

Mandala Generator

Software Engineering II WS23/24

Bauhaus-Universität Weimar

Project Idea

Our "Mandala Generator" project is designed to enable users to create a mandala with a few inputs only. These mandalas can be exported as images or PDF files. In addition, the user should also be able to color the mandala. The term mandala originally comes from the Indian language in which the term has a religious meaning and means 'wheel of life'. There they have a religious meaning. The mandalas known in the western world are geometric motifs in which symmetry plays an important role. They are usually aligned on the center. Popular shapes for mandalas are circles and squares. Many mandalas can also be constructed using a compass and a ruler. The entries can refer, for example, to the shapes used or the number of symmetrical circle segments.

A possible input for the program could be:

- Base: Circle
- Items: Circle
- Segments: 6

The program could generate something like example 1 or example 2. The only difference is that in example 1 we have something like a layering, while in the other image we have a transparent image.

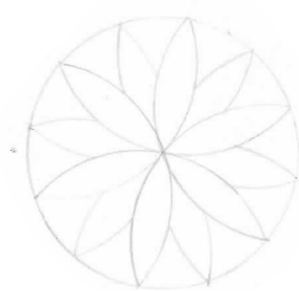


Abb. 1. Example 1

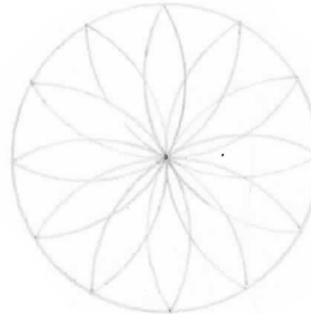


Abb. 2. Example 2

Requirements

Functional Requirements

REQ1 - M: The program should generate at least 2000 distinguishable mandalas.

REQ2 - H: The user can set the parameters of the mandala or create a random one.

REQ3 - L: The program should be able to create different mandalas with the same input.

REQ4 - H: The system is designed to generate symmetrical mandalas created using basic geometric shapes and lines.

REQ5 - H: The program must allow the mandalas to be exported as an image or print file.

REQ6 - L: The program should provide a way of coloring the mandala, after it is generated in the program.

Non-Functional Requirements

REQ7 - L: After pressing "Generate", the mandala should appear with a delay imperceptible to the human eye.

REQ8 - H: The program should run on computers and use a graphical user interface.

REQ9 - L: The user should only be able to navigate through the program with a mouse.

REQ10 - L: Only basic reading skills should be required to use the program.