



UniSIR Software Development Team presents

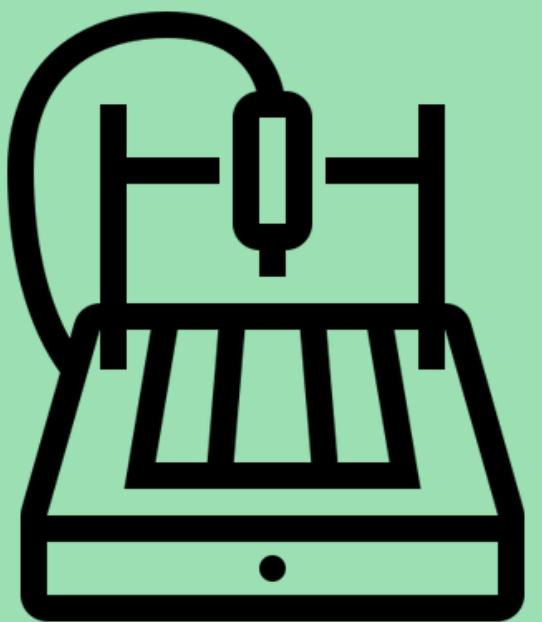
G-Code Shaper and Parser IDE

github.com/Team-di-Sviluppo-UniSIR/GCode-Shaper-Parser

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Alessandro Mazzola

Introduction to the software
functionalities and why this is the tool
you're looking for



Topics

There are a few things we need to discuss before we get going



Who is this tool for?

What is G-Code?

The problem

The solution

How it works

How to get the most out of it

Demo

Who is this tool for?

This software is aimed at all those who study the GCODE programming language or whoever is involved in the development of CNC drawings, both from an academic or industrial point of view.



What is G-Code?

G-Code (also known as RS-274) is the most widely used computer numerical control (CNC) programming language. It is used mainly in computer-aided manufacturing to control automated machine tools, and has many variants.



WIKIPEDIA
The Free Encyclopedia

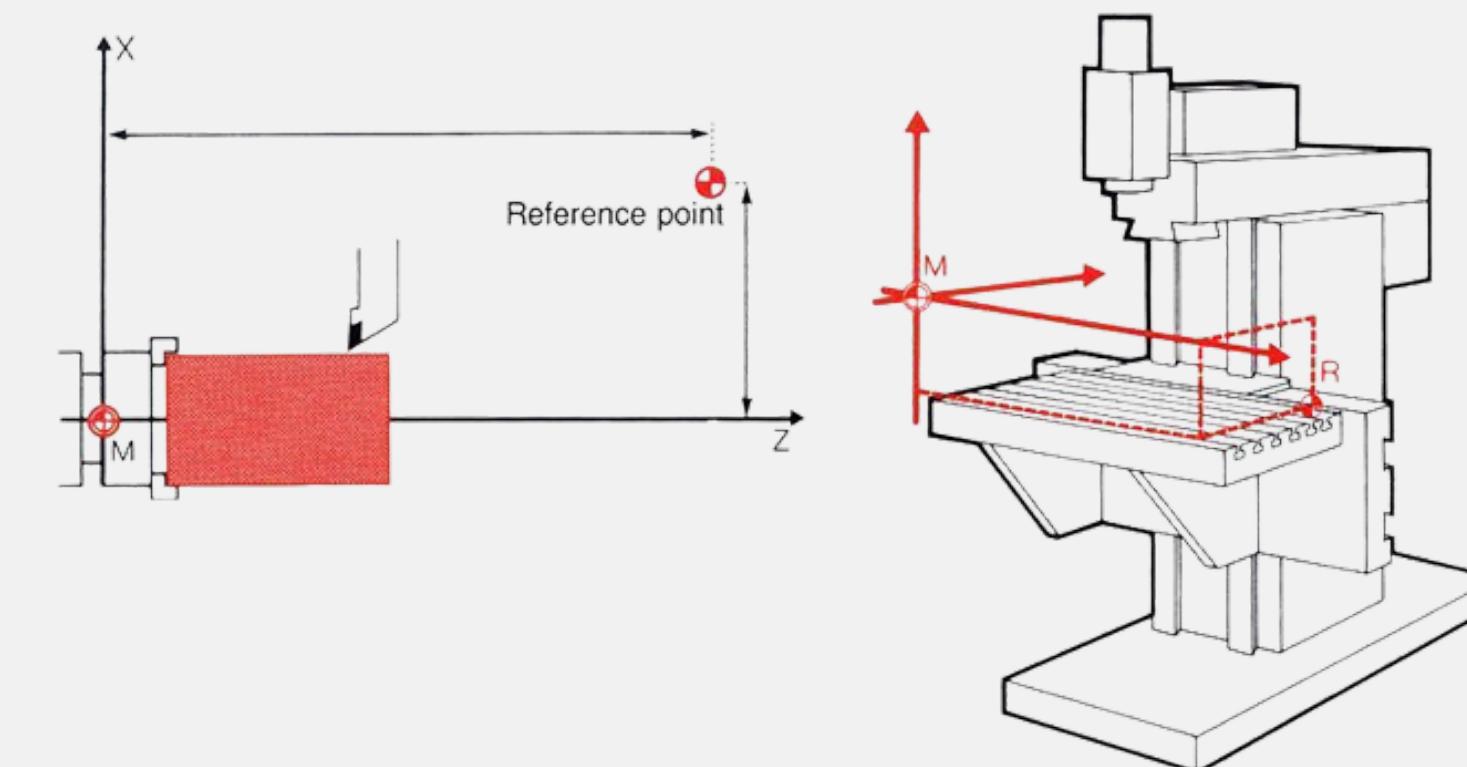
The G-Code programming language is used on machine tools, that are machines for handling or machining metal or other rigid materials, usually by cutting, boring, grinding, shearing, or other forms of deformations



How can we speed up the learning process?

The problem

G-Code learning requires time since usually no tool is used to show in "real time" the making of what has been designed. Even if there are tools which offers a look to the current production, they are usually complex and do not help or guide users in understanding what they did wrong in case of errors.



A close-up photograph of a person's hands and face. The person is wearing a blue and white checkered shirt. They are holding a white pen and writing in a white notebook. Their face is partially visible on the left, showing a beard and mustache. The background is blurred.

The solution

G-Code Parser

G-Code Parser solves the problem by offering users a visual integrated IDE which shows the drawing of the designed production. It also helps users in understanding what they did wrong in case of errors since the error which are thrown by the parser are really well described.

Shaper

Shaper is an incredible tool that:

- helps users which are approaching to G-Code for the first time in writing correct code for basic geometrical figures
- speeds up the process of writing G-Code for basic geometrical figures

How it works

G-Code Parser

Write your code in "J-Code Language Input" window and press "PARSE" button. Done.

