



Praktické aspekty vývoje software

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Project 2 – User Manual

Team "Kuře před E112"

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1 Introduction

SwagAnimeDripCalculator is a simple calculator that can count with precision. its minimal design and many functions will leave you in shambles. This product was developed as a project in subject IVS.

2 Installation

Installation of our calculator is intuitive and fast. The installer works only on Unix operation systems (e.g. Ubuntu).

2.1 Requirements

In order to run the calculator and installer you must have the following requirements installed on your PC:

- Python3 - install command `sudo apt install python3`
- PyQt5 - install command: `pip install pyqt5` (pip command can be installed by `sudo apt install python3-pip`)

2.2 How to install

To install the calculator on your device, you need to have a UNIX OS (Calculator was developed for Ubuntu). After you have downloaded the installer, go to the folder where it's downloaded (using `cd`) command and then use the following command: `sudo apt install ./sadcalc_1.0_amd64.deb`

```
ivs@vm:~/Stazene$ sudo apt install ./sadcalc_1.0_amd64.deb
Načítají se seznamy balíků... Hotovo
Vytváří se strom závislostí... Hotovo
Načítají se stavové informace... Hotovo
Pozn: Vybírám „sadcalc“ místo „./sadcalc_1.0_amd64.deb“
Následující balíky byly nainstalovány automaticky a již nejsou potřeba:
  apt aptport-symptoms aptdaemon-data avahi-utils cups-ppk-helper dc dconf-cli distro-info distro-info-data
```

Figure 1: Install calculator app command

To install the profiler on your device, you also need to have a UNIX OS and use the following command: `sudo apt install ./sadcalcprof_1.0_amd64.deb` This procedure is nearly the same as installing the calculator.

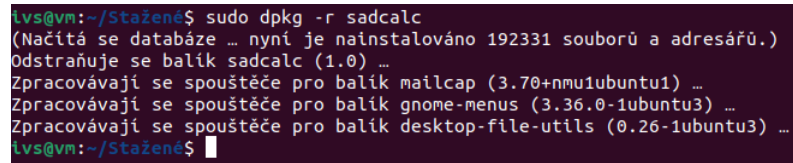
```
ivs@vm:~/Stazene$ sudo apt install ./sadcalcprof_1.0_amd64.deb
[sudo] heslo pro ivs:
Načítají se seznamy balíků... Hotovo
Vytváří se strom závislostí... Hotovo
Načítají se stavové informace... Hotovo
Pozn: Vybírám „sadcalcprof“ místo „./sadcalcprof_1.0_amd64.deb“
Následující NOVÉ balíky budou nainstalovány:
  sadcalcprof
0 aktualizováno, 1 nově instalováno, 0 k odstranění a 0 neaktualizováno.
```

Figure 2: Install profiler command

2.3 How to uninstall

To uninstall the calculator on your device, you need to have a UNIX OS and use the following command:

```
sudo dpkg -r sadcalc
```

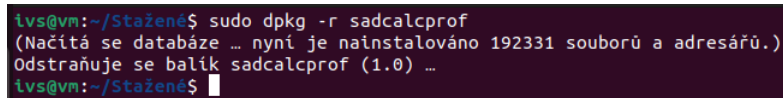


```
lvs@vm:~/Staženě$ sudo dpkg -r sadcalc
(Načítá se databáze ... nyní je nainstalováno 192331 souborů a adresářů.)
Odstraňuje se balík sadcalc (1.0) ...
Zpracovávají se spouštěče pro balík mailcap (3.70+nmu1ubuntu1) ...
Zpracovávají se spouštěče pro balík gnome-menus (3.36.0-1ubuntu3) ...
Zpracovávají se spouštěče pro balík desktop-file-utils (0.26-1ubuntu3) ...
lvs@vm:~/Staženě$
```

Figure 3: Uninstall calculator app command

To uninstall the profiler on your device, you also need to have a UNIX OS and use the following command:

```
sudo dpkg -r sadcalcprof
```



```
lvs@vm:~/Staženě$ sudo dpkg -r sadcalcprof
(Načítá se databáze ... nyní je nainstalováno 192331 souborů a adresářů.)
Odstraňuje se balík sadcalcprof (1.0) ...
lvs@vm:~/Staženě$
```

Figure 4: Uninstall profiler command

3 How to run the program

To run the calculator you can use the terminal or run it by launching the app. To run it using the terminal, run the following command: `sadcalc`

```
ivs@vm:~/Staženė$ sadcalc
```

Figure 5: Running the calculator through terminal

After installation you can also search for the app on your PC and open it manually.

