Generative Art with Julia

Generative Art

Making beautiful pictures with algorithms

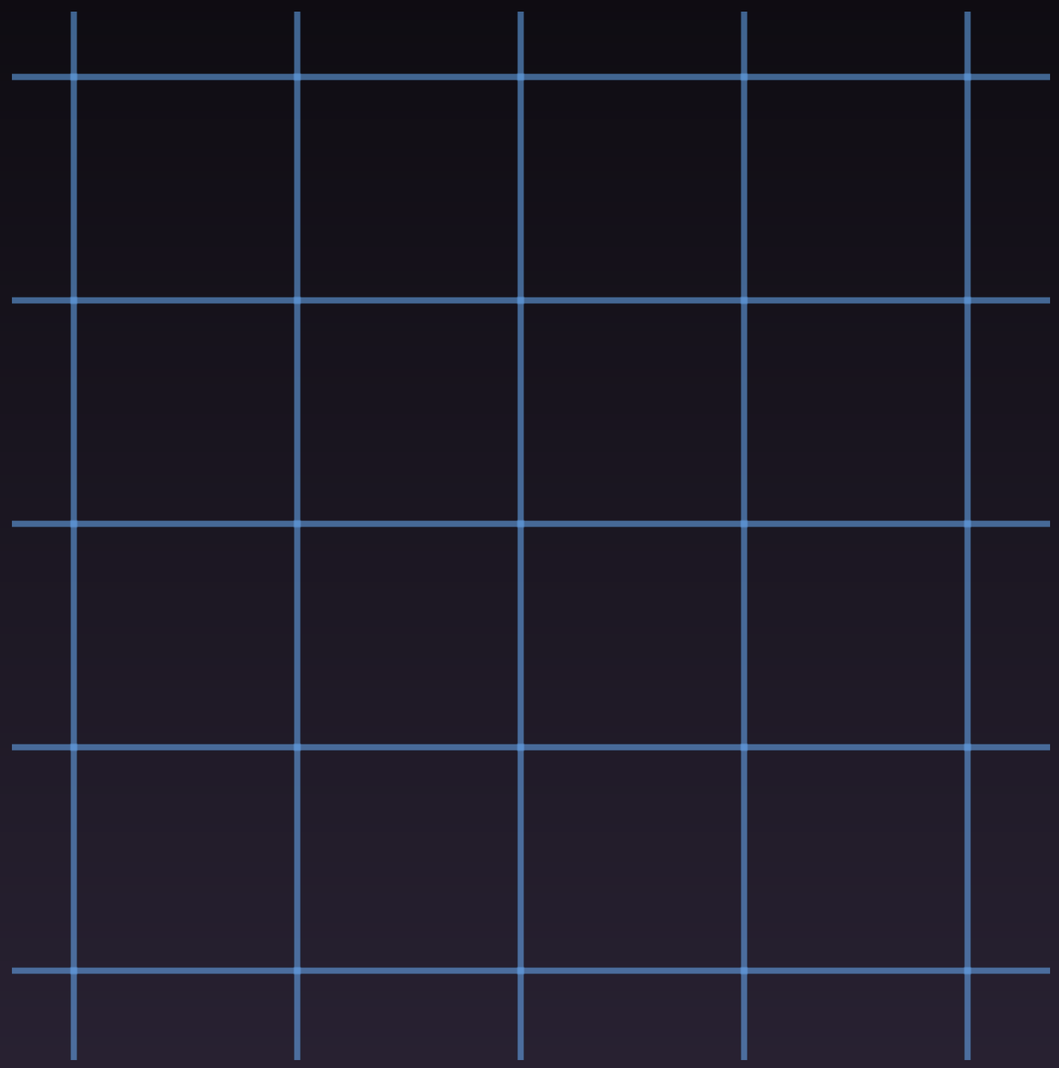
Question

Imagine you have all of the representable colors on the RGB color cube...