Did you write the code correctly? ☺

The integrated IDE will show your creation.

Did you make some mistakes?

Don't worry, the Console will guide you in the correction.

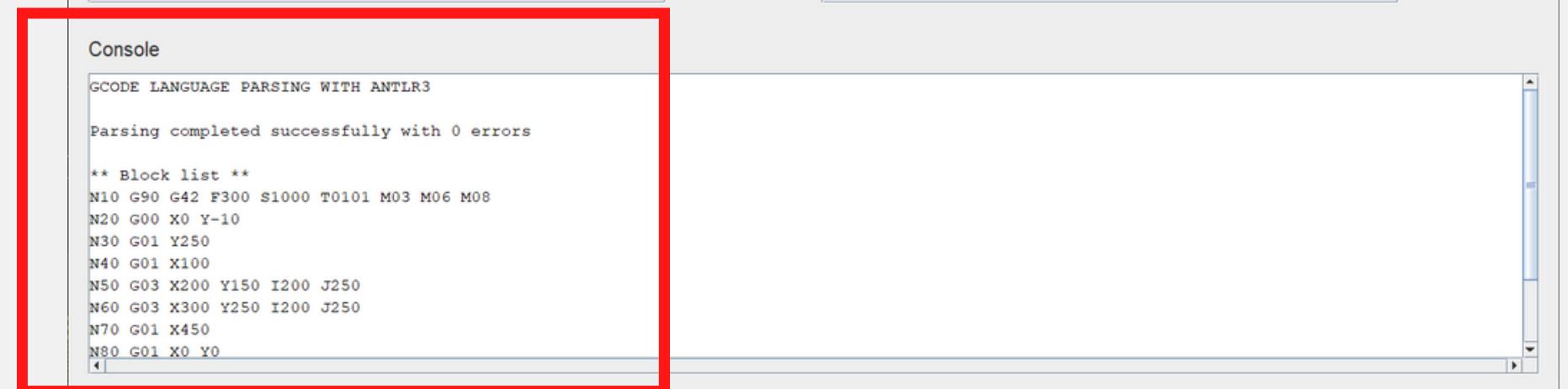
