



UNIVERSITÀ DEGLI STUDI  
DI SALERNO



---

# PROGRAMMABLE CALCULATOR

---

User Guide



DE LUCA A. - D'AGOSTINO M. - DE LUCA D. - FESTA R.

- GROUP 21 -

## Index

1	Version .....	2
2	Project Description .....	2
3	Getting Started .....	2
4	Installation .....	2
4.1	On Windows .....	2
4.2	On MacOS.....	2
4.3	For .jar File .....	2
5	How to Use .....	3
5.1	Starting Up .....	3
5.2	Performing Operations .....	3
5.3	Error Handling.....	3
5.4	Stack Manipulation .....	3
5.5	Text Area Operations.....	3
5.6	Using Variables .....	3
6	License.....	3
7	Contact and Support .....	3



## 1 Version

Revision	Summary of changes
1.0	First release

## 2 Project Description

Welcome to the User Guide for **ProgrammableCalculator**, open-source, versatile calculator software designed for complex mathematical operations with RPN stack based syntax. This guide will help you to install, use, and contribute.

## 3 Getting Started

Before you begin, ensure that your system meets the following requirements:

- Operating System: Windows 10 or higher, MacOS
- RAM: 4GB minimum
- Disk Space: < 100MB

You can download ProgrammableCalculator from our GitHub repository [[ProgrammableCalculator2023](#)].

## 4 Installation

### 4.1 On Windows

1. Download the latest Windows release from the GitHub repository.
2. Run the .exe file and follow the installation instructions.
3. After installation, launch the software from the desktop icon or Start menu.

### 4.2 On MacOS

1. Download the latest MacOS release from the GitHub repository.
2. Open the .dmg file and drag the app into Application dir.
3. After installation, launch the software from the Launchpad menu.

### 4.3 For .jar File

1. Download and install Java JDK 21.
2. Download the latest .jar release from the GitHub repository.
3. Open the .jar file.

## 5 How to Use

### 5.1 Starting Up

Open ProgrammableCalculator to begin. You will be greeted with an intuitive user interface.

### 5.2 Performing Operations

- Inputting Complex Numbers: Enter complex numbers into the stack, which is visible on the right side of the GUI.
- Basic Operations: Use the basic mathematical operations including addition (+), subtraction (-), multiplication (\*), division (/), negation ( $\pm$ ), and square root (**sqrt**).

### 5.3 Error Handling

If an incorrect expression is entered in the text area, an error message will appear, highlighting the mistake.

### 5.4 Stack Manipulation

- (**clear**): Clears the entire stack.
- (**over**): Copies the second-to-top element of the stack to the top.
- (**dup**): Duplicates the top element of the stack.
- (**drop**): Removes the top element of the stack.
- (**swap**): Swaps the positions of the top two elements in the stack.

### 5.5 Text Area Operations

- (**CE**): Clears the entire text area.
- (**C**): Clears the last entered value in the text area.

### 5.6 Using Variables

Assign the top stack value to a variable (**A-Z**) using the "**ABC...**" button, which displays all available variables. Perform operations with variables using the syntax *operation-variable*. Supported operations include +, -, \*, /,  $\pm$ , **sqrt**, push to variable (>), and take from variable (<). You can return back to previous interface using the "**123...**" button.

## 6 License

ProgrammableCalculator is released under the **GNU General Public License v3.0** License. For more details, please refer to the LICENSE file in the GitHub repository.

## 7 Contact and Support

Name	Email
D'Agostino Marco	<a href="mailto:m.dagostino38@studenti.unisa.it">m.dagostino38@studenti.unisa.it</a>
De Luca Aniello	<a href="mailto:a.deluca103@studenti.unisa.it">a.deluca103@studenti.unisa.it</a>
De Luca Daniele	<a href="mailto:d.deluca32@studenti.unisa.it">d.deluca32@studenti.unisa.it</a>
Festa Raffaele	<a href="mailto:r.festa9@studenti.unisa.it">r.festa9@studenti.unisa.it</a>

