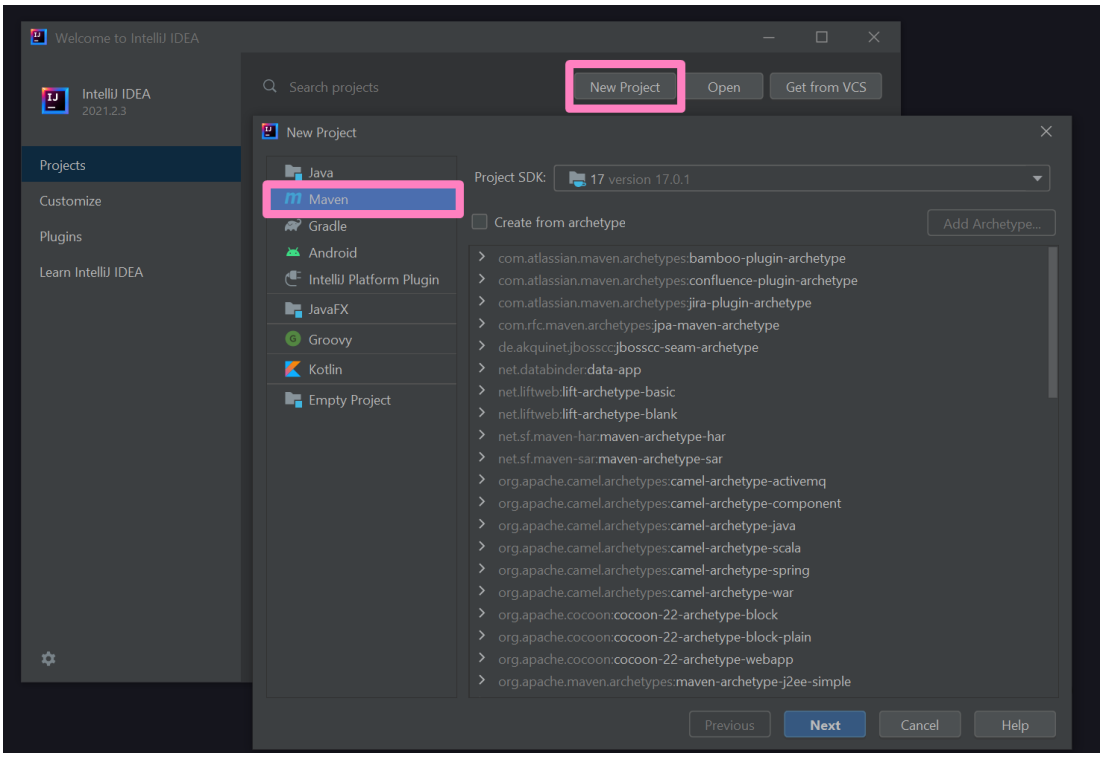
Homework 2 - Description:

- You have to create more jobs in a pipeline that will run all tests from your repository.
- Create a document with every step and the result of running this pipeline.
- Please put in different sections of this document Homework 1 and Homework 2.

Prerequisites

Build a Maven Project

1. Create a new project with maven in IntelliJ.



2. Add a name that respects the format: SQMA_SecondName_FirstName

3. Add dependencies and write the code.

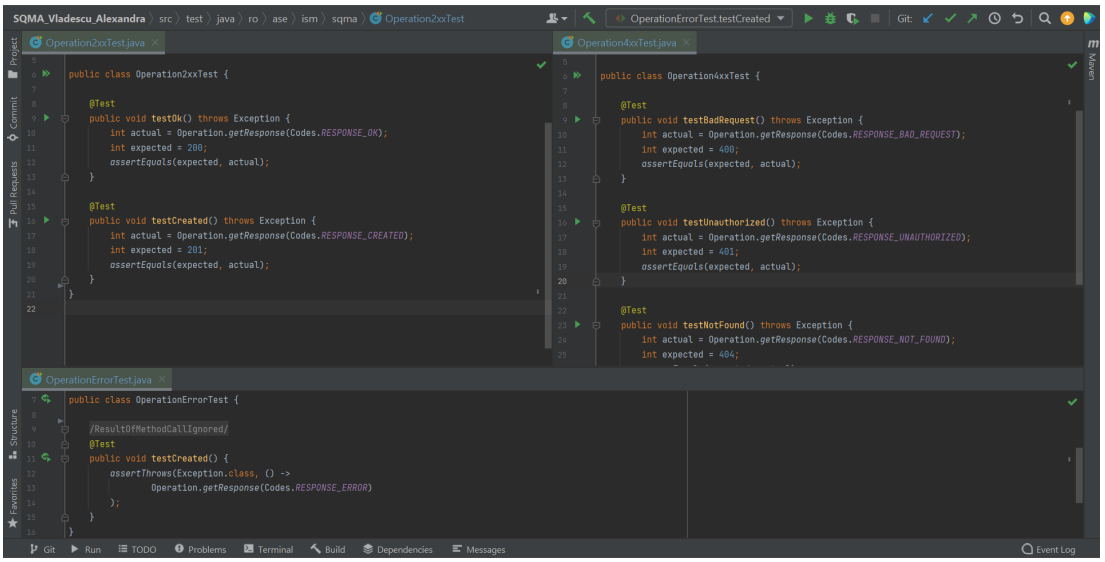
- Method to be tested.

```java
package ro.ase.ism.sqma;

public class Operation {

    public static int getResponse(Codes code) throws Exception {
        return switch (code) {
            case RESPONSE_OK -> 200;
            case RESPONSE_CREATED -> 201;
            case RESPONSE_BAD_REQUEST -> 400;
            case RESPONSE_UNAUTHORIZED -> 401;
            case RESPONSE_NOT_FOUND -> 404;
            default -> throw new Exception();
        };
    }
}
```

