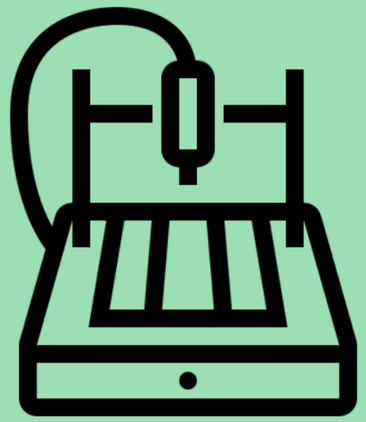
UniSIR Software Development Team presents

UNIVERSITÀ DEGLI STUDI DI BERGAMO

G-Code Shaper and Parser IDE



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

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Luca Parimbelli
Andrea Marinò
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

The problem

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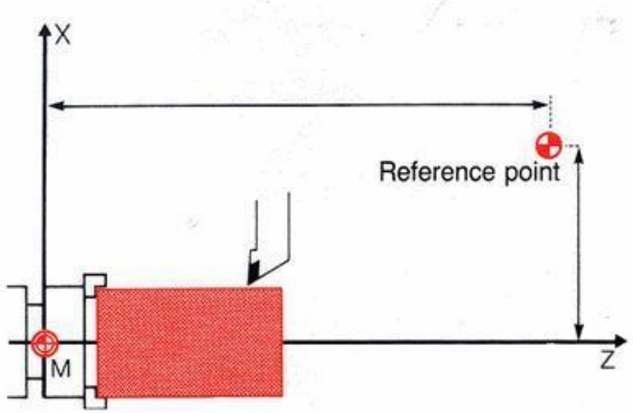

