National Technical University of Ukraine “Kyiv Polytechnical Institute”

Faculty of Electronics

Microelectronic Department

Presentation on the topic:

Fractal graphics

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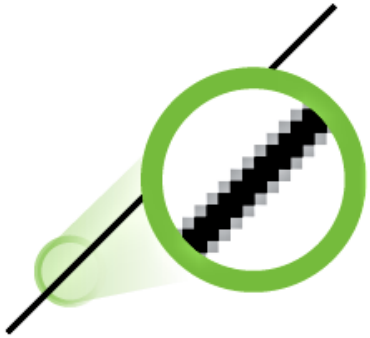
Kyiv-2020

Plan:

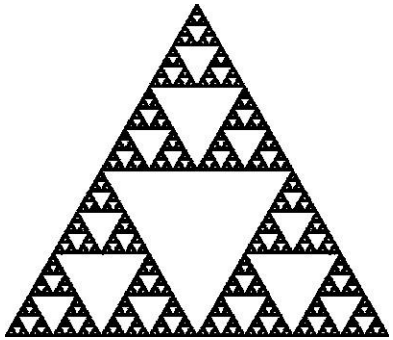
- Types of computer graphics?
- Fractal?
- Fractal graphics in modern art?
- Questions?



Raster

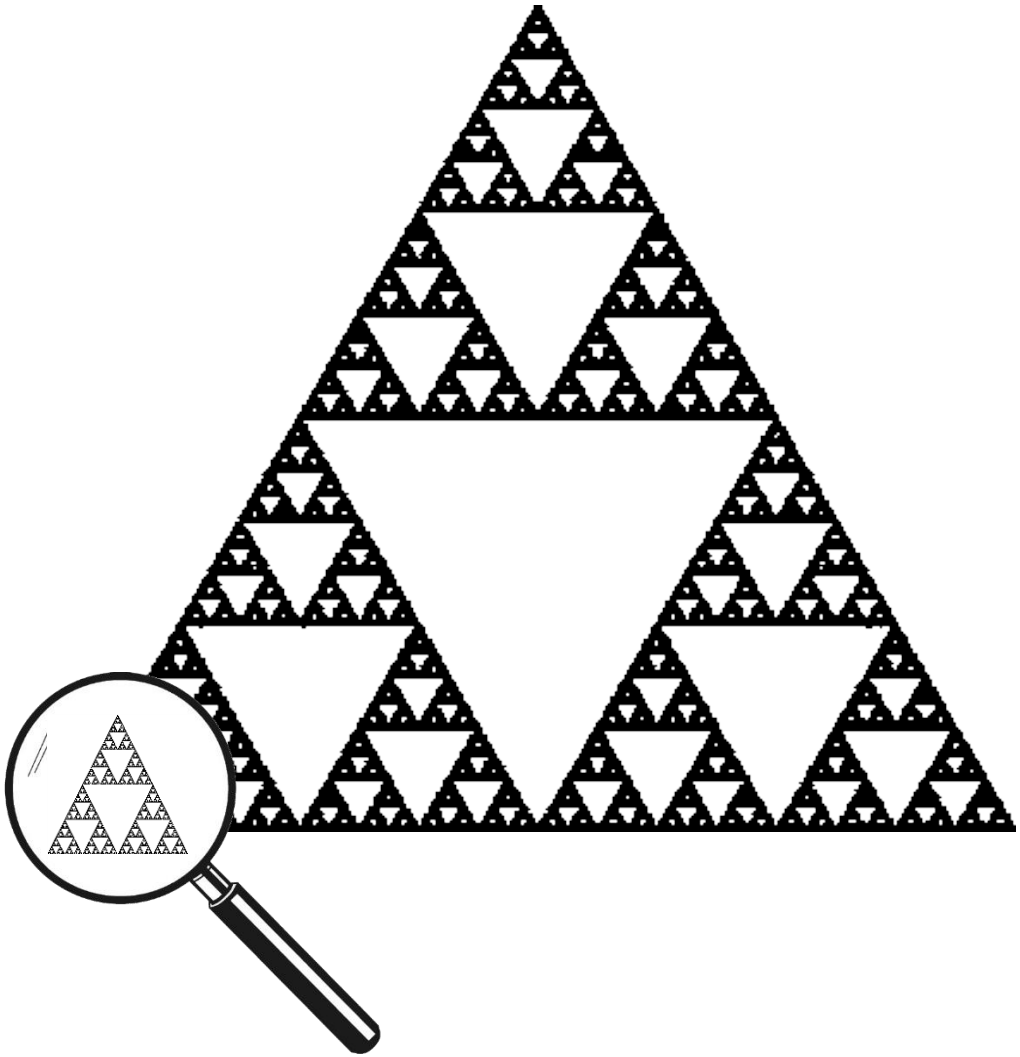
Graphics

Vector

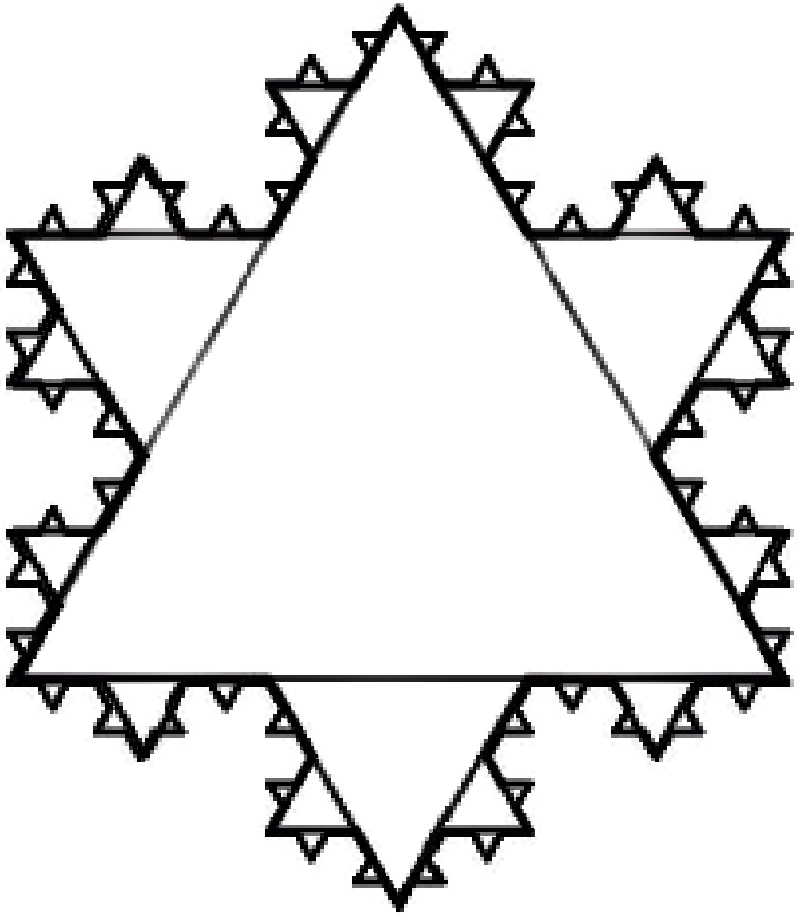


Fractal

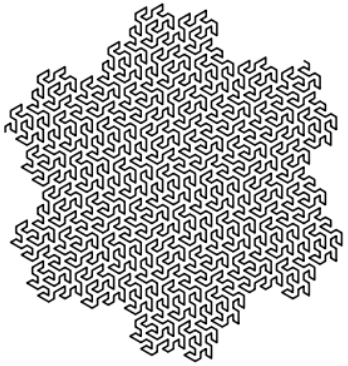
Fractal (from lat. *fractus*- crushed, broken, shaterred*)*- a set, that has such property as **self-similarity**.



