Introduction

Loutext allows you to create seamless textures. The texture is made from pictures (tiles) which can be placed side by side (up/down, right/left) without any visible transition.

Each month, a new release will be available. Those new releases can include enhancements arising from your remarks and ideas.

If you need any help, have any remarks, any enhancement ideas, feel free to send me an email (luc.helie@wanadoo.fr). Have fun ...

LouText 0.4 is a FreeWare. You can use it and the result textures as you want.

Release 0.4: New functionalities

REMARK !!! Structures and parameters places have change inside presets files. To be able to use your old presets you must first convert their structure to release 0.4 structure using **PCStruct04.exe**, then use **PCPrmtr04.exe** to change parameters place inside the preset. If you have any problems with an old preset feel free to send me an email …

OOPS !!! I didn't mention that release 0.3 Perlin Noise module doesn't produce seamless textures. All modules like "Perlin Noise" or "Chaotic functions" which don't produce seamless textures appear in red in the module list.

New modules

Functions>Chaotic Functions

Chaotic functions produce grey scale picture which are not seamless textures. The final result is by nature unforeseeable.

Functions>Shapes>Filled>Circles

Generate filled circles with saturation and luminosity gradients.

Filters>Color Replacer>Gradient Fill

"Gradient Fill" allows the user to replace a sequence of pixels of the same specified color by a gradient.

Filters>Color Replacer

The 2 color replacer filters « Color Replacer » and « Replace Null Color » have been moved to the « Filters>Color Replacer » menu item.

Effects>Emboss

" Emboss" allows to create a « traditional » emboss effect : an image which is stacked with a shifted negative.

Effects>Grey Scale Colorize>Colorize 1

Based on the luminosity channel of the last processed module « Colorize 1 » allow to colorize a grey scale image.

Effects>Offset Effects

" Offset Effects" compute for each pixel a new value which is based on the pixel himself (x,y coordinates) and another pixel which coordinates are X + 'Width Effect' and Y + 'Height Effect'. Release 0.4 includes 5 algorithms.

Effects>Outline

" Outline" creates a luminous outline round picture areas. It works better with picture including large area of similar colors.

Adjust>Ligthness/Darkness

Negative values of the amount parameter allows to adjust picture darkness, positive value allows to adjust picture ligthness.

Adjust>Levelling>HSL
Adjust>Levelling>RGB

« Levelling » allow to replace for each channels (RGB or HSL) values which are greater than « High value » by « High Value ». It also replace for each channels (RGB or HSL) values which are less than « Low value » by « Low Value ». Then « Levelling » allow to distribute the values (using the « Strech » parameter) between 0 and 255 (or 359 for the hue channel).

Geometric>Shuffle

" Shuffle" randomly swaps pair of pixels.

General remarks

Color definition

There are different ways to define a color. Loutext uses two of them : the RGB mode and the HSL mode.

The RGB mode blends Red, Green and Blue to get a color. The quantity of red, green and blue can varies from 0 up to 255.

The HSL mode defines a color by a Hue, Saturation and Luminosity. The Hue varies from 0 up to 359, Saturation and Luminosity vary from 0 to 255.

Use of RGB and HSL modes

You can use RGB and HSL modules in the same texture. Module after module Loutext keep the state of your texture both in RGB and HSL mode. Having said that, converting a color from HSL to RGB then back to HSL doesn't guarantee a return to the original values. So, it's better (but not mandatory) to be consistent using RGB or HSL.

Parameters

In a lot of modules, you will have to define a min and a max value for a parameter. When you enter those parameters Loutext doesn't verify that the min value is less than the max value, but during processing Loutext will invert those two parameters if the min value is greater than the max value.

The Main form

The main form is made of a menu and an image container work space. An image container allows to view the result of a texture processing. You can create several image containers, the active one will be used to display the processing result of the current texture.

Main form menu

Image

New	Create an empty image container which allows to view the result of a texture processing.
Save	Save the selected image in a bmp format file.
BMP Format	Allow to choose the color depth : 8, 16, 24 or 32 bits.

