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# Camomile

Camomile is a plugin with Pure Data (http://msp.ucsd.edu/software.html) embedded that offers to load and to control patches inside a digital audio workstation. The plugin is available as VST, VST3 and Audio Unit for Windows, Linux and MacOS.

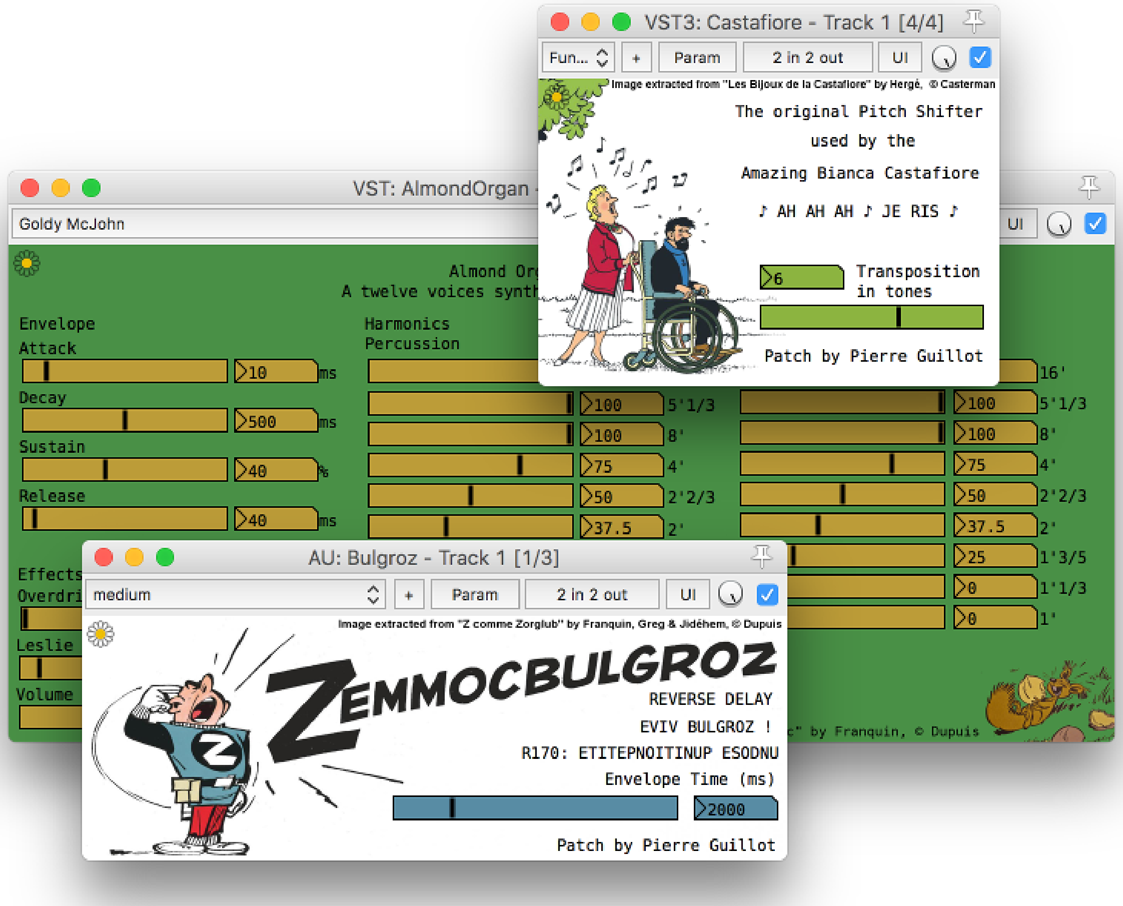


Image extracted from "Les Bijoux de la Castafiore" by Hergé, © Casterman

The original Pitch Shifter used by the Amazing Bianca Castafiore

♪ AH AH AH ♪ JE RIS ♪

6 Transposition in tones

Patch by Pierre Guillot

Goldy McJohn

Almond Or
A twelve voices synt

Envelope
Attack 10 ms
Decay 500 ms
Sustain 40 %
Release 40 ms

Harmonics
Percussion

100 5'1/3 100 5'1/3
100 8' 100 8'
75 4' 75 4'
50 2'2/3 50 2'2/3
37.5 2' 37.5 2'
16'
25 1'3/5
0 1'1/3
0 1'