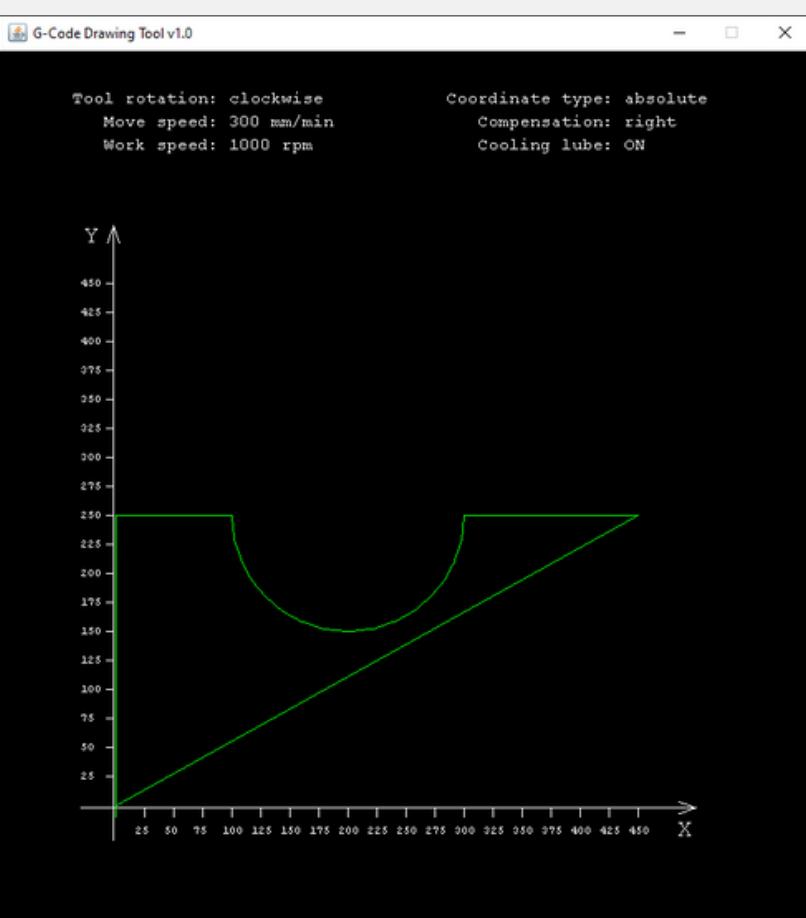
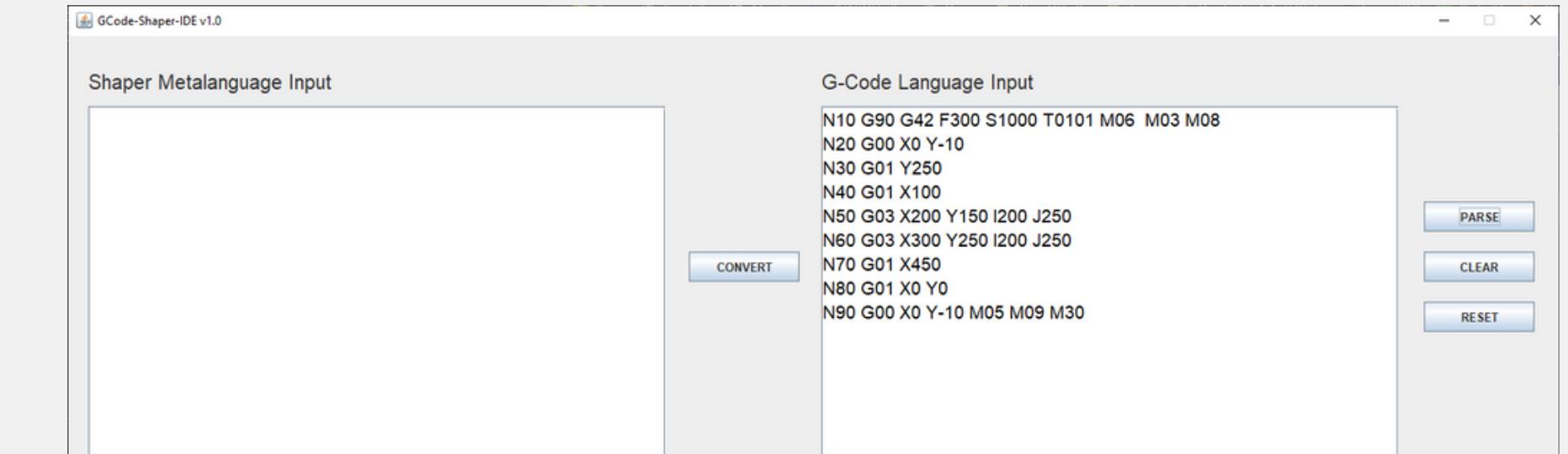
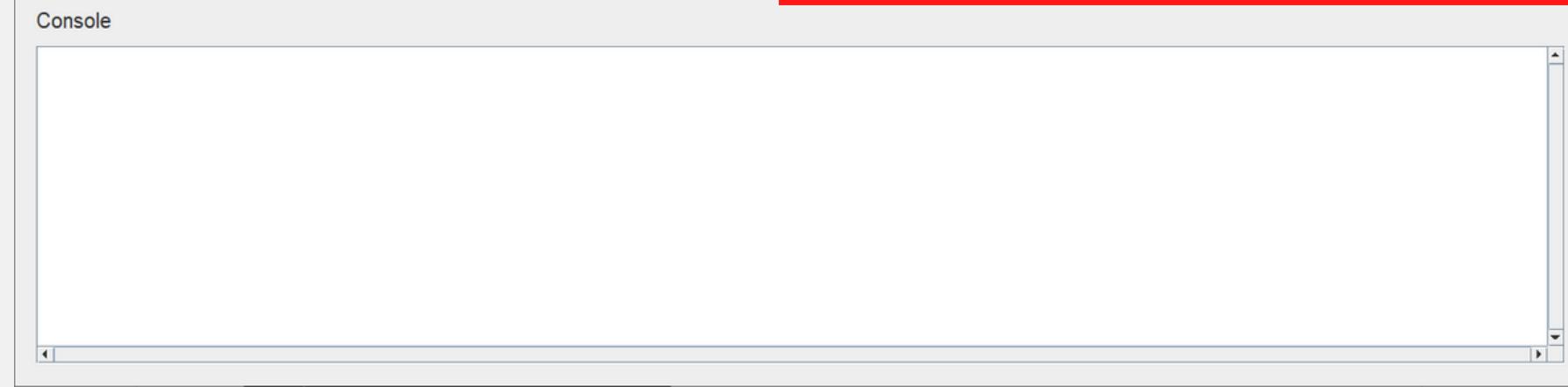
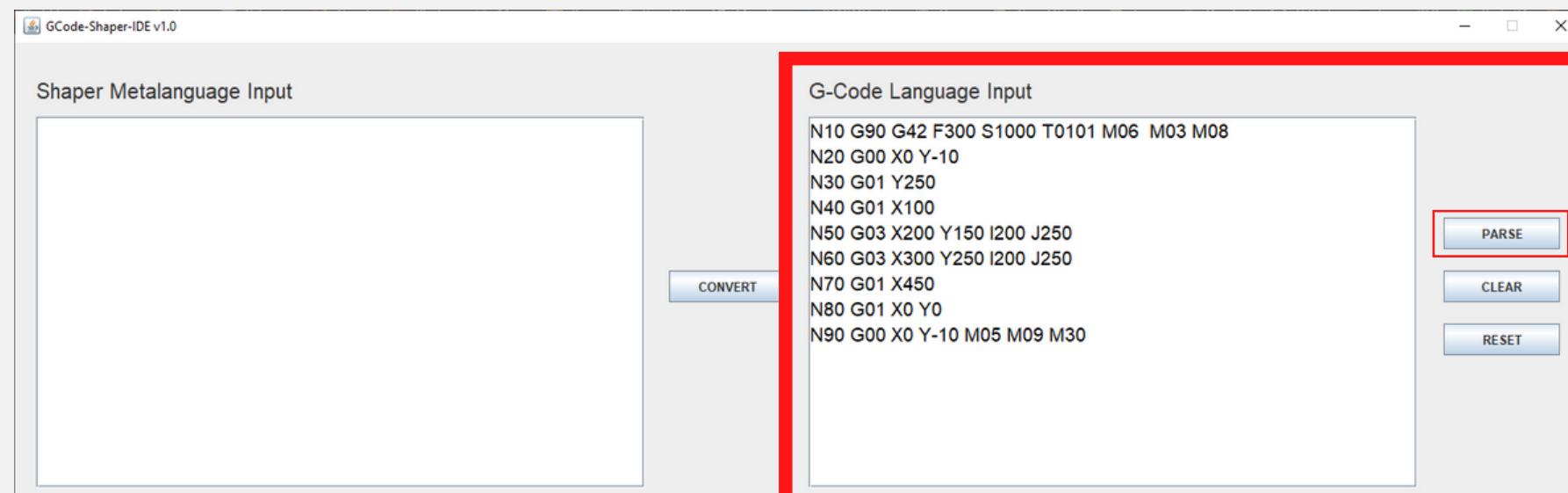
Shaper