Texture

New	Open the " Texture form " and create a new texture.
Load	Load a texture from a texture file (.lou extension) and open the " Texture form ".
Save	Save a texture as a texture file (.lou extension)

The texture form

The texture form allows you to define a texture through the combination of modules (up to 200). The texture form is made of a menu and 4 panels : " Parameters ", " Colors ", " Modules " and " Blending ".

The " Modules " panel is a list of modules which are processed from top to bottom to create a texture.

The " Parameters " and " Colors " panels define all the parameters of the " current module " which is identified in the list by a gold disc in the second column of the modules list. To go from a module to another, you just have to click on the name of the module

Just under the " Modules " panel, you will find 5 buttons :

Process process the texture from the first module to the current module

Up/ Down arrows
move the current module up and down through the list

Active define if the current module is active or not. Inactive module are shown by an "X" in the third column of the modules list.

Remove remove the current module

The " Blending " panel defines how the current module and the preceding module are blended. Blending takes place at the module indicated by the green and red squares in the second column of the modules list.

Texture form menu

The " Texture ", " Functions ", " Filters ", " Adjust ", " Geometric", " Buffers " and " Layers " menus allow to add new modules to the list. The " Color Channels " defines which image channel (Color, HSL or RGB) will be display in the image container.

Remark : The " Buffers>Move to buffer " function allows you to save the current state of the texture and recall it later using " Buffers>Recall buffer ". Typically, it lets you create two (or more) branches of a texture and then mix them.

Parameters Panel

Each parameter can be defined via a Scrolling Bar or a ComboBox. For Scrolling Bar parameters you can also type the value into the associated text field.

Colors Panel

Some modules need color parameters (background, foreground …). You can introduce those colors parameters in the " Colors " panel. To modify the default colors you just have to click on the color box to open a choose color dialog.

Modules Panel

The Modules panel is made of three columns. The first one gives the name of the module. The second one specifies the current module by an X. The third column specifies if the module is active or not.

Blending Panel

The " Blending " panel defines how the current module and the preceding module are blended. Each layer (HSL or RGB) can be blended with a different parameter which is accessible through one of the three ComboBox (Red/Hue, Green/Saturation and Blue/Luminosity). The "Randomize" button will produce a random choice of blending parameters for the three layers of the current module.

The "Mode" ComboBox defines if the blending is made in RGB or HSL color definition.

The "Result Layer" and "Current Layer" ScrollBars define the opacity of those layers.

If the transparency color is applied all pixels of the Current Layer of that color are replaced by the Result Layer pixels with no blending.

The "Rand. Blend." button creates a random choice of blending functions for all the modules.

The "Rand. Opacity" button creates a random choice of opacity values for all the modules.

The "Rand. All" button creates a random choice of blending functions and opacity values for all the modules.

The 3 buttons "Rand. Blend.", "Rand. Opacity" and "Rand. All" automatically start the texture processing.

The " Texture " form menus

Functions

Chaotic Functions

« Fx 2 A » to « Fx 2 F » chaotic functions have the same parameters. Those functions don't produce seamless textures. The final result is a grey scale picture.

Remark :

'Details' and 'Luminosity' parameters default values are optimized for 512 x 512 pictures.

Parameters :

'Width Effect 1' / 'Height Effect 1'
Chaotic algorithm parameter 1 (width and height effects).

'Width Effect 2' / 'Height Effect 2'
Chaotic algorithm parameter 2 (width and height effects).

'Details'
Define the details level of the final picture. Be careful, high values are time consumming and do not necesseraly give better results. It depends on the function parameters.

'Luminosity'
Define the luminosity level of the final picture.

'Random seed'
Random generator initial value

'Width – Left Offset', 'Width – Right Offset',
'Height – Top Offset', 'Height – Bottom Offset'
Allow to define the rectangle limits where the chaotic functions is drawned.

Noise

Create a texture made of randomly colored pixels. The noise can be controlled limiting the range of values for each channel (HSL or RGB) through the min and max parameters. The " Rate " parameter defines the percentage of pixels which are initialized by a random color. The color parameter "BckGrnd" will be used for

pixels which are not initialized.

Perlin Noise

The "Perlin Noise" function generates a grey image from a Perlin noise which can be defined using 6 separate frequencies.

