User manual

Fitutubies calculator

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Information Technologies
Brno University of Technology
Fitutubies team

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Software overview

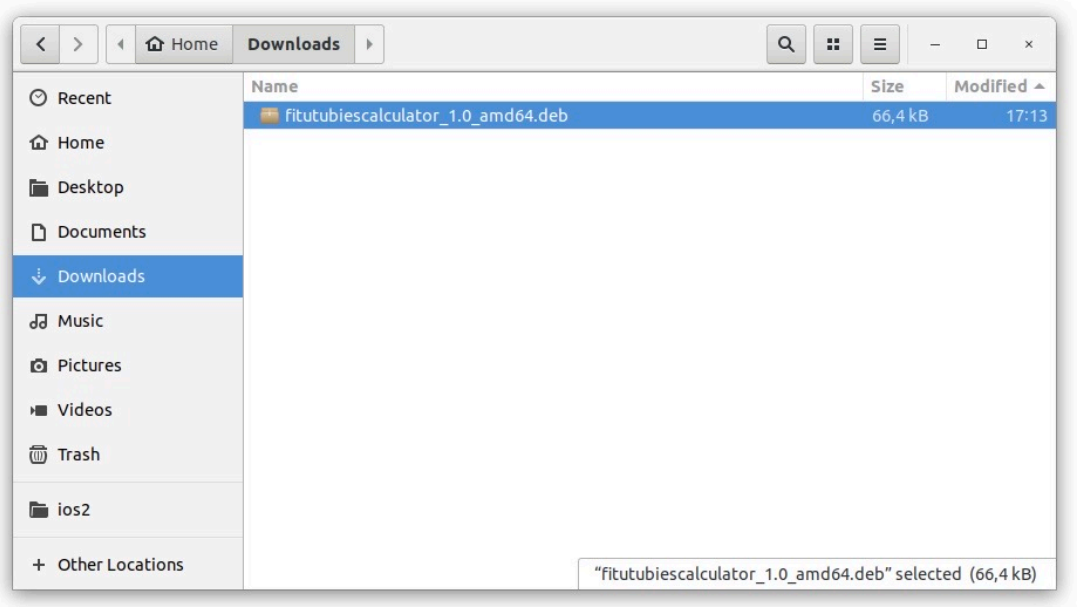
This program was created as a project for the *Practical Aspects of Software Design* course. The main purpose of this program is offering a tool which allows the user to perform basic and slightly advanced mathematical calculations.
These calculations include variety of arithmetic operations, goniometric and logarithmic functions, in addition to calculation of modulo, factorial, nth root and power of entered number.

Before use:

- It is advised to read through the whole manual before the use
- Any modifications of the source code might cause undesirable behaviour of the program
- In order to report a bug, refer to **Contact** section