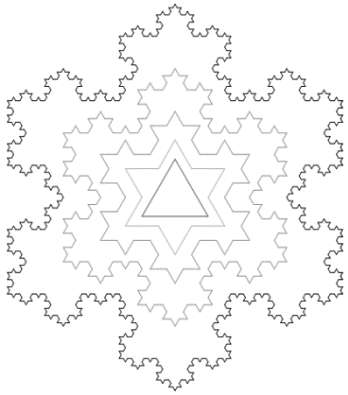
The simplest fractal can be initiated with a **recursion**.



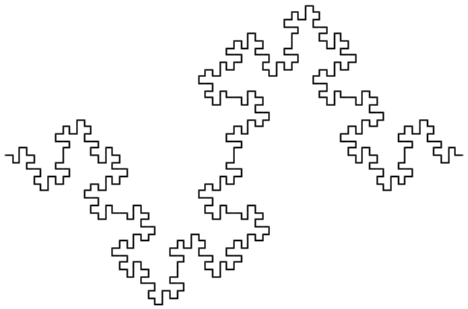
Fractal curves



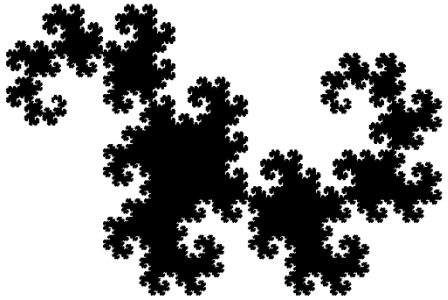
Gosper curve



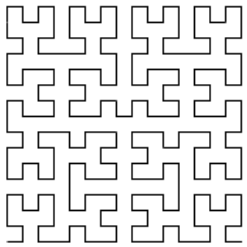
Koch snowflake



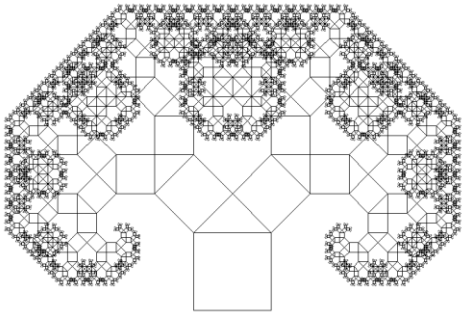
Minkowski curve



Dragon curve

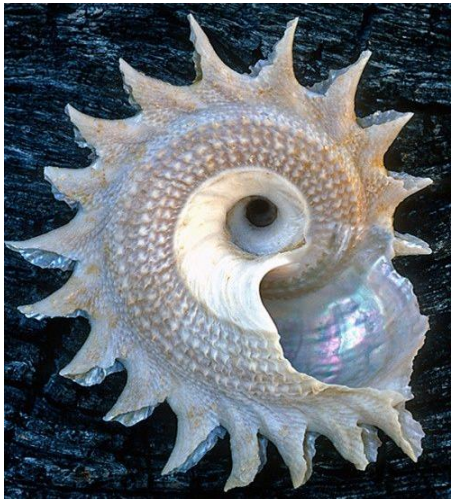


Hilbert curve



Pythagoras tree

Examples of fractal objects



Advantages:

- No computer memory used
- Perfect for creating complicated landscapes
- No art talent required
- Realism
- Stable quality of the picture

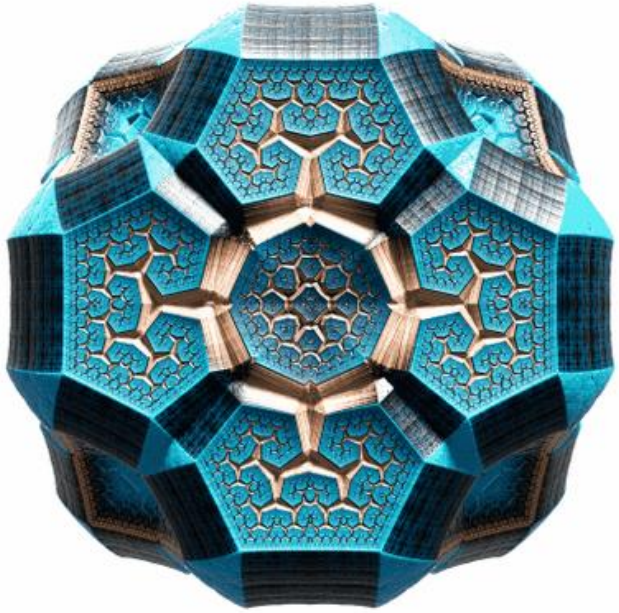
Disadvantages:

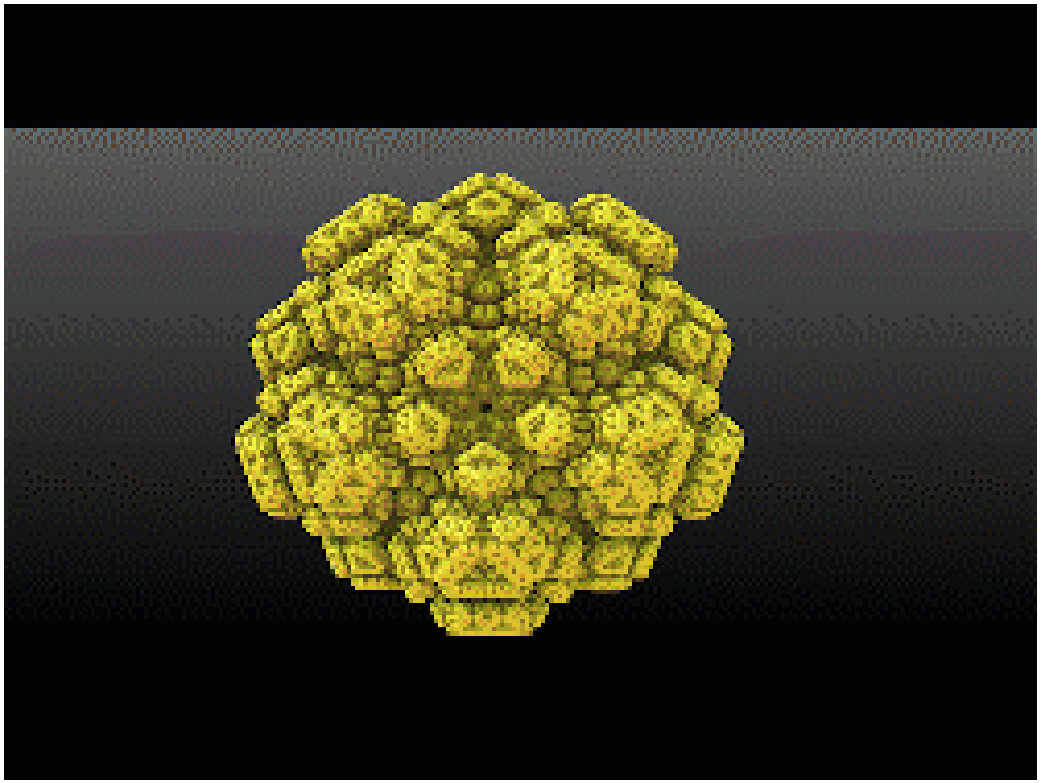
- Big processor load
- Disability to create every picture

Programs for creating fractals:

- apophysis 3d
- apophys 7x
- chaotica
- ultra fractal
- **mandlebulb 3d (recommended)**

Examples of 3d fractal objects





CONCLUSION

Fractal graphics- is a synthesis of art and math, which combines beauty, harmony and math.

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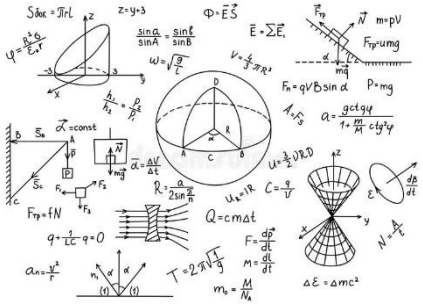

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Thanks for your attention