

# VICEL REFERENCE MANUAL

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## Abstract

Vicel is a free open source TUI spreadsheet editor. You can read, modify and save data stored in rows and columns. It aims to be an alternative to proprietary non gratis well known Microsoft program, for non professional usage.

## About development

For now it is being developed by Hugo Coto as a side project. He does that because for college reasons he has to use the Windows-only mouse-centered similar and he almost went ill. The plan for the future is to reach a stable version with all and no more than the useful and needed features to have an usable program for non professional usage. What I mean with no professional is that it's not planned to support any graphs neither economic formulas or such specific things. It's true that with builtins someone can adapt vicel to his own necessities.

## Installation

This section would guide you to install vicel from source. Source is available in [github](https://github.com/hugoocoto/vicel). First, it's needed to clone the repo to your own machine.

```
git clone "https://github.com/hugoocoto/vicel"
cd vicel
```

Then, there are two options to install it.

1. Local installation: run `make`.
2. Global installation: run `make install`. This would move the executable to `~/LOCAL/BIN`, make sure this route is in path.

After installation, it will be available. Note that local installation requires `./vicel` while if installed globally it can be called just by name: `vicel`.

## Open Vicel

As vicel is a TUI program you have to start it from the command line. If you installed it in `~/.LOCAL/BIN` then you can start it as a normal terminal tool:

```
vicel filename [options]
```

If the filename is omitted it opens an unnamed sheet. Note that this sheet can't be saved. Also, you can't open more than one file at the same time.

## Options

The options supported are the following:

Command	Description
<code>-m, --use-mouse</code>	Enable mouse support
<code>-D, --debug</code>	Enable debug output
<code>-c, --config-file</code>	Set custom file path
<code>--dump-options</code>	Print in stdout the default options and exit
<code>--repl</code>	Open a vspl repl and exit on repl close

For example, if you want to open the file `./SHEETS/TABLE.CSV` with a config file in `./CONFIG/VICEL.TOML`, the command line should look like that:

```
vicel sheets/table.csv -c config/vicel.toml
```

## Moving around

As a vim enthusiast, movement is keyboard centered, and use the vim default `h j k l`. Every action can be prefixed with a number, so it would be executed that amount of times. The following table describes the basic movement.

Command	Description
<code>h, l, j, k</code>	Move cursor left, right, down, up
<code>\$</code>	Go to last cell of the current row
<code>^</code>	Go to first cell of the current row
<code>gg</code>	Go to first cell of the current column
<code>G</code>	Go to last cell of the current column
<code>g0</code>	Same as <code>^</code> and <code>gg</code>

## Scrolling

When using previous commands the editor auto scrolls if it's needed. But sometimes you would want to scroll just because. So, the following commands can be used to move the editor view without move the cursor (if still in the view).

Command	Description
<code>eh</code>	Scroll left
<code>ej</code>	Scroll down
<code>ek</code>	Scroll up

Command	Description
el	Scroll right

Some users may find it reversed. Thus, the option `NATURAL_SCROLL=TRUE` is implemented. Setting it to true reverses the scrolling.

## Write or edit

To write text in a cell, move the cursor there and press `i`. A text input box would be open at the cell. After writing, press `ENTER` to save it. The data type would be automatically calculated by the program. Every number, with or without a fractional part separated by a dot would be interpreted as a `NUMBER`. If the text written starts with an equal sign it would be interpreted as a formula. Other formats would be set to `TEXT`.

Command	Description
i	insert/modify text
d	delete cell content
v	toggle cell selection

The valid types are described in the following table by its formal representation.

Type	Formal
NUMBER	<code>[0-9]+(“.”[0-9]+)?</code>
FORMULA	<code>“=” FORMULA BODY</code>
TEXT	<code>!NUMBER &amp;&amp; !FORMULA</code>

## Formula

Formulas are expressions that evaluate to a valid value. They start with an equal sign. The function body has to contain a valid expression.

Type	Description	Example
Literal	Number, text, identifier or range	see below
Number	As cell type <code>NUMBER</code>	5987, 45.6
Text	Alphas or text surrounded by <code>'</code>	hello, '5.9'
Identifier	Cell reference by name as <code>ColRow</code>	A0, b5, ZZ98
Range	Cell range as <code>ID:ID</code>	A0:A2, A7:C8
Arithmetic operators	Evaluate arithmetic expressions	<code>+</code> , <code>-</code> , <code>/</code> , <code>*</code> , <code>^</code>
Comparison operators	Compare two expressions	<code>&gt;</code> , <code>&lt;</code> , <code>&gt;=</code> , <code>&lt;=</code> , <code>==</code> , <code>!=</code> , <code>!</code>
functions	Reserved names that convert some input in some output, with the form <code>NAME(ARGS,...)</code>	<code>sum(A0,A1)</code>

Todo: expand formula reference

## Builtin functions

Builtin functions can be called in formulas. It takes numbers, text or cells as arguments and return a value.

- **sum(...)**: Sum zero or more arguments and return the result as if adding it one by one.

- **mul(...)**: Multiply zero or more arguments.
- **avg(...)**: Get the average of zero or more values.
- **count(...)**: Get the number of non empty arguments.
- **min(...)**: Get the min number between arguments.
- **max(...)**: Get the max number between arguments.
- **if(cond, iftrue [, else])**: Get the value depending on the condition.
- **color(color, cells [, ...])**: Apply color to one or more cells
- **colorb(color, cells [, ...])**: Apply color if not done yet to one or more cells
- **literal(v)**: Evaluates to v, literally. Can be used to store numbers as strings.

