

# AGP User Guide

## 1 Starting a session

To begin a new art generation session, begin by defining the image resolution for the final product. These can be defined within the Image Width and Image Height Boxes, within the Session Setup Tab, this is depicted in figure UG1.

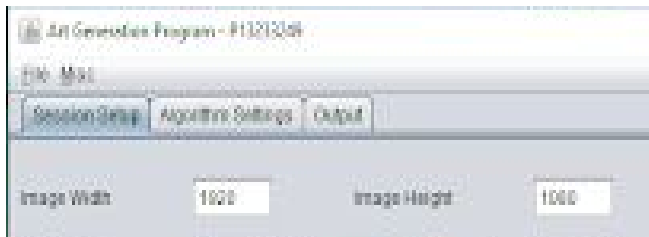


Figure UG1 - defining the resolution

Once these have been entered. Select a session type from the Combination box and click the begin session button, UG2.

A Manual session is a user guided image creation session. This means the user can decide which algorithms to apply and specify the specific parameters for the algorithm. The Automated Session generates an output image without the user deciding what algorithms to apply or what order to apply them in.



Figure UG2 - Selecting the session type

## 2 Manual Session

Figure UG3 - the algorithm tab

If the user selects the manual session and clicks the begin button, they will be taken to the Algorithm Settings tab. Within this tab they can decide which algorithms they would like to apply to the image. This can be done by first selecting an algorithm from the Select Algorithm Box. UG4

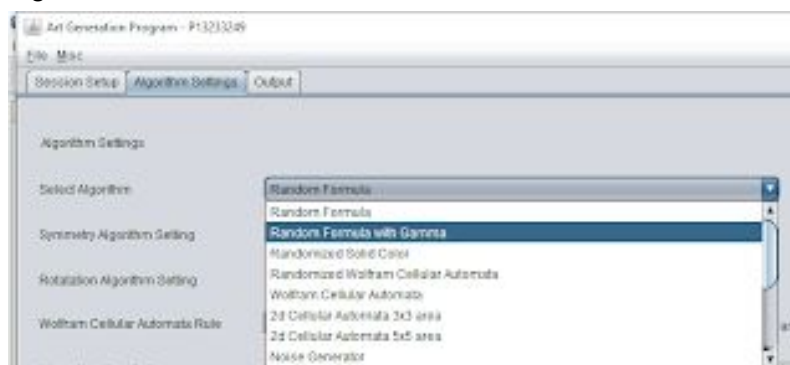
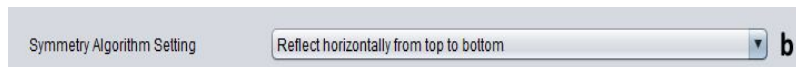


Figure UG4 - the algorithm selector

The next step is to select or enter the relevant parameters for the selected algorithm, UG3 elements a-h. Finally the user must click the apply algorithm Button in order to apply the algorithm to the Output Image, UG3 element i.

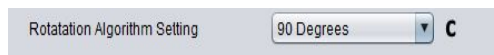
## 2.1 Algorithm Parameters

Combination box b in figure UG3, refers to the type of symmetry the system will apply. When the user selects “Apply Symmetry” from Box a, they then select the type of symmetry from box b. The type of symmetry defines which half or quarter of the image is reflected to the corresponding half or quarter. For example selecting “reflect vertically from right to left”, will reflect the right half of the image across to the left half of the image.

A screenshot of a software interface for symmetry settings. It features a label 'Symmetry Algorithm Setting' on the left and a dropdown menu on the right. The dropdown menu is open, showing the selected option 'Reflect horizontally from top to bottom'. A small blue square with the letter 'b' is positioned to the right of the dropdown menu.