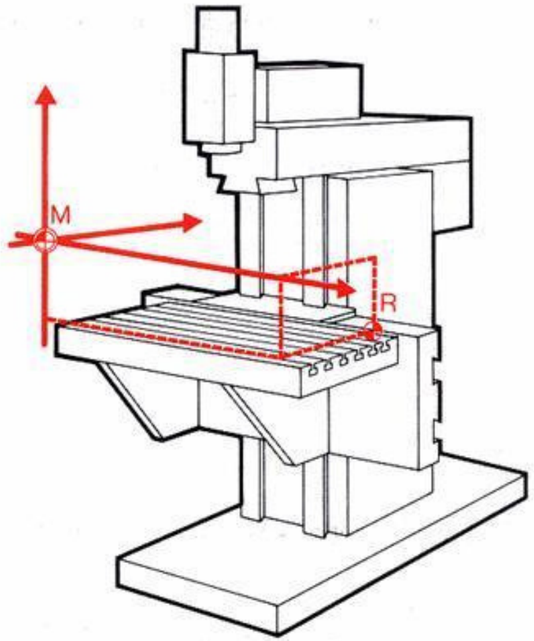

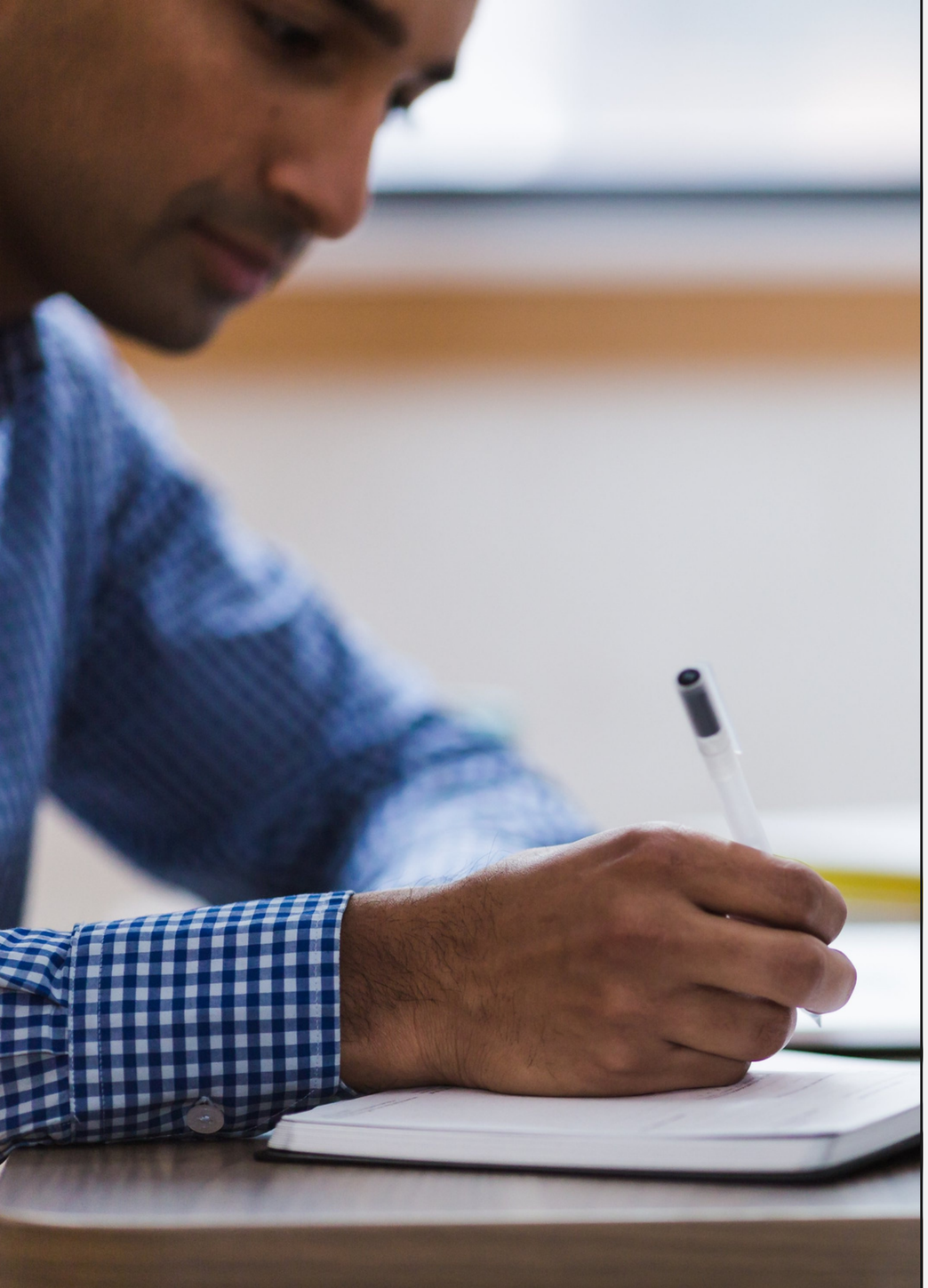

The solution

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How it works

