HELP

EXPECT_EQ(oznuk, false)

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Contents

1 Calculator window

After successfully running the executable the main window shows up. This window is called calculator view. Calculator view contains of function buttons and display panels. Buttons are used for entering mathematical expressions and can be replaced by physical keyboard. Display panel returns results of calculations and shows the history of calculations.

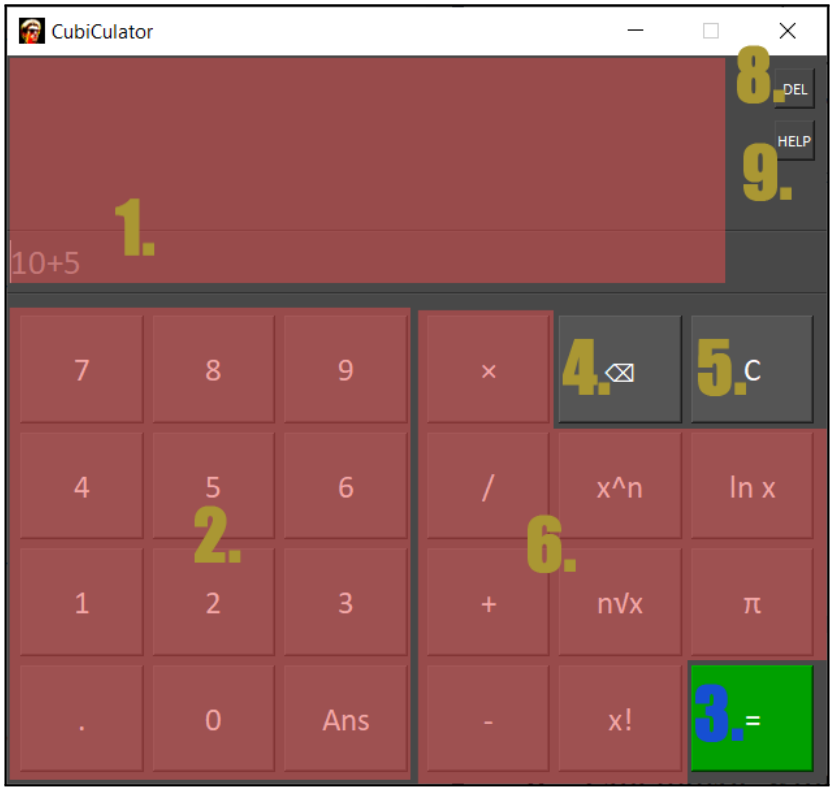

Figure 1: Calculator view

1. Display panel - Displaying entry and history.
2. Number buttons - Used for entering numbers.
3. Result button - Returns result of current expression.
4. Backspace button - Deletes last added character.
5. C button - Clears an entry.
6. Mathematical functions - Enters mathematical function.
7. π Button - Enters number π.
8. DEL button - Clears history.
9. HELP button - Shows hint.

1.1 Error messages

Error messages warns you about miss behaving with you calculator (For example when you write input in a wrong way.) or when calculator is about to calculate undefined operation.
Errors, that can occur are:

1. **Number must be integer greater than or equal zero!**
   - This error occurs when you try to get factorial of an negative number or non-number input.
2. **Division by zero!**
   - This error occurs when you try to divide by zero or when some of the actions you've written leads to division by zero.
   - For example $58/0$.
3. **Root number cannot be zero (division by zero)!**
   - This error occurs when you try to calculate 0 root of any number
   - For example $\sqrt[0]{45}$.
4. **Under the square root cannot be negative number!**
   - This error occurs when you try to calculate square root of any negative number.
   - For example $\sqrt{-56.2356}$, $\sqrt{-69.69}$, $\sqrt{-420}$.
5. **The natural logarithm is defined only in the interval** $(0, \infty)$
   - This error occurs when you try to calculate natural logarithm of an negative number.
   - For example $ln - 15$, $ln - 69$

1.2 Tips and special features

CubiCulator is calculator with special features.

1. Arrow scrolling
   - You can navigate throughout calculator history just by clicking [**up**] and [**down**] arrow keys.
2. Enter to result
   - You can get results of your expressions much faster thanks to out new equal function trigger. Just click on the [**Enter**] button and result is displayed.
3. Pi to π
   - You can type π even without mouse. Just type [**P**] [**I**] on your keyboard and CubiCulator will process it like it was written by [π]button.

