



ELO Flows Development

Basics



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The basics of flow development

Technical system requirements

In this chapter, you will find an initial overview of the tools required and their implementation.

Visual Studio Code (VS Code)

Visual Studio Code is a source code editor that can be used on different operating systems (Windows, Linux, and macOS). The editor is not a true integrated development environment (IDE). Still, VS Code provides all standard programming tools such as version management, debugging, code completion, or syntax highlighting. The source text editor does not work on a project basis. Implementation work is organized in work environments and folders. By using plug-ins, VS Code can be used for virtually any programming language, customized, and extended.

Java Runtime Environment (Java version 17)

The programming language Java is used as the basis for implementing ELO Flows components. Creating and running Java applications requires a Java Runtime Environment (JRE). For more comprehensive implementations, we recommend a Java Development Kit (JDK), which provides additional programming tools. The Java Runtime Environment is already included in the JDK. For our training, we will use Java version 17.

Gradle 7.x

Gradle is a build management project tool that can be used in software development for different programming languages. The tool automates the development process, from compiling source codes in binary code, to creating packages, to performing automated tests.

VS Code Plug-in: Framework for ELO Flows component development

The plug-in for VS Code provided by ELO is a framework for implementing ELO Flows components. The framework is intended to simplify development and establish standard guidelines for implementation. It includes an example component that will help you get started quickly. Developers can begin a project and programming directly after installation. No additional configurations or extensions are required.

Framework (VS Code Plug-in)

In this chapter, we will take a look at the configuration of the development tools mentioned in the Technical system requirements chapter.

Visual Studio Code (VS Code)

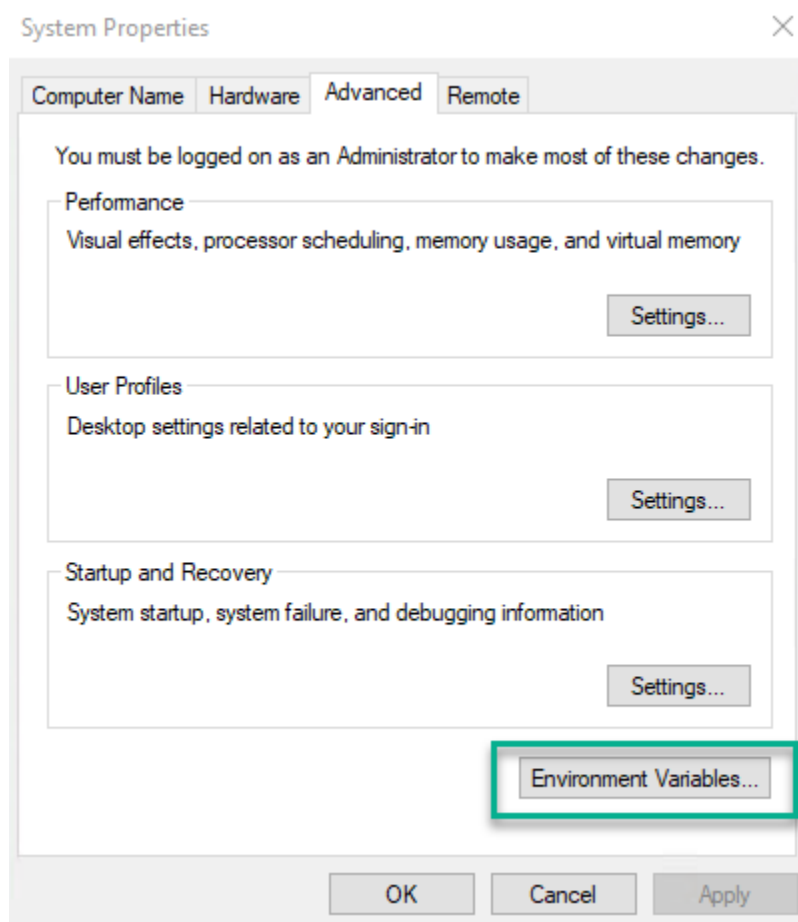
No configuration steps are necessary.