Functions accepts ranges as parameters. They are two valid cells separated by a :. For example, `sum(A0:A9)` is the same as sum the first 10 numbers in row A.

### Advanced write: write and move

There is a builtin feature to automatically move before insert text. It is useful if you need to input a big amount of data in a given direction. The idea is to prefix the following commands with a number, to do it for a given amount of times.

Command	Description
<code>gih, gij, gik, gil</code>	insert text and move in the given direction

### Modify sheet structure

There are some commands to add/delete rows and columns. Note that formula identifier would not change on row/col insertion/deletion.

Command	Description
<code>g#</code>	Add s row/column: see below
<code>gd#</code>	Delete a row/column: see below
<code>gj</code>	Add a new row after the cursor
<code>gl</code>	Add a new column after the cursor
<code>gk</code>	Add a new row before the cursor
<code>gh</code>	Add a new column before the cursor
<code>gJ</code>	Add a new row at the end
<code>gL</code>	Add a new column at the end
<code>gK</code>	Add a new row at the start
<code>gH</code>	Add a new column at the start
<code>gdj</code>	Delete row and move up
<code>gdl</code>	Delete column and move right
<code>gdk</code>	Delete row and move down
<code>gdh</code>	Delete column and move left

### Expand cells

There is a feature to fill the next cell value based on the previous one and a direction. Numbers add 1 and formula identifiers recalculate depending on the direction. You can prevent modification by prefixing the identifier with \$ before the column letter (freeze column) or number (freeze row). The mappings to do this are described in the following table.

Command	Description
J, K, H, L	Expand current cell down, up, left, right (and move)

## Copy - Paste

As a vim user, you might want to copy-paste things around. Unfortunately, it's only possible to copy a single cell value and paste it in a single cell. Note that deletion also copy the content of the cell, it would sound natural for vim users.

Command	Description
p	paste
y	yank (copy)

## Other commands

There are another useful commands, described below.

Command	Description
q	Save and quit
w	Write (save)
r	Re-render the screen
Ctrl-c	Quit without save

## Mouse support

Despite the early development idea was to create a fully mouseless experience, some users may find convenient to do some actions with their mouse. It can be enabled setting the option `WINDOW.USE_MOUSE` to `TRUE`.

This is an experimental feature. At the time of writing, the cursor follows the mouse and you can drag and drop cell values using left click (drag on press, drop on release).

Right click over a cell enters insert mode. If you click on a cell, its name would be appended to input. If you press the mouse over the cell A and move to the cell B and then release the right button, the range A:B would be written.

Mouse wheel scrolls the screen. If you want to scroll in the other direction, pressing the mouse wheel changes the direction.

Command	Description
Enable it	<code>window.use_mouse = true</code>
Mouse move	Cursor follows mouse pointer
Drag and drop (Left button)	Delete and paste cell value
Right click	Enter insert mode on cell
Drag and drop on insert (Left button)	Write selected range (From drag to drop or a single cell if click on it)
Wheel up/down	Scroll the view
Wheel press	Toggle scroll between horizontal and vertical

## Configuration

### vicel.toml

You can customize some values using a vicel vispel configuration file. By default, vicel looks for this file in the following paths:

- ./VICEL.VSPL
- ~/VICEL.VSPL
- ~/.CONFIG/VICEL.VSPL
- ~/.CONFIG/VICEL/VICEL.VSPL

If you want to use a different file, you can specify it with the `-c` or `--config-file` flag, followed by the full path to the file. The configuration format is vspl. You won't find any information about this language as is written by myself. Don't worry, you only need to assign values to yet declared variables. You can check out the configuration I currently use [here](#).

### Color

Options in this table controls colors in all the editor.

```
ui = "49;30";           // All ui text except ui_text_cell
ui_cell_text = "49;39;1"; // Cell text representation and previous message
ui_report = "41;39";     // Error/report message at the bottom right
cell = "49;39";          // Cell color if not custom color applied
cell_over = "49;39;7;1"; // Cell color if cursor is over cell
cell_selected = "49;32"; // Cell color if selected
ln_over = "49;32;7;1";   // Row/col number/alpha if cursor is in this row/col
ln = "49;32";            // Row/col number/alpha default color
sheet_ui = "49;39";      // UI elements inside sheet as separators
sheet_ui_over = "45;39;7;1"; // UI elements inside sheet if cursor is over they
sheet_ui_selected = "45;32"; // UI elements inside sheet if assigned cell is
selected
insert = "49;39";        // Color used when cell input text is being written
```

### UI and others

```
num_col_width = 5;      // Number column width
col_width = 14;         // Column width (min is cell_l_sep + cell_r_sep + 1)
row_width = 1;          // Other size is not supported
use_cell_color_for_sep = true; // Use cell color for separators instead of sheet_ui
cell_l_sep = " ";        // Left separator
cell_r_sep = " ";        // Right separator
save_time = 0;           // Time interval (in seconds) where save is call. 0
means no autosave.
use_mouse = false;       // Enable mouse capturing
```

This is the ui customization, where you can modify how the editor looks like (Also in WINDOW).

```
// Top bar
status_l_stuff = "vicel | "; // Top Left bar text
status_filename = "filename: "; // Between status_l_stuff and filename
status_r_end = "github: hugocoto/vicel"; // Top right-align bar text

// Bottom bar
ui_celltext_l_sep = "cell text: "; // Bottom Left bar text, before cell repr text
ui_celltext_m_sep = " (";          // Between cell text and cell type
ui_celltext_r_sep = ") ";          // Before cell type, left-aligned
ui_status_bottom_end = "";         // Bottom right-align text
```