

Fox Engine

Version 1.0.0



User Guide

Edition 1.0.0

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Bug Reporting

Please report any bugs you find in the program. Be sure to describe any bugs thoroughly enough that our developers can duplicate the issues; the developers can't fix bugs they can't find.

If you are using the .jar version of this program and the program freezes, this indicates a fatal error occurring.

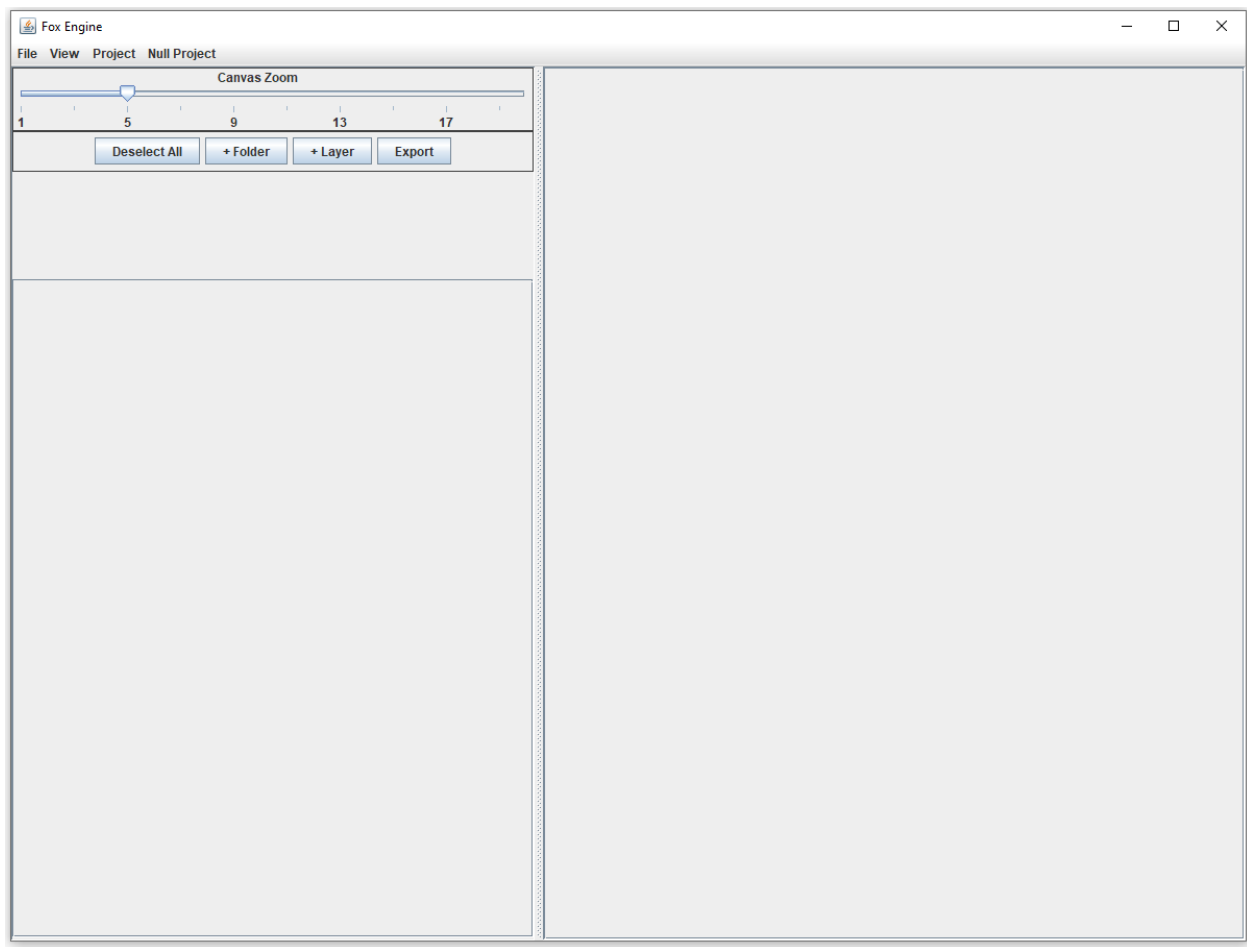
Introduction

Fox Engine is a program targeted at artists for guided image compositing with artist-generated layers. The software was written to support the concept of “adoptables” art that is popular to many forum game websites.

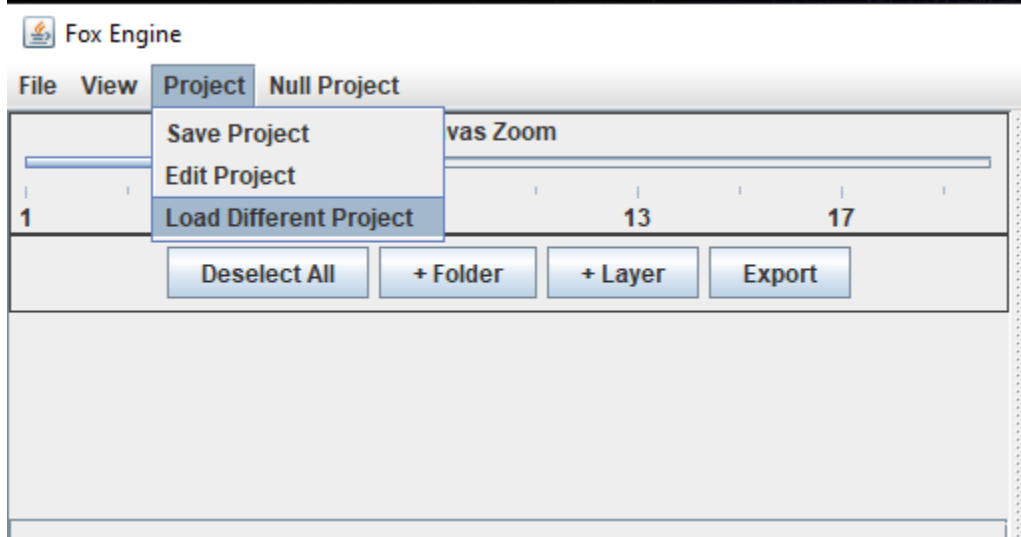
Quick Start

The software was written in Java 14, and should be compatible with this and any later version of Java. Start by making sure you have Java installed on your device.