Java Runtime Environment (Open JDK 17)

After you install the JRE, you have to configure the *JAVA_HOME* environment variable.

1. Set the *JAVA_HOME* environment variable for Java. Enter the relevant path (e.g. *JAVA_HOME=C:\Program Files\Java\jdk-17.0.2*)

The new *JAVA_HOME* environment variable is defined in the system properties.



Environment Variables



User variables for Administrator

Variable	Value
OneDrive	C:\Users\Administrator\OneDrive
Path	C:\Users\Administrator\AppData\Local\Microsoft\WindowsApps;C:...
TEMP	C:\Users\Administrator\AppData\Local\Temp
TMP	C:\Users\Administrator\AppData\Local\Temp

New... Edit... Delete

System variables

Variable	Value
ComSpec	C:\WINDOWS\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
NUMBER_OF_PROCESSORS	4
OS	Windows_NT
Path	C:\jdk-17.0.2\bin;C:\Program Files\AdoptOpenJDK\jdk-11.0.11.9-ho...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC

New... Edit... Delete

OK Cancel

New System Variable



Variable name: JAVA_HOME

Variable value: C:\Program Files\Java\jdk-17.0.2

Browse Directory... Browse File... OK Cancel

Gradle 7.3

After you install Gradle 7.3 version, you have to configure the Path environment variable.

1. Add the path variables for Gradle. Enter the relevant path.

Environment Variables



User variables for Administrator

Variable	Value
OneDrive	C:\Users\Administrator\OneDrive
Path	C:\Users\Administrator\AppData\Local\Microsoft\WindowsApps;C:...
TEMP	C:\Users\Administrator\AppData\Local\Temp
TMP	C:\Users\Administrator\AppData\Local\Temp

New...

Edit...

Delete

System variables

Variable	Value
ComSpec	C:\WINDOWS\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
JAVA_HOME	C:\jdk-17.0.2
NUMBER_OF_PROCESSORS	4
OS	Windows_NT
Path	C:\jdk-17.0.2\bin;C:\Program Files\AdoptOpenJDK\jdk-11.0.11.9-ho...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC

New...

Edit...

Delete

OK

Cancel

Edit environment variable



%USERPROFILE%\AppData\Local\Microsoft\WindowsApps

C:\Tools\gradle-7.3.3\bin

New

Edit

Browse...