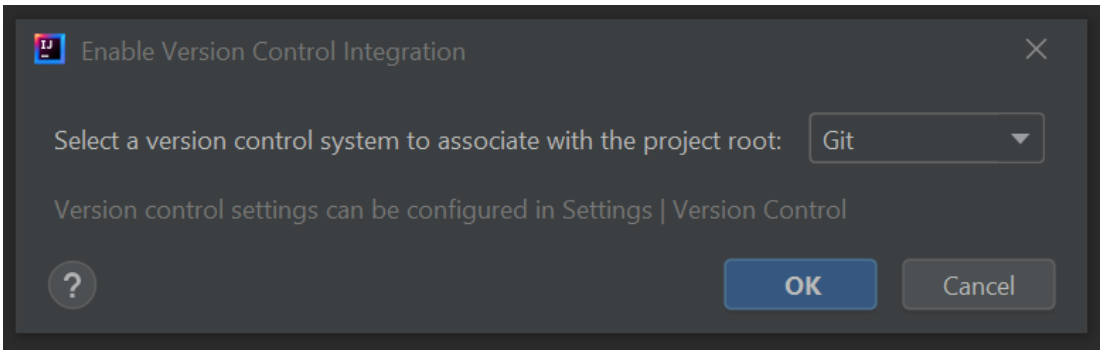
- Three sets of tests.