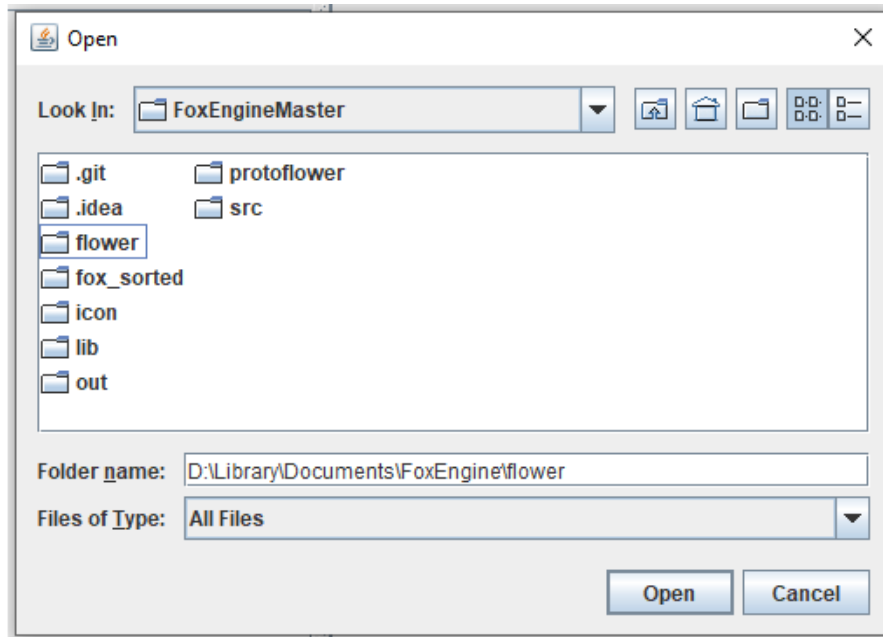
The file “Fox Engine.jar”, when launched, opens the application.



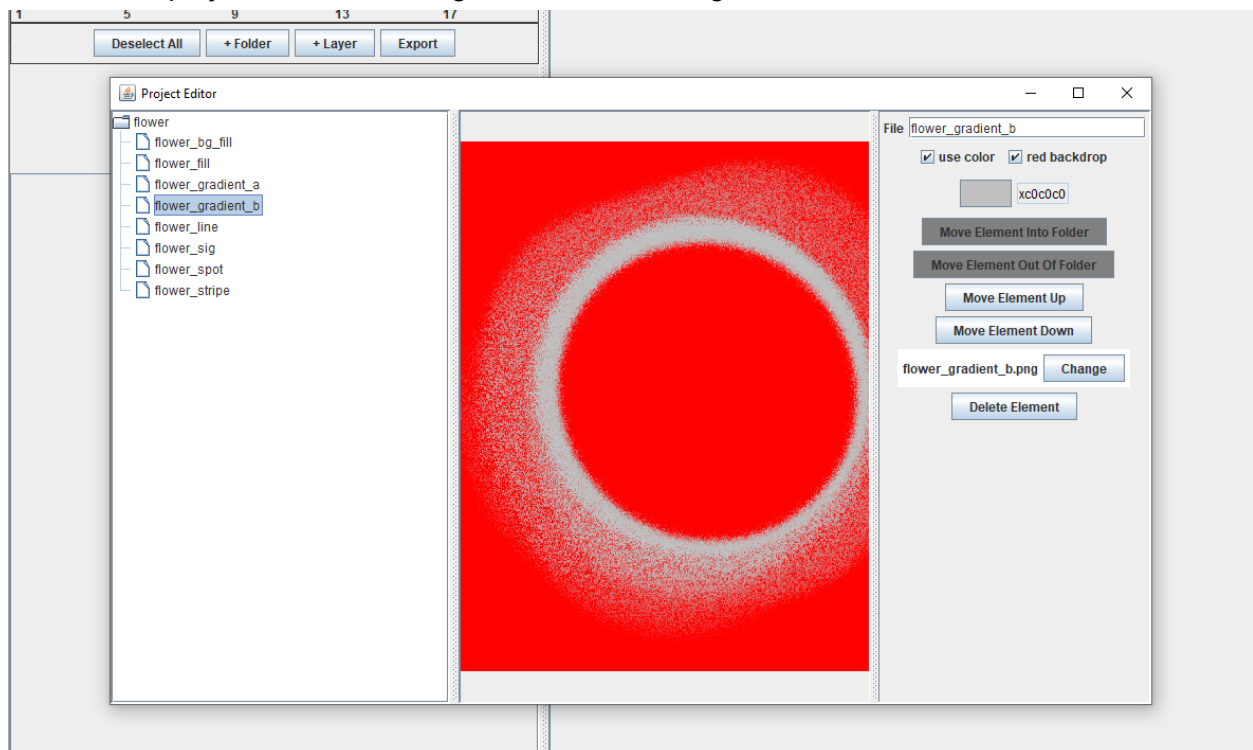
At first launch, the project will be listed as Null Project, meaning that there is no project selected. Go ahead and change that by selecting the Project tab, and then the Load Project option.



Doing this will open a project selection menu. Use this to select a folder containing a project, such as the folder “flower” that’s included as an example.