Effects
Overdri
Leslie
Volume

c" by Franquin, © Dupuis

medium

Image extracted from "Z comme Zorglub" by Franquin, Greg & Jidéhem, © Dupuis

REVERSE DELAY
EVIV BULGROZ !
R170: ETITEPNOITINUP ESODNU
Envelope Time (ms) 2000

Patch by Pierre Guillot

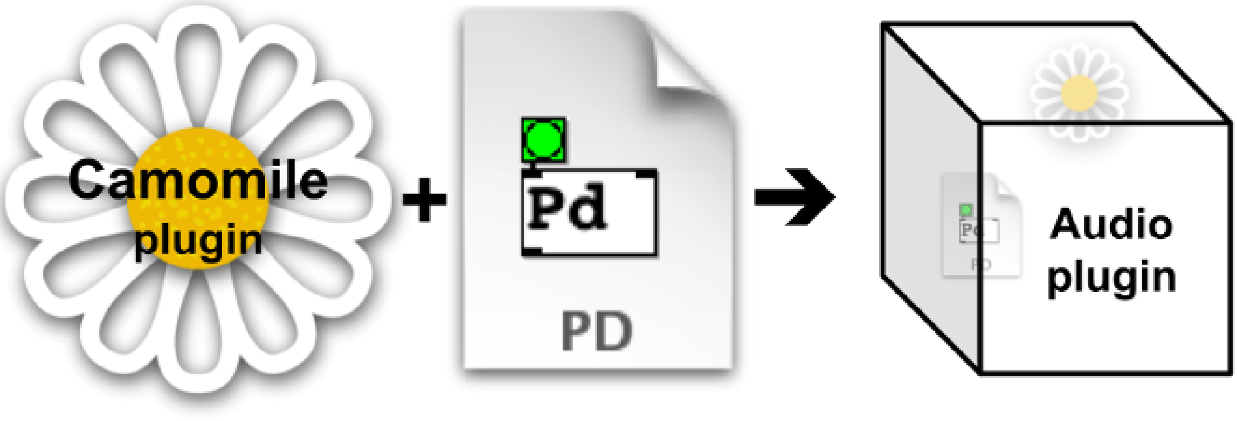
# Download the plugins

The current stable version of the plugin is 1.0.3 (https://github.com/pierreguillot/Camomile/releases). The current documentation is destined to this version. Even if some minor changes can happen, the general behavior of the version will be preserved.

The version 0.0.7 (https://github.com/pierreguillot/Camomile/releases/tag/v0.0.7-beta) of the plugin is now obsolete but its documentation (https://github.com/pierreguillot/Camomile/wiki/v0.0.7---Instructions) is preserved.

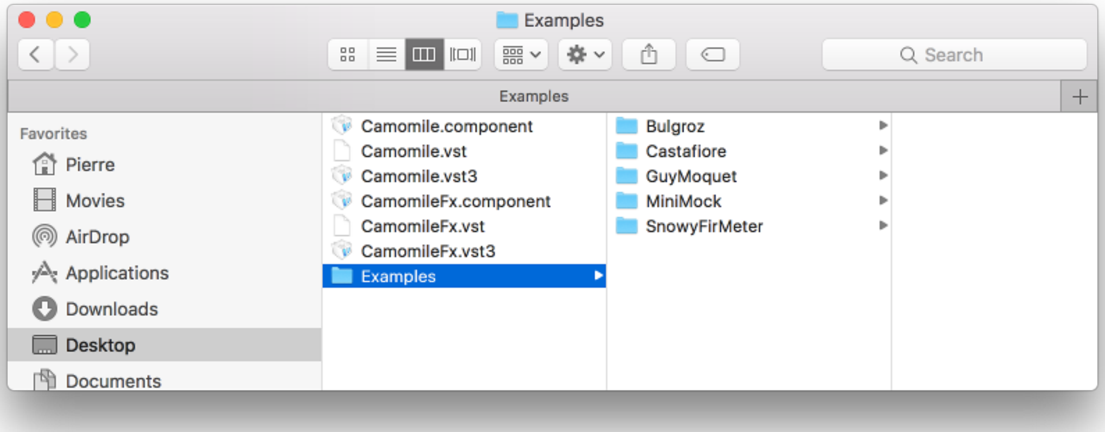
# How to generate plugins

The Camomile plugins are a set of meta plugins. It means that the plugins of the distribution can't be directly loaded in a digital audio workstation but must be used to generate new plugins associated with Pure Data patches that will be loadable in the digital audio workstations.



The distribution contains a set of folders that can be used to generate plugins. This tutorial presents how to generate these examples but the approach will be the same for the plugins that you'll create. MacOS users can also watch this tutorial (https://vimeo.com/253586694).