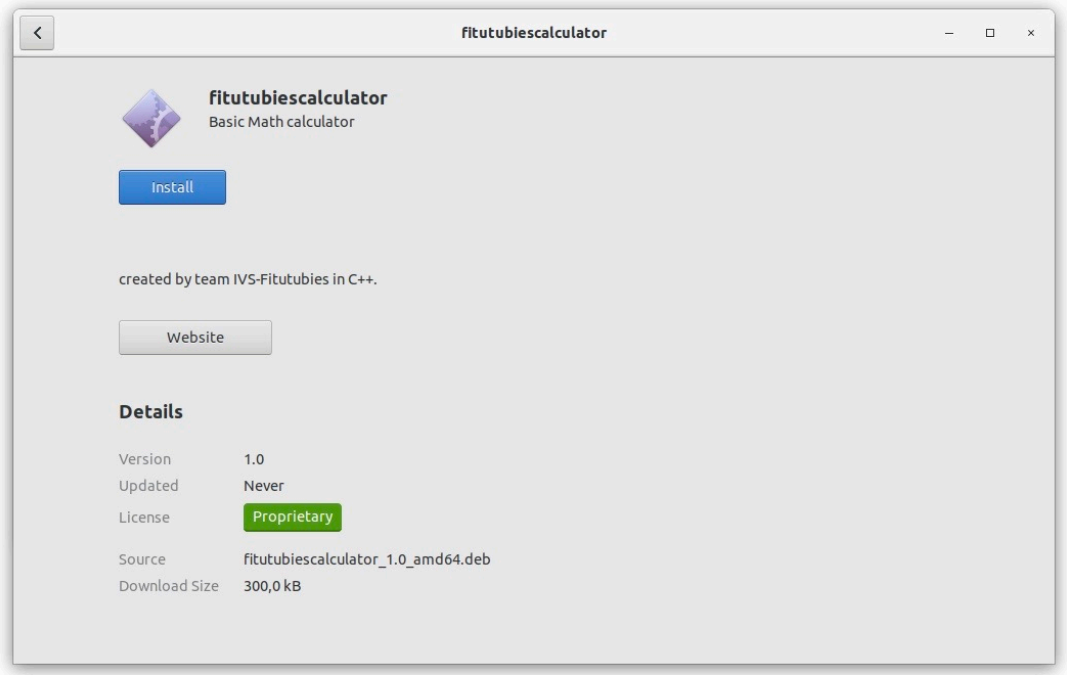
Installation

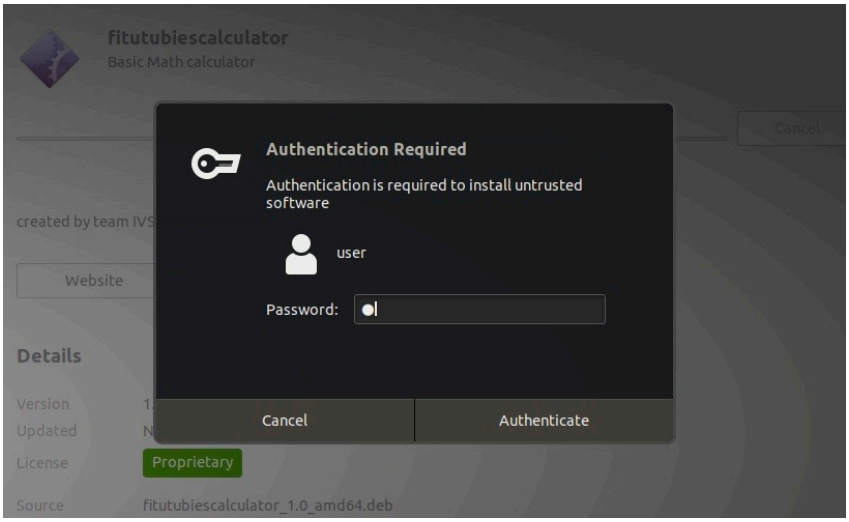
In order to use the calculator, it needs to be installed beforehand. Simply follow these steps to achieve successful installation.



After downloading the package, double-click the file

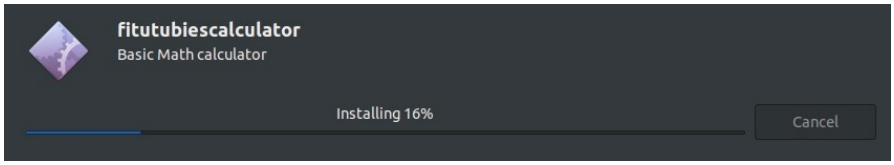
Click the **Install** button



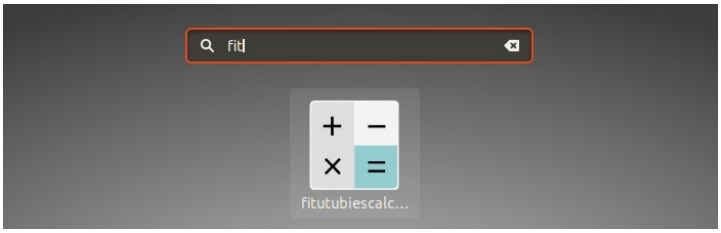


Enter the user password in order to authenticate the installation if necessary

Wait for the installation to complete



Running the software

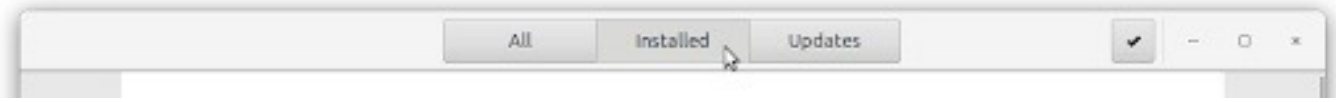


Start typing ***fitutubies-calculator*** into the search, until the application shows up