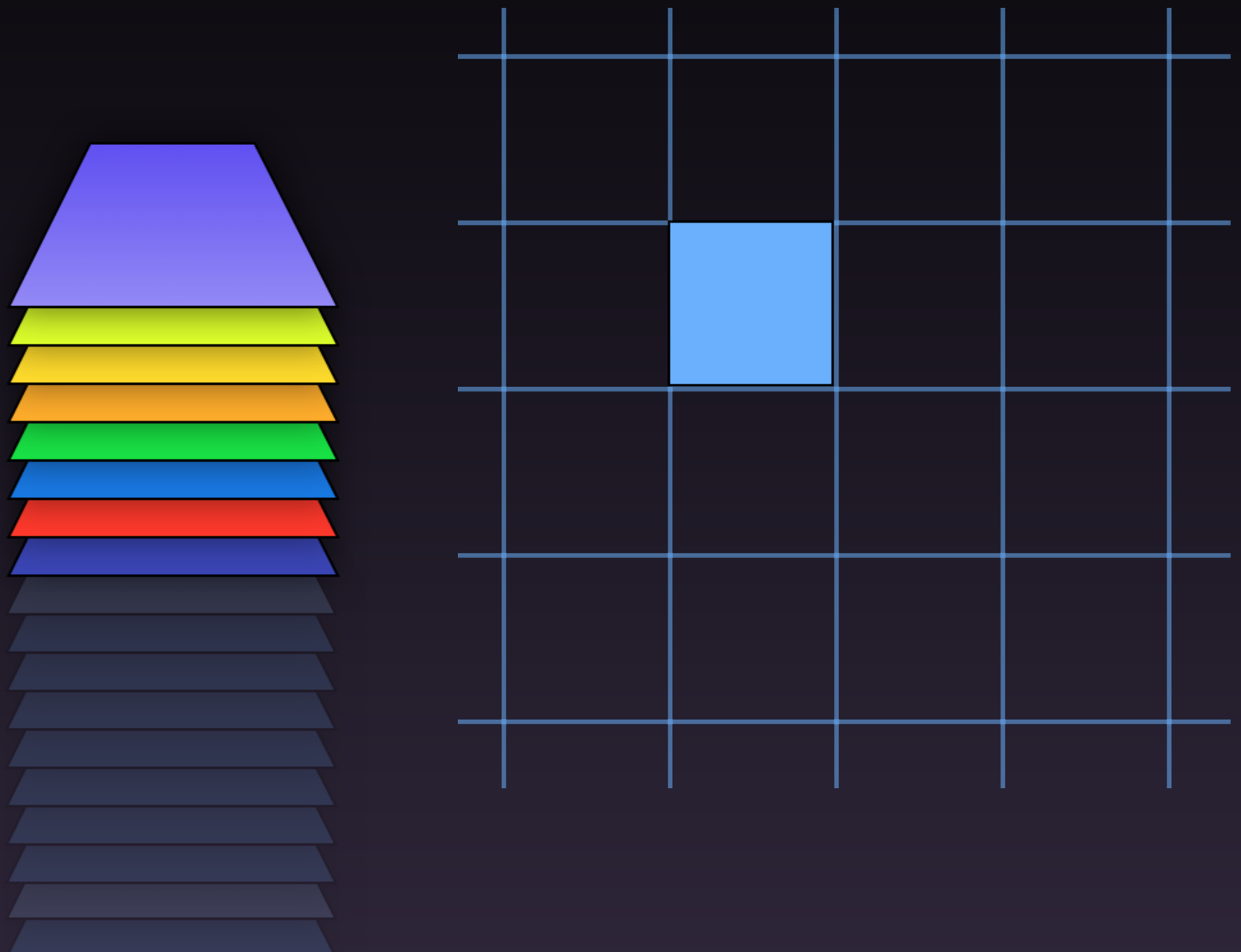
Question

What if you made a picture that used each color once and once only?

How Does it Work?



How Does it Work?



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