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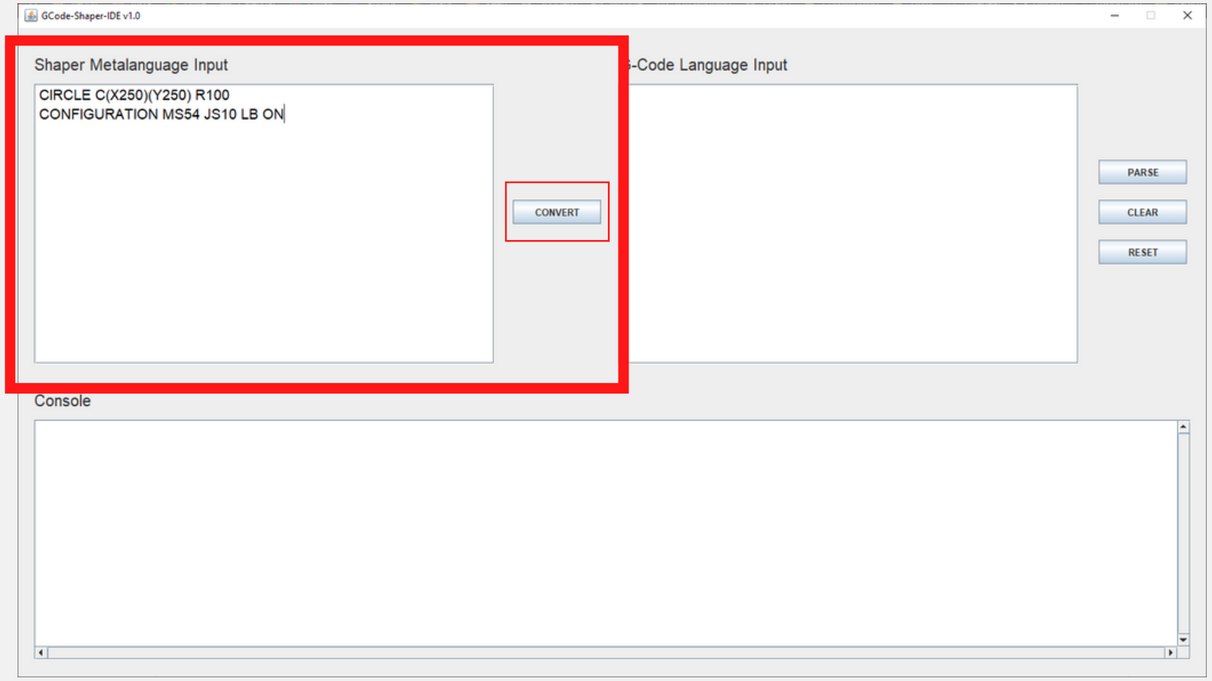
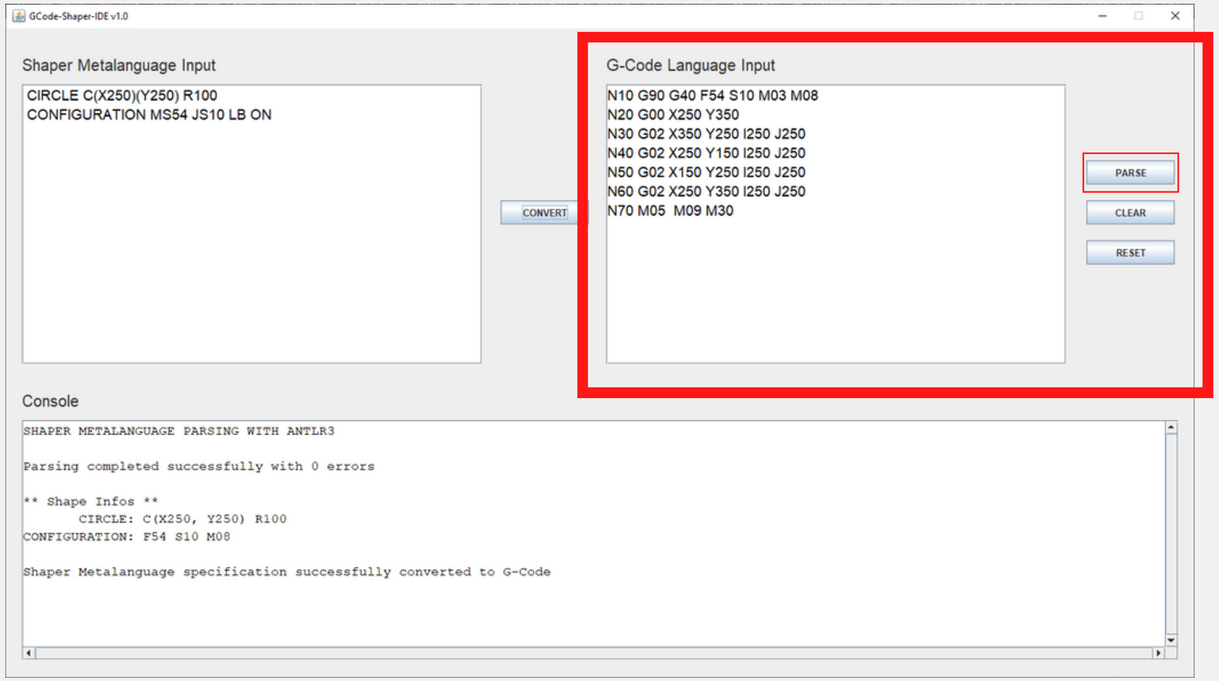