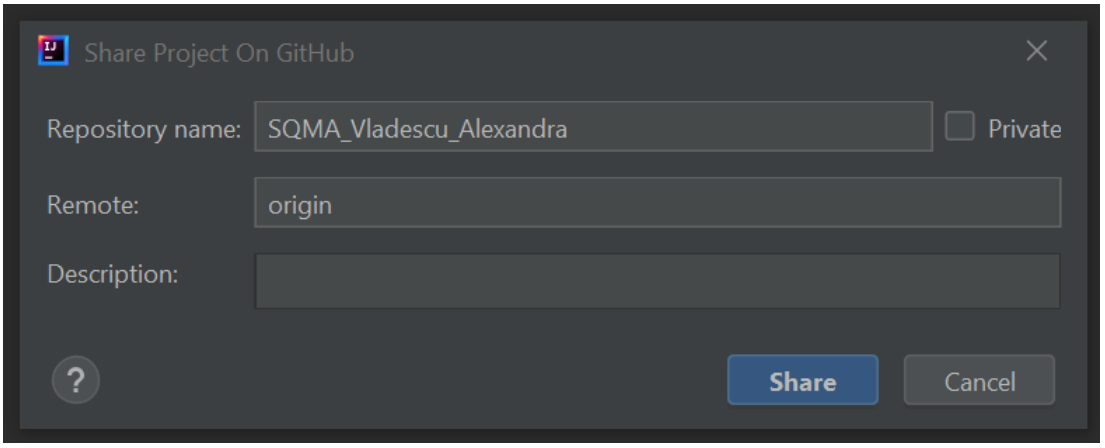
Publish the project on GitHub

1. From IntelliJ: VCS -> Enable Version Control Integration

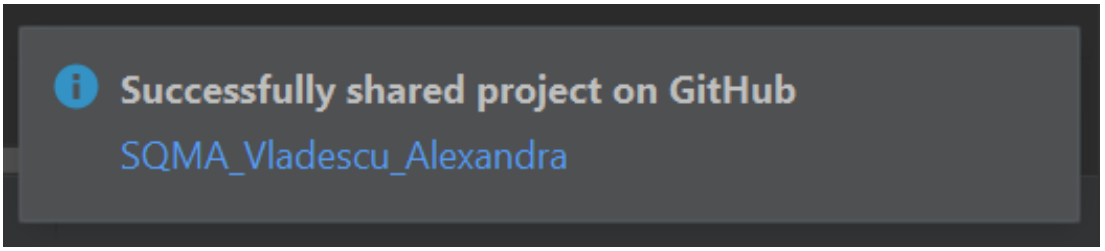
- Select **Git** then click **OK**



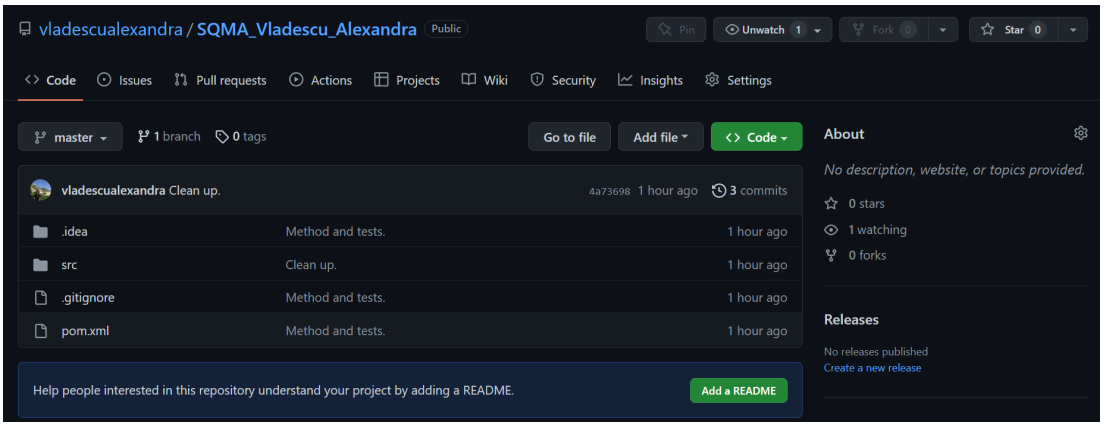
2. From IntelliJ: VCS -> GitHub -> Share Project On GitHub



3. A popup will appear after the project is published.

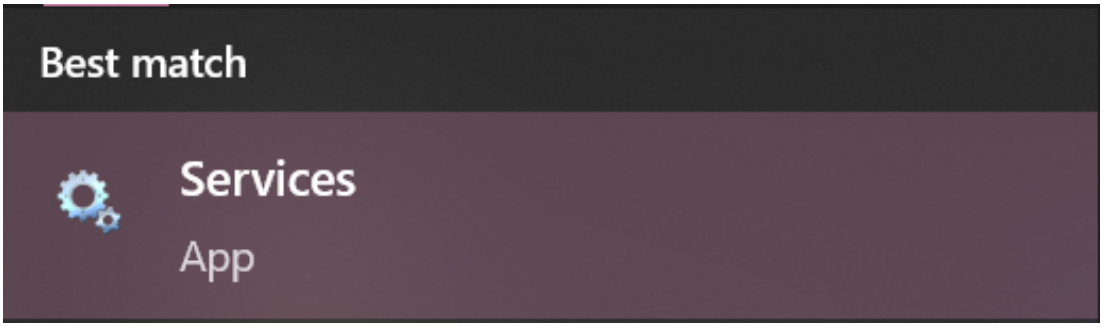


4. Click the link to open the project in GitHub.
   This project: https://github.com/vladescualexandra/SQMA_Vladescu_Alexandra



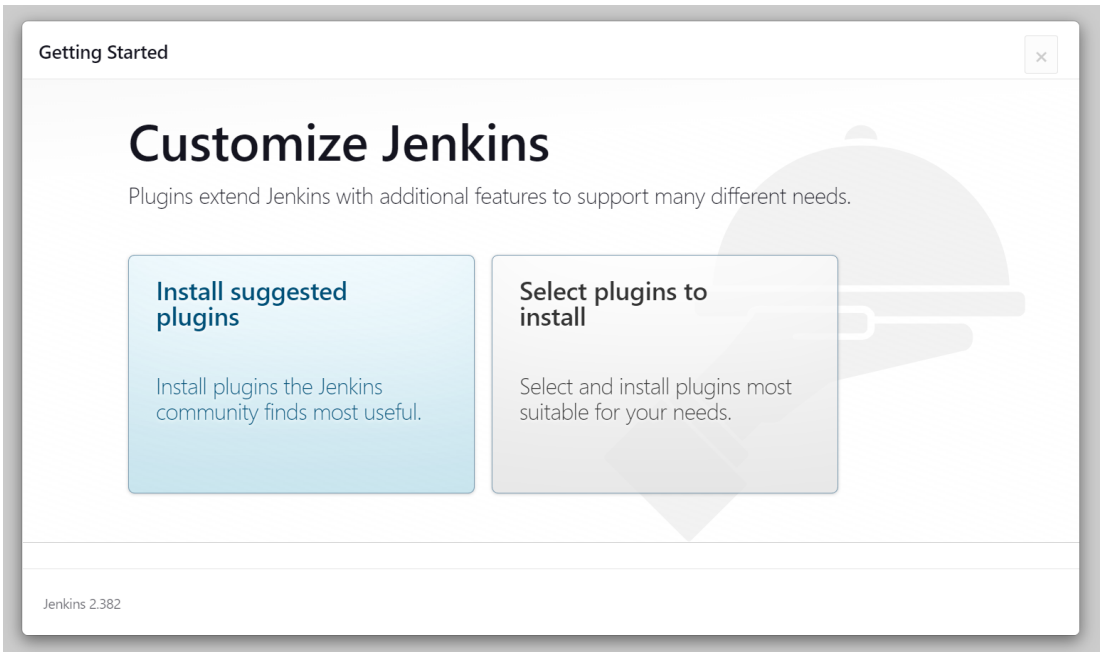
Install Jenkins

1. Follow instructions from: https://www.jenkins.io/doc/book/installing/windows/
2. To check that Jenkins is running, from Windows find Services, then look for the Jenkins service and the status needs to be Running.:

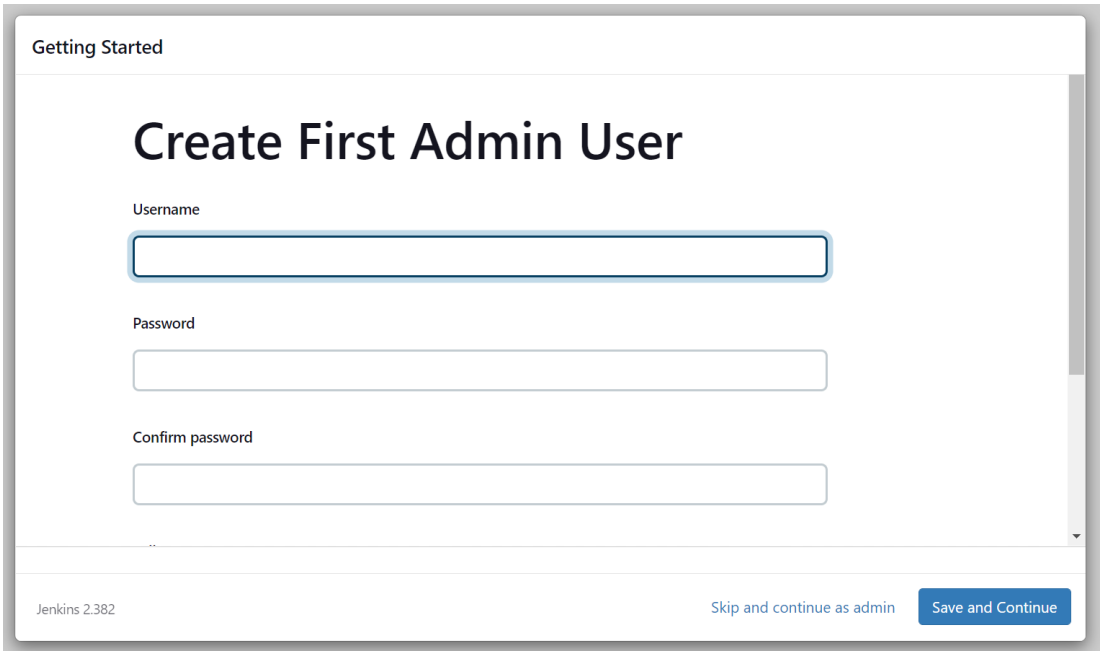


Name	Description	Status	Startup Type	Log On As
Jenkins	Jenkins Auto...	Running	Automatic	Local System
Language Experience Service	Provides infr...		Manual	Local System
Link-Layer Topology Discove...	Creates a Ne...		Manual	Local Service
Local Profile Assistant Service	This service ...		Manual (Trigg...	Local Service
Local Session Manager	Core Windo...	Running	Automatic	Local System
LxssManager	The LXSS Ma...	Running	Manual	Local System
LxssManagerUser_3ef27936	The LXSS Ma...		Manual (Trigg...	Local System

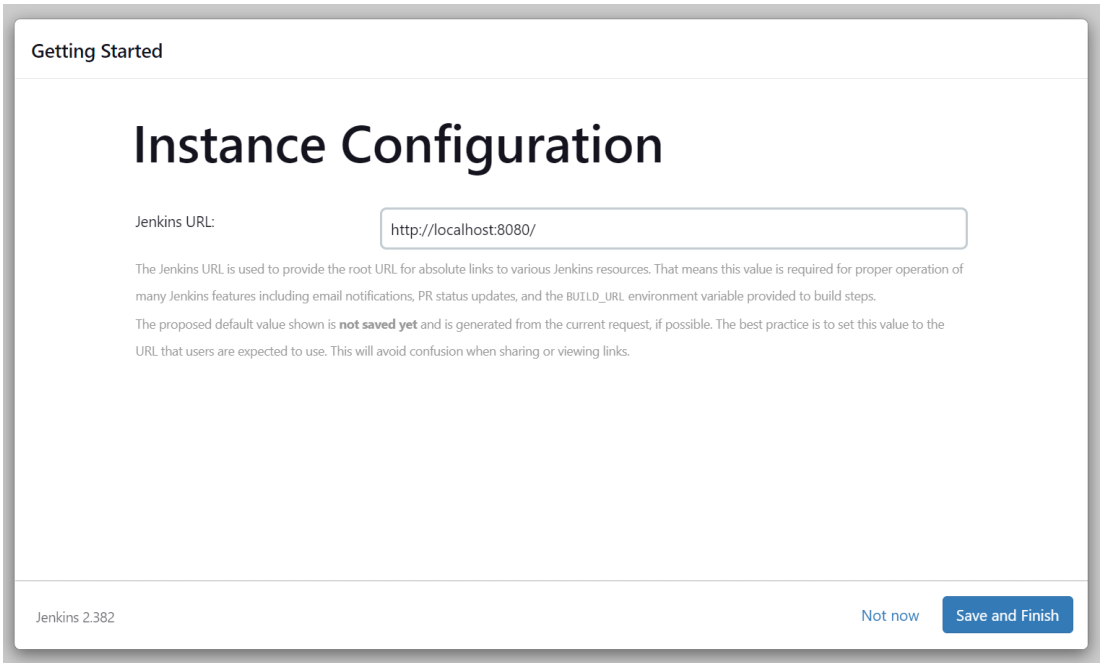
3. Access jenkins on: http://localhost:8080/ and login
4. Install suggested plugins:



5. Create an user or click on **Skip and continue as admin**



6. Configure the URL.

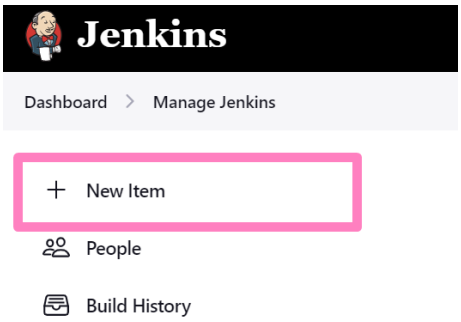


7. Save and finish

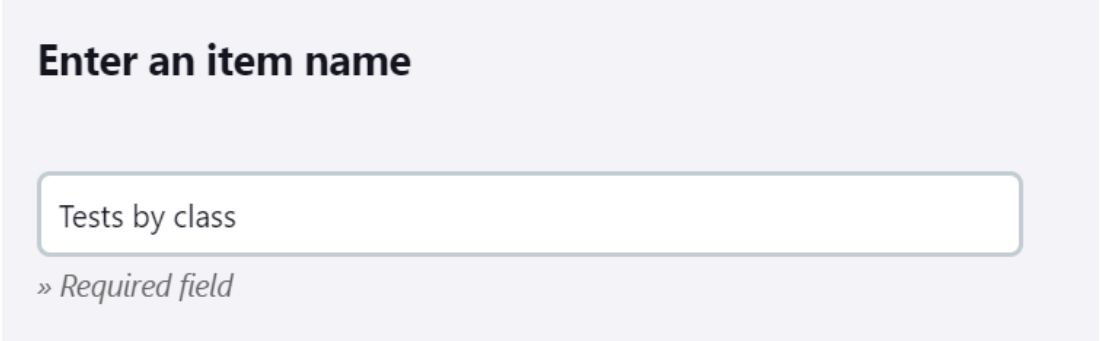
Homework 1

Create a Jenkins Job that connects to a GitHub repository

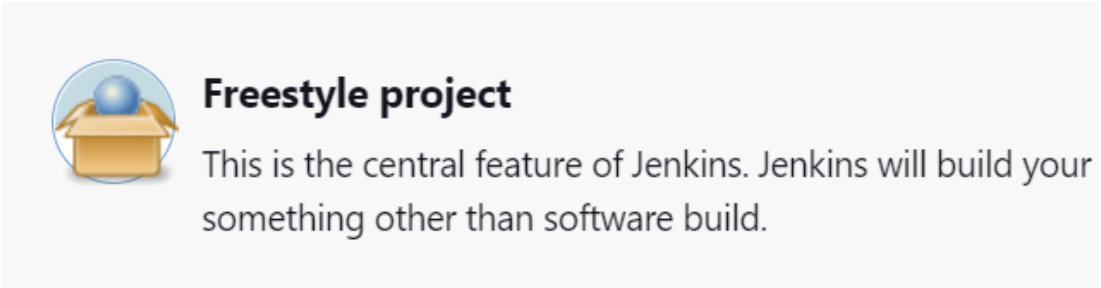
1. From Dashboard > Manage Jenkins > New Item



2. Enter a name for the item.



3. Choose a Freestyle Project.

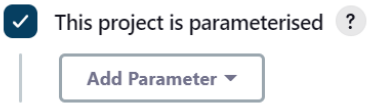


4. Source code management -> Select Git

- Repository URL: https://github.com/vladescualexandra/SQMA_Vladescu_Alexandra

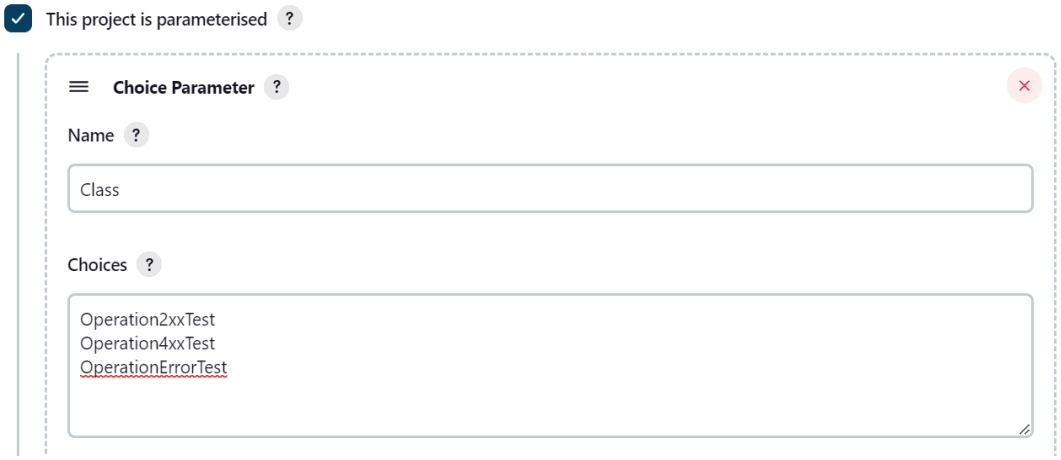
Configure a parameter to decide which one of these tests to run.