The final result is the sum of the 6 frequencies. Each frequency is moderated by the "Amplitude" parameter. Frequencies with a "Frequency" parameter or an "Amplitude" parameter equal to 0 are not processed.

The R,G and B channels contain equal values from 0 to 255 which define a grey level. In HSL mode, the Luminosity channel contains the function values, the saturation and the hue channel are set to 0.

Parameters :

'Frequency' : Grey variation speed.

'Amplitude' : Frequency weight.

'Scale' : X and Y values scale. By default, values are 1,2,3,4 .... "Scale" is used as a divisor to get thinner values, i.e. if "Scale" is equal to 5 X and Y values are 0.2, 0.4, 0.6, 0.8 .... "Scale" can be also be perceived as a Zoom factor.

'Random Seed' Random generator initial value

Periodic Functions

The channels values (H,S,L or R,G,B) are obtained from the values of a periodic function (Sine, Triangle, Saw Tooth, Square).

Shapes>Wire>HSL Variations>Polygons

"Polygons" generate irregular polygons whose outlines can vary through a hue, saturation and luminosity variation.

Parameters :

'Occurrences'	Lines number
'Hue Range'	Hue range (+ / - 'Foreground' hue)
'Hue Step'	Hue variation speed during the drawn of a line
'Saturation Range'	Saturation range (+ / - 'Foreground' Saturation)
'Saturation Step'	Saturation variation speed during the drawn of a line
'Luminosity Range'	Luminosity range (+ / - 'Foreground' Luminosity)
'Luminosity Step'	Luminosity variation speed during the drawn of a line
'Minimum Length'	Line minimum length
'Random Seed'	Random generator initial value
'Background color'	Background color
'Foreground color'	Outlines base color

Shapes>Wire>HSL Variations>Rectangles

Generate wire rectangles whose outlines can vary through a hue, saturation and luminosity variation.

Parameters :

'Width Min'	Rectangles minimum width
'Width Max'	Rectangles maximum width
'Height Min'	Rectangles minimum height
'Height Max'	Rectangles maximum height
'Occurrences'	Rectangles numbers
'Hue Range'	Hue range (+ / - 'Foreground' hue)
'Hue Step'	Hue variation speed during the drawn of a line
'Saturation Range'	Saturation range (+ / - 'Foreground' Saturation)
'Saturation Step'	Saturation variation speed during the drawn of a line
'Luminosity Range'	Luminosity range (+ / - 'Foreground' Luminosity)
'Luminosity Step'	Luminosity variation speed during the drawn of a line
'Random Seed'	Random generator initial value
'Background color'	Background color
'Foreground color'	Outlines base color

Shapes>Wire>Monochrome>Rectangles

Generate wire rectangles with monochromatic outlines.

Parameters :

'Width Min'	Rectangles minimum width
'Width Max'	Rectangles maximum width
'Height Min'	Rectangles minimum height
'Height Max'	Rectangles maximum height
'Hue Min'	Minimum hue value
'Hue Max'	Maximum hue value
'Saturation Min'	Minimum saturation value
'Saturation Max'	Maximum saturation value
'Luminosity Min'	Minimum luminosity value
'Luminosity Max'	Maximum luminosity value
'Occurrences'	Rectangles numbers
'Random Seed'	Random generator initial value
'Background color'	Background color

Shapes>Filled>Rectangles

Generate filled rectangles with saturation and luminosity gradients.

Parameters :

'Width Min'	Rectangles minimum width
'Width Max'	Rectangles maximum width
'Height Min'	Rectangles minimum height
'Height Max'	Rectangles maximum height
'Hue Min'	Minimum hue value
'Hue Max'	Maximum hue value
'Saturation Min'	Minimum saturation value
'Saturation Max'	Maximum saturation value
'Luminosity Min'	Minimum luminosity value
'Luminosity Max'	Maximum luminosity value
'Occurrences'	Rectangles numbers
'Luminosity Gradient Mode'	Luminosity gradient orientation
'Saturation Gradient Mode'	Saturation gradient orientation
'Random Seed'	Random generator initial value
'Background color'	Background color

Shapes>Filled>Circles

Generate filled circles with saturation and luminosity gradients.