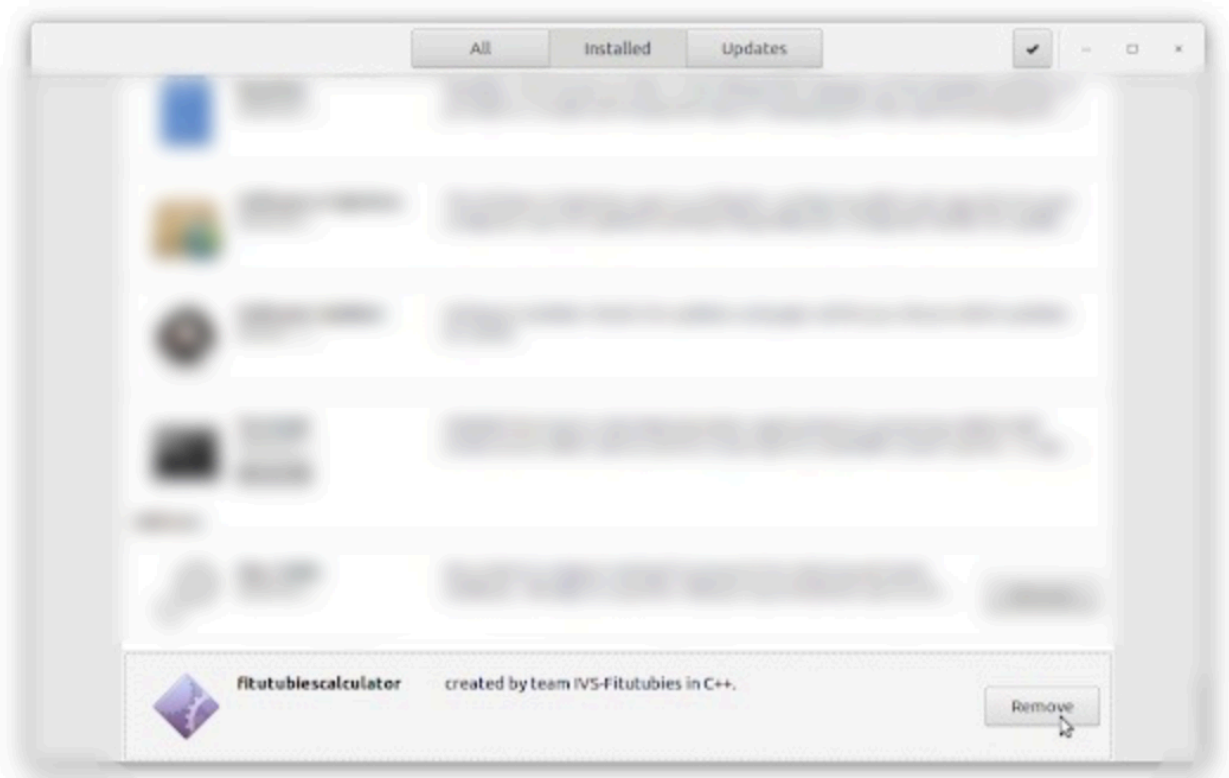
Application opens up after clicking its icon

Uninstallation

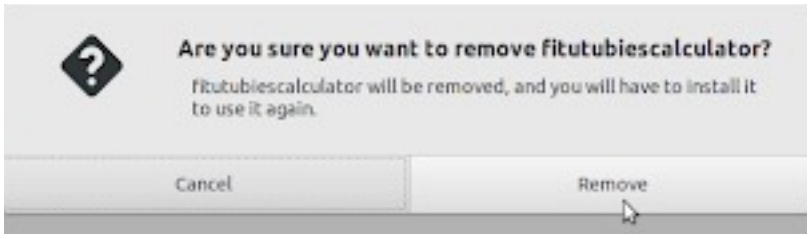
If the application is no longer needed within your device, it can be easily uninstalled.
After installing the application by opening .deb package, it can be found in the **Installed** section of *Ubuntu software*.