1. From General -> check “This project is parameterised”



2. Click on Add Parameter -> Choice

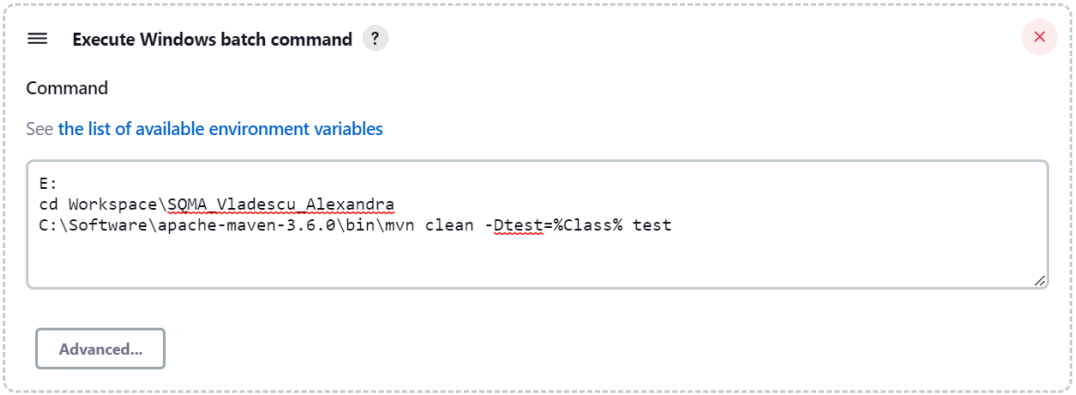
Name	Class
Choices	Operation2xxTest Operation4xxTest OperationErrorTest



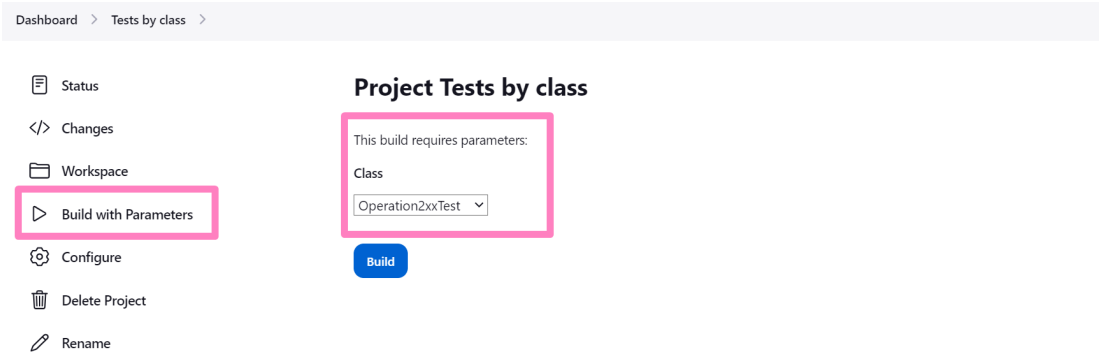
3. Add Build Steps:

Add Build Steps	Execute Windows batch command
Command	E: cd Workspace\SQMA_Vladescu_Alexandra C:\Software\apache-maven-3.6.0\bin\mvn clean -Dtest=%Class% test

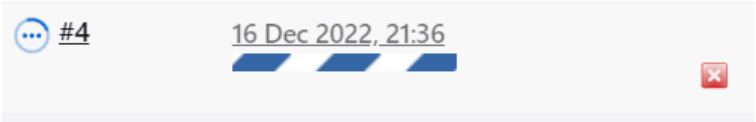
Build Steps



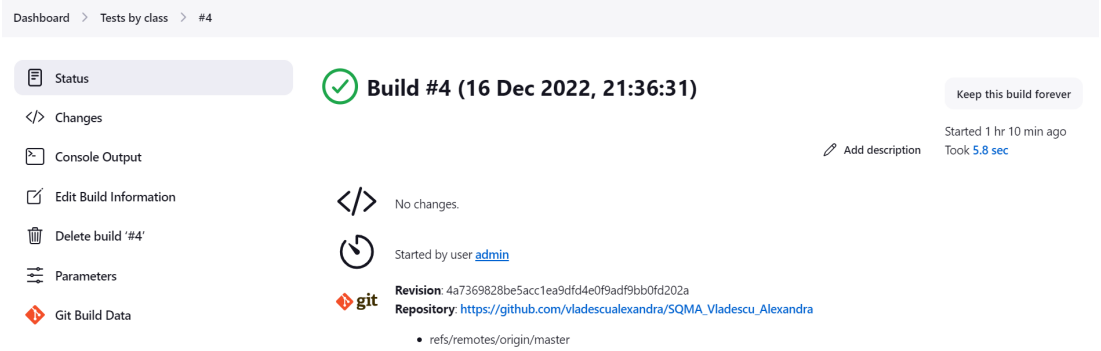
4. Save, then the pipeline will be created.
5. Click on Build with Parameters
6. Choose a class from the list then click on Build