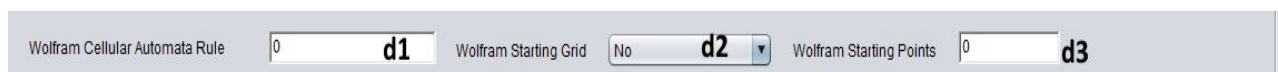
Symmetry Algorithm Setting    Reflect horizontally from top to bottom    b

Box c allows the user to define to what degree they would like to rotate, when the “Apply rotation” algorithm is selected..

A screenshot of a software interface for rotation settings. It features a label 'Rotation Algorithm Setting' on the left and a dropdown menu on the right. The dropdown menu is open, showing the selected option '90 Degrees'. A small blue square with the letter 'c' is positioned to the right of the dropdown menu.

Rotation Algorithm Setting    90 Degrees    c

Elements d1, d2 and d3 are used when the user selects “Wolfram Cellular Automata” from box a. d1 defines the 1d cellular automata rule that will be applied, this can be any integer from 0 to 255. d2 defines if the user wants to define the starting grid, The no option means the implementation will start with two points, the yes option will start with a randomized grid and the custom start option will mean the system takes the integer value from d3 and creates that many starting points.

A screenshot of a software interface for Wolfram Cellular Automata settings. It contains three input fields: 'Wolfram Cellular Automata Rule' with a text box containing '0' and a label 'd1', 'Wolfram Starting Grid' with a dropdown menu showing 'No' and a label 'd2', and 'Wolfram Starting Points' with a text box containing '0' and a label 'd3'.

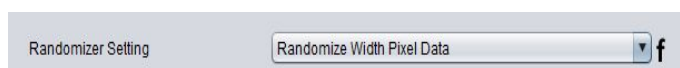
Wolfram Cellular Automata Rule    0    d1    Wolfram Starting Grid    No    d2    Wolfram Starting Points    0    d3

Elements e1 - e4 allow the user to define values which are used by the “Line System”. e1 defines how many lines are drawn by the system. e2 defines the angle of the line. e3 defines the starting length of the first line whilst e4 defines how much the line grows. e5 takes a double value between 0 and 1.0. This value defines the starting point of the next line, in comparison to the current line.

A screenshot of a software interface for line system settings. It features a label 'Lines Algorithm Settings' on the left and five input fields on the right: 'Number of Lines' with a text box containing '0' and a label 'e1', 'Angle' with a text box containing '0' and a label 'e2', 'Length' with a text box containing '0' and a label 'e3', 'Growth' with a text box containing '0' and a label 'e4', and 'Modifier' with a text box containing '0' and a label 'e5'.

Lines Algorithm Settings    Number of Lines    0    e1    Angle    0    e2    Length    0    e3    Growth    0    e4    Modifier    0    e5

Element f lets the user decide which style of pixel randomization they would like to apply to the existing image, when the “Randomizer” algorithm is selected.

A screenshot of a software interface for randomizer settings. It features a label 'Randomizer Setting' on the left and a dropdown menu on the right. The dropdown menu is open, showing the selected option 'Randomize Width Pixel Data'. A small blue square with the letter 'f' is positioned to the right of the dropdown menu.

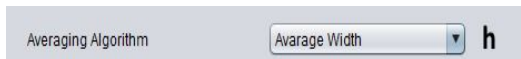
Randomizer Setting    Randomize Width Pixel Data    f

Fields g1 - g4 are used when the user applies a “Tile System” algorithm. g1 and g2 are integer values that define the size of a tile, whilst g3 and g4 define the start location of the tile that will be replicated across the entire canvas.

A horizontal UI bar with a light gray background. On the left, the text "Tile Settings" is displayed. To its right are four input fields. The first is labeled "Tile Width" and contains the value "0" followed by a bold "g1". The second is labeled "Tile Height" and contains the value "0" followed by a bold "g2". The third is labeled "Start x" and contains the value "0" followed by a bold "g3". The fourth is labeled "Start y" and contains the value "0" followed by a bold "g4".