Open the **Installed** section within the *Ubuntu software* application



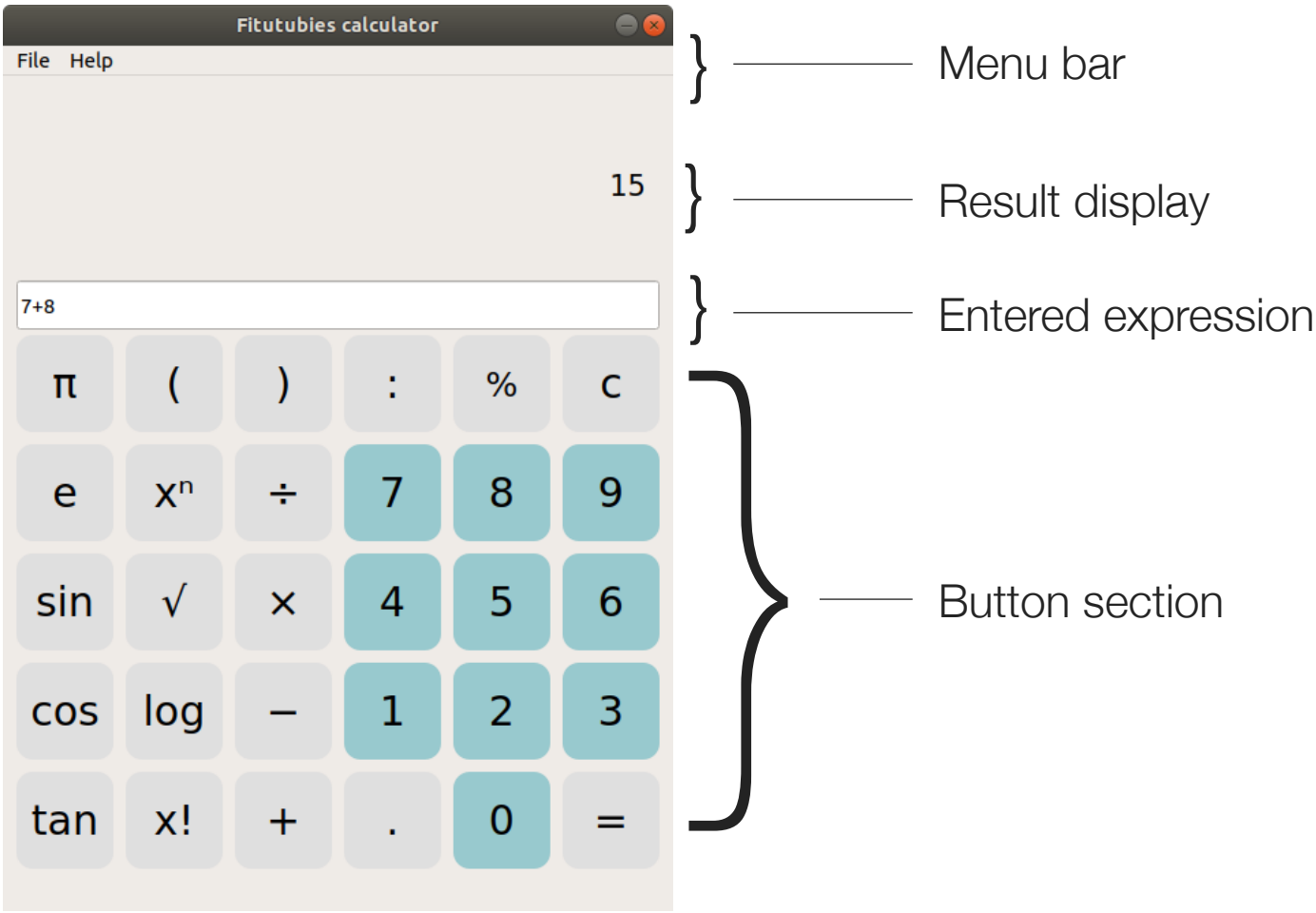
Find the application within the list, then click on the **Remove** button



If you are sure to remove the application, simply push the **Remove** button again

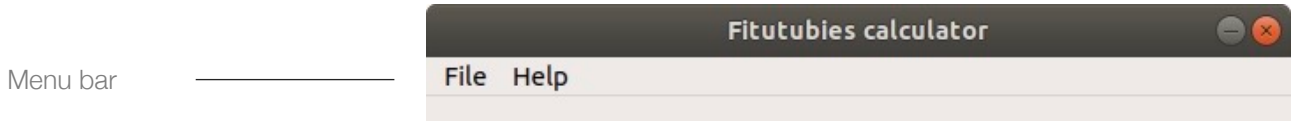
User interface

The graphical user interface of this calculator is intuitive, and easy to navigate. Please continue reading for detailed description.

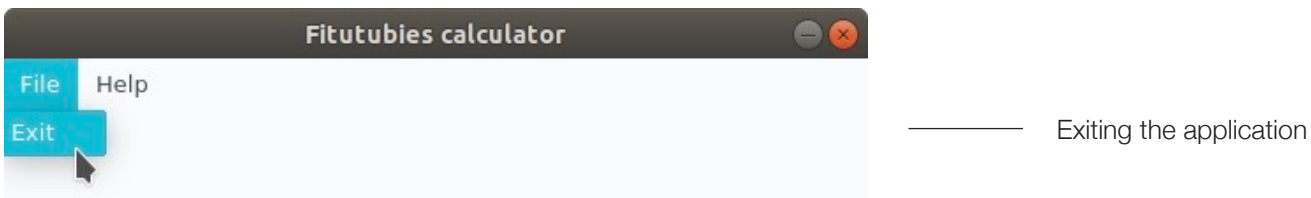


Menu bar

The uppermost part of the user interface includes the location of menu bar.

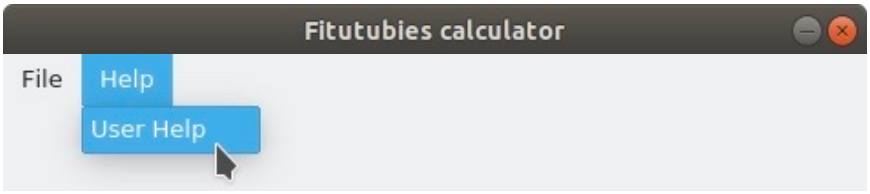


File - Exiting the application via menu bar
By clicking the **File** and **Exit**, user can easily close the application window.