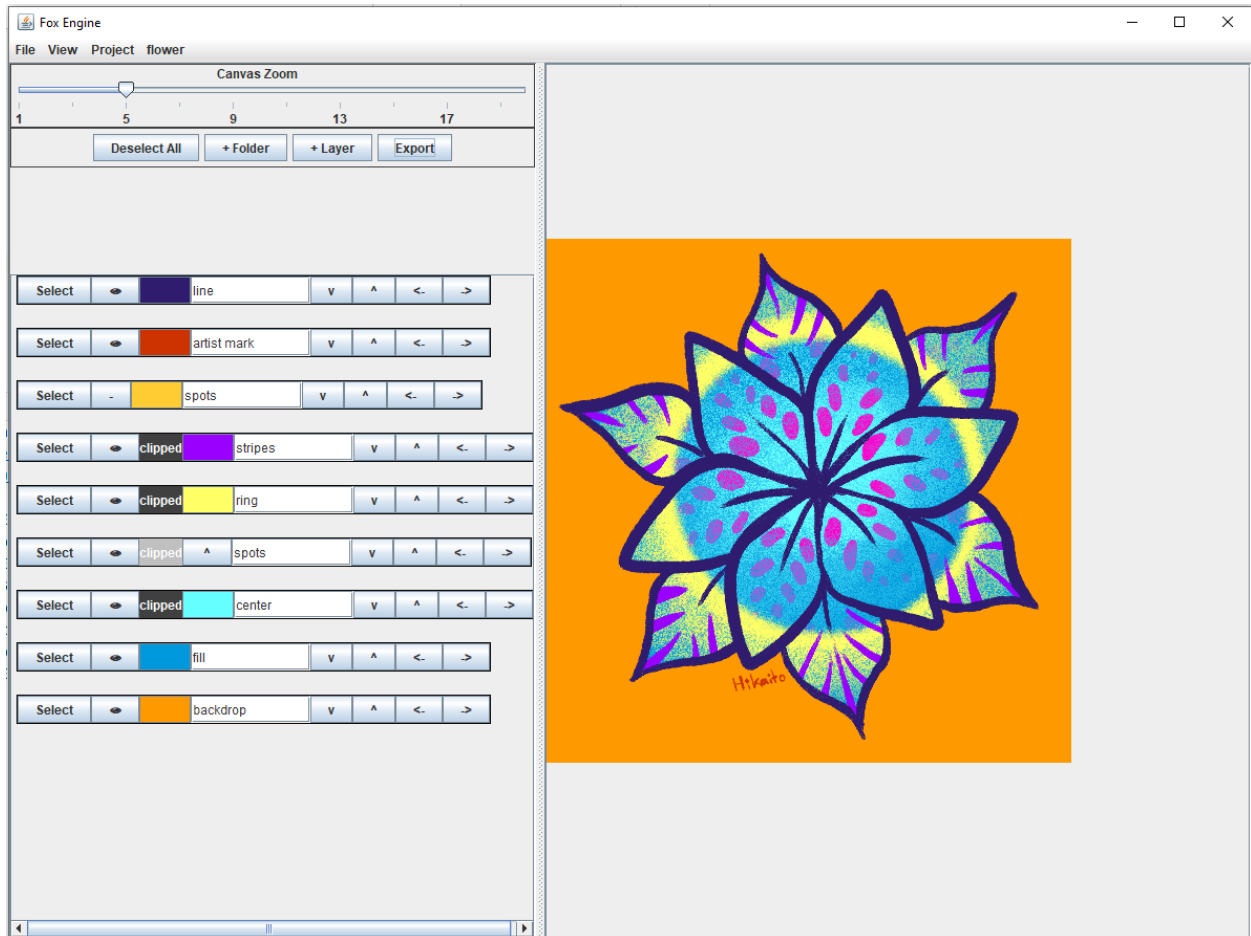
Opening the project file will open the project import dialogue, which looks a lot like the project editor window. From this window, files can be selected and their preset options can be edited to customize a project’s default settings to the user’s liking.



To close the customization window, just click on the exit button. Make sure to save your changes to the project file by selecting Project>SaveProject from the menu bar at the top.

Go ahead and click the “+ Layer” button to create a layer, or select a file from your project’s file structure to the right of the Project button in the top menu bar to get started! Have fun!

If you want to see how a project layer tree is put together, try opening the “example project” template in the flower project.



Deeper Functionality

A **project** is the file structure of files available for use as image layers. This is the representation of the folder of source files. Make sure you don't delete the save files for these, or images won't load correctly anymore.

A **layer tree** is the save file that generates a specific image from a project. These represent individual images made using project files.

A **template** is a specially marked save file that is used as a preset when making images with layer trees.

Persistent Data

Persistent Data describes data the program remembers, like save files and user settings.

User Setting File

The program saves user setting information to a file called “setting.json”. Certain details about the operation of the program can be changed by altering values of this document; erasing the document will prompt the program to regenerate the document.

Project File

The structure of a project is stored in “project.json” in the folder selected as the project’s folder. Without this file, a layer tree file has no meaning, so make sure you don’t erase it, or you won’t be able to open the associated layer tree files anymore.

Layer Tree Files

By default, three output folders are generated in a project structure for storing output files. The folder “saves” is used to store user files, “templates” is used to store specialized user files from which new projects are templated, and “renders” is the default save location for output images (png). Autosaved files are placed in “saves” with the suffix “_AUTO”.

Layer tree save files are not written with the actual images, but instead the registry of project images used to create the layer tree, so many projects can be saved with only limited memory space.

Canvas

The canvas of the program displays the final image. The Canvas Zoom slide bar changes the zoom of the canvas, as does the View>ZoomIn and View>ZoomOut options of the top bar menu.

The canvas can be translated using slide bars along the sides.