2 Mathematical functions

Calculator can compute various mathematical functions. Different function have different number of operands. In case of every 2 operand function (*+, -, *, /, n^x, $n\sqrt{x}$*) you enter operands in *operand1 function operand2* order. In case of factorial (*x!*) function you enter operand in *operand function* order. In case of natural logarithm you enter operand in *function operand* order.

2.1 Function overview

Here you can see overview of the mathematical functions:

Function	Symbol	Number of operands	Input Order
Addition	+	2	*operand1 function operand2*
Subtraction	-	2	*operand1 function operand2*
Multiplication	*	2	*operand1 function operand2*
Division	/	2	*operand1 function operand2*
Power	x^n	2	*operand1 function operand2**
Root	n$\sqrt{x}$	2	*operand1 function operand2***
Factorial	x!	1	*operand function*
Natural logarithm	ln x	1	*function operand*

*In case of *function operand* input order the expression is equal to *2 function operand* or 2^x.
**In case of *function operand* input order the expression is equal to *2 function operand* or $\sqrt{x}$.

2.2 Example

For example, if you want to calculate $\frac{\sqrt{4}}{3}$ expression you would be entering commands in this order:

1. Click on the [**2**] number button.

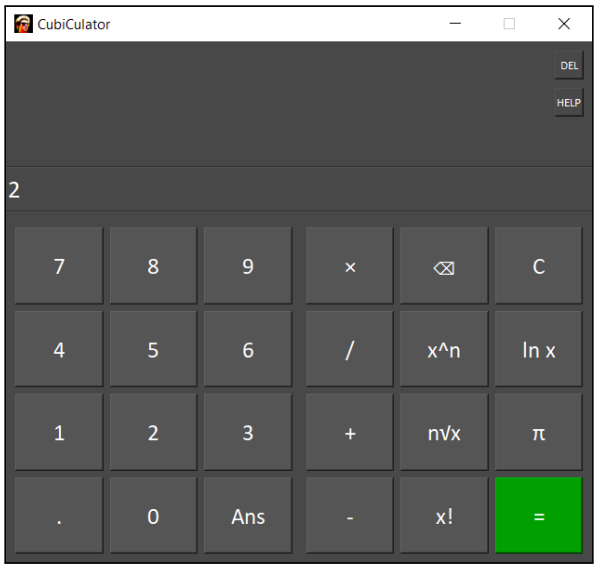

Figure 2: Expression input - 1

2. Then click on the [**Root**] button.

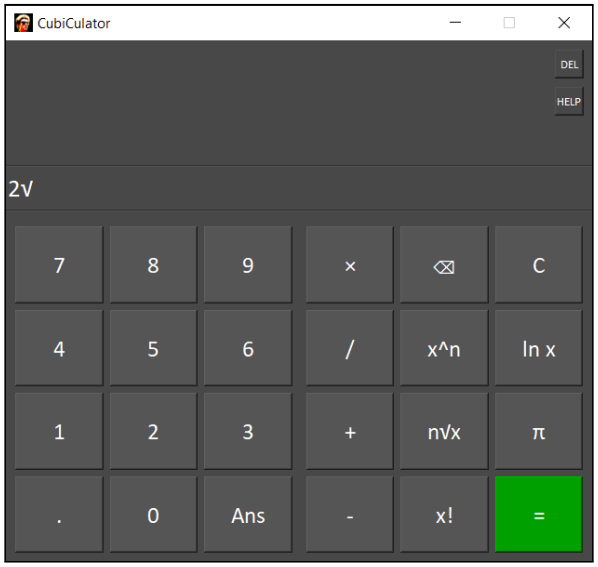

Figure 3: Expression input - 2

3. After that click on the [**4**] number button.

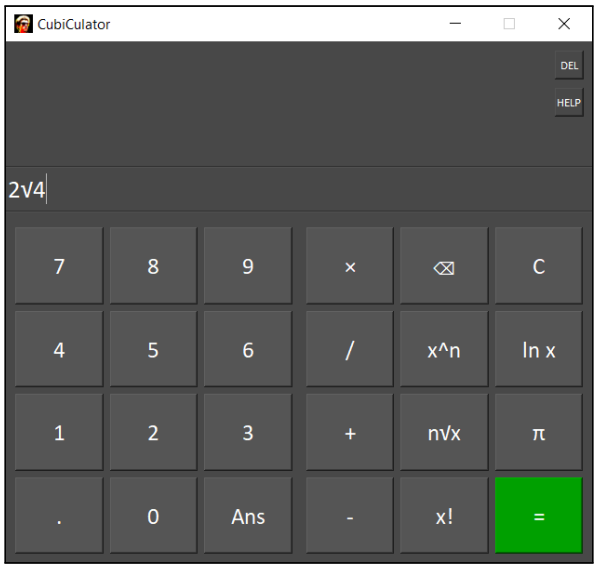

Figure 4: Expression input - 3

4. To divide the number click on the [/] Division button.

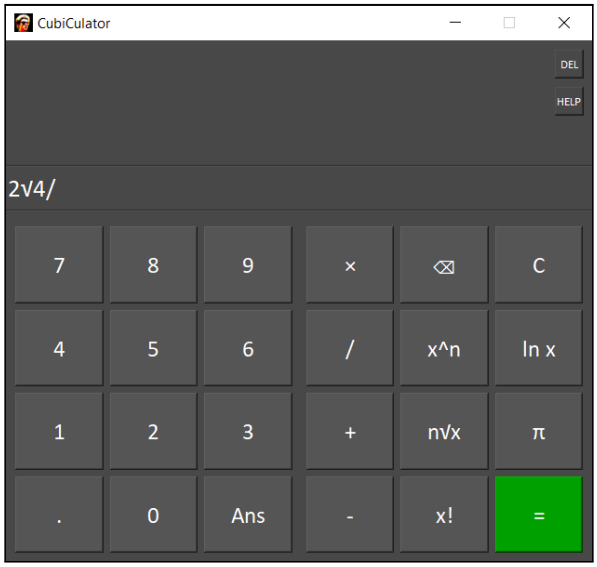

Figure 5: Expression input - 4

5. Then click on the **[3]** number button.

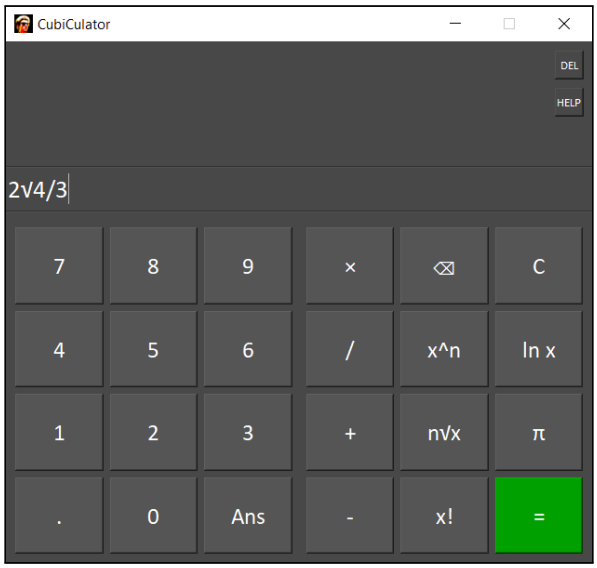

Figure 6: Expression input - 5

6. To calculate result of this expression click on the [=] number button.

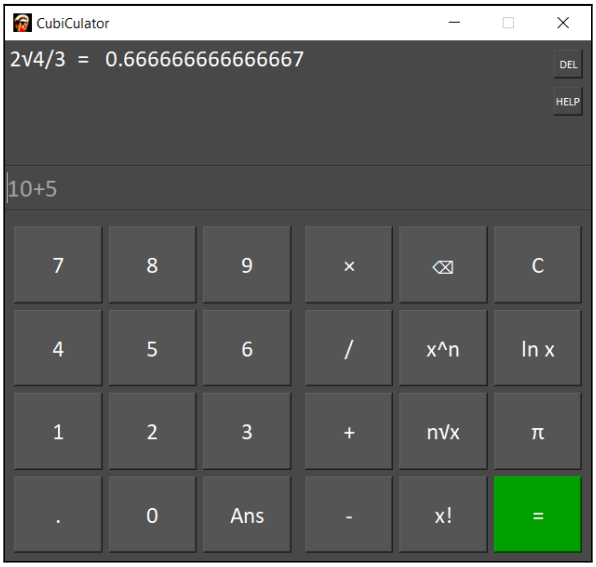

Figure 7: Expression input - 6