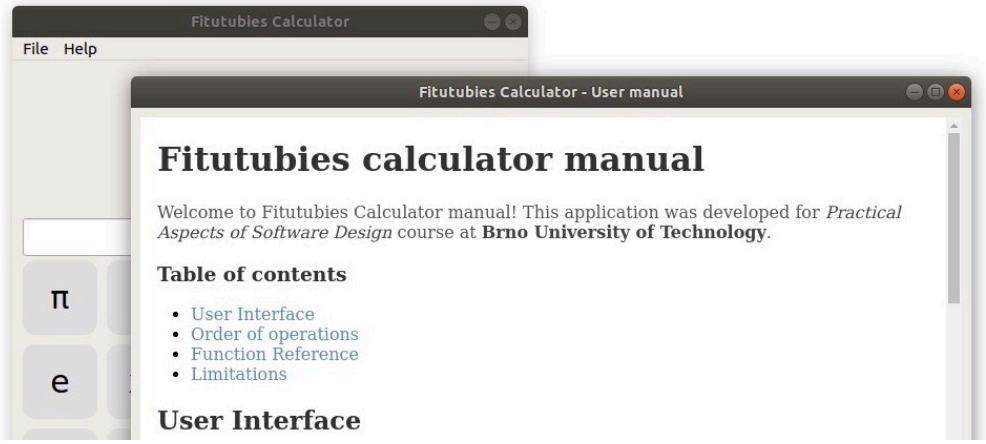


Help - Displaying the User Help

Clicking the **Help** leads to the possibility of displaying a brief **User Help**, which serves as a shorter version of this manual.



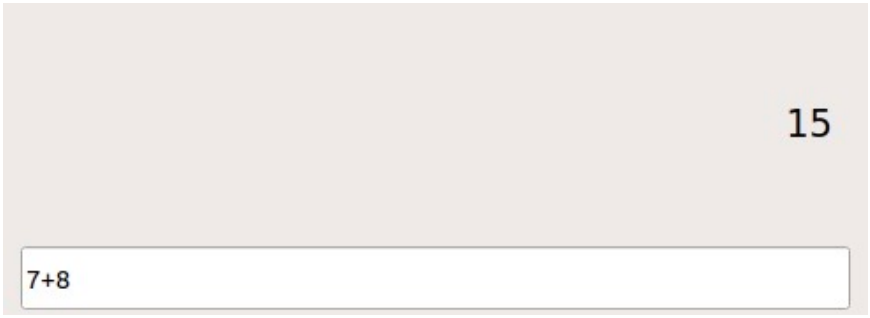
Displaying the user help



Window with brief manual

Display

Below the menu bar, a section displaying the outcome of entered mathematical expression is located. This result is located directly above the expression.



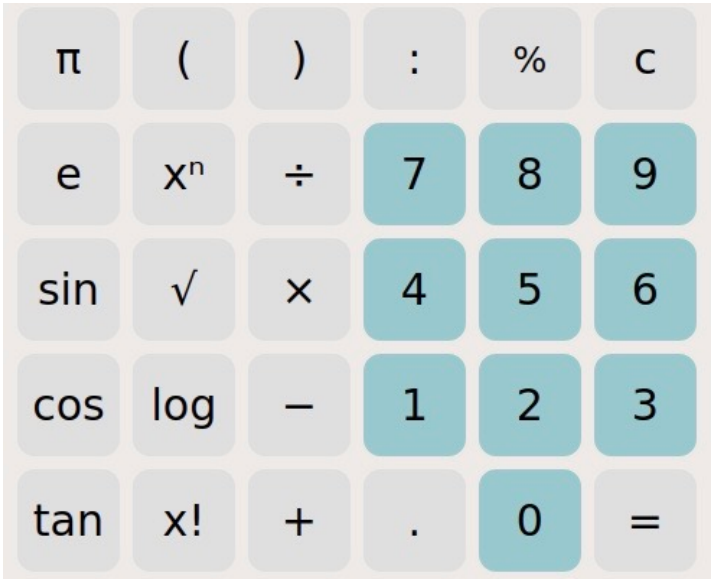
Calculated result

Entered expression

The result is displayed with maximum precision of 8 decimal places, and the expression which is to be calculated can be entered either manually by clicking on individual buttons, or by using the keyboard.