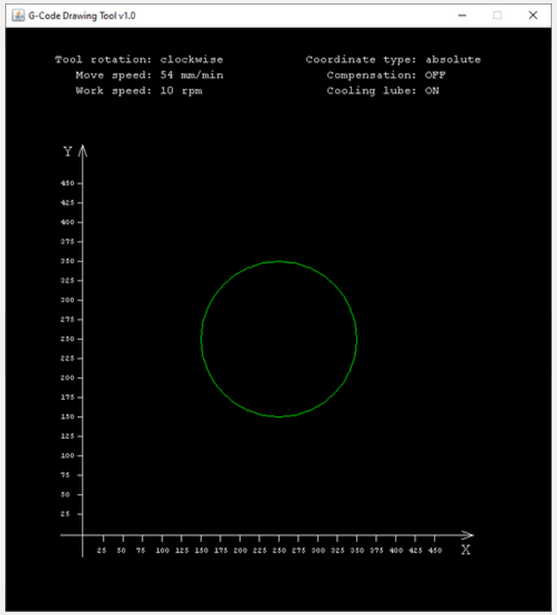
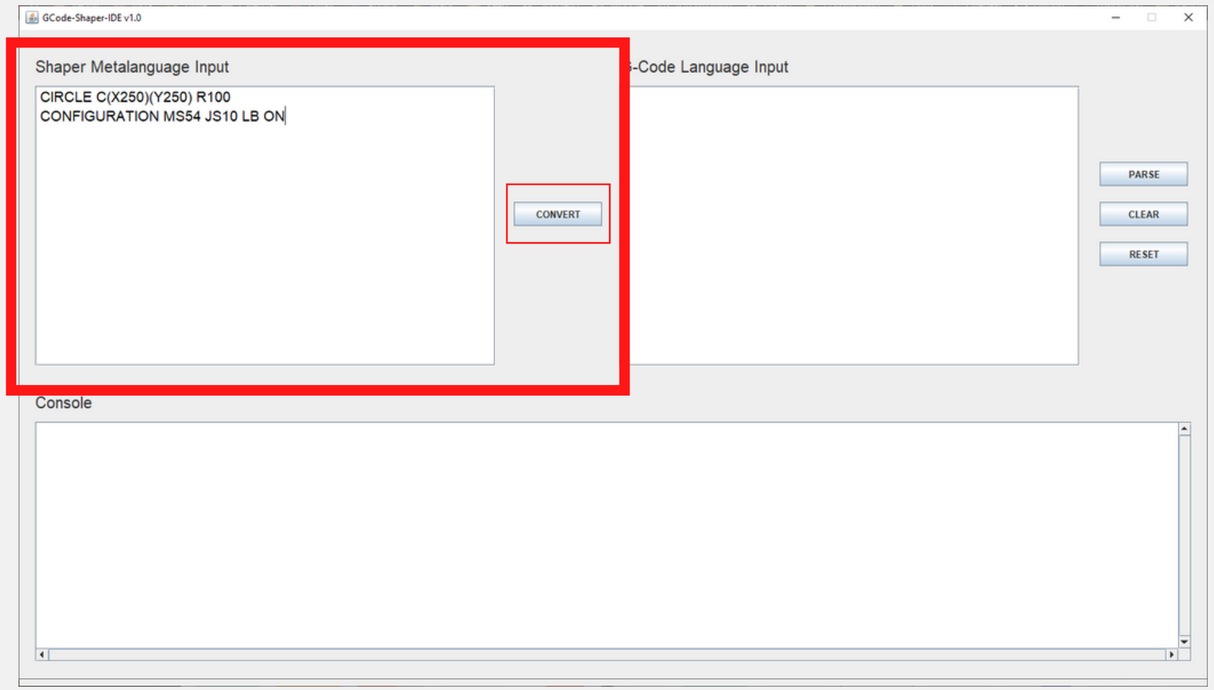
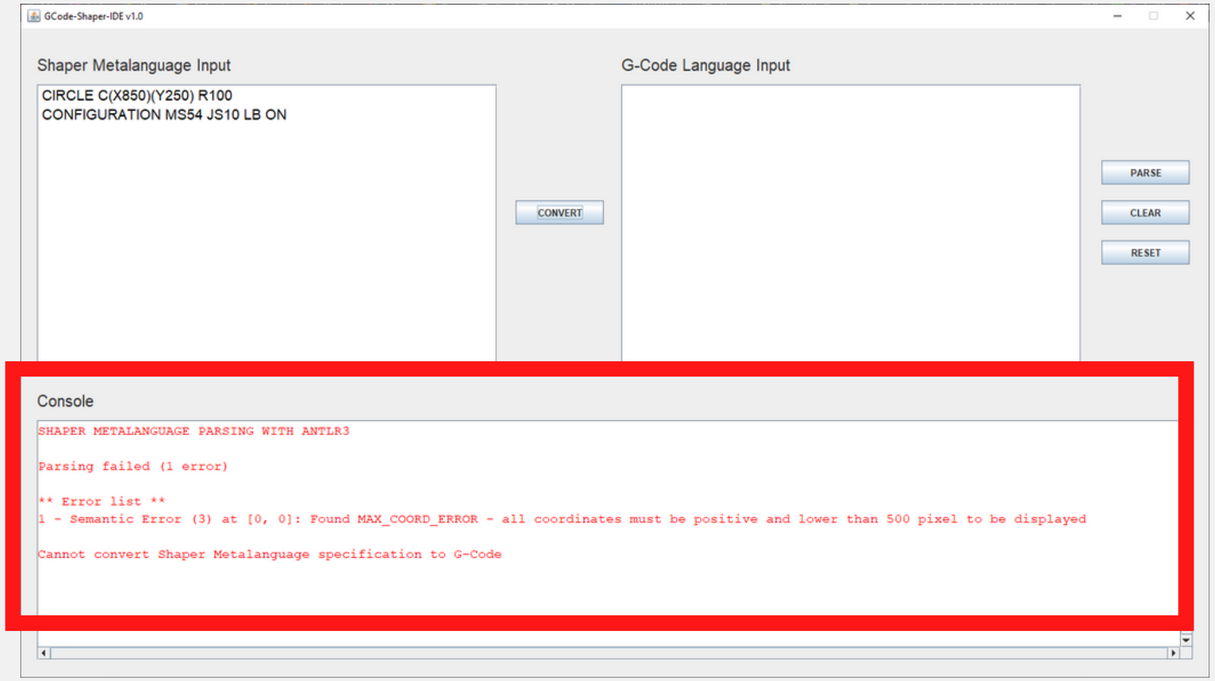
Shaper