7. You can see the build running.



8. Click on the build number, where you can see the status, then go to Console Output.



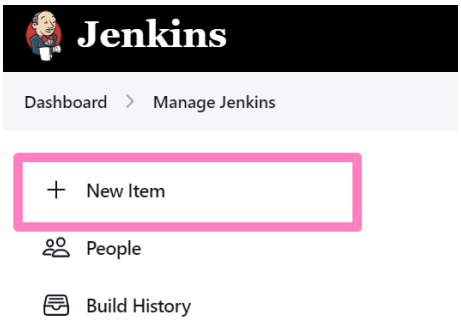
9. In the logs, we can see that only the test from class Operation2xxTest ran.

```
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ SQMA_Vladescu_Alexandra ---
[INFO]
[INFO] -------------------------------------------------------
[INFO]  T E S T S
[INFO] -------------------------------------------------------
[INFO] Running ro.ase.ism.sqma.Operation2xxTest
[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.04 s - in ro.ase.ism.sqma.Operation2xxTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  3.186 s
[INFO] Finished at: 2022-12-16T21:36:37+02:00
[INFO] ------------------------------------------------------------------------
Finished: SUCCESS
```

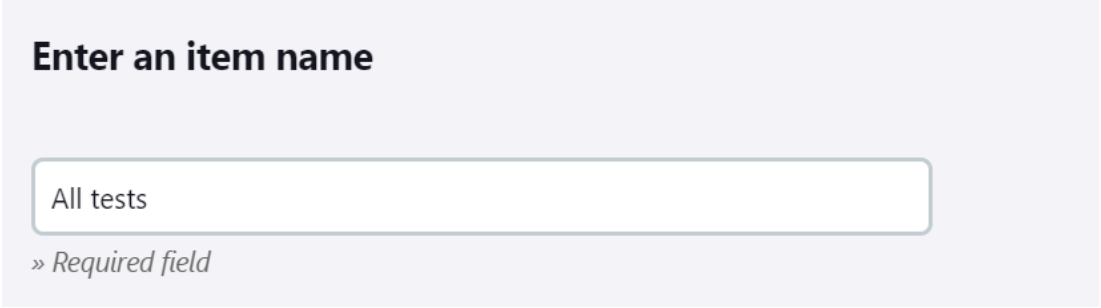
Homework 2

Create a Jenkins Job that connects to a GitHub repository

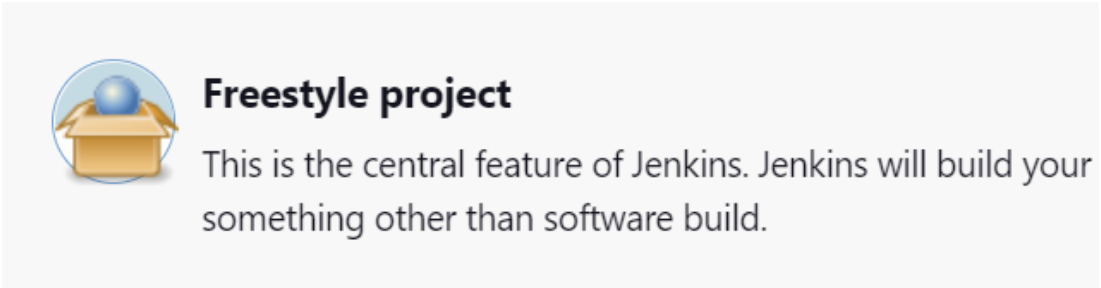
1. From Dashboard > Manage Jenkins > New Item



