

# SOFTHORN CALCULATOR

## USER MANUAL

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# 1 Introduction

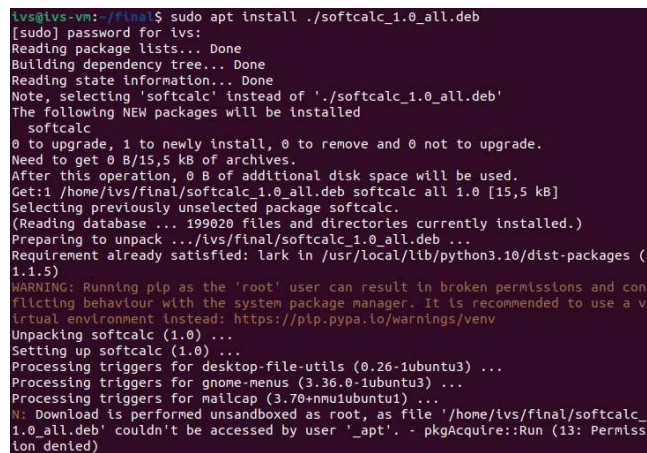
This application was made for Ubuntu 64-bit. It is a simple calculator that can solve addition, subtraction, multiplication and division. There are also other functions like root, logarithm, factorial and power. The calculator likewise supports usage of parentheses and decimal numbers.

## 2 (Un)Installation of Softhorn calculator

### 2.1 Using debian package

Open up a terminal. Execute following command in `install/` directory:

```
sudo apt install ./softcalc_1.0_all.deb
```



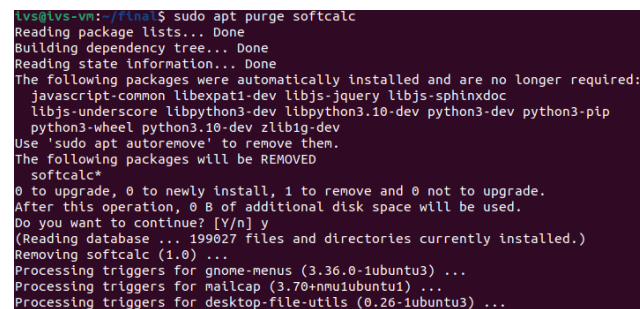
```
lvs@lvs-vm: ~/final$ sudo apt install ./softcalc_1.0_all.deb
[sudo] password for lvs:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'softcalc' instead of './softcalc_1.0_all.deb'
The following NEW packages will be installed:
  softcalc
0 to upgrade, 1 to newly install, 0 to remove and 0 not to upgrade.
Need to get 0 B/15,5 kB of archives.
After this operation, 0 B of additional disk space will be used.
Get:1 /home/lvs/final/softcalc_1.0_all.deb softcalc all 1.0 [15,5 kB]
Selecting previously unselected package softcalc.
(Reading database ... 199020 files and directories currently installed.)
Preparing to unpack .../lvs/final/softcalc_1.0_all.deb ...
Requirement already satisfied: lark in /usr/local/lib/python3.10/dist-packages (1.1.5)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv
Unpacking softcalc (1.0) ...
Setting up softcalc (1.0) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu3) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu3) ...
Processing triggers for mailcap (3.70+nmuiubuntu1) ...
N: Download is performed unsandboxed as root, as file '/home/lvs/final/softcalc_1.0_all.deb' couldn't be accessed by user '_apt'. - pkgAcquire::Run (13: Permission denied)
```

Figure 1: Installation of Softhorn Calculator

You can use the calculator by running `softcalc` command in the terminal or by pressing Meta button on the keyboard and typing `softcalc` and pressing enter.

To uninstall softhorn calculator execute following command from any directory in terminal:

```
sudo apt purge softcalc
```



```
lvs@lvs-vm: ~/final$ sudo apt purge softcalc
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  javascript-common libexpat1-dev libjs-jquery libjs-sphinxdoc
  libjs-underscore libpython3-dev libpython3.10-dev python3-dev python3-pip
  python3-wheel python3.10-dev zlib1g-dev
Use 'sudo apt autoremove' to remove them.
The following packages will be REMOVED:
  softcalc*
0 to upgrade, 0 to newly install, 1 to remove and 0 not to upgrade.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n] y
(Reading database ... 199027 files and directories currently installed.)
Removing softcalc (1.0) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu3) ...
Processing triggers for mailcap (3.70+nmuiubuntu1) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu3) ...
```

Figure 2: Uninstallation of Softhorn Calculator

## 2.2 Manually

Softhorn calculator needs certain dependencies to run correctly. You need to install `python3`, `python3-tk` and `lark` module for `python3` using `python3-pip`.