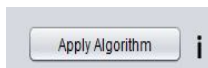
Tile Settings      Tile Width 0 **g1**      Tile Height 0 **g2**      Start x 0 **g3**      Start y 0 **g4**

When the “Averaging Function” is selected, the system applies the specific algorithm selected in box h.

A horizontal UI bar with a light gray background. On the left, the text "Averaging Algorithm" is displayed. To its right is a dropdown menu with the text "Average Width" and a small downward arrow. To the right of the dropdown is a bold letter "h".

Averaging Algorithm      Average Width ▾ **h**

Once a user has picked a algorithm and defined its parameters properly, they must click the apply algorithm button, which applies the algorithm to the output image.

A horizontal UI bar with a light gray background. On the left is a button with the text "Apply Algorithm". To the right of the button is a bold letter "i".

Apply Algorithm **i**

The user can now look at the generated image and apply further algorithms.

### 3 The Output

The output of the system is displayed within the output tab of the GUI. This image is the resulting image of either the automated or manual sessions.



Figure UG5 - the output window

## 4 The Menu

The menu bar consists of two differing menus. The file menu and the misc menu.

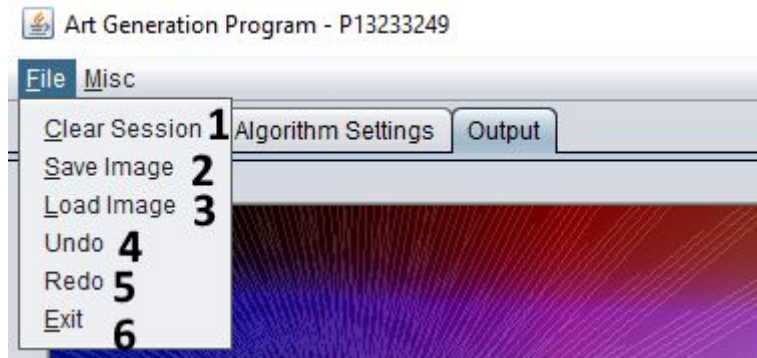


Figure UG7 - the file menu

Element 1 of the file menu clears the current session and creates a new one, this means the user can redefine the session type in the session setup.

Element 2 allows the user to save the output image to a user specified location. When this element is selected, a file dialog opens and the user is free to decide the name and location of the output.