2. Enter a name for the item.



3. Choose a Freestyle Project



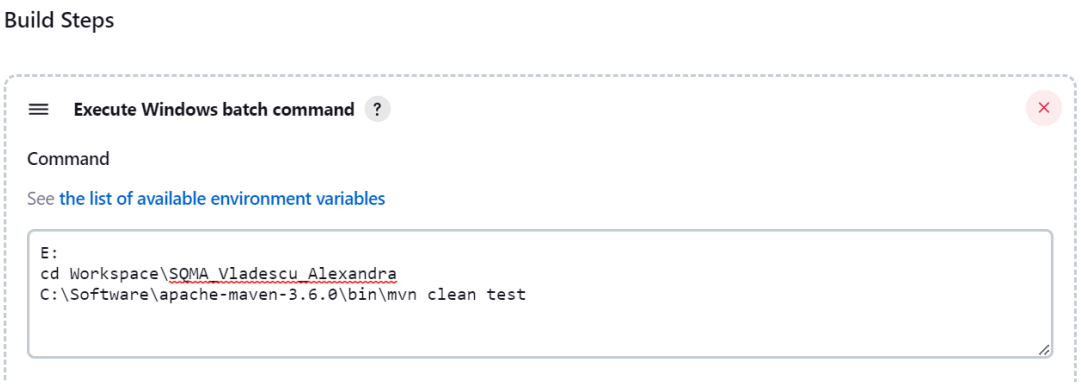
4. Source code management -> select Git

- Repository URL: https://github.com/vladescualexandra/SQMA_Vladescu_Alexandra

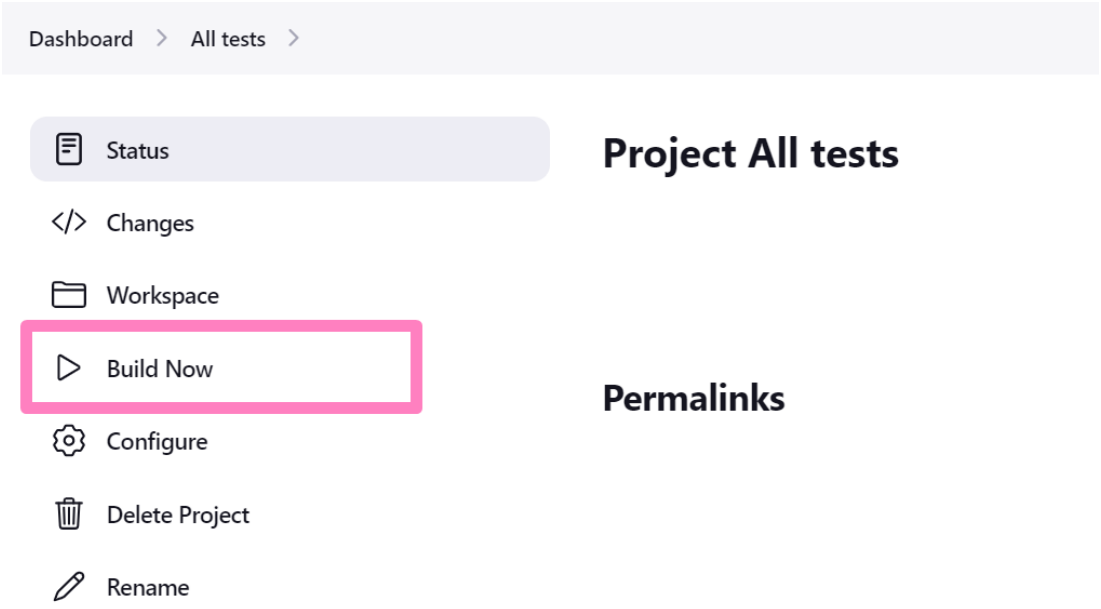
Configure the build to run all tests

1. Add Build Steps:

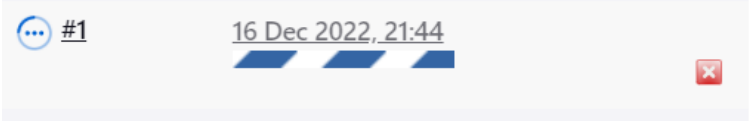
Add Build Steps	Execute Windows batch command
Command	E: cd Workspace\SQMA_Vladescu_Alexandra C:\Software\apache-maven-3.6.0\bin\mvn clean test



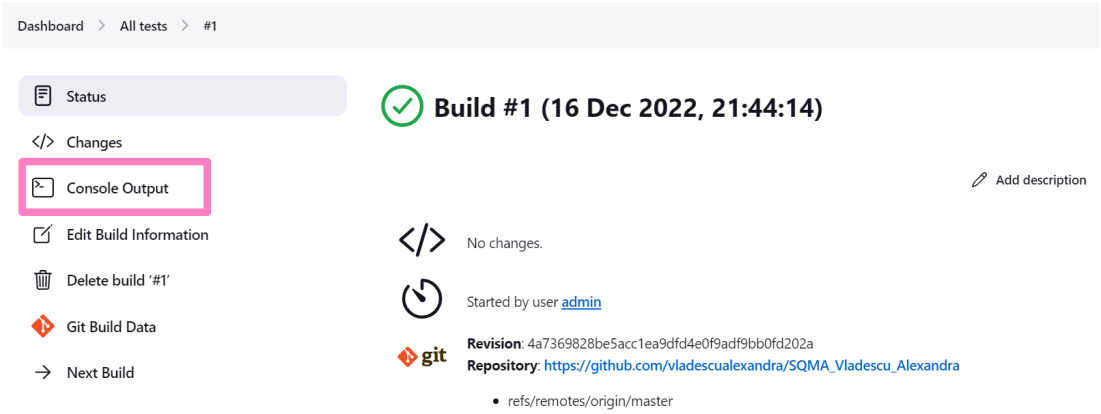
2. Save.
3. From Project Status, click on Build now.



4. Observe that the build is running.



5. Click on the build number, then go to Console Output.



6. Observe that all tests ran.

```
[INFO] -------------------------------------------------------
[INFO]  T E S T S
[INFO] -------------------------------------------------------
[INFO] Running ro.ase.ism.sqma.Operation2xxTest
[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.032 s - in ro.ase.ism.sqma.Operation2xxTest
[INFO] Running ro.ase.ism.sqma.Operation4xxTest
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0 s - in ro.ase.ism.sqma.Operation4xxTest
[INFO] Running ro.ase.ism.sqma.OperationErrorTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0 s - in ro.ase.ism.sqma.OperationErrorTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 6, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  3.247 s
[INFO] Finished at: 2022-12-16T21:44:21+02:00
[INFO] ------------------------------------------------------------------------
Finished: SUCCESS
```

7. In the dashboard we can see all the projects with their last statuses.