Parameters :

'Radius Min' / 'Radius Max'
The circle radius is randomly generated between 'Radius Min' and 'Radius Max'.

'Thickness Min' / 'Thickness Max'
The circle thickness is randomly generated between 'Thickness Min' and 'Thickness Max'.

'Hue Min' / 'Hue Max'
The circle hue is randomly generated between 'Hue Min' and 'Hue Max'.

'Saturation Min' / 'Saturation Max'
The circle saturation is randomly generated between 'Hue Min' and 'Hue Max'.

'Luminosity Min' / 'Luminosity Max'
The circle luminosity is randomly generated between 'Luminosity Min' and 'Luminosity Max'.

'Occurences'
Circle numbers

'Luminosity Gradient Mode'
Luminosity gradient orientation

'Saturation Gradient Mode'
Saturation gradient orientation

'Random seed'
Random generator initial value

'Background color'
Background color

Twigs

Create " Twigs " with parameters for length, orientation, hue, saturation and luminosity variation.

Filters

Matrix Filters

Replace each pixel by a value obtained from a matrix centered on the pixel, for instance the average of the matrix pixels. A "Matrix Size" of 1 defines a 3 x 3 matrix, 2 defines a matrix of 5 x 5 pixels, 3 defines a matrix of 7 x 7 pixels, 4 defines a matrix of 9 x 9 pixels and 5 defines a matrix of 11 x 11 pixels.
Be careful, a value of 5 implies that each pixel is computed from a matrix of 120 pixels, which means for a 512 x 512 texture 31,457,280 elementary operations !!!

Conditional Average

Replace the channel value of a pixel by the average of the matrix centered on the pixel. This is done if the offset between the average and the channel value is greater than the "offset" parameter.

Invert

Invert one or more of the H,S,L channels (or R,G and B) of each pixel depending on a condition which limits the pixels that will be inverted. A channel is inverted by subtracting its current value from its maximum value (359 for the hue and 255 for other channels). To get a negative image, just invert the 3 RGB channels without any condition. The invert operation of a pixel is done if the H,S and L pixel values are inside the H,S,L ranges. The 3 values must be in the ranges if the condition is "And" or only one if the condition is "Or".

Color Replacer>Simple Color replacer

Replace the " Color " color with a tolerance on each channel by the " Replaced by " color.

Color Replacer>Replace Null Color>HSL
Color Replacer>Replace Null Color>RGB

Replace a color (" Null Color " parameter) by variations which are linked to other colors, to the algorithm and to random variation ranges authorized for the H, S and L channels (or R,G and B).

Parameters :

'Negative Hue Variation' : 'Positive Hue Variation' :	Hue random variation range around the computed value
'Negative Saturation Variation' : 'Positive Saturation Variation' :	Saturation random variation range around the computed value
'Negative Luminosity Variation' : 'Positive Luminosity Variation' :	Luminosity random variation range around the computed value
'Algorithm' :	2 algorithms are available
'Random seed' :	Random generator initial value
'Null Color' :	Color to be replaced

Color Replacer>Gradient Fill

"Gradient Fill" allows the user to replace a sequence of pixels of the same specified color with a gradient starting from the value of the pixel preceding the first pixel of the sequence and ending with the value of the pixel immediately following the sequence. For instance, imagine a row extract which looks like this :

… 189 120 140 140 140 140 140 140 140 140 210 156 …

If the « Replaced Color » has a value of 140, the « Gradient Fill » algorithm will give the following result :

… 189 120 130 140 150 160 170 180 190 200 210 156 …

Parameters :

'Algorithm'	Currently only one algorithm is available : « Linear Morphing »
'Orientation'	Four orientations are available (Horizontal, Vertical and the two 45 degrees diagonals)

Conditional Average

Replace the channel value of a pixel by the average of the matrix centered on the pixel. This is done if the offset between the average and the channel value is greater than the "offset" parameter.

Shapes>Rectangular Tiles

"Rectangular Tiles" create rectangular tiles modifying the preceding process module (if any).