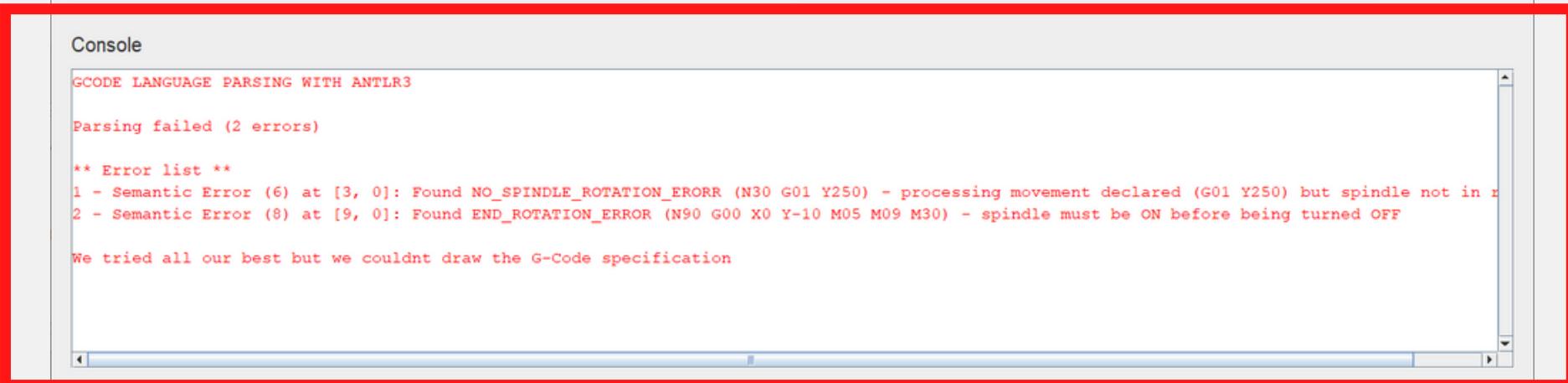
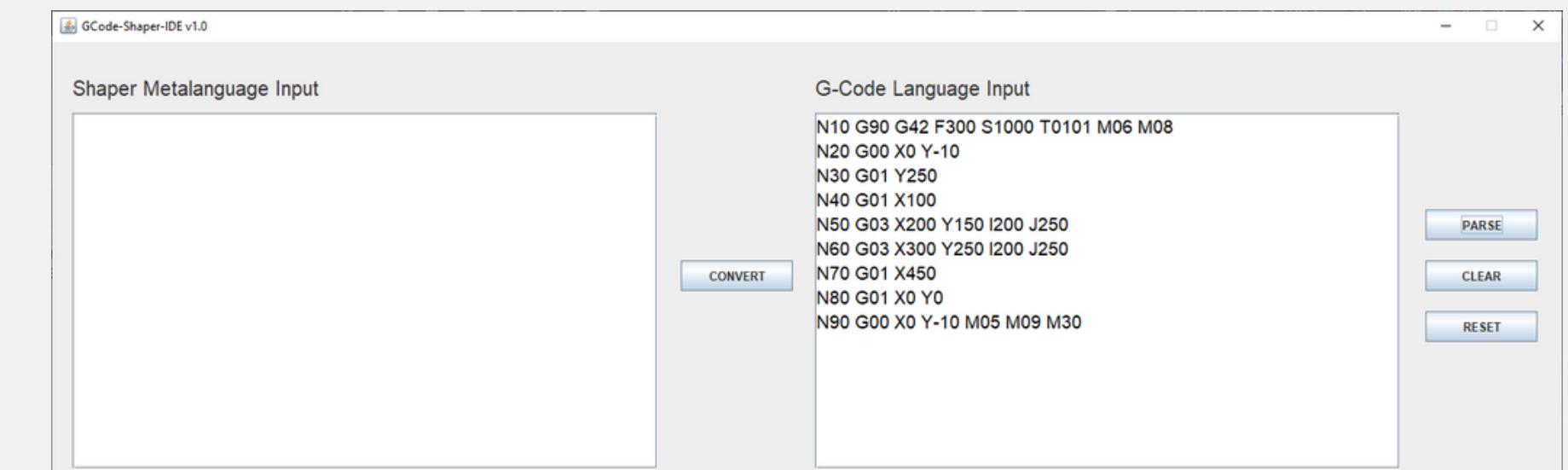
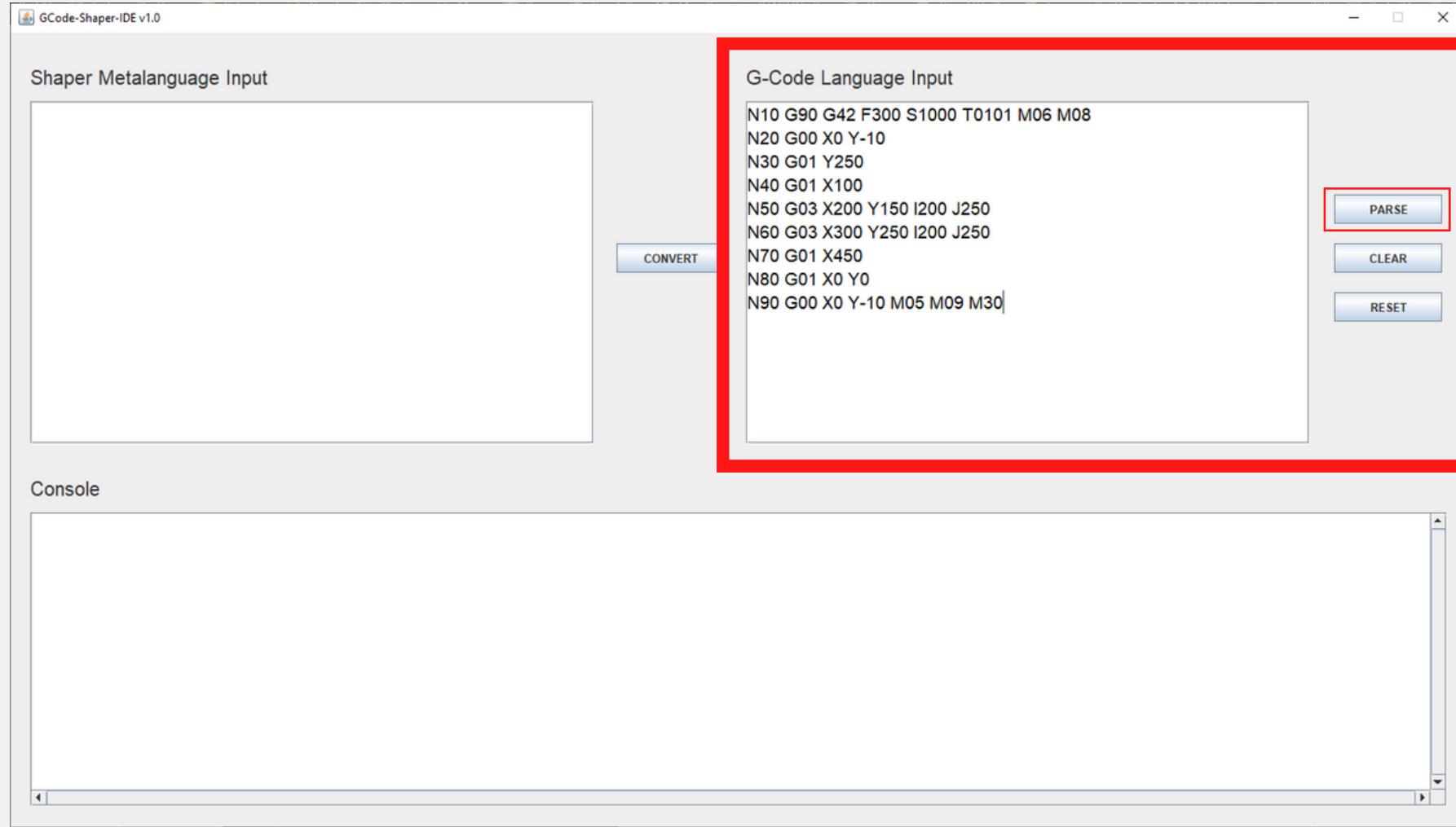
Write your code in "Shaper Metalanguage Input" window and press "CONVERT" button. Your code will be correctly converted in G-Code.