Delete

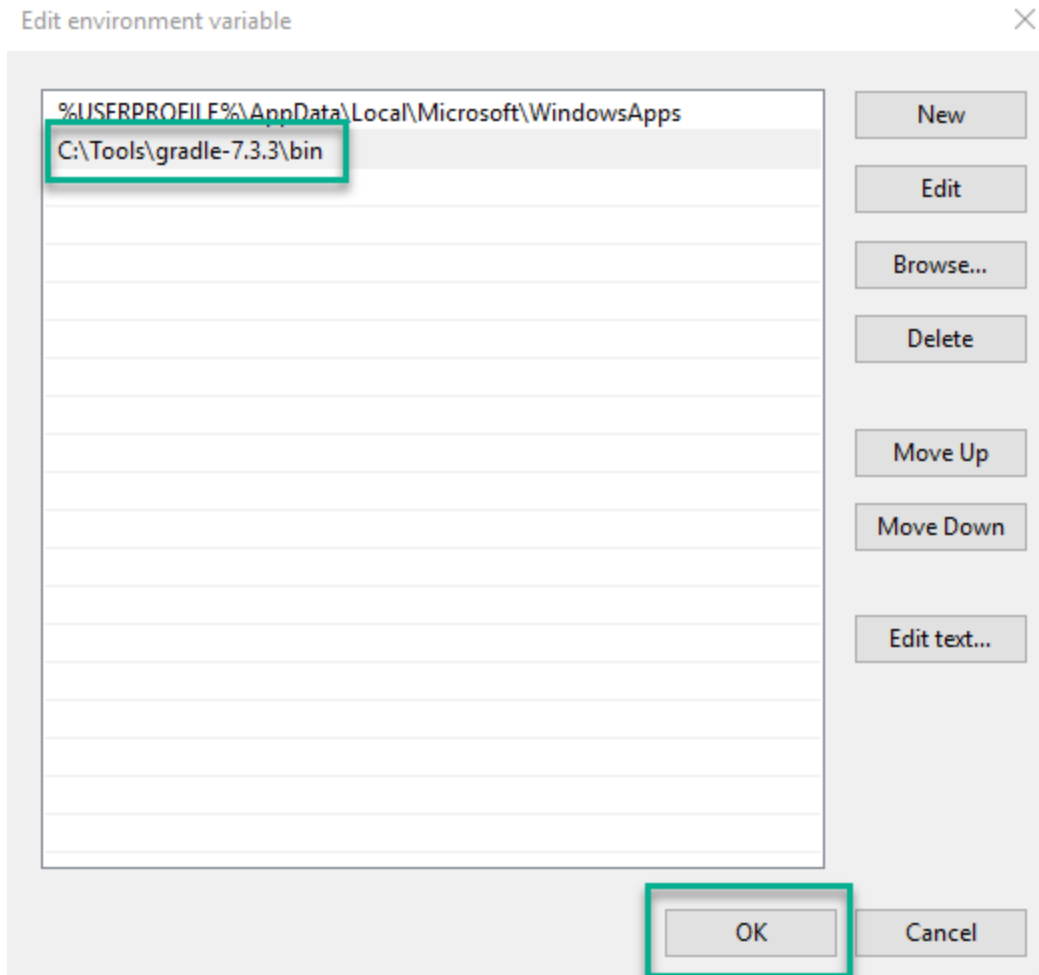
Move Up

Move Down

Edit text...