GCode-Shaper-IDE v1.0
Shaper Metalanguage Input
CIRCLE C(X250)(Y250) R100
CONFIGURATION MS54 JS10 LB ON
CONVERT
G-Code Language Input
PARSE
CLEAR
RESET
Console

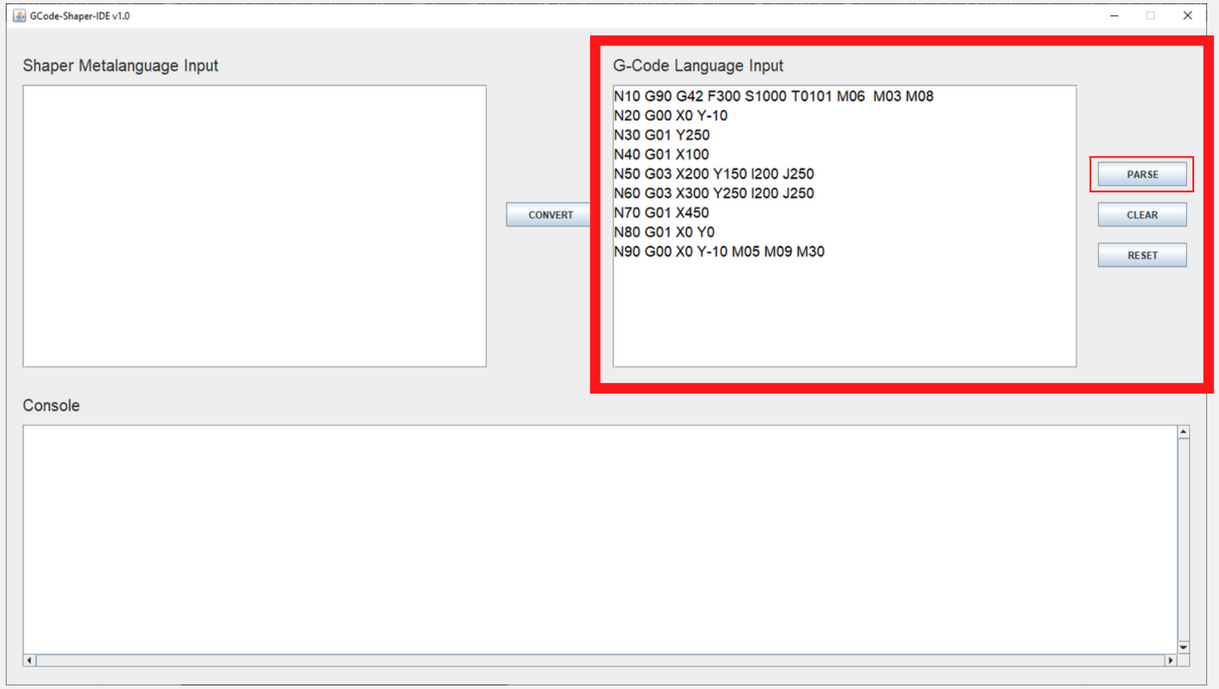

GCode-Shaper-IDE v1.0
Shaper Metalanguage Input
CIRCLE C(X250)(Y250) R100
CONFIGURATION MS54 JS10 LB ON
CONVERT
G-Code Language Input
N10 G90 G40 F54 S10 M03 M08
N20 G00 X250 Y350
N30 G02 X350 Y250 I250 J250
N40 G02 X250 Y150 I250 J250
N50 G02 X150 Y250 I250 J250
N60 G02 X250 Y350 I250 J250
N70 M05 M09 M30
PARSE
CLEAR
RESET
Console
SHAPER METALANGUAGE PARSING WITH ANTLR3
Parsing completed successfully with 0 errors
** Shape Infos **
CIRCLE: C(X250, Y250) R100
CONFIGURATION: F54 S10 M08
Shaper Metalanguage specification successfully converted to G-Code


G-Code Drawing Tool v1.0
Tool rotation: clockwise
Move speed: 54 mm/min
Work speed: 10 rpm
Coordinate type: absolute
Compensation: OFF
Cooling lube: ON
Y
X