Editor Panel

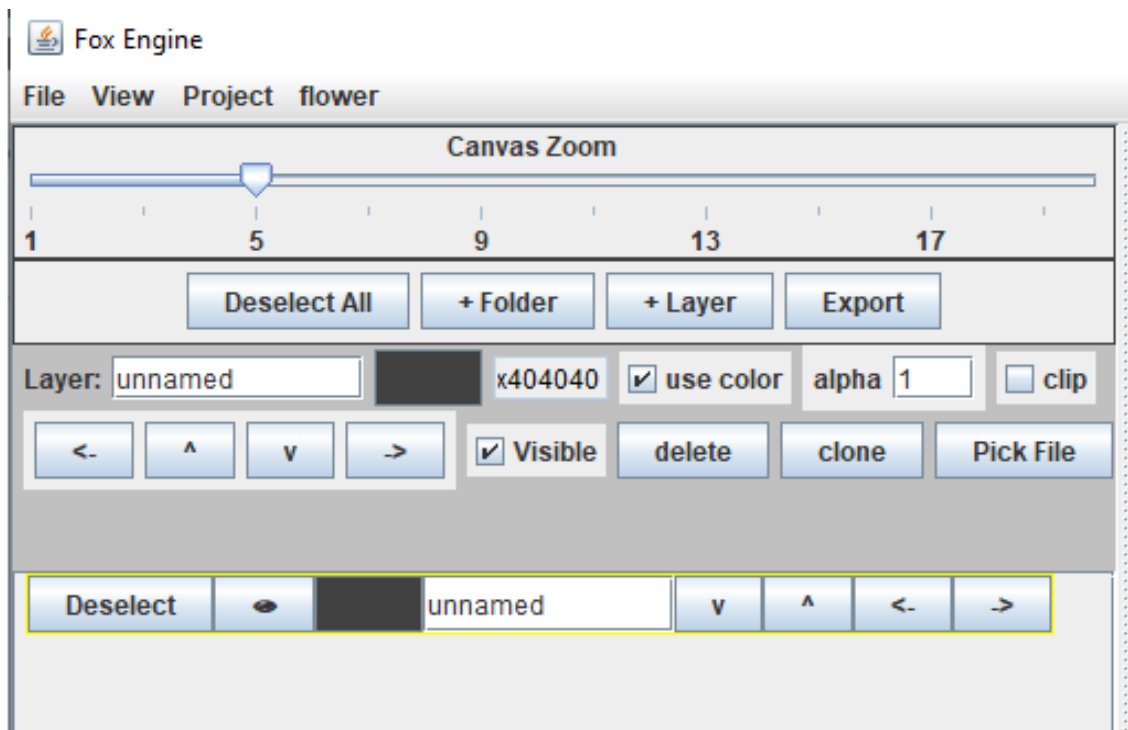
The Editor Panel is the group of tools to the left of the canvas. At the top is a zoom option which can change the zoom of the canvas. Below this are some buttons:

Name	Purpose
Deselect All	Remove all file selection.
+ Folder	Add a folder to the layer tree.
+ Layer	Add a layer to the layer tree.
Export	Render the image; opens image save dialogue.

Layer Tree

The elements of the layer tree can be altered using the layer and folder editors, which are accessed by selecting a layer or a folder.

Layer Editor

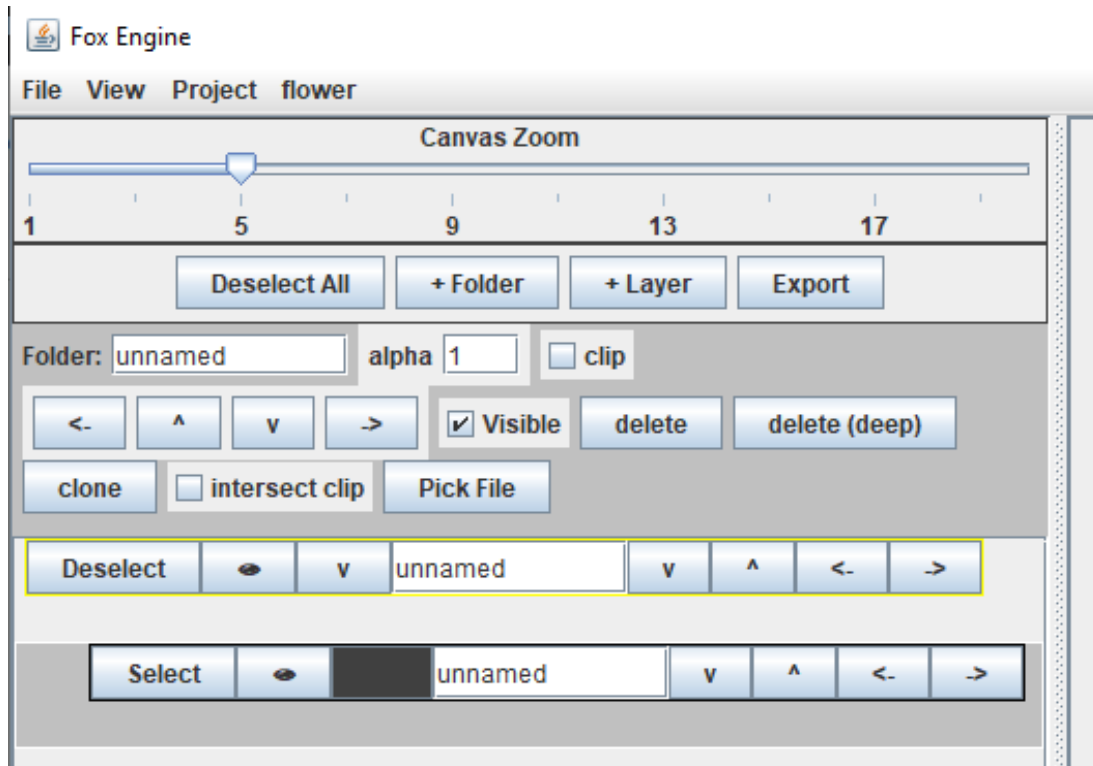


Layers are used to represent image files. The layer editor provides the following options:

Name	Purpose
Name Field	Used to rename the layer to make the visual representation of the layer tree more meaningful.
Color Selection	Clicking on the rectangle of color will open a color selection dialogue, for selecting a layer's color. The text to the right represents the hex value of the color and is selectable.
Use Color Toggle	Activating this toggle will use the color selected by Color Selection as the layer's color. Deactivating the toggle will use the raw image coloration.
Alpha	Changing the value in this field will change the opacity of the layer. The opacity can be varied from 0 to 1, with 1 representing full opacity and 0 representing complete transparency.
Clip Toggle	Activating this toggle will clip this layer to layers or folders underneath it. Clipping means that the layer will only be visible in places where the layer or folder immediately below is also visible.
Move Out	Moves a layer out of the current folder, if it is within a folder.
Move Up	Moves a layer up in its current folder.
Move Down	Moves a layer down in its current folder.
Move In	Moves a layer into a folder it is immediately under.
Visible Toggle	Activating this toggle will hide the layer. This is distinct from the alpha, and can be toggled freely without affecting the values saved for alpha.
Delete	Deletes the layer.
Clone	Make a copy of the layer.
Pick File	Selecting this option will open a file selection dialogue to select a different file from the project structure to assign to the layer. By default, a layer has no file.

The Layer Tree representation of the layer also has shortcuts for some editing options: select/deselect, visible toggle, color selection, name selection, move down, move up, move out, move in.

Folder Editor



Folders are used to sort and contain groups of layers and other folders, and also enable intersect clipping. The folder editor provides the following options:

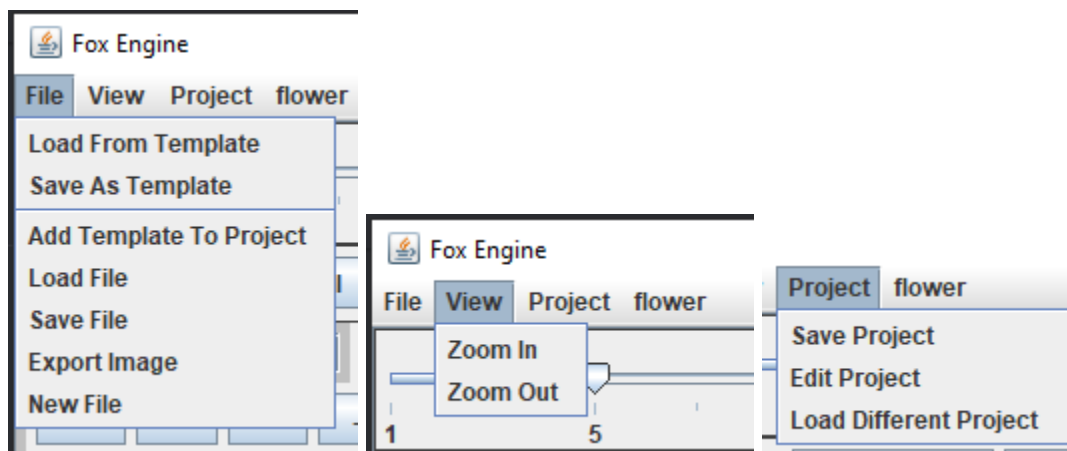
Name	Purpose
Name Field	Used to rename the folder to make the visual representation of the layer tree more meaningful.
Alpha	Changing the value in this field will change the opacity of the folder. The opacity can be varied from 0 to 1, with 1 representing full opacity and 0 representing complete transparency.
Clip Toggle	Activating this toggle will clip this folder to layers or folders underneath it. Clipping means that the folder will only be visible in places where the folder or layer immediately below is also visible.
Move Out	Moves a folder out of the current folder, if it is within a folder.
Move Up	Moves a folder up in its current folder.
Move Down	Moves a folder down in its current folder.
Move In	Moves a folder into a folder it is immediately under.

Visible Toggle	Activating this toggle will hide the folder. This is distinct from the alpha, and can be toggled freely without affecting the values saved for alpha.
Delete	Deletes the folder and moves contents to the folder's parent folder.
Delete Deep	Deletes the folder and all contents.
Clone	Make a copy of the folder.
Intersect Clip Toggle	Activating this toggle will enable intersect clipping with a selected file; this feature is only available when a file is selected for intersect clipping. In intersect clipping, the contents of the folder are only visible in places where the clipping image has visibility. The clipping image itself is not visible.
Pick File/Revoke	Selecting Pick File will open a file selection dialogue to select a file from the project structure to assign to intersect clipping. Selecting Revoke will remove the file from intersect clipping selection.

The Layer Tree representation of the folder also has shortcuts for some editing options: select/deselect, visible toggle, name selection, move down, move up, move out, move in.

Topbar Menu

The menu at the top of the program has different tabs with different features.



Left: File Tab. Center: View tab. Right: Project tab.

The Project tab's name will change to reflect the selected project; its contents are the project's structure. Selecting an element from the Project tab will generate the element as a new layer in the layer tree.

File Tab

Most of these actions are completed through some file selection dialogue and can be canceled.

Name	Purpose
Load From Template	Open a template as a new layer tree file.
Save As Template	Saves the current layer tree file as a new template.
Add Template To Project	Adds a template to the current layer tree file as a new folder.
Load File	Loads a file as the layer tree.
Save File	Saves the layer tree file.
Export Image	Exports a render of the layer tree image; autosaves the layer tree file.
New File	Generates a new layer tree file, erasing the present file.

View Tab

Name	Purpose
Zoom In	Zoom in the canvas view.
Zoom Out	Zoom out the canvas view.

Project Tab

Name	Purpose
Save Project	Save the current project file.
Edit Project	Opens the project edit window. Changes to the project file are NOT automatically saved.
Load Different Project	Open a different project from the folder. If the project has a project file, it will open that project file and may invoke project reconciliation. If no project file is found, it will import the folder as a new project. Selection of this option will autosave and close the current project file. Only one such autosave is kept at a time per project.