OK

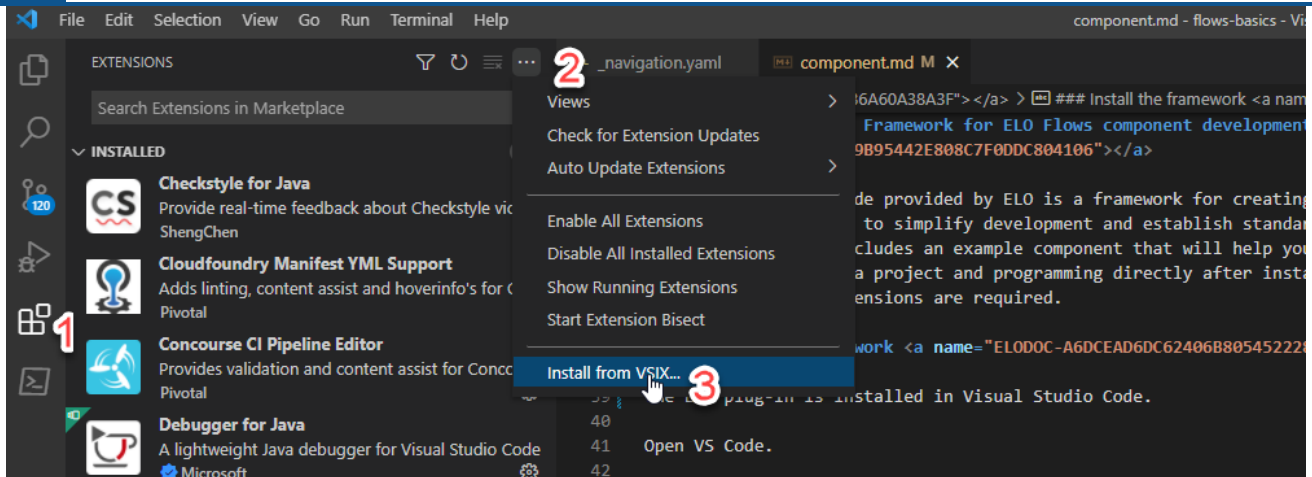
Cancel



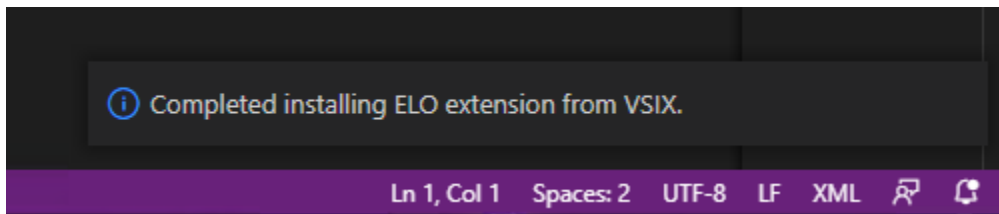
ELO plug-in installation

Once you've configured all the tools, you can install the plug-in for ELO Flows component development.

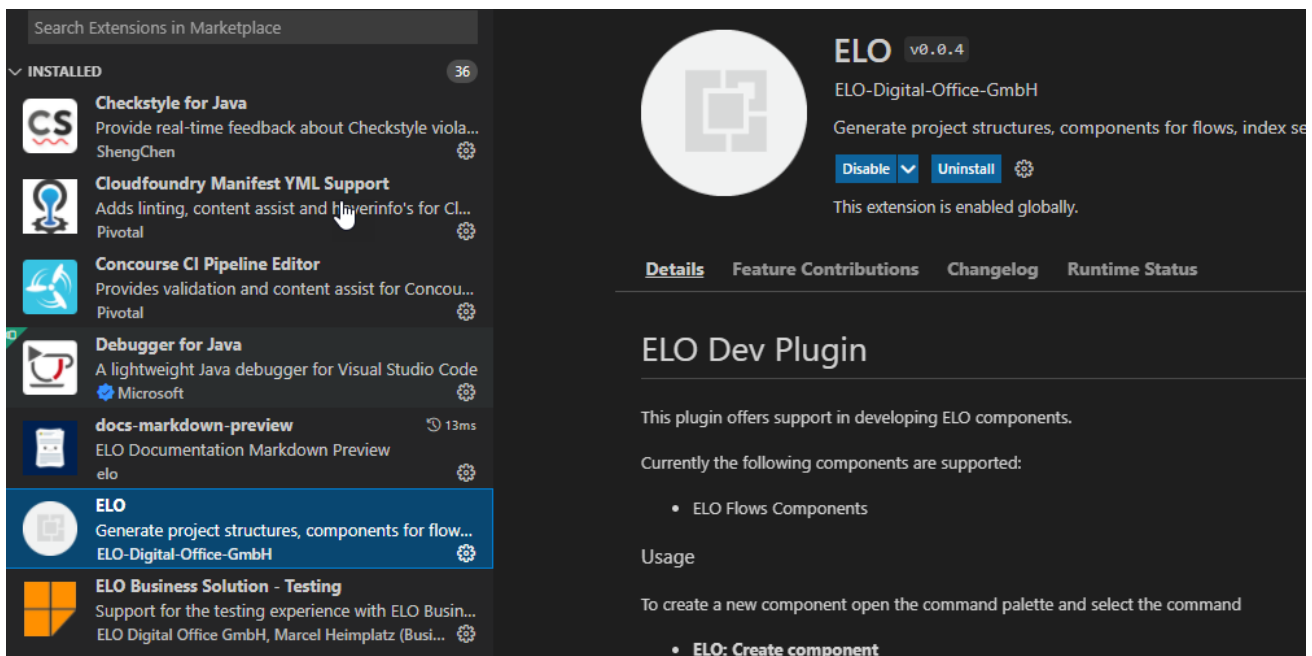
1. Open VS Code.
2. Navigate to the *Extensions* area (1).
3. Open the *Views and more Actions* menu (2).
4. Click *Install from VSIX...* (3).



VS Code indicates when installation is complete (at the bottom right).

