

# Mosaic Generator Manual

Mosaic Generator is the simple application which generate periodic planar mosaic with the random pattern. Periodic planar mosaics is the most common type of mosaic. It is created by one tile which is simply repeated by transtations and cover whole two-dimensional plane without overlapping. As a generating parameters you can set up five different visual properties described unde this paragraph. These properties were discovered as to be important for aesthetic perception by the human mind. Detailed explanation and more precise description of all methods contains my diploma thesis “Aesthetic Preference Research for Planar Periodic Mosaics, Faculty of Informatics, Masaryk University, 2006”. This application is the demonstrative part of that thesis.

## Symmetry group

Each mosaic is generated in the one symmetry group. The total number of groups in two dimensions is 17. Each group contains some transformations — identity, rotation, reflection, glide reflection or translation. The denoting of symmetry group came from crystallography.

## Objects

The total number of objects in the picture of the mosaic.

## Shapes

The total number of different shapes in the picture of the mosaic.

## Fractal dimension

The fractal dimension was created as a measure for describing the extreme irregular curves and its exceed topological dimension. In this case it can vary from 1 to 2. In the visual perception you can imagine this as a measure for complexicity of curves and image and its amoutn of self-repeating parts of the image in different scales.

## Lacunarity with empties

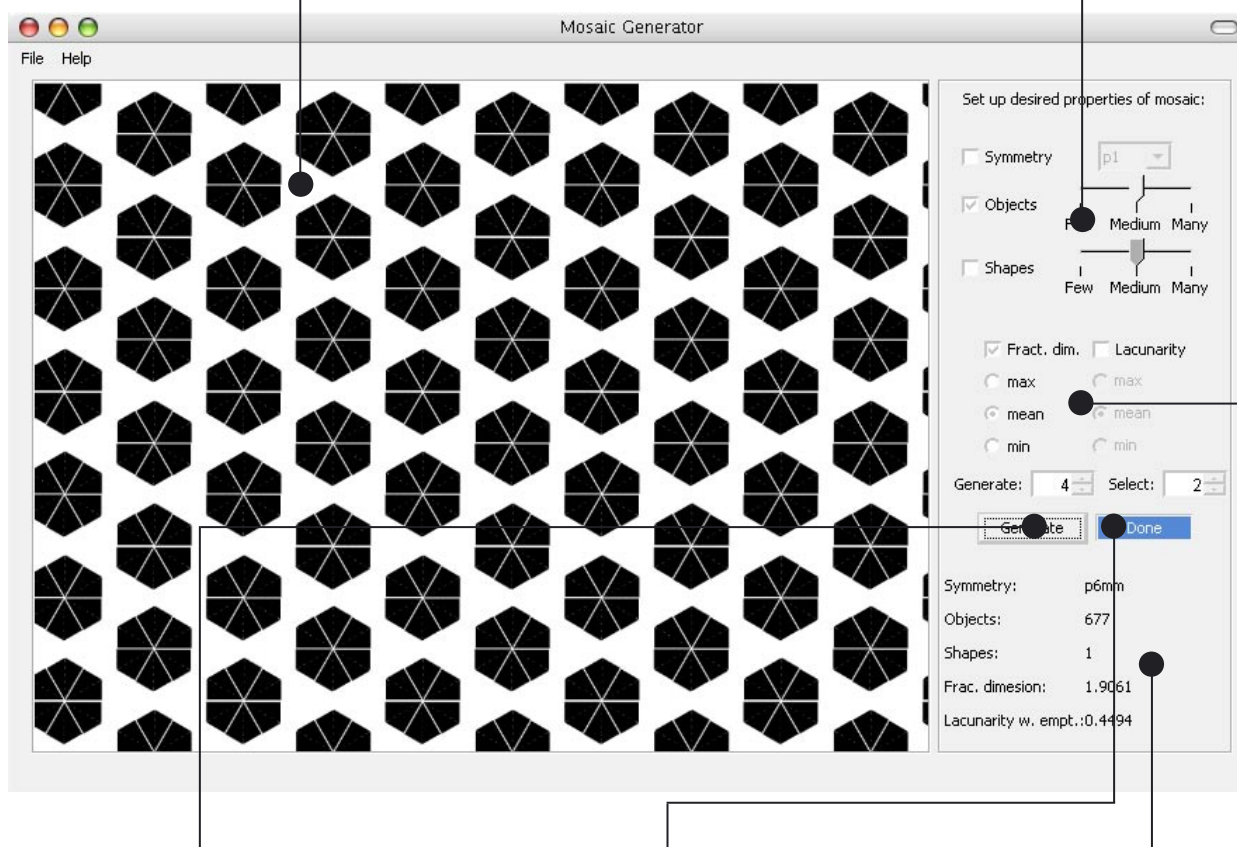
It is complementary measure to fractal dimension. By this we can differentiate between two images with the same fractal dimension. Higher lacunarity means more holes in the picture and lower lacunarity means more compact pattern. Lacunarity with empties is one of the possible way how to measure it.

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Generated mosaic, if is created more than one, the last one is displayed.

Setting up main parameters of desired mosaic(s).

Setting up fractal dimension and lacunarity. Available only if more than one mosaic will be generated.



Start of generating. Prompt for directory to store images if more than one mosaic will be generated.

Completed percentage of generating and saving operations.

Exact parameters of created mosaic.

Pavel Kozárek  
kozarek@gmail.com