Easy, right? ☺



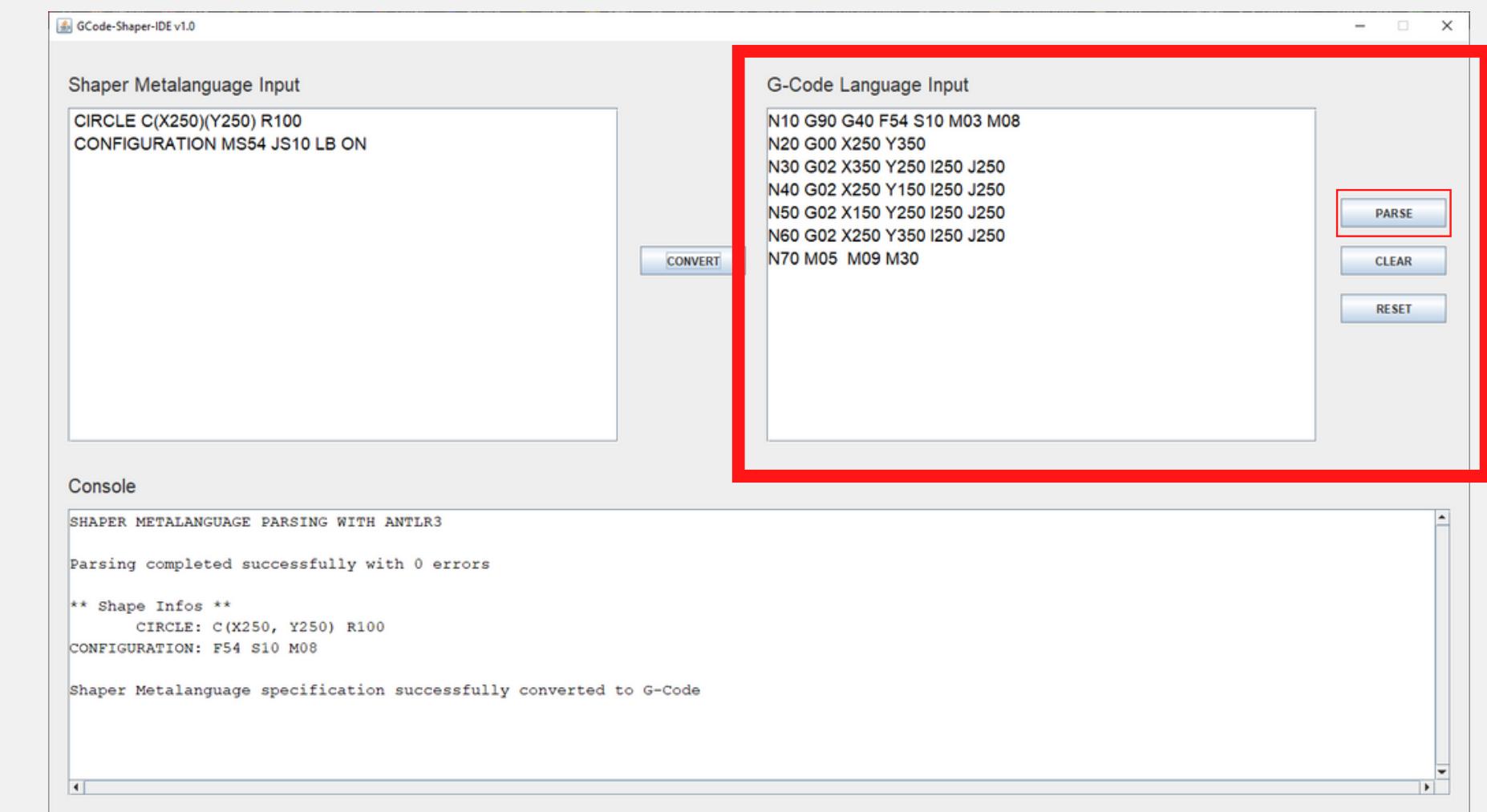