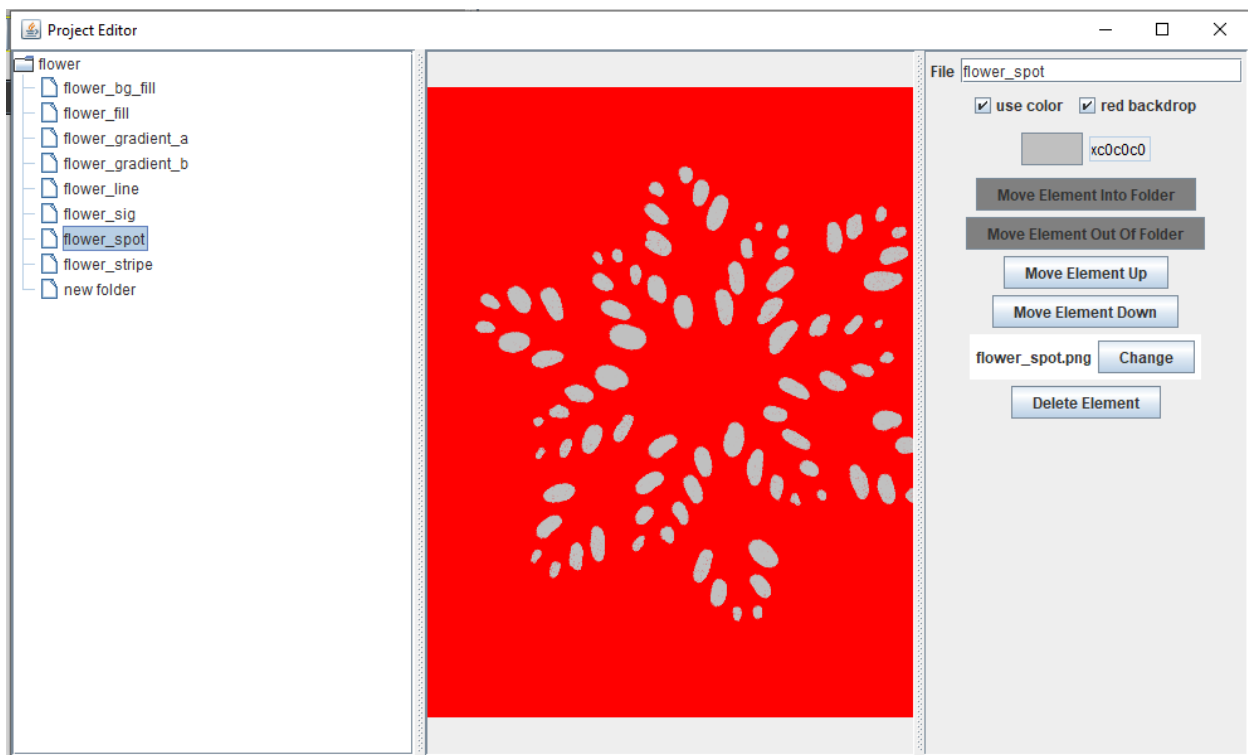
Project

The project represents the pool of files that can be used in a layer tree.

Project Editor

The Project Editor is a window that allows the user to edit aspects of the project. Editing the project structure does not affect the actual filesystem.

Layer

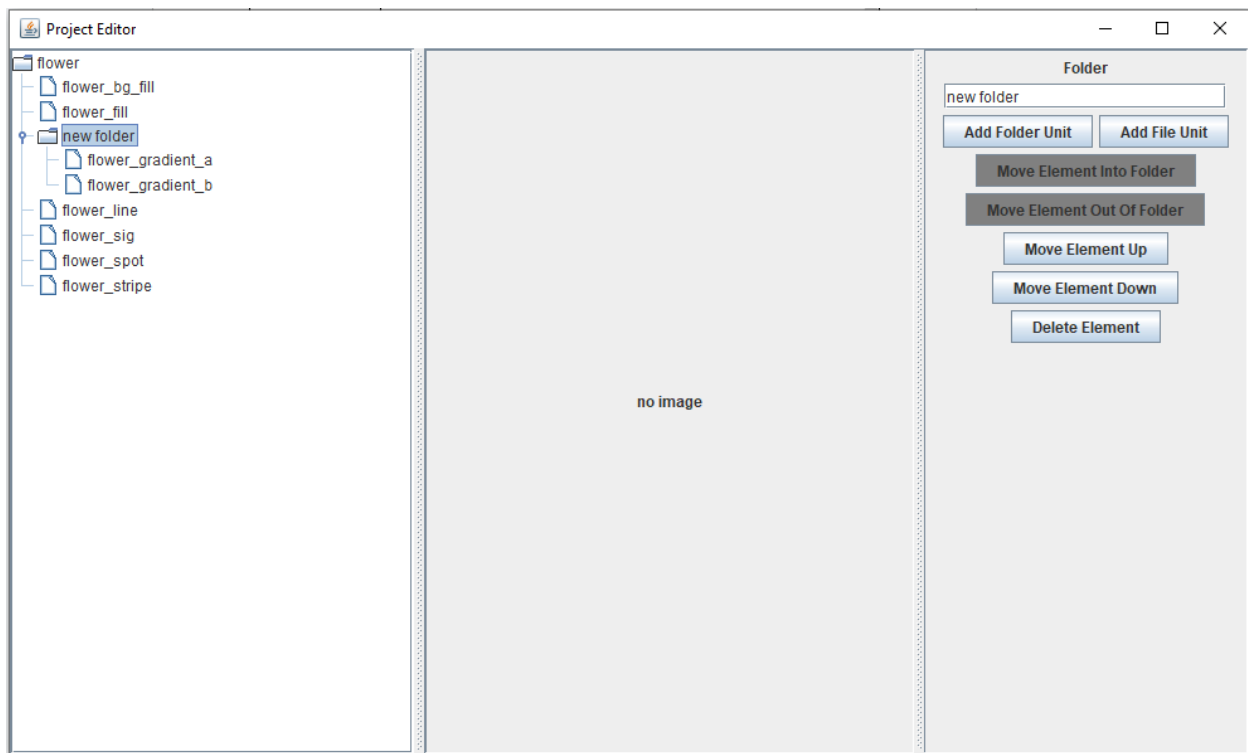


Selecting a layer in the project tree will offer the following options:

Name	Purpose
Name	Changes the display name of the file; changes the default layer name when a new layer is generated with the file. Hitting enter will change the name.
Use Color Toggle	Changes whether the 'use color' option is enabled or not in default layers generated from the file.
Red Backdrop	Activating this toggle will show the preview image with a red backdrop.

