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# Ditheridoo

Dither me like one of your French girls.

Ditheridoo is a multicolor bitmap editor for Commodore 64. It runs on 64 bit versions of Linux, MacOS, Windows and other systems supported by Python.

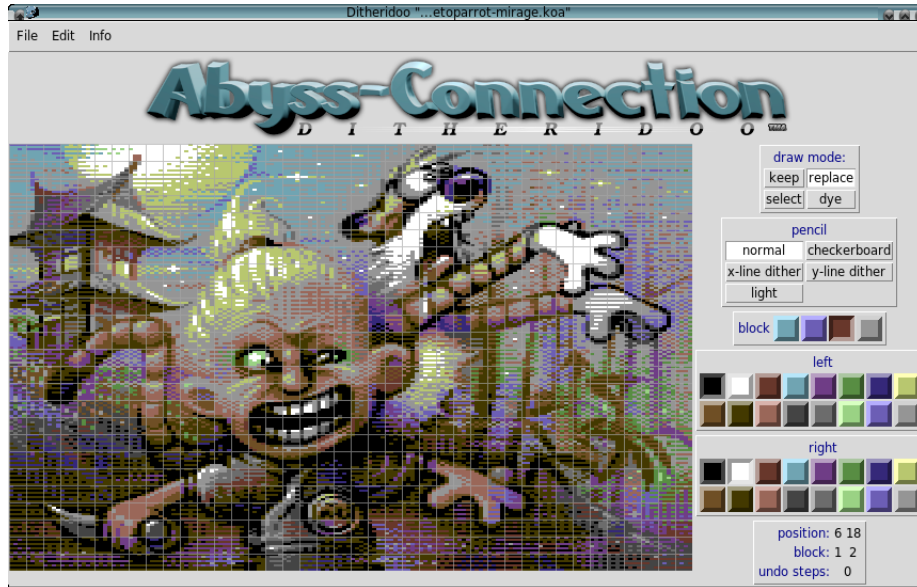


Figure 1: screenshot

## Why Ditheridoo?

reason	description
open source	easy to modify and to improve, any useful contribution is highly welcome
portable	available on Linux, MacOS, Windows and any other system supported by Python3
easy dithering	checkerboard, x-line, y-line, light dither modes available, more might be implemented in the future
interesting for coders	total control which values are set in draw-modes "select color" and "dye", see built-in help or cheatsheet.md for details

## Usage

For a list of quick keyboard shortcuts and other information see file cheatsheet.md or the full documentation in /doc.

## File Format

The multicolor bitmap is stored in the widely-spread KoalaPainter (C64) format:

- 2 bytes load address
- 8000 bytes raw bitmap data
- 1000 bytes raw “Video Matrix” (screen) data
- 1000 bytes raw “Color RAM” data
- 1 byte background data

## Authors

- fieserWoLF/Abyss-Connection - *code*, *graphics* - <https://github.com/fieserWoLF> <https://csdb.dk/scener/?id=3623>
- The Mysterious Art/Abyss-Connection - *graphics* - <https://csdb.dk/scener/?id=3501>
- Pararaum/The 7th Division - *example image* - <https://csdb.dk/scener/?id=31223>
- Mirage/Booze Design - *example image* - <https://csdb.dk/scener/?id=739>

## Getting Started

Ditheridoo comes in two flavors:

- standalone executable for 64-bit systems Linux, MacOS/Darwin and Windows (see releases)
- Python3 script

### Run the standalone executable

Just download your bundle at releases and enjoy. Keep in mind that only 64bit systems are supported as I could not find a 32bit system to generate the bundle.

#### Note for Windows users

If some antivirus scanner puts Ditheridoo into quarantine because it suspects a trojan or virus, simply put it out there again. It isn't harmful, I used PyInstaller to bundle the standalone executable for you. Unfortunately, the PyInstaller bootloader triggers a false alarm on some systems. I even tried my best and re-compiled the PyInstaller bootloader so that this should not happen anymore. Keep your fingers crossed ;)

#### Note for MacOS users

Your system might complain that the code is not signed by a certificated developer. Well, I am not, so I signed the program on my own.

"Ditheridoo" can't be opened because it is from an unidentified developer.

You need to right-click or Control-click the app and select "Open".

### Run the Python3 script directly

Download *ditheridoo.py* and the whole *resource* - directory into the same folder on your computer.

#### Prerequisites

At least this is needed to run the script directly:

- python 3
- python tkinter module
- python "The Python Imaging Library" (PIL)

Normally, you would use pip like this:

```
pip3 install tk pillow
```

On my Debian GNU/Linux machine I use apt-get to install everything needed:

```
apt-get update  
apt-get install python3 python3-tk python3-pil python3-pil.imagetk
```

# Ditheridoo Cheatsheet

## GUI controls

key	function
Ctrl+q	quit
Ctrl+o	open file
Ctrl+s	save file
Ctrl+p	preferences
Ctrl+h	this help

## mouse control

mouse action	function
right mouse button	set color
left mouse button	set other color
middle mouse button	scroll image
mouse wheel	zoom in and out

## editing

key	function
Ctrl+z	undo (single pixel editing only, not for block-commands like cut or paste)
Ctrl+x	cut
Ctrl+c	copy
Ctrl+v	paste
m	set marker
Ctrl+n	normal pencil
Ctrl+b	checkerboard dither pencil
Ctrl+d	x-line dither pencil
Ctrl+y	y-line dither pencil
Ctrl+l	light dither pencil

## editor visuals

key	function
plus/ minus	zoom in and out
cursor keys	scroll image

### left mouse-button color

key	function
0-9 a-f	select color
F1	screen-color-1 of block
F2	screen-color-2 of block
F3	colorram of block
F4	background

### right mouse-button color

key	function
Shift+ 0-9 a-f	select color
Shift+F1	screen-color-1 of block
Shift+F2	screen-color-2 of block
Shift+F3	colorram of block
Shift+F4	background

Note: If shift does not work for you, please, try out some other modifier that works with your keyboard layout like Apple-key, fn-key or whatever.

### color to replace (only when in draw mode ‘select’):

key	function
F5	screen-color-1 of block
F6	screen-color-2 of block
F7	colorram of block
F8	background
Space	no overwriting

### notes: draw-modes

Can be set in settings window. Behavior if too many colors are used (color-clash):

mode	description
keep color	keep color if too many colors are used
replace color	replace color if too many colors are used
select color	overwrite selected data: screen-color1, screen-color2, colorram or background



mode	description
dye	do not touch bitmap, only overwrite color

# Changelog

## Future plans

- implement sanity check: accept only standard koala format files
- implement real undo for all functions
- implement hires drawing mode
- implement different pencil sizes
- implement: freely adjustable edit window
- maybe: preview window: indicate current view with a visible frame
- maybe: preview window: move visible frame by dragging the mouse
- maybe: “draw mode: select”: avoid moving of the controls

Any help and support in any form is highly appreciated.

If you have a feature request, a bug report or if you want to offer help, please, contact me:

<http://csdb.dk/scener/?id=3623> or [wolf@abyss-connection.de](mailto:wolf@abyss-connection.de)

## Changes in 1.1

(next release candidate)

- mostly rewritten code, split up into segments
- bug fixes

## Changes in 1.0

- initial release

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