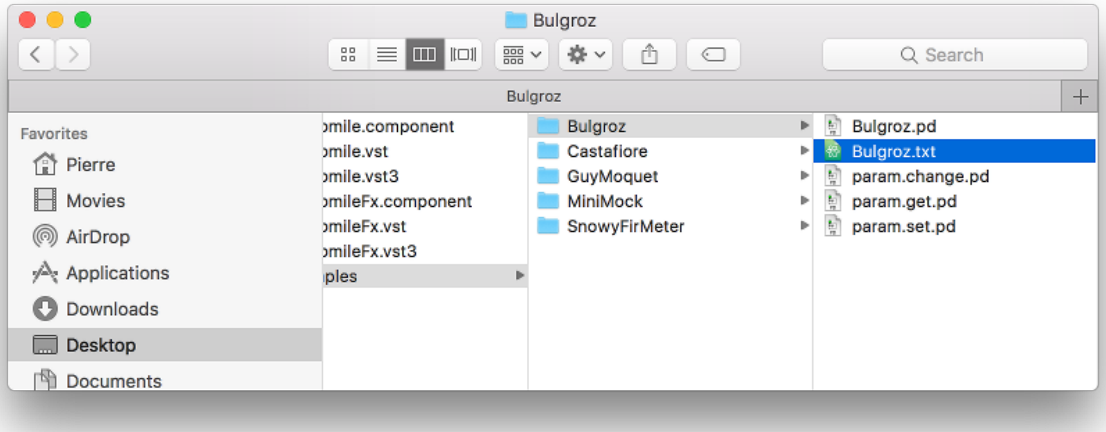
1. Open the *Examples* folder in the distribution. Each folder owns the patches and the informations of a plugin.



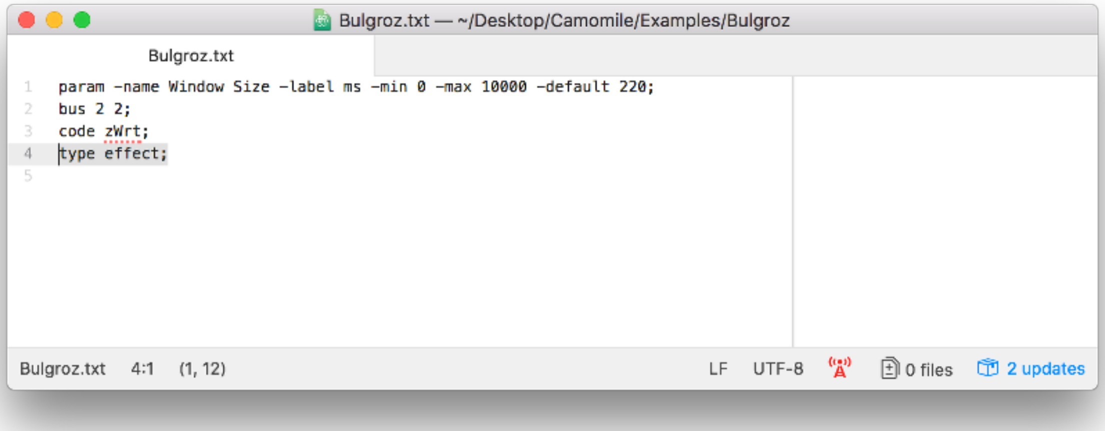
Camomile.component
Camomile.vst
Camomile.vst3
CamomileFx.component
CamomileFx.vst
CamomileFx.vst3
Examples