Button section

The input for the calculator can be entered using the clickable buttons in the main section of the user interface. Continue reading for detailed use of its individual parts.



Overview of the button section

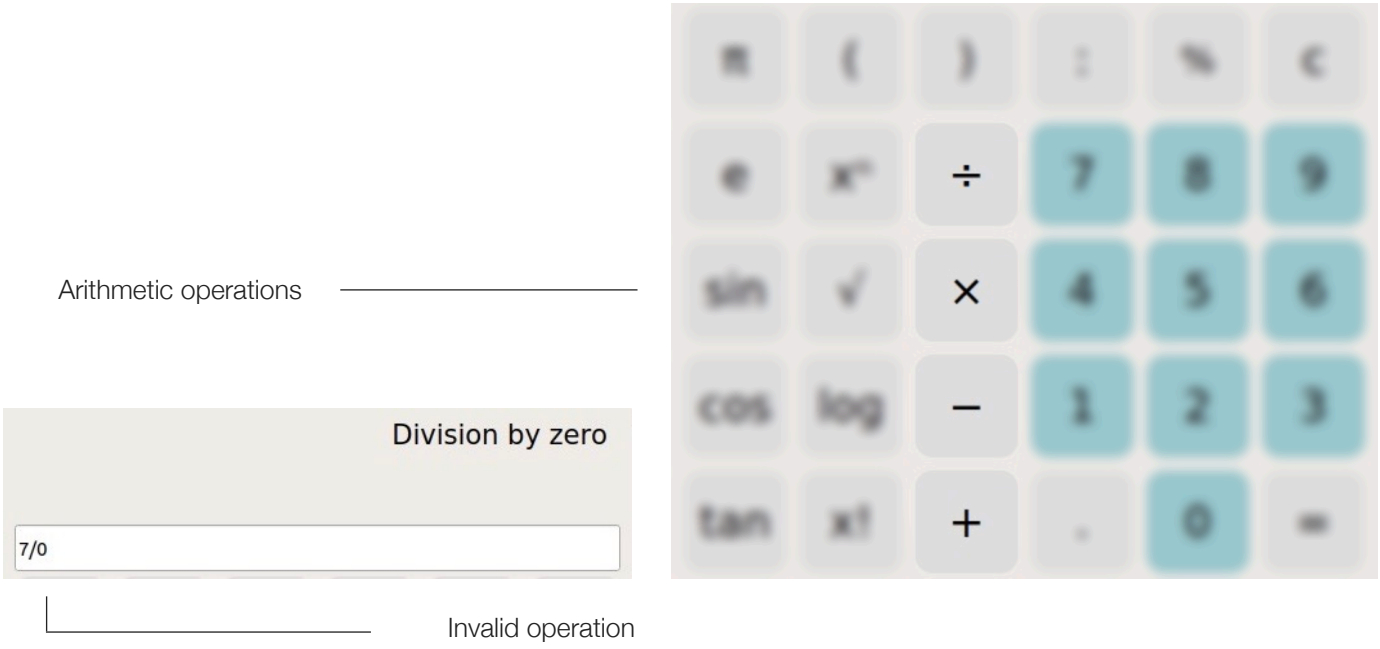
Numerical symbols

The individual digits expressing particular value are inserted into the display section right after being clicked. Several digits can be pressed sequentially, in order to create multi-digit number.