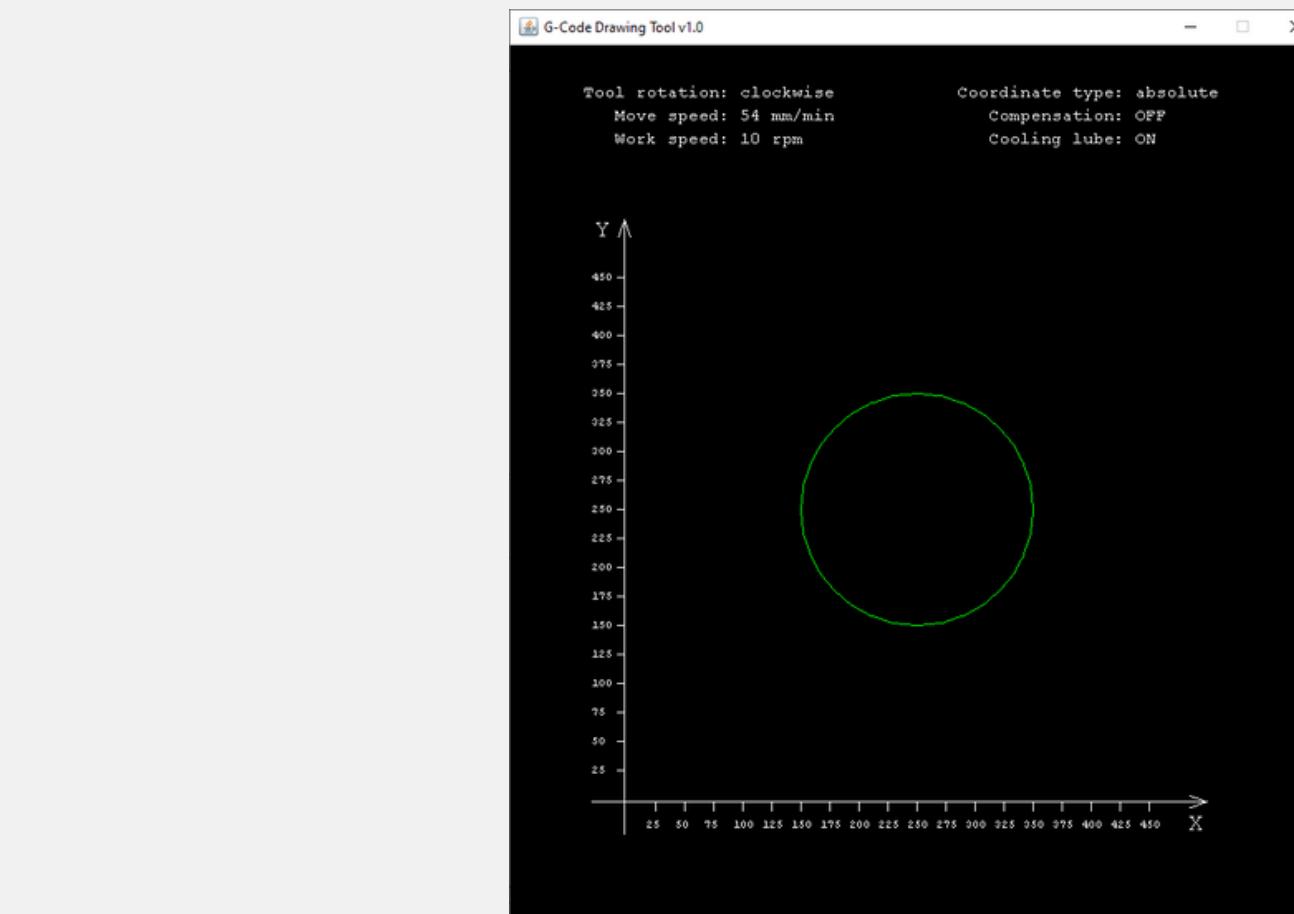
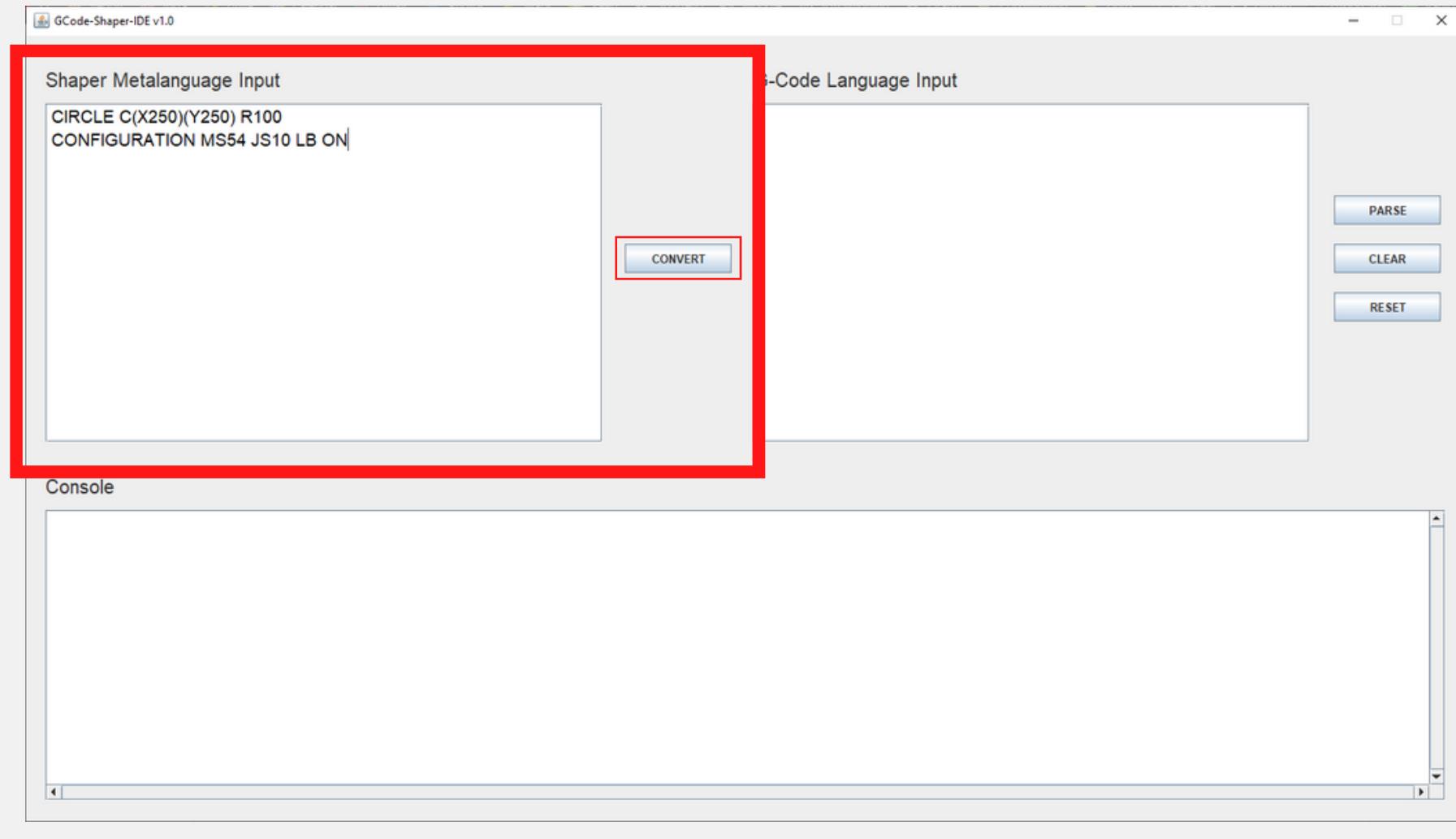
G-Code