Parameters :

'Width Period' :	Width tiles number
'Height Period' :	Height tiles number
'Thickness' :	Tile border thickness
'Luminosity' :	The border is created by a variation of the luminosity. 'Luminosity' is the start value which increase or decrease more or less quickly depending on 'Luminosity Variation' parameter.
'Luminosity Variation' :	See above.
'Tile Orientation' :	4 orientations are available in the ComboBox parameter.
'Luminosity Orientation' :	Define if the luminosity will increase or decrease creating the tile border.

Transfer Functions>Sine Fx

Transfer functions compute the value of a function from the value of each pixel for one or several channels. This value replaces the pixel value.

Parameters :

'Channels'	RGB or HSL
'Apply to Red / Hue'	The filter is applied or not to the 'Red' channel (or 'Hue' depending on 'Channels' parameter)
'Apply to Green / Saturation'	The filter is applied or not to the 'Green' channel (or 'Saturation' depending on 'Channels' parameter)
'Apply to Blue / Luminosity'	The filter is applied or not to the 'Blue' channel (or 'Luminosity' depending on 'Channels' parameter)
'Algorithm'	3 algorithms based on sine functions
'Parameter 1'	Sine function parameter 1
'Parameter 2'	Sine function parameter 2

Effects

Emboss

" Emboss" allows to create a « traditional » emboss effect : an image which is stacked with a shifted negative.

Parameters :

'Width effect'	Width shift / offset
'Height effect'	Height shift / offset
'Stretch'	Distribute the RGB channels values from 0 to 255.

Grey Scale Colorize>Colorize 1

" Colorize 1" algorithms are based on the luminosity channel of the last processed module.

Remark :

Depending on the 'Base color', different values of variant parameters can give same result.

Parameters :

'Variant 1', 'Variant 2' , 'Variant 3' and 'Base color' are the 4 algorithm parameters.

Offset Effects

" Offset Effects" compute for each pixel a new value which is based on the pixel himself (x,y coordinates) and another pixel which coordinates are X + 'Width Effect' and Y + 'Height Effect'. Release 0.4 includes 5 algorithms.

Outline

" Outline" creates a luminous outline round picture areas. It works better with picture including large area of similar colors.

Adjust

Contrast

Adjust the texture contrast.

Color Balance

Modify the texture colors by a balance between Cyan and Red, Magenta and Green, Yellow and Blue.

Levels

Distributes the values of a channel from min value to max value.

Levelling>HSL
Levelling>RGB

« Levelling » allow to replace for each channels (RGB or HSL) values which are greater than « High value » by « High Value ». It also replace for each channels (RGB or HSL) values which are less than « Low value » by « Low Value ». Then « Levelling » allow to distribute the values (using the « Strech » parameter) between 0 and 255 (or 359 for the hue channel).

Ligthness/Darkness

Negative values of the amount parameter allows to adjust picture darkness, positive value allows to adjust picture ligthness.

Geometric

Mirror

Horizontal mirror of the texture.

Flip

Vertical mirror of the texture.

Offset

Sets displacement in pixels on X and Y axes.

Shuffle

" Shuffle" randomly swaps pair of pixels. It’s possible to control the swaps through 2 limits :

- the distance between the pixel of origin and the target pixel
- the 3 channels value difference between the 2 pixels

Parameters :

'Apply To'
Apply the swaps to HSL or RGB channels

'Hue/Red max diff'
Don’t swap the pixels which Hue/Red difference is greater than this parameter

'Saturation/Green max diff'
Don’t swap the pixels which Saturation/Green difference is greater than this parameter

`Luminosity/Blue max diff'
Don’t swap the pixels which Luminosity/Blue difference is greater than this parameter

'Width min distance'
'Width max distance'
'Height min distance'
'Height max distance'
Limit the distance between the 2 pixels

'Occurences'
Swap numbers

'Random Seed'
Random generator initial value

Buffers

Move to Buffer
Save the current state of a texture in one of the 3 buffers.

Recall Buffer
Recall a texture saved in one of the 3 buffers.

Layers

Invert Channels
Invert two channels of a texture.

Move Channels
Replace a channel by another for all texture pixels.

Color Channels

The "Color Channels" menu allows to define which channel (H, S or L, R, G or B) will be displayed in the texture image.