Numerical symbols

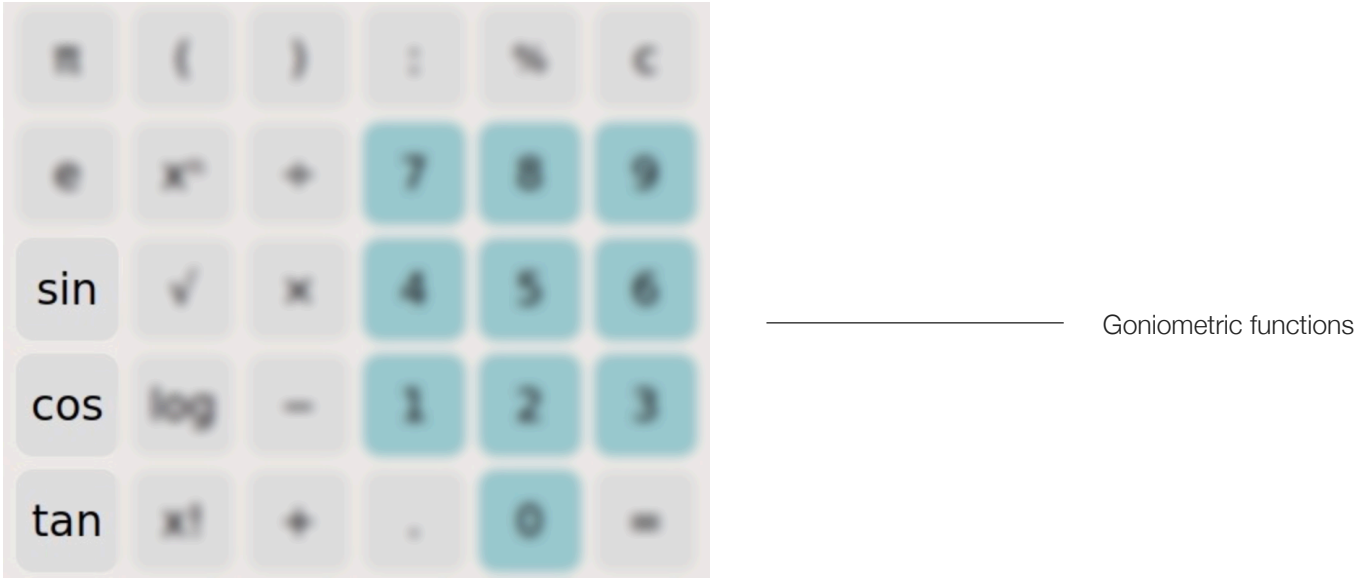
Arithmetic operations

Basic arithmetic operations like addition, subtraction, division and multiplication can be performed using suitable symbols. All of these operations are binary, which means that you need to interact with two values on both of their sides. Division by 0 causes error.



Goniometric functions

Buttons **sin**, **cos** and **tan** are used to calculate goniometric functions. These are unary operations, where the value is calculated from the expression within the brackets. The result is stated in degrees, not radians.

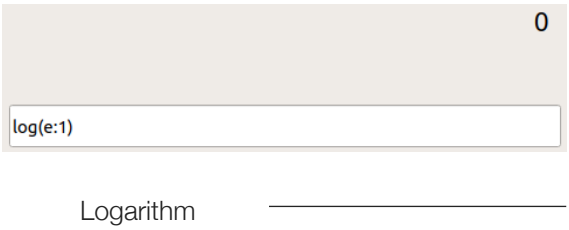


Logarithmic function

The **log** button is used for calculating a common logarithm. However, the base of the logarithm can be adjusted using the separator. Please see the **Special buttons** section for further explanation.

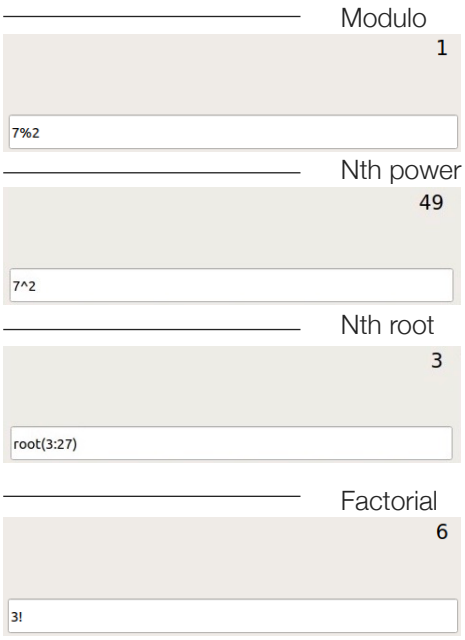
Natural logarithm

Natural logarithm can be calculated by using supported constant **e** as a base.



Other operations

Other operations supported by this calculator include factorial, the nth root and power, as well as modulo. In order to calculate the nth root, usage of separator is necessary (see **Special symbols** section).