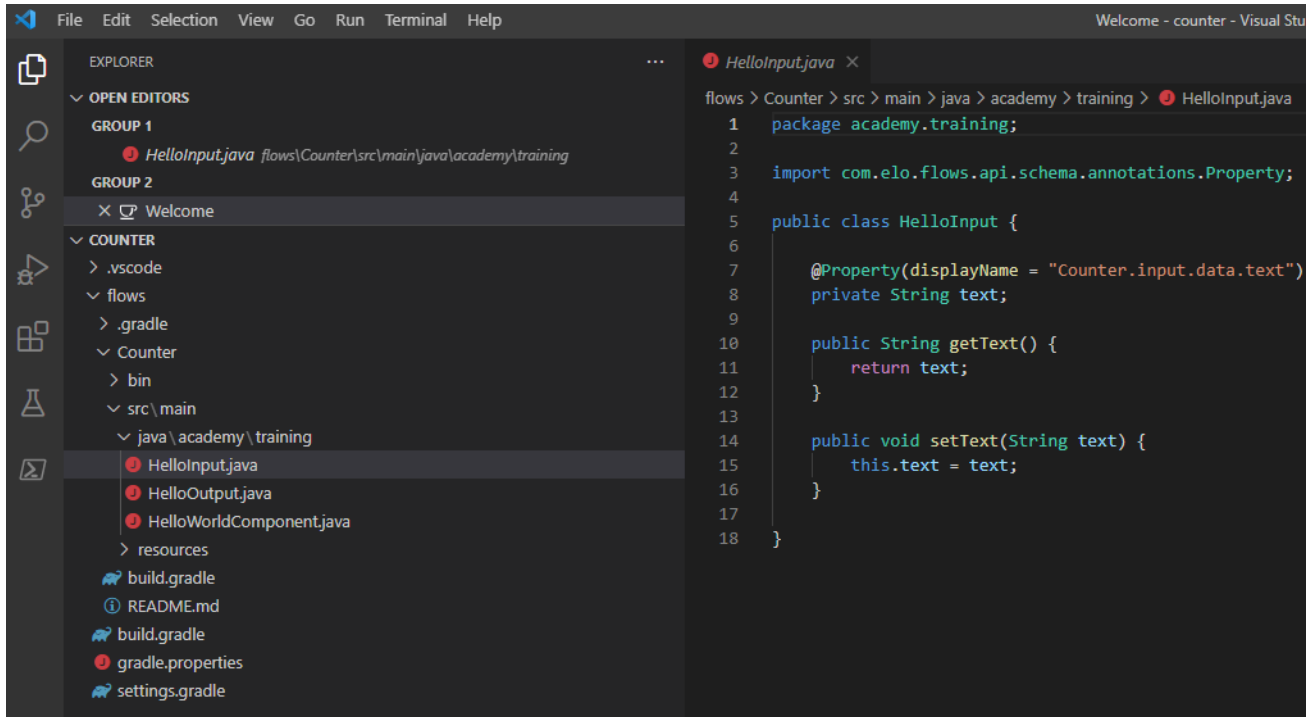


You will find more information about the framework in the extension overview.



Project structure

The initial project in the framework consists of multiple different areas (directories) that you'd normally find in any typical Java project. Please note that additional structure areas can be added over the course of the development process. This includes your tests, additional classes, or the libraries created in your project.