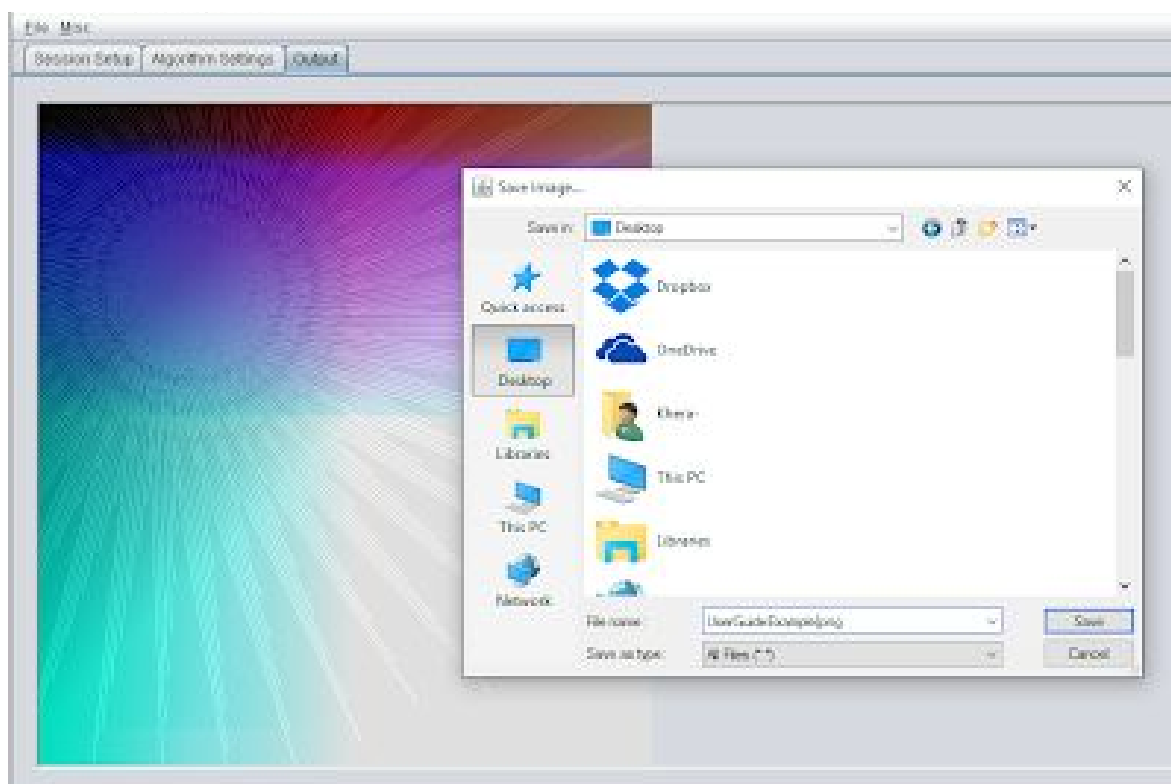


Figure UG7.1 - Saving

Element 3 allows the user to load an existing image into the program, this can be a previous sessions generated image or a image that was not created within the system.

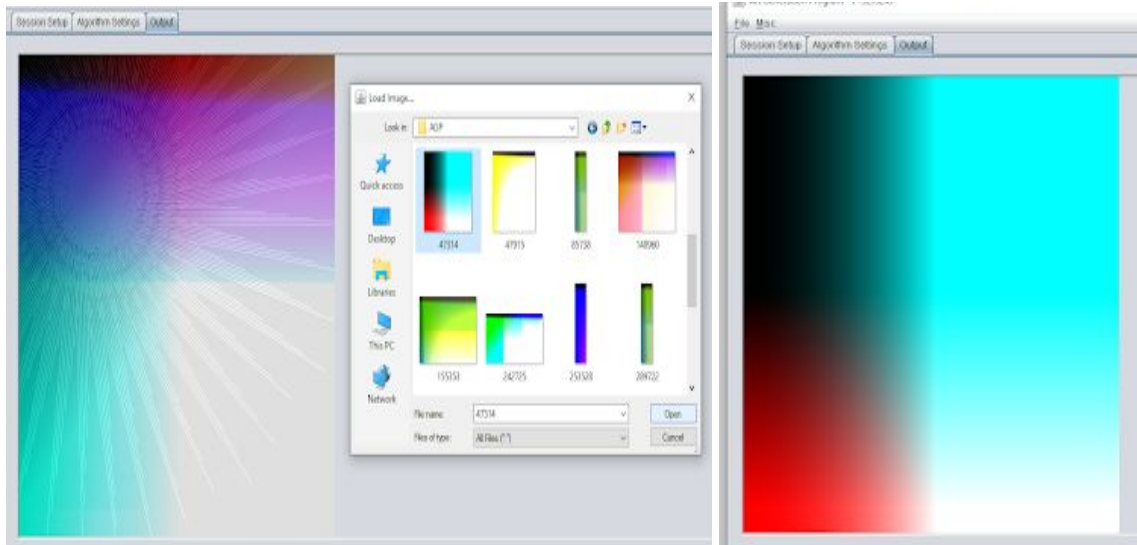


Figure UG7.2 - Loading

Elements 4 and 5 are used to traverse the history of the current session and to revert to items within that history

Element 6 is used to exit the program.

The Misc menu consists of one element.

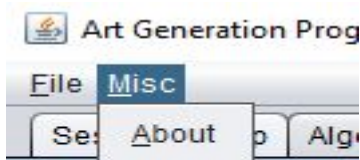


Figure UG8 - the misc menu

When the user clicks the about button, a dialog with a brief description of the program opens.