Bulgroz
Castafiore
GuyMoquet
MiniMock
SnowyFirMeter

2. Choose the folder of the plugin that you want to generate.

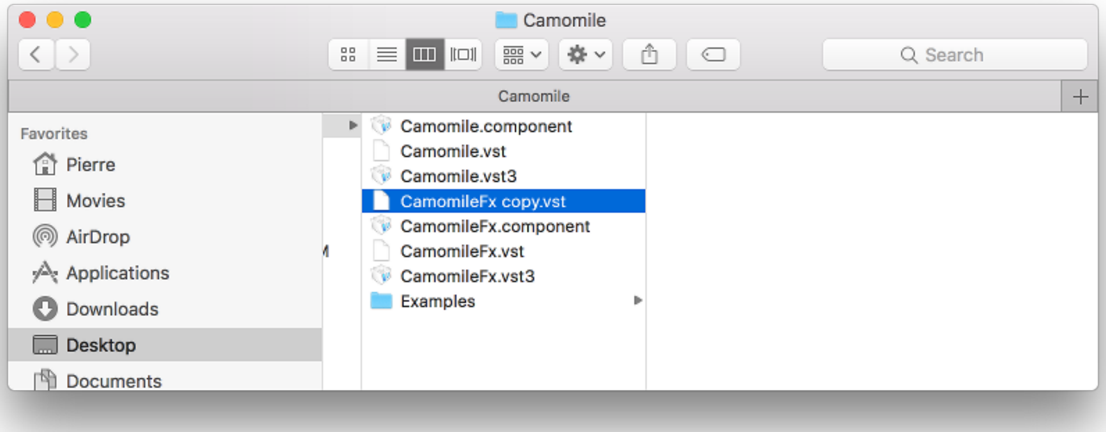


3. Open the *txt* file that has the same name as the plugin and find the line that starts with *type*.

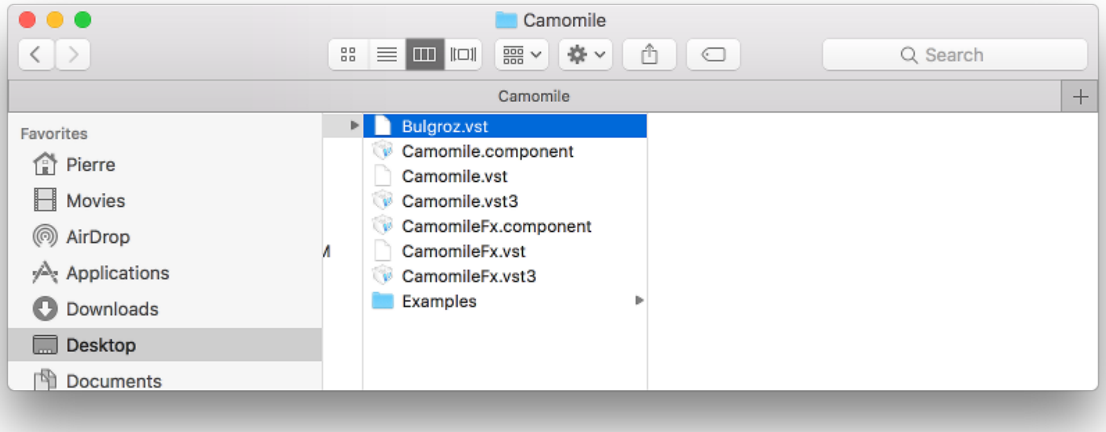


```
param -name Window Size -label ms -min 0 -max 10000 -default 220;
bus 2 2;
code zWrt;
type effect;
```

4. If the type is *effect*, copy the *CamomileFx* plugin that you want to create (*.dll*, *.lib*, *.vst*, *.vst3*, or *.component*), otherwise if the type is *instrument* copy the *Camomile* plugin of your choice.



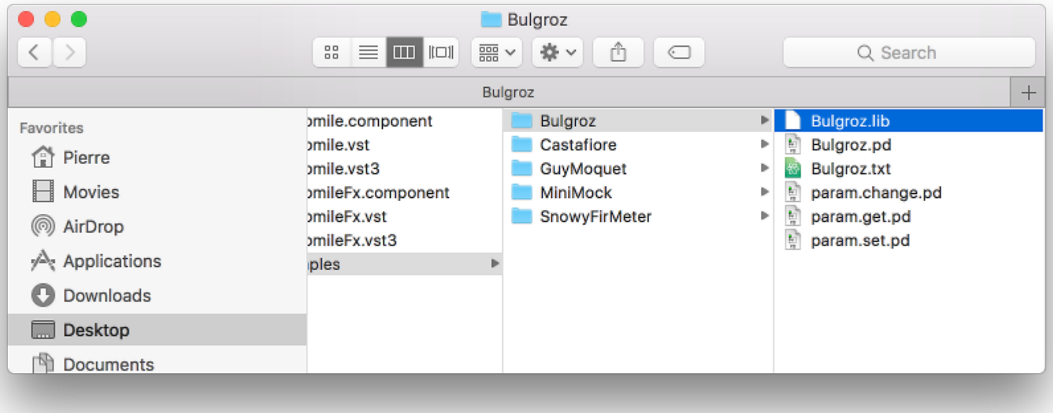
5. Rename the Camomile plugin with the name of the plugin folder.



6. Integrate the patches and the dependencies to the new plugin. The approach is slightly different depending on the operating system (Windows, MacOS and Linux) and the type (Audio Unit or VST).