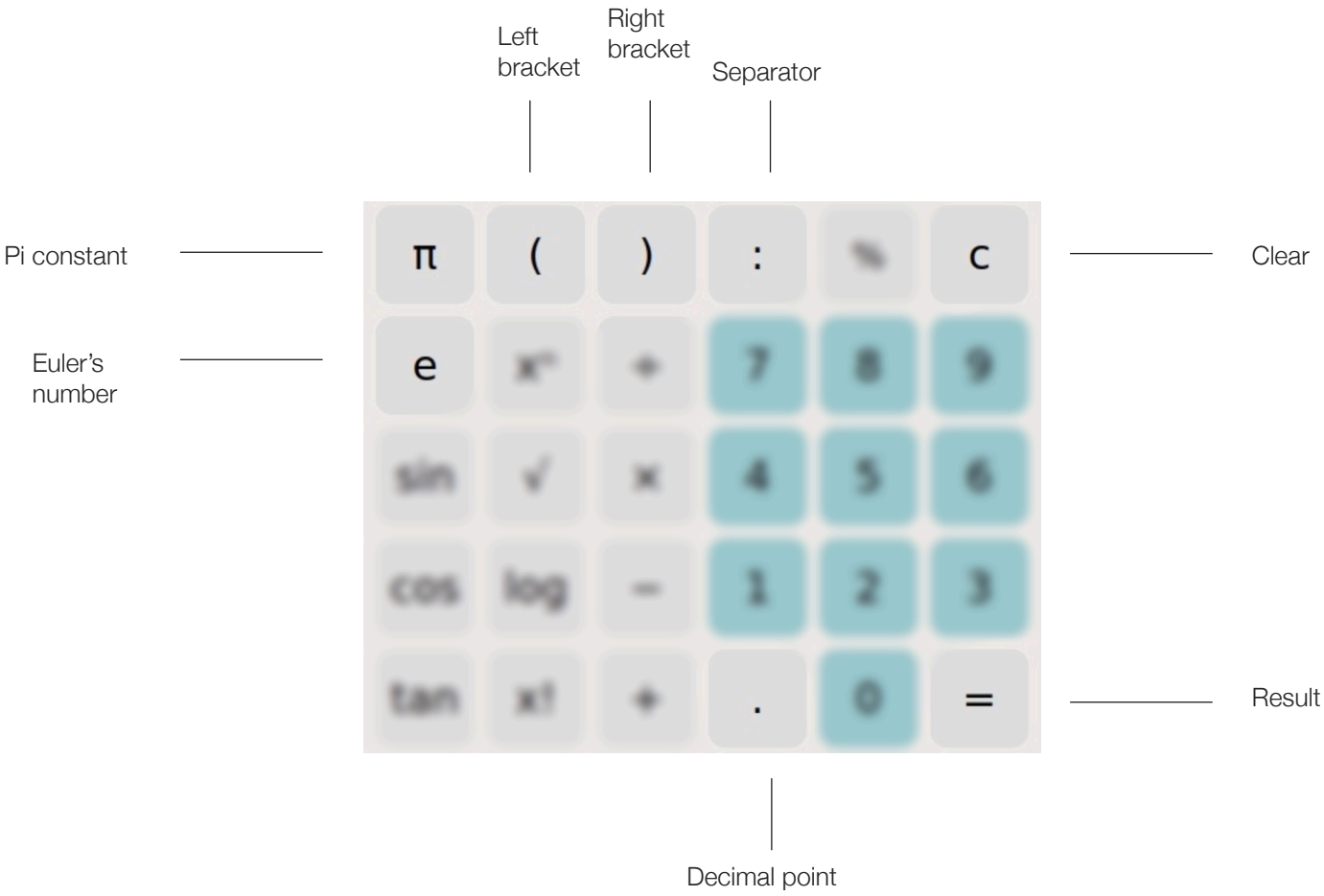
Special symbols

Constants e and π

In order to work with these two mathematical constants, simply press the corresponding button for constant to be evaluated within the expression.

Clear

After pressing the **C** button, the entered expression is erased. Content of the result display is preserved.



Brackets

The current version does not support adjusting the priority of individual values surrounded by brackets. These can only be used in unary operations such as **sin**.

Result

Pressing of this button results in calculating the outcome of entered expression.

Separator

This special button is employed in the root and logarithmic functions, since they require more than one argument.

These arguments are separated by '**:**'.

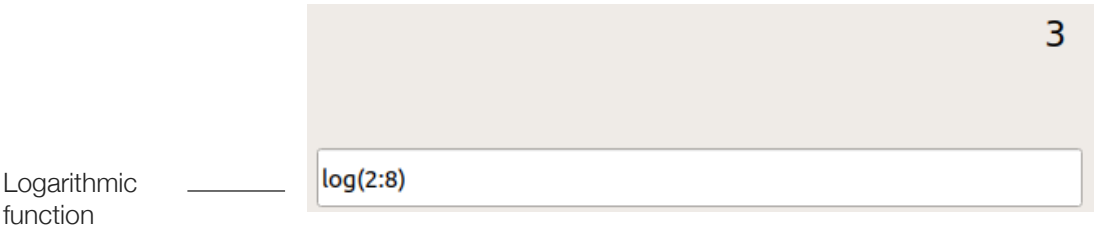
Root function and separator

In case of **root function**, first one stands for the exponent, and the second one is the number for which the root will be calculated.

$$\sqrt[exponent]{x} \quad = \quad root(exponent:x)$$

Logarithmic function and separator

Unless calculating a logarithm to the base 10, the first number specifies the base, while the other stands for the argument.



$$\log_{base} x \quad = \quad log(base:x)$$

Contact

Thank You for choosing our application as a tool for your mathematical calculations.

This application was created by a group of four students. In case of any further questions, or possible occurrence of bugs, please contact one of the team members.

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