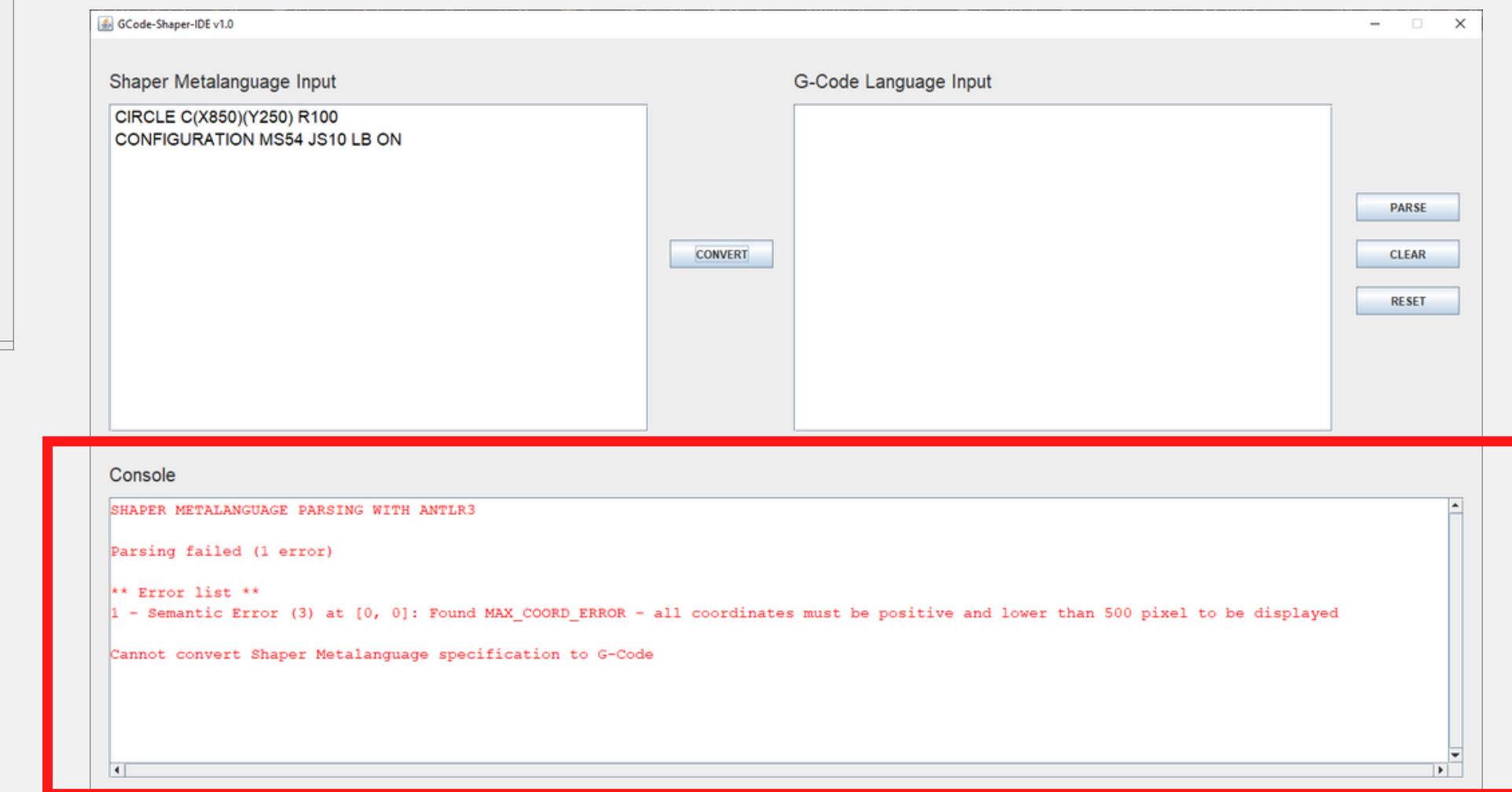
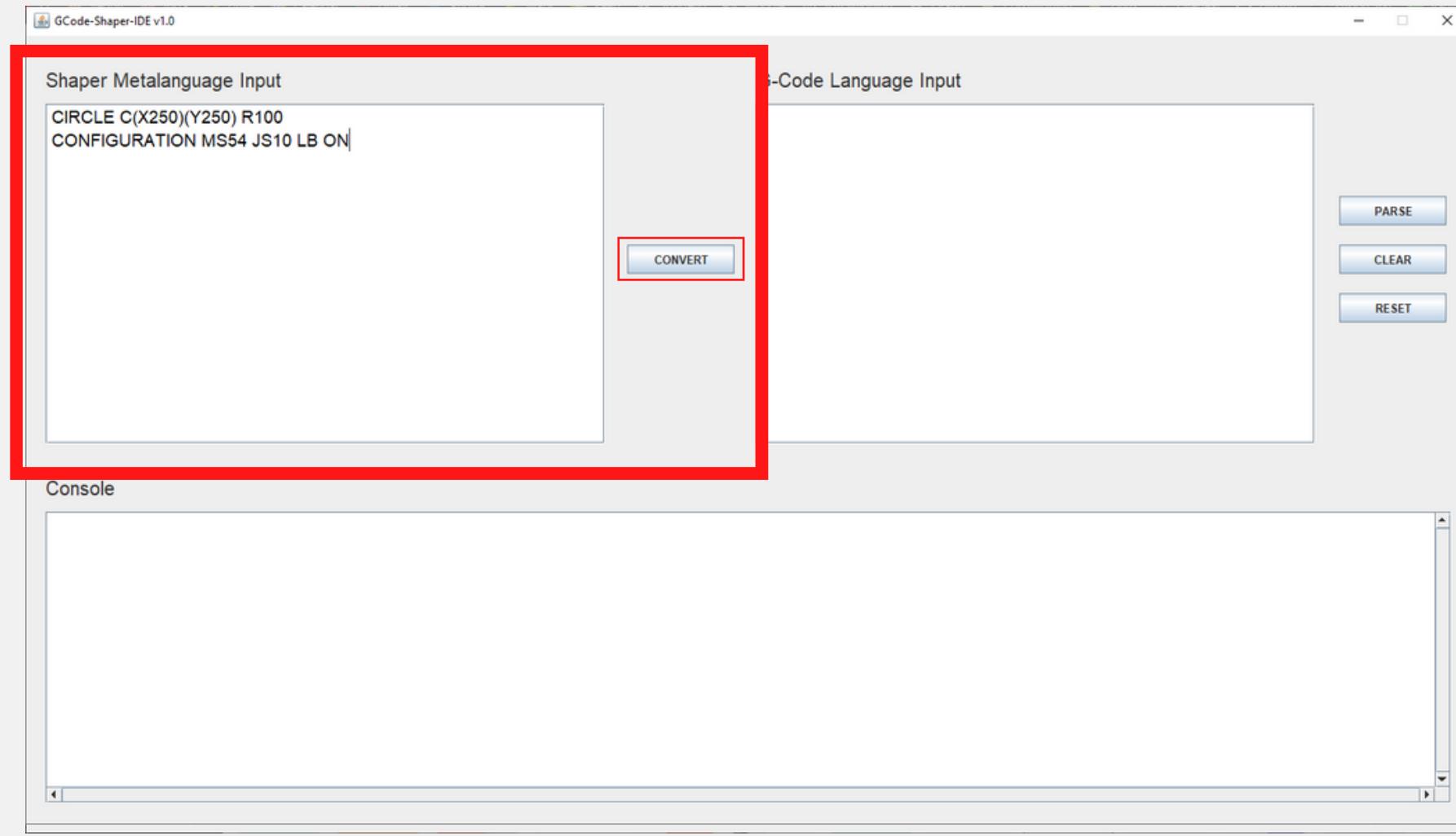