Toggle	This is purely cosmetic and limited to the editor.
Color Selection	Selects a color to pair with the Use Color Toggle if the toggle is set to true.
Move Element into Folder	Moves the selected element into a folder above it.
Move Element Out Of Folder	Moves the selected element out of a folder.
Move Element Up	Moves the selected element up in a folder.
Move Element Down	Moves the selected element down in a folder.
File Selector	Selects a different file from the filesystem to assign to the project tree file. Do not select a file outside the current project folder, or your program may not work properly.
Delete Element	Remove the file from the project tree. This does not delete the actual image file.

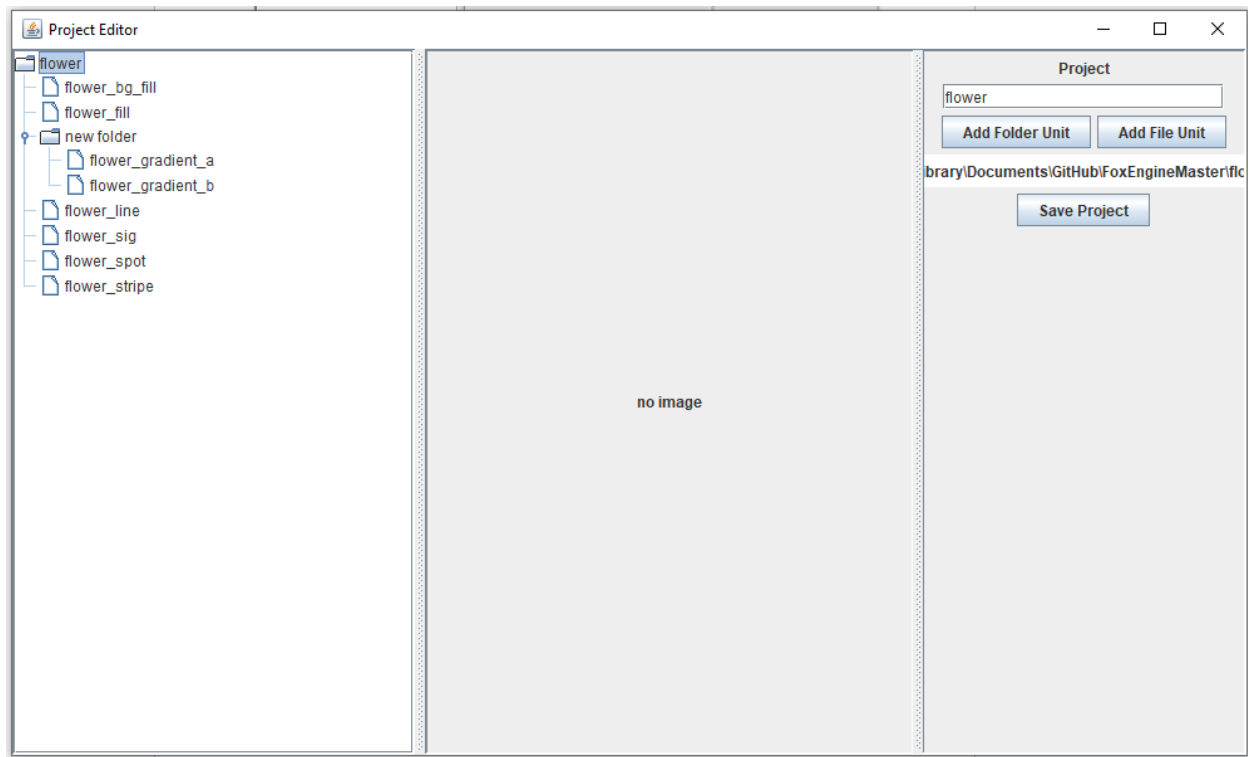
Folder



Selecting a folder in the project tree will offer the following options:

Name	Purpose
Name	Change the display name of the folder. Hitting enter will change the name.
Add Folder Unit	Adds a folder to the current folder.
Add File Unit	Adds a file to the current folder. Note that multiple files can use the same image.
Move Element into Folder	Moves the selected element into a folder above it.
Move Element Out Of Folder	Moves the selected element out of a folder.
Move Element Up	Moves the selected element up in a folder.
Move Element Down	Moves the selected element down in a folder.
Delete Element	Remove the file from the project tree. This does not delete the actual image file.