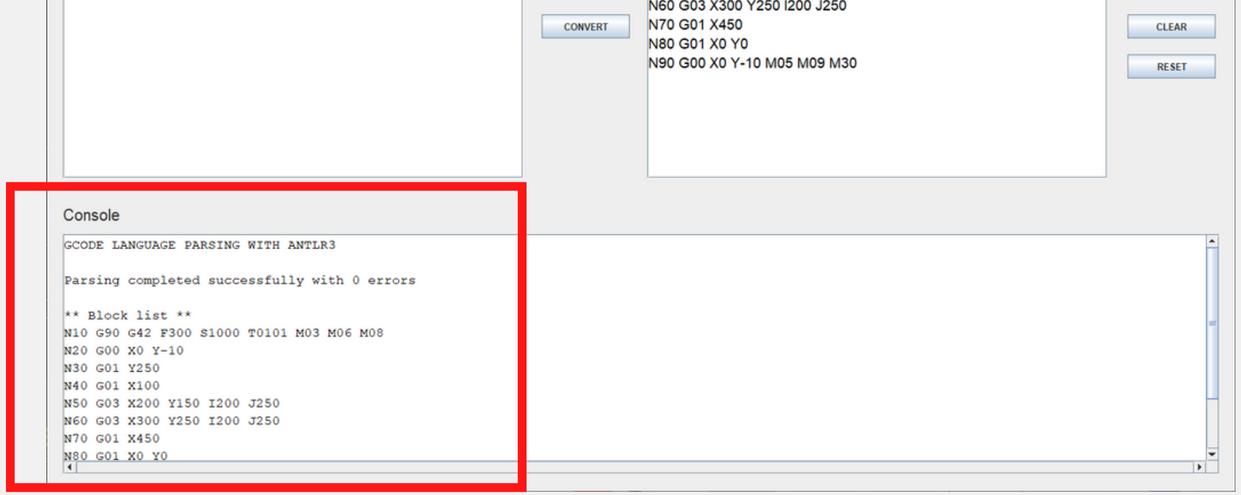


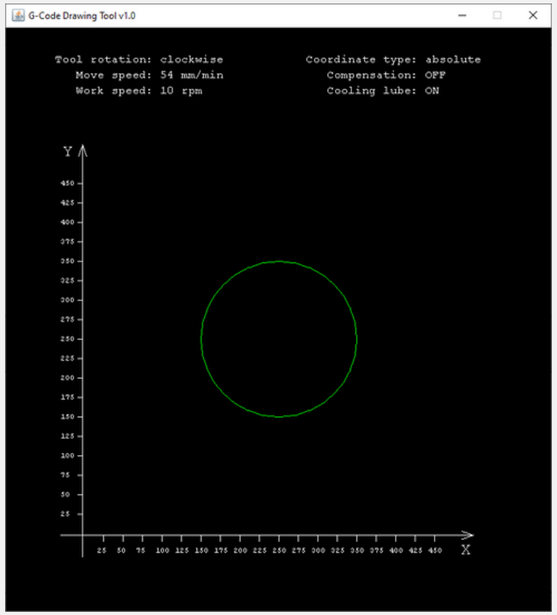


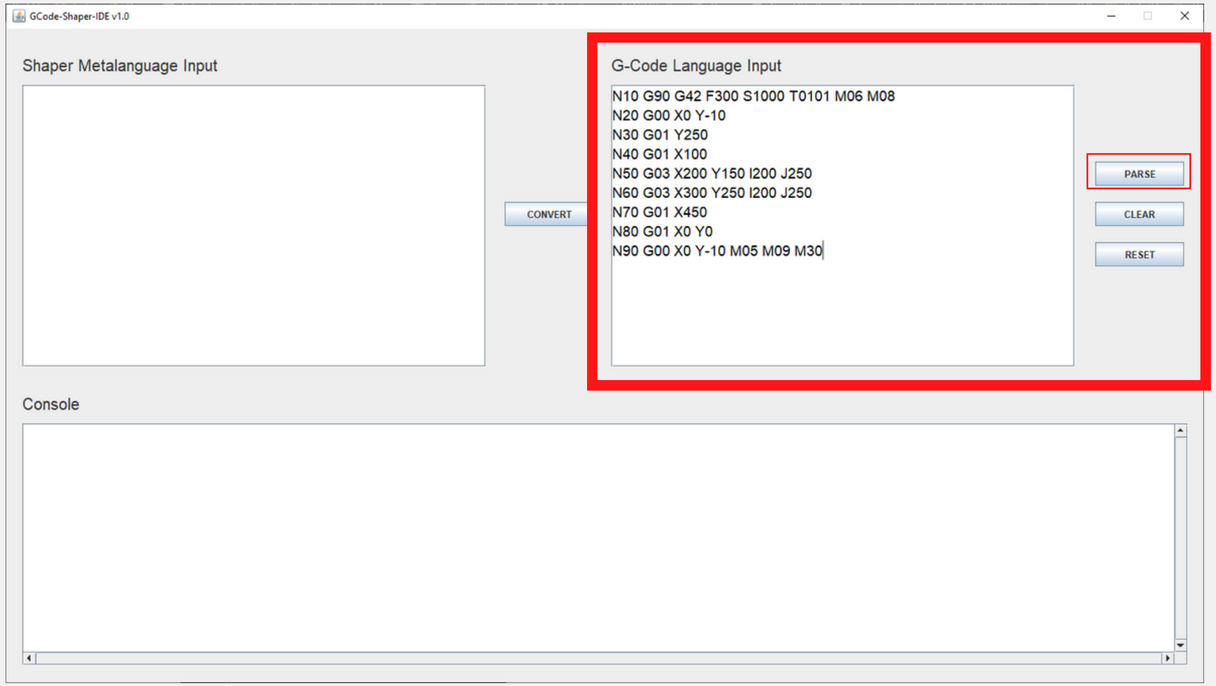
In case of an error, the console shows where the error is and how to solve it