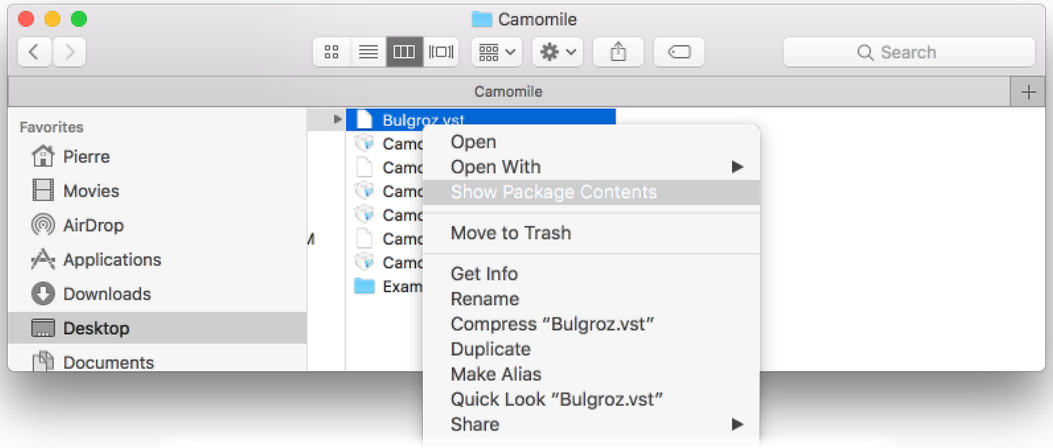
   - Windows & Linux

     Copy the plugin (*.dll*, *.vst3* or *.lib*) in the plugin folder.

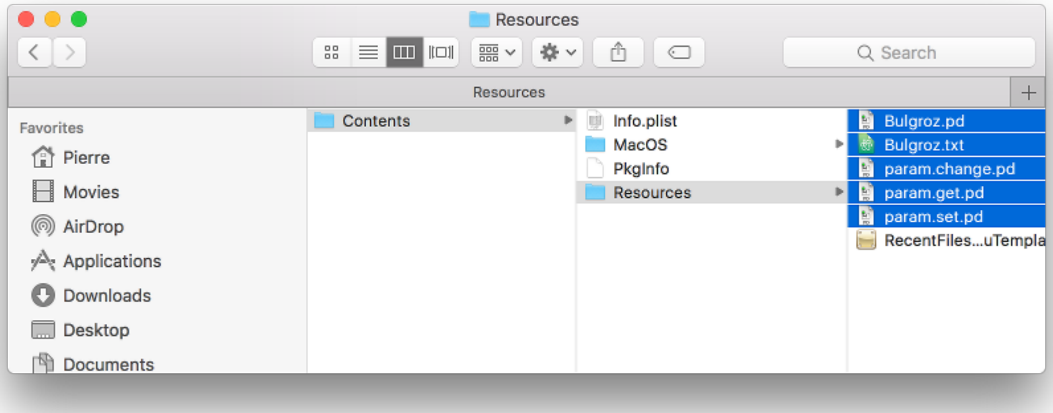


   - MacOS

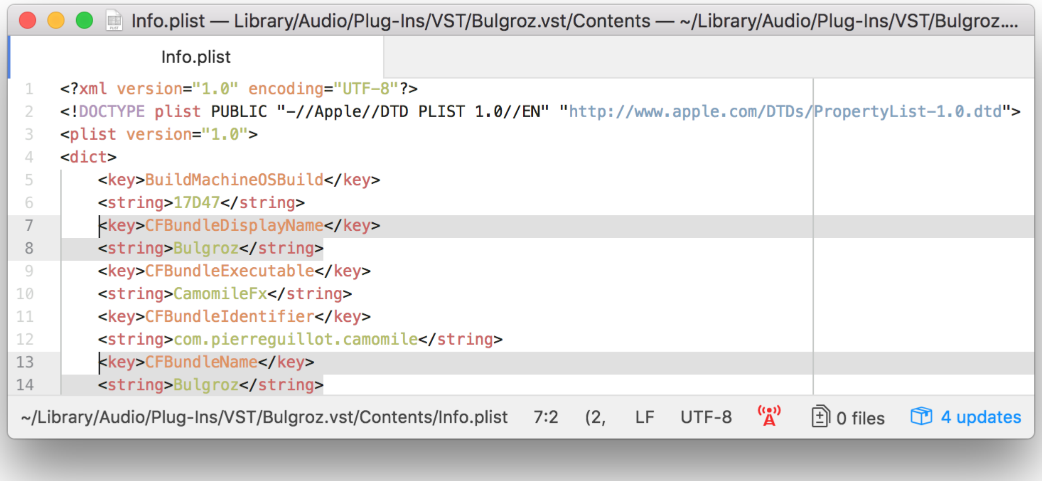
Right click on the plugin (*.vst*, *.vst3* or *.component*) and select *Show Package Contents*.