Project



Selecting the project root (the topmost folder) in the project tree will offer the following options:

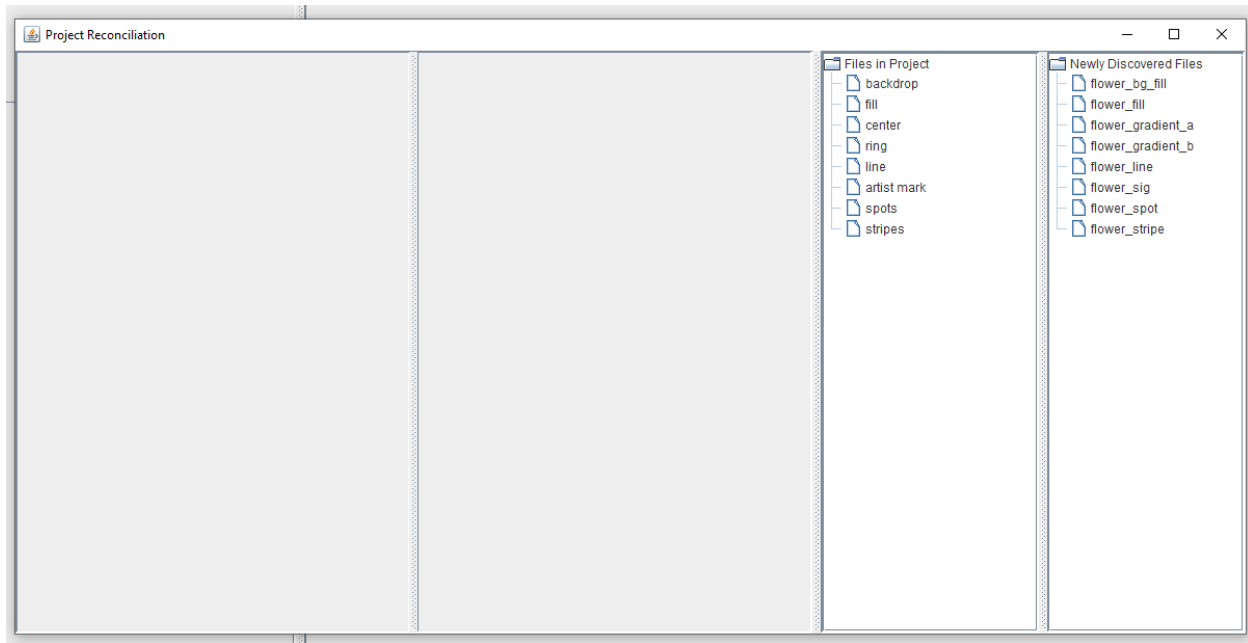
Name	Purpose
Name	Change the display name of the project. Hitting enter will change the name.
Add Folder Unit	Adds a folder to the project.
Add File Unit	Adds a file to the project. Note that multiple files can use the same image.
File Location	Displays the current project location, but does not allow the user to change it.
Save Project	Saves changes made to the project tree.

Project Reconciliation

Any changes to the source images in the project structure are detected when a project is loaded, and the project reconciliation window is opened. This window allows the user to tell the program where files moved to, if files were moved or renamed, and remove old files from the

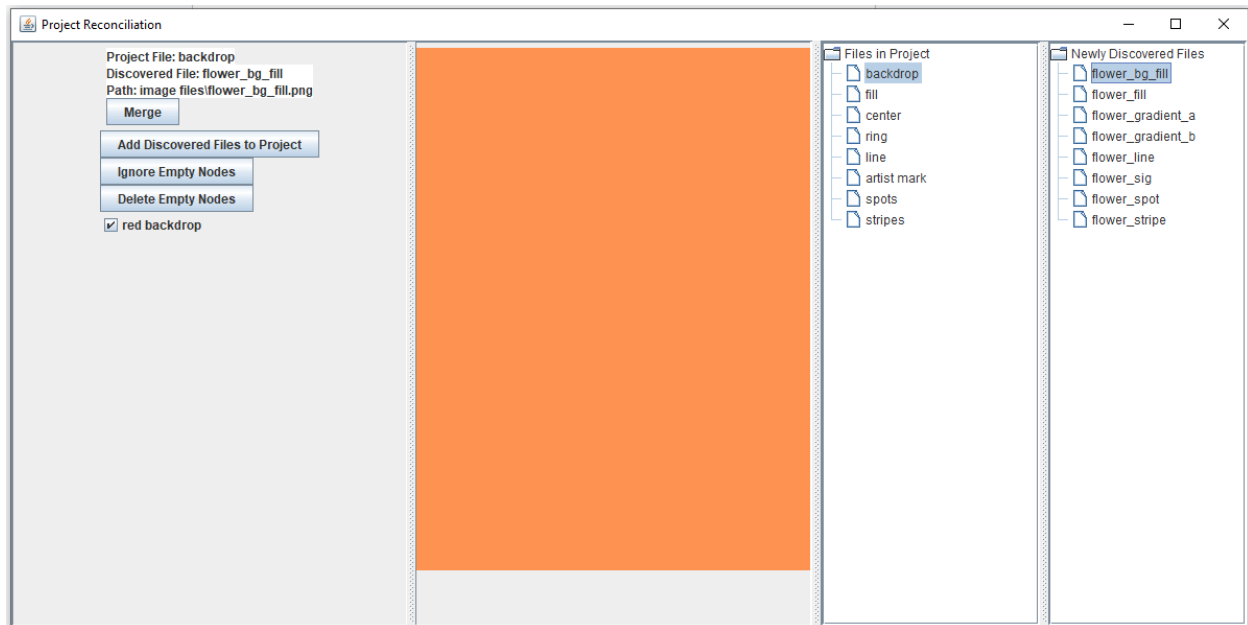
project structure. It also automatically detects new files, so to expand the file set of a project, simply add your new files to the project's files and reload the project.

Note: A known bug exists that requires the user to manually resize different window elements to achieve the ideal window view:



To “reconcile” moved or renamed files, select the file from the project structure on the left and the discovered file that matches it on the right, and select merge. This will remove both files from the display trees, since they’ve been resolved.

After reconciling a project and saving the changes, you may have to reopen it.



Selecting “Add Discovered Files to Project” will add all discovered files to the project as new files; use this option when adding new files to the project.

Selecting “Ignore Empty Nodes” will ignore the nodes whose files are missing, but does not delete them.

Selecting “Delete Empty Nodes” will delete the nodes whose files are missing.

The red backdrop toggle exists here, and works the same as in the project editor.