# CLI Calculator Manual

(github.com/majestic53/Cli-Calc)

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David Jolly

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# I. Introduction

CLI Calculator is a small terminal based calculator utility which can be used in conjunction with other terminal based utilities to perform various mathematical operations. CLI Calculator supports alpha-numeric variables as well as a variety of mathematical functions. CLI Calculator can take expressions as input, or if no input is given, the calculator enters an interactive mode.

# II. Installation

Instructions for compiling CLI Calc from source code

- **Requirements** (tested on):
  - libmpfr 3 or newer
  - libgmp 3 or newer
  - g++ 4.4.3 or newer
  - make 3.8 or newer

- For Debian:
  - sudo apt-get install build-essential libgmp3-dev libmpfr-dev make

- **Install**:
  - make
  - make install

  (might require administrator privileges)

- **Uninstall**:
  - make uninstall

  (might require administrator privileges)

# III. How to Use

In a terminal window, type:

`cli-calc <expression>...` (to evaluate a series of expressions)

or

`cli-calc` (to enter interactive mode)

Once in interactive mode, a prompt (“>> “) will be given. At this point the user can issue expressions, which will be evaluated when the user hits return:

```
>> (2 + 2) * 4 / float 5
3.2
>>
```

Alpha-numeric variables are supported, as well as a variety of mathematical functions (see the section below for a complete list of functions):

```
>> make x fact 10
```
(assign the variable x the value of 10!)

```
>> state
```
(view the contents of the global state)

```
x - - > 3628800
>>
```

(The global state can be reset by issuing the command 'reset')

# IV. Functions

When in interactive mode, the user can issue the command 'help' for a full list of available functions.

| | | |
|---|---|---|
| about | -- | print credits |
| abs | -- | absolute value |
| acos | -- | arc cosine |
| asin | -- | arc sine |
| atan | -- | arc tangent |
| ceiling | -- | ceiling (maintains type) |
| constants | -- | e, pi |
| cos | -- | cosine |
| cosh | -- | hyperbolic cosine |
| fact [n] | -- | factorial |
| fib [n] | -- | Fibonacci sequence |
| float | -- | cast to floating-point |
| floor | -- | floor (maintains type) |
| int | -- | cast to integer |
| ln | -- | natural log (log-base-e) |
| log2 | -- | log-base-2 |
| log10 | -- | log-base-10 |
| make | -- | assign an id to an expression |
| rand | -- | normalized random numbers (0-1) |
| reset | -- | resets the global state |
| round | -- | round to nearest integer (maintains type) |
| sin | -- | sine |
| sinh | -- | hyperbolic sine |

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