In case of an error, the console shows where the error is located and how to solve it, using a **multi-step approach**

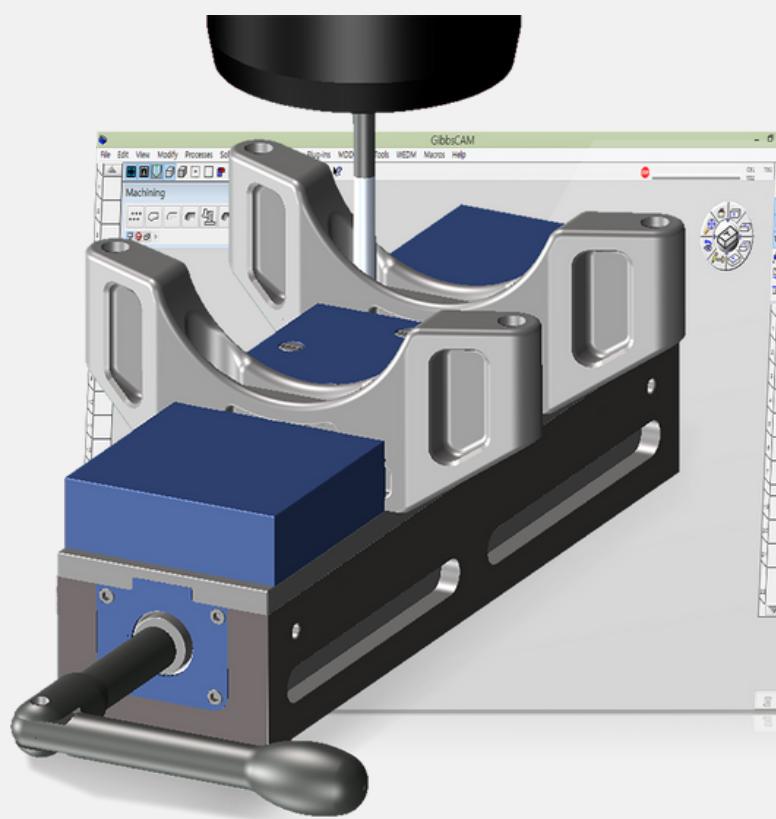
Shaper





In case of an error, the console shows where the error is located and how to solve it

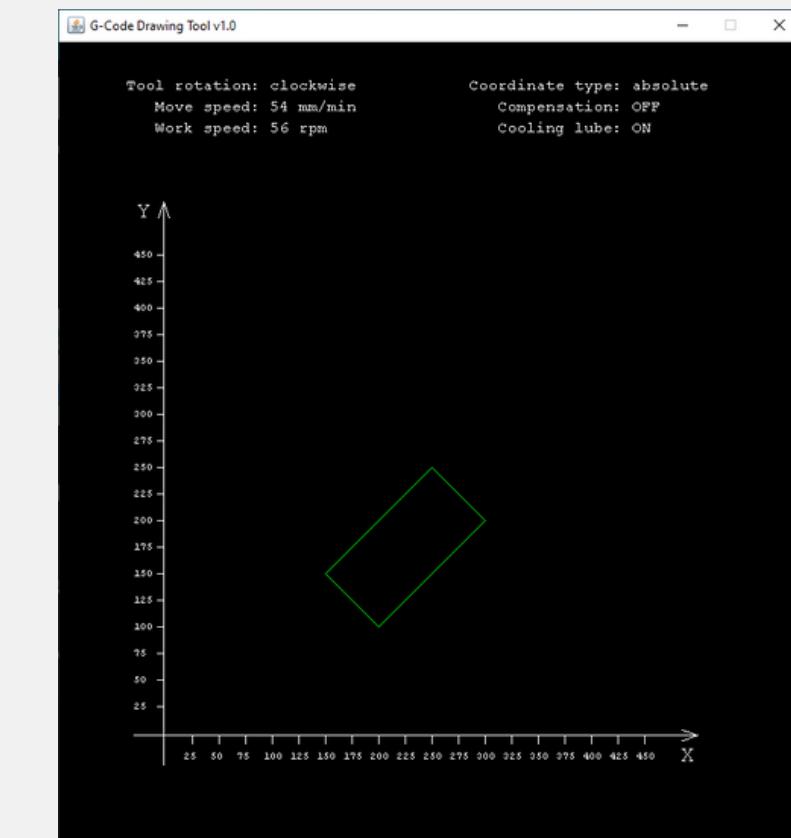
How to get the most out of it



Get started with an example

RECTANGLE P1(X300)(Y200) P2(X250)(Y250) P3(X200)(Y100)
CONFIGURATION MS54 JS56 LB ON

N10 G90 G40 F54 S56 M03 M08
N20 G00 X300 Y200
N30 G01 X250 Y250
N40 G01 X150 Y150
N50 G01 X200 Y100
N60 G01 X300 Y200
N70 M05 M09 M30



**Find us on
GitHub**

There's plenty of incredibly good documentation you can look up

github.com/Team-di-Sviluppo-UniSIR/GCode-Shaper-Parser



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main branch tag Go to file Add file Code

lucaghisllo Updated jar folder b247b45 6 days ago 222 commits

code update temp files 10 days ago

docs Update README.md 7 days ago

errors Update README.md 8 days ago

jars Updated jar folder 6 days ago

libraries Updated jar folder 6 days ago

.gitignore Update .gitignore 4 months ago

.project Create .project 4 months ago

LICENSE Initial commit 4 months ago

README.md Update README.md 8 days ago

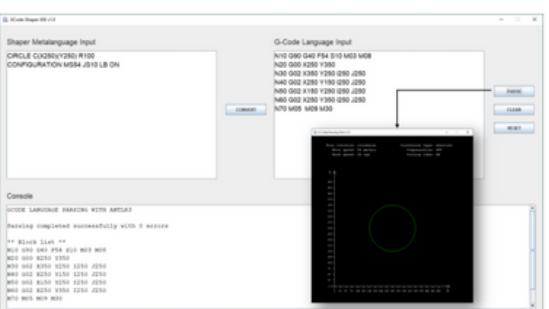
README.md

What are GCODE Parser and Shaper

GCode-Shaper-Parser aims to provide students an useful tool for understanding and practicing with G-code, a programming language for CNC machines:

- **GCODE Parser** is the main compiler developed for parsing G-code language and provide a graphical representation of the written code.
- **Shaper** is a metalanguage built upon G-code in order to simplify the definition of CNC commands and help the users understand the rules of G-code language.

Both GCODE Parser and Shaper are written in Java using ANTLR package.
GCode-Shaper-IDE is a GUI developed for helping users in the usage of GCode-Shaper-Parser.



Installation

GCode-Shaper-IDE v1.0 executable program can be downloaded from the [Releases](#) section of this repo ("GCodeShaperIDE.exe").

Docs

Helpful docs with syntax, examples and errors for understanding both GCODE Parser and Shaper are here provided:

1. [G-code Parser docs](#)
2. [Shaper docs](#)

Errors

All errors in G-code Parser and Shaper are here listed:

1. [G-code Parser error list](#)
2. [Shaper error list](#)

Contributors

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About

G-code and shaper metalanguage parser and IDE for understanding and practicing with G-code, a programming language for CNC machines.

java language parser ui lexer gcode gcode-visualizer antlr3

Readme MIT License 2 stars 1 watching 1 fork

Releases 1

GCode-Shaper-Parser Latest 9 days ago

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Languages

Java 95.4% GAP 4.4%
G-code 0.2%

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Demo

Now it's up to you