You can do so by running these commands:

```
sudo apt install python3
sudo apt install python3-tk python3-pip
pip3 install lark
```

Next, navigate to `repo/src/` directory in and run following commands:

```
sudo mkdir /usr/share/softhorn/
sudo cp gui.py mathlib.py core.py /usr/bin/softhorn/
sudo cp icon.png /usr/share/pixmaps/
sudo touch /usr/bin/softcalc
```

Copy following text in the `softcalc` file:

```
#!/bin/sh
# -*- coding: utf-8 -*-

SOFTCALC_HOME=`dirname "$0" `
exec python3 "${SOFTCALC_HOME}/softhorn/gui.py"
```

After that, do the following.

```
sudo touch usr/share/applications/
```

Copy following text in the `softcalc.desktop` file:

```
[Desktop Entry]
Version=1.0
Categories=Science
Exec=softcalc
GenericName=Simple Calculator
Icon=icon.png
Name=Softcalc
Type=Application
X-KDE-StartupNotify=false
Comment=Simple calculator with basic functions
```

And execute final command.

```
sudo chmod +x /usr/bin/softcalc
```

You can use the calculator by running `softcalc` command in the terminal or by pressing Meta button on the keyboard and typing `softcalc` and pressing enter.

If you wish to manually uninstall Softhorn Calculator open up a terminal and run these commands:

```
sudo rm -r /usr/bin/softhorn/stddev.py /usr/bin/softcalc
sudo rm /usr/share/pixmaps/icon.png
sudo rm /usr/share/applications/softcalc.desktop
```

You can also unistall all the dependencies you have installed earlier:

```
sudo apt remove python3-tk pyhon3-pip
```

Uninstalling `python3` is not recommended as many other programs depend on it.

## 3 (Un)Installation of profiler

### 3.1 Using debian package

Open up a terminal. Execute following command in the `install/` directory:

```
sudo apt install ./softcalc-profiling_1.0_all.deb
```

You can run profiling by executing `softcalc-profiling` command in the terminal

To uninstall profiler execute following command from any directory in terminal:

```
sudo apt purge softcalc-profiling
```

### 3.2 Manually

Navigate to `repo/src/` directory and run following commands:

```
sudo cp stddev.py numbers_for_profiling.txt /usr/bin/softhorn/  
sudo touch /usr/bin/softcalc-profiling
```

Copy following text in the `softcalc-profiling` file:

```
#!/bin/sh  
# -*- coding: utf-8 -*-  
  
PROFILE_HOME=`dirname "$0" `  
exec python3 "${PROFILE_HOME}/softhorn/stddev.py"
```

And execute final command.

```
sudo chmod +x /usr/bin/softcalc-profiling
```

You can run profiling by executing `softcalc-profiling` command in the terminal

If you wish to manually uninstall profiler open up a terminal and run these commands:

```
sudo rm /usr/bin/softhorn/stddev.py  
sudo rm /usr/bin/softhorn/numbers_for_profiling.txt  
sudo rm /usr/bin/softcalc-profiling
```

## 4 Usage

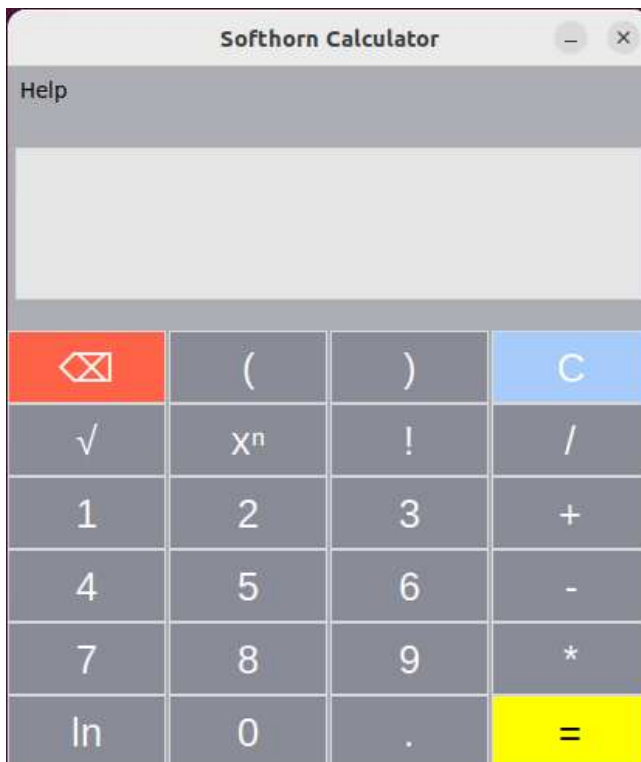


Figure 3: Softhorn Calculator

Buttons from 0 – 9 represent digits from 0 – 9.

Standard arithmetic functions:

- / – division
- + – addition
- – – subtraction
- \* – multiplication

Bonus functions:

- ( ) – parentheses
- . – decimal point

In figure 3 you can see softhorn calculator.

To close Softhorn Calculator click on the small cross in the right-up corner. To minimize the application simply click on the button right next to small cross. Use Help button and then Commands button to show brief manual on how to use all the functions.

If you click on the display, you can use your keyboard to insert numbers and all other functions. Use the red button to delete previous character or use backspace and use blue C button to clear whole display. Either press yellow = button or press enter to show the result.

Additional functions:

- $\ln$  – natural logarithm.  
Insert logarithm and then the value.
- $\sqrt[n]{x}$  – root.  
Insert degree of the root  $n$  press the root button and insert value of  $x$
- $x^n$  – power of a number  
Insert value  $x$ , then press the button and insert number  $n$  that will raise value of  $x$ .
- ! – factorial  
Insert number and then factorial sign.