Copy the content of the plugin folder in the *Resources* folder of the plugin package.



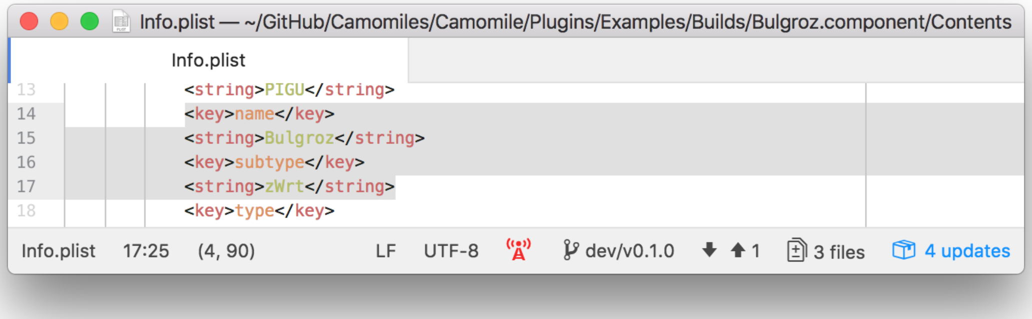
Open the file *Info.plist* in a text editor , and change the values of the *Bundle display name* (\CFBundleDisplayName\\*value*\) and the *Bundle name* (\CFBundleName\\*value*\) to the *name* of the plugin. For example: `<key>CFBundleDisplayName</key><string>Bulgroz</string> ... <key>CFBundleName</key><string>Bulgroz</string>` .


Info.plist — Library/Audio/Plug-Ins/VST/Bulgroz.vst/Contents — ~/Library/Audio/Plug-Ins/VST/Bulgroz....
Info.plist

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
    <key>BuildMachineOSBuild</key>
    <string>17D47</string>
    <key>CFBundleDisplayName</key>
    <string>Bulgroz</string>
    <key>CFBundleExecutable</key>
    <string>CamomileFx</string>
    <key>CFBundleIdentifier</key>
    <string>com.pierreguillot.camomile</string>
    <key>CFBundleName</key>
    <string>Bulgroz</string>
```

~/Library/Audio/Plug-Ins/VST/Bulgroz.vst/Contents/Info.plist 7:2 (2, LF UTF-8 0 files 4 updates

Specific to Audio Unit plugins (*.component*), the *subtype* value of the *Info.plist* must be changed to the *code* value defined in the text file of the plugin folder (see 3rd step). This value is a four characters string with at least one upper case character. And change the *name* value to the name of the plugin.



Info.plist — ~/GitHub/Camomiles/Camomile/Plugins/Examples/Builds/Bulgroz.component/Contents
Info.plist
Info.plist
17:25
(4, 90)
LF
UTF-8
dev/v0.1.0
1
3 files
4 updates