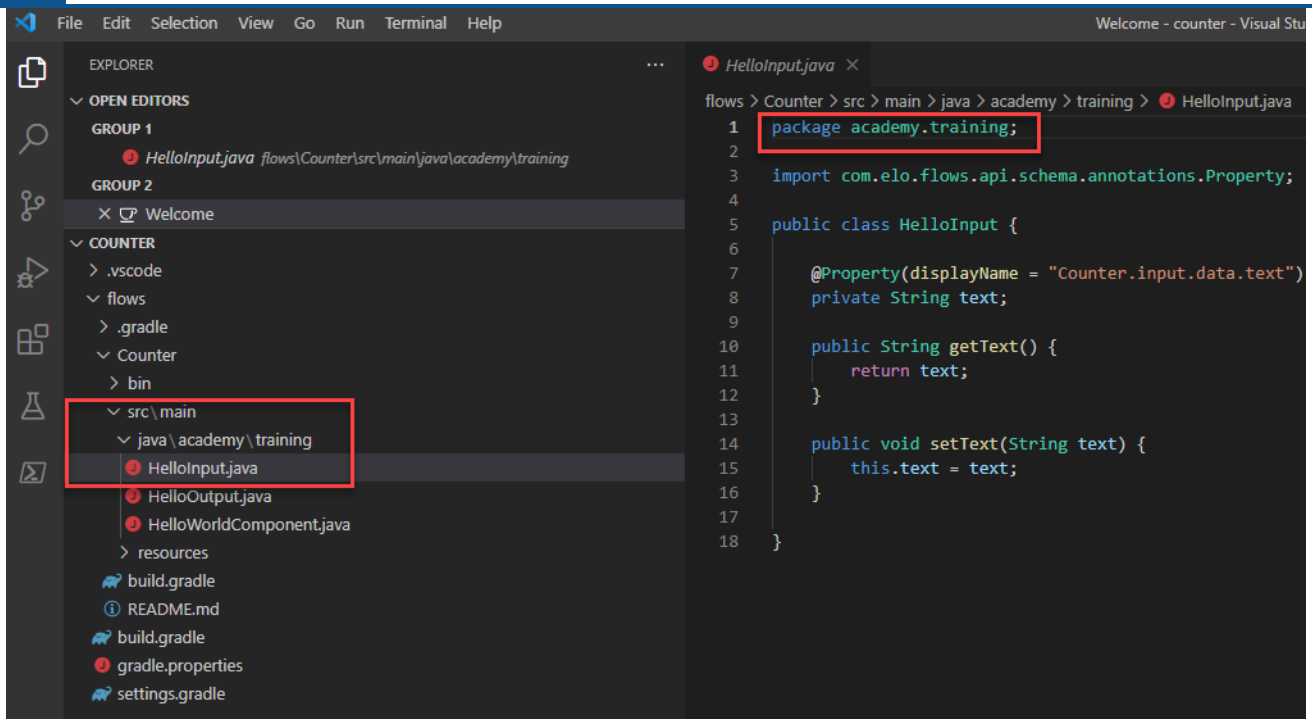


Source

The source code (Source) of the project is located in the folder `src\main`.

Information

The project folder structure does not correspond 1:1 to a package in the source code. This depends on the project settings and can be customized later.

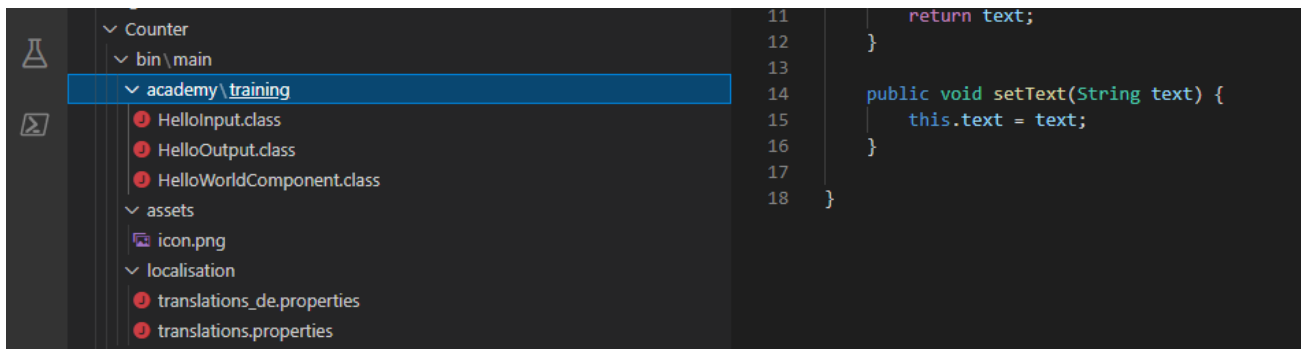


Resources

The *resources* project folder contains the localization files, for example.