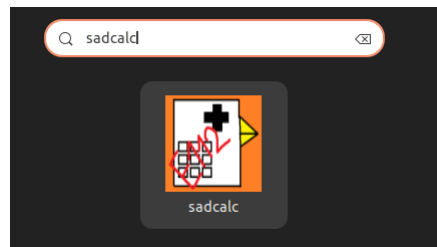


Figure 6: Running the calculator

You can run the profiler using two different methods, the first method only outputs one number, while the other method is more in-depth. Keep in mind you must have a `.txt` file which contains sample numbers for the profiler. Run this command in the terminal for the first option: `sadcalcprof < input.txt`

```
ivs@vm:~/Staženė$ sadcalcprof < input.txt
3.0276503540974917
```

Figure 7: Running the profiler - first method

Run this command in the terminal for the second option: `sadcalcprof-profile < input.txt`

```
ivs@vm:~/Staženė$ sadcalcprof-profile < input.txt
3.0276503540974917
  279 function calls (278 primitive calls) in 0.002 seconds

Ordered by: standard name

ncalls  tottime  percall  cumtime  percall filename:lineno(function)
1      0.002      0.002      0.002      0.002 /usr/lib/python3.10/site-packages/...
```

Figure 8: Running the profiler - second method

4 Functions

Input can be done by using the keyboard or pressing the buttons included in the calculator. The calculator takes one number at a time. You have to input a number, choose an operation and select another number if the operation is binary. The calculator also enables you to change skins (see section 4.1) and change floating point precision. When given invalid input that doesn't have a solution in real numbers, the calculator shows an error message. The calculator can only count binary operations (or unary in factorial).

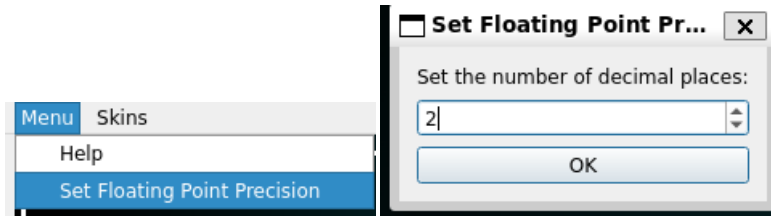


Figure 9: Setting the floating point precision

4.1 Layout

The calculator offers a variety of skins for users to use (see Figure 10 and 11). Calculator’s layout doesn’t really differ from the usual. On the left side there are buttons for the numbers, in the last row decimal point and the other buttons are operators and functions. C deletes your input in the calculator, backspace removes numbers from the right etc - more in section 4.2

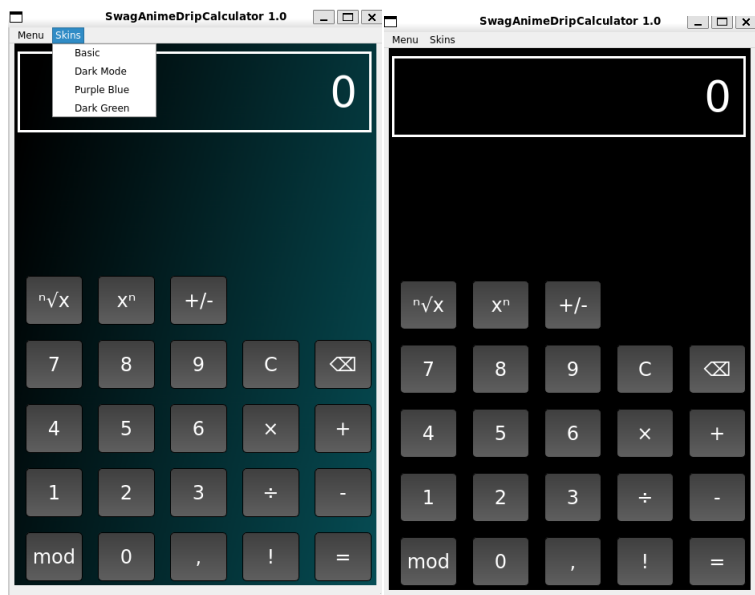


Figure 10: Skins: basic and dark mode

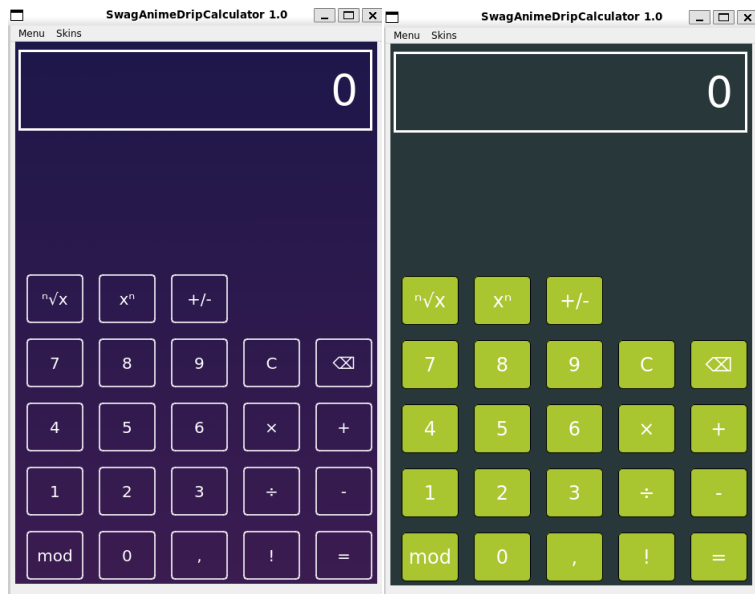


Figure 11: Skins: purple blue and dark green

4.2 Operators and buttons

The available arithmetic operations in our calculator are:

- Addition +
- Multiplication *
- Subtraction −
- Division /
- Modulo `mod`
- Power a^n
- Root $\sqrt[n]{a}$
- Factorial $\times !$

Other buttons that help you with controlling the calculator:

- C - resets the user input
- Backspace - removes input, one number after each press
- = - shows the result of given operation
- . - used for decimal numbers
- +/- - gives us opposite number