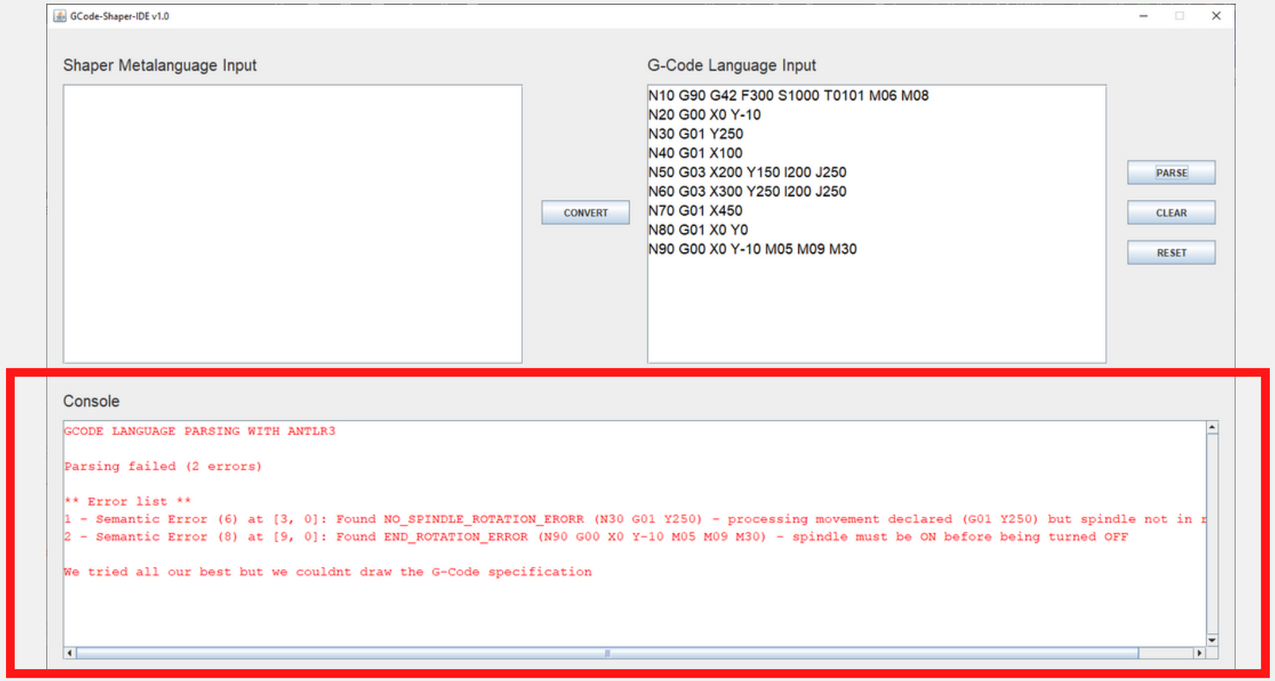

GCode-Shaper-IDE v1.0
Shaper Metalanguage Input
CONVERT
G-Code Language Input
N10 G90 G42 F300 S1000 T0101 M06 M03 M08
N20 G00 X0 Y-10
N30 G01 Y250
N40 G01 X100
N50 G03 X200 Y150 I200 J250
N60 G03 X300 Y250 I200 J250
N70 G01 X450
N80 G01 X0 Y0
N90 G00 X0 Y-10 M05 M09 M30
PARSE
CLEAR
RESET
Console

G-Code


GCode-Shaper-IDE v1.0
Shaper Metalanguage Input
CONVERT
G-Code Language Input
N10 G90 G42 F300 S1000 T0101 M06 M03 M08
N20 G00 X0 Y-10
N30 G01 Y250
N40 G01 X100
N50 G03 X200 Y150 I200 J250
N60 G03 X300 Y250 I200 J250
N70 G01 X450
N80 G01 X0 Y0
N90 G00 X0 Y-10 M05 M09 M30
PARSE
CLEAR
RESET
Console
GCODE LANGUAGE PARSING WITH ANTLR3
Parsing completed successfully with 0 errors
** Block list **
N10 G90 G42 F300 S1000 T0101 M03 M06 M08
N20 G00 X0 Y-10
N30 G01 Y250
N40 G01 X100
N50 G03 X200 Y150 I200 J250
N60 G03 X300 Y250 I200 J250
N70 G01 X450
N80 G01 X0 Y0