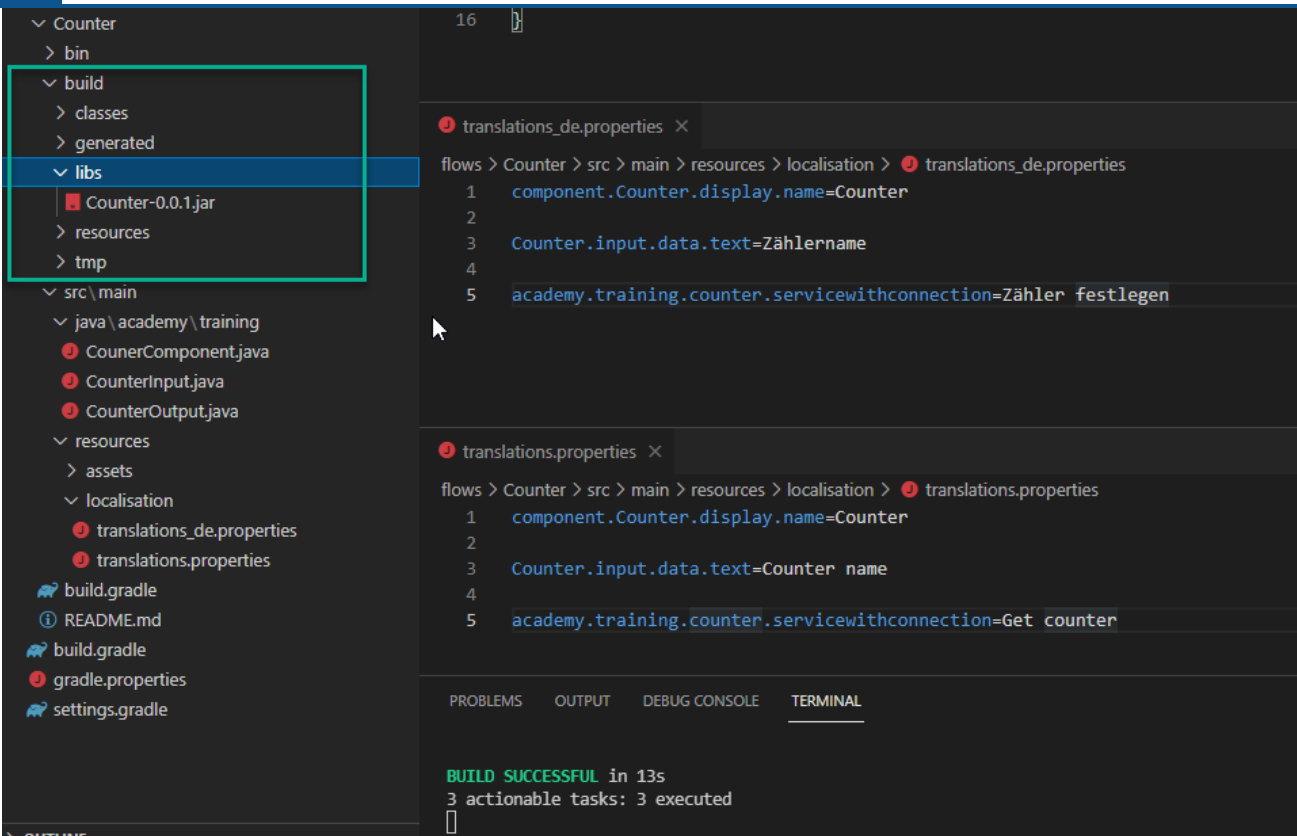
Binaries

The translated Java classes and resources are filed to the *bin* project folder. The JAR files are built from these later via the build process.



Libs (during project development)

After the first build process, a new folder with the JAR library appears for the deploy process.



Test (during project development)

We will create the test folder over the course of the project. This can look as follows.