```xml
<string>PIGU</string>
<key>name</key>
<string>Bulgroz</string>
<key>subtype</key>
<string>zWrt</string>
<key>type</key>
```

The plugin is ready to be used within a digital audio workstation. Please read the following section if you need help to install the plugin: How to install plugins.

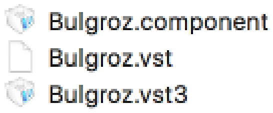
# How to install plugins

The last step before using the plugin is the installation in the audio plugins' location specific to the digital audio workstation (please refer to the digital audio workstation documentation) or to the operating system's default audio plugins' location.

**Important: If you didn't read the previous section How to generate plugins, you won't be able to use Camomile properly. MacOS users can also watch this tutorial (https://vimeo.com/253586694).**

### MacOS

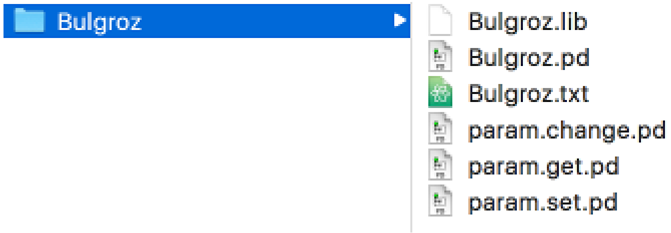
Copy the VST (*.vst*), VST3 (*.vst3*) or Audio Unit (*.component*) packages to their respectives locations (Default VST & VST3 location (https://helpcenter.steinberg.de/hc/fr/articles/115000171310-VST-plug-in-locations-on-Mac-OS-X-and-macOS) and Default Audio Unit location (https://support.apple.com/en-us/HT201532)).



Bulgroz.component
Bulgroz.vst
Bulgroz.vst3

### Linux

Copy the plugin folder that now contains the VST plugin itself (*.lib*) and its dependencies (the patches, the text file, etc.) to its specific location (Default VST location (http://www.manual.ardour.org/working-with-plugins/getting-plugins)).



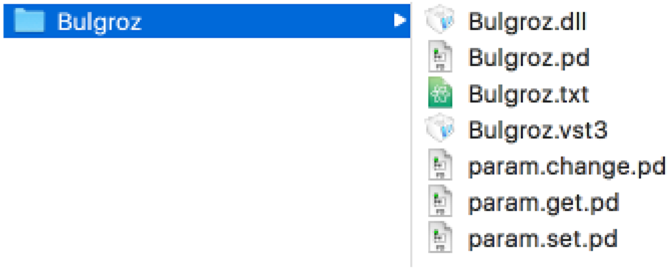
Bulgroz

Bulgroz.lib
Bulgroz.pd
Bulgroz.txt
param.change.pd
param.get.pd
param.set.pd

## Windows

Copy the plugin folder that now contains the VST (*.dll*) and/or VST3 (*.vst3*) plugin and its dependencies (the patches, the text file, etc.) to its specific location (Default VST & VST3 location (https://helpcenter.steinberg.de/hc/fr/articles/115000177084-VST-plug-in-locations-on-Windows)).

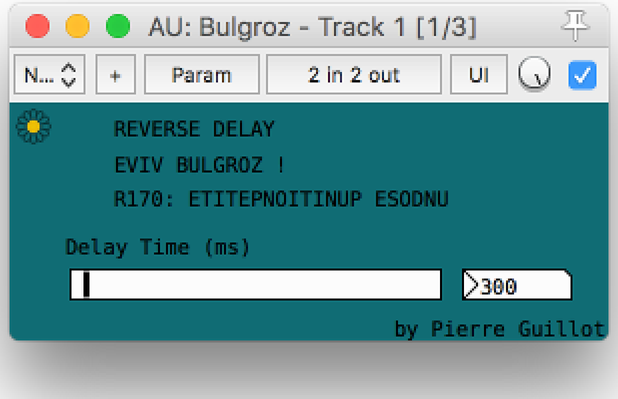
**Important: On Windows, the file libpd.dll offered by the distribution must be installed. If you use the 32bits plugins on Windows 32bits or the 64bits plugins on Windows 64bits, the file libpd.dll must be installed in the folder C:\Windows\System32. If you use the 32bits plugins on Windows 64bits (if your digital audio workstation is 32bits), the file libpd.dll must be installed in the folder C:\Windows\SysWOW64.**



Bulgroz

Bulgroz.dll
Bulgroz.pd
Bulgroz.txt
Bulgroz.vst3
param.change.pd
param.get.pd
param.set.pd

The plugin is now installed and ready to use. The plugin should be visible in the plugins' list of the digital audio workstation. If not, please ensure that you followed the previous steps to generate and to install the plugin. If the problem persist, look for it in pre-existing issues (https://github.com/pierreguillot/Camomile/issues) perhaps a solution has already been found. Otherwise, feel free to open a new issue (https://github.com/pierreguillot/Camomile/issues/new).



Once loaded, the graphical user interface of the plugin should be visible with a flower button at the top-left corner. If the rest of the graphical user interface only displays the message *Plugin Not Valid*, it means configuration text file of the plugin has been not found. Most likely, an error has been made while generating the plugin. Click on the flower and select the console to display further information (the path where the configuration text file is expected). Here again, ensure that you followed the previous steps to generate and to install the plugin, check for the pre-existing issues (https://github.com/pierreguillot/Camomile/issues) and feel to create a new one (https://github.com/pierreguillot/Camomile/issues/new) if you still need help.

Even if the plugin is well loaded and functional, it is wise to check errors in the console. The plugin notifies if the type defined in the configuration text file is different from the type of the plugin. Other errors can also have been done by the patch creator, in this case you should contact him. At last, if the rest of the graphical user interface only displays the message *No Graph On Parent Available*, it means that the user graphical interface has not been defined in the patch but plugin should still be functional, the audio engine should work properly and you should have access to the available parameters and presets.

Now that you know how to create and install plugins, you should want to create your own one. Please read the following section: How to create new plugins.

# How to create new plugins

Work in progress. For the moment, please refer to this issue: How to create a plugin #73 (https://github.com/pierreguillot/Camomile/issues/73).

# How to compile the plugins

The cross-platform dependencies (libPd, Pure Data, JUCE and the VST SDK), are integrated as submodules to the repository. You need to pull the repository and its submodules:

```
git clone --recursive https://github.com/pierreguillot/Camomile.git
cd Camomile
```

### MacOS

To compile the AU, VST & VST3 plugins on MacOS, you first need to compile the static version of libPd for multi instances and multi threads. The static library is expected to be in the folder *libpd/libs*. At the root of this directory, you can do the two following commands to generate the libpd project using CMake:

```
mkdir Dependencies/LibPd/build
mkdir Dependencies/LibPd/build/xcode/
cd Dependencies/LibPd/build/xcode
cmake -GXcode ../..
cd ../../../..
```

Thereafter, you can compile both libpd and the Camomile plugins using the scheme *Camomile-libpd* from the Xcode workspace *Camomile* or using the command:

```
xcodebuild -workspace Camomile.xcworkspace -scheme Camomile-libpd -configuration R
```

If you want to modify the Camomile projects, you should use *Camomile.jucer* and *CamomileFx.jucer* located in the *Instrument* and the *Effect* folders with the Juce's projucer application. If you want to compile the Audio Unit, after generating the XCode projects, you must change the type of the *include_juce_audio_plugin_client_AU.r* located in the folder *JuceLibraryCode* to *Objective-C++ preprocessor*.

### Linux

To compile VST plugins on Linux, JUCE requires a large set of dependencies, to install everything you should do this command (for further information you should refer to the JUCE documentation):

```
sudo apt-get -qq update
sudo apt-get install -y libx11-dev libxrandr-dev libxinerama-dev libxcursor-dev py
sudo add-apt-repository -y ppa:webkit-team/ppa
sudo apt-get -qq update
sudo apt-get install -y libwebkit2gtk-4.0-37 libwebkit2gtk-4.0-dev
```

Then you can generate a libpd makefile using CMake and compile the plugins with the commands:

```
mkdir Dependencies/LibPd/build
mkdir Dependencies/LibPd/build/makefile/
cd Dependencies/LibPd/build/makefile
cmake -DCMAKE_BUILD_TYPE=Release ../..
cd ../../../..
make -C Dependencies/LibPd/build/makefile libpdstatic
make -C Instrument/Builds/LinuxMakefile TARGET_ARCH=-m64 CONFIG=Release
make -C Effect/Builds/LinuxMakefile TARGET_ARCH=-m64 CONFIG=Release
```

### Windows

First, you should compile libPd with multi instance and multi threads support. The static library is expected to be in the folder *libpd/libs*. For this, you can follow the libPd documentation. You have to use MinGW-w64 (http://mingw-w64.org/doku.php) and to install msys2 (http://msys2.github.io/). The batch scripts offered by the libPd distribution are made for the csharp version without multi instance and multi thread supports. To compile the appropriate c version of libPd, you have change the script (or to use *libpd_mingw64_build.bat*):

```
make -C libpd libpd MULTI=true ADDITIONAL_LDFLAGS="-static -static-libgcc" ADDITIO
```

Then you can compile the Camomile plugin. The Visual Studio 2015 solution and projects are located in the folder *Builds\VisualStudio2015*. With command, you can do

```
msbuild \Instrument\Builds\VisualStudio2015\Camomile.sln /property:Configuration=R
msbuild \Effect\Builds\VisualStudio2015\CamomileFx.sln /property:Configuration=Rel
```

# Demos

- Pierre Guillot's demos and tutorials on Vimeo (https://vimeo.com/album/4639971)
- Camomile patches on patchstorage (https://patchstorage.com/)

# Credits

Camomile by Pierre Guillot - CICM (http://cicm.mshparisnord.org/) | Université Paris 8 (https://www.univ-paris8.fr/) | Labex Arts H2H (http://www.labex-arts-h2h.fr/)

Pure Data (http://msp.ucsd.edu/software.html) by Miller Puckette and others
JUCE (http://www.juce.com) by ROLI Ltd.
libPd (https://github.com/libpd/libpd) by the Pure Data community
VST PlugIn Technology (https://www.steinberg.net/en/company/developers.html) by Steinberg Media Technologies

# License

# Older versions

v0.0.7 (https://github.com/pierreguillot/Camomile/wiki/v0.0.7---Instructions)
v0.0.5 (https://github.com/pierreguillot/Camomile/releases/tag/v0.0.5-beta)
v0.0.4 (https://github.com/pierreguillot/Camomile/releases/tag/v0.0.4-beta)