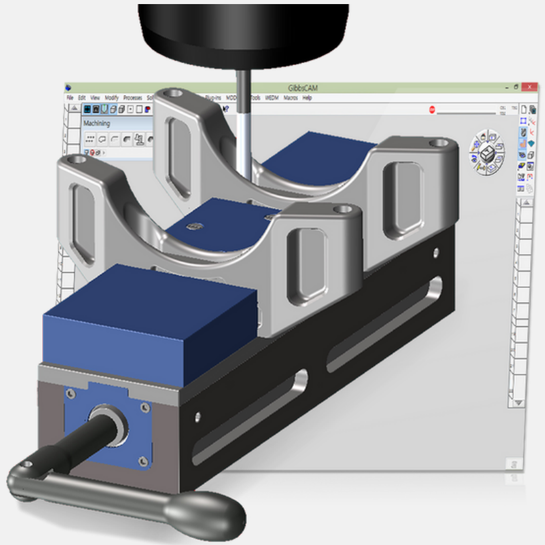

G-Code Drawing Tool v1.0
Tool rotation: clockwise
Move speed: 54 mm/min
Work speed: 10 rpm
Coordinate type: absolute
Compensation: OFF
Cooling lube: ON
Y
X





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

How to get the most out of it



txt

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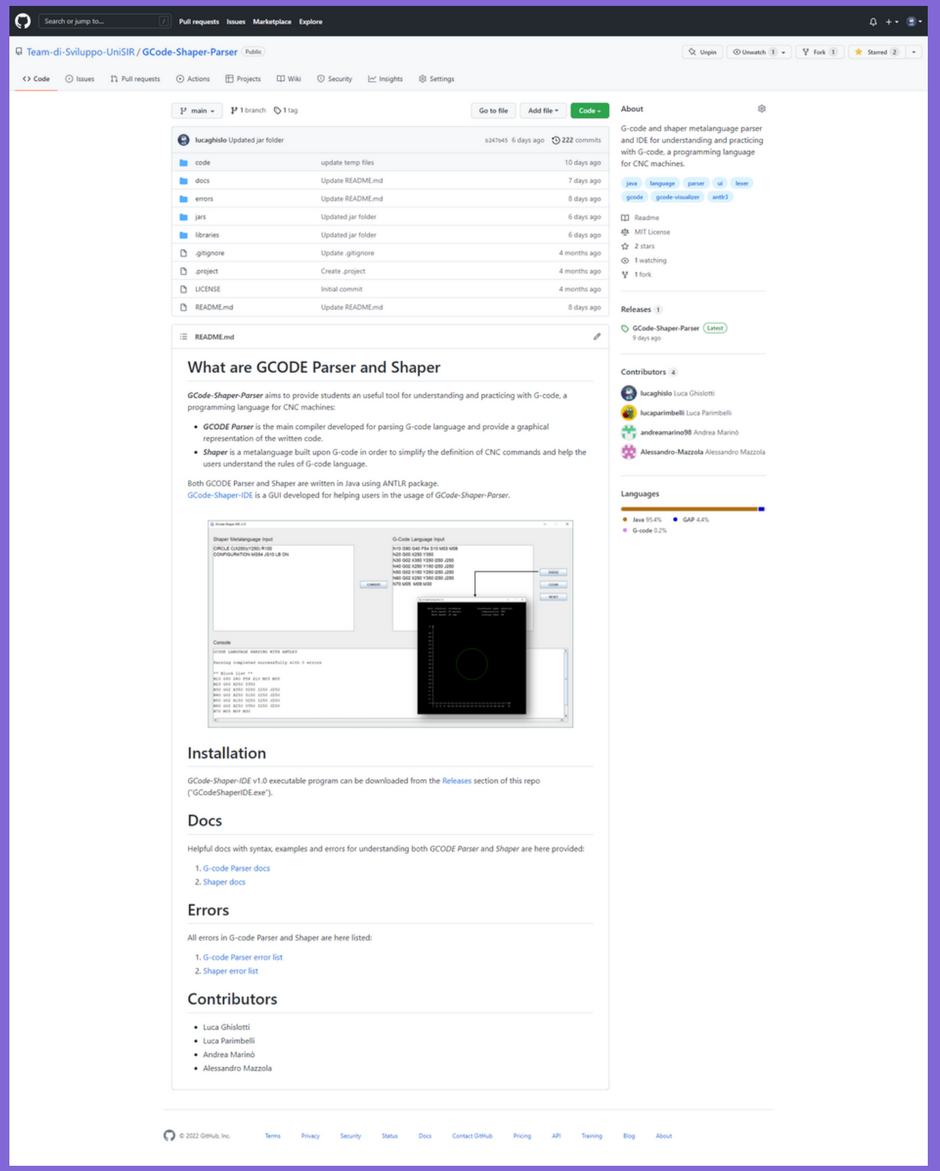
Find us on GitHub

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

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

GitHub



Demo

Now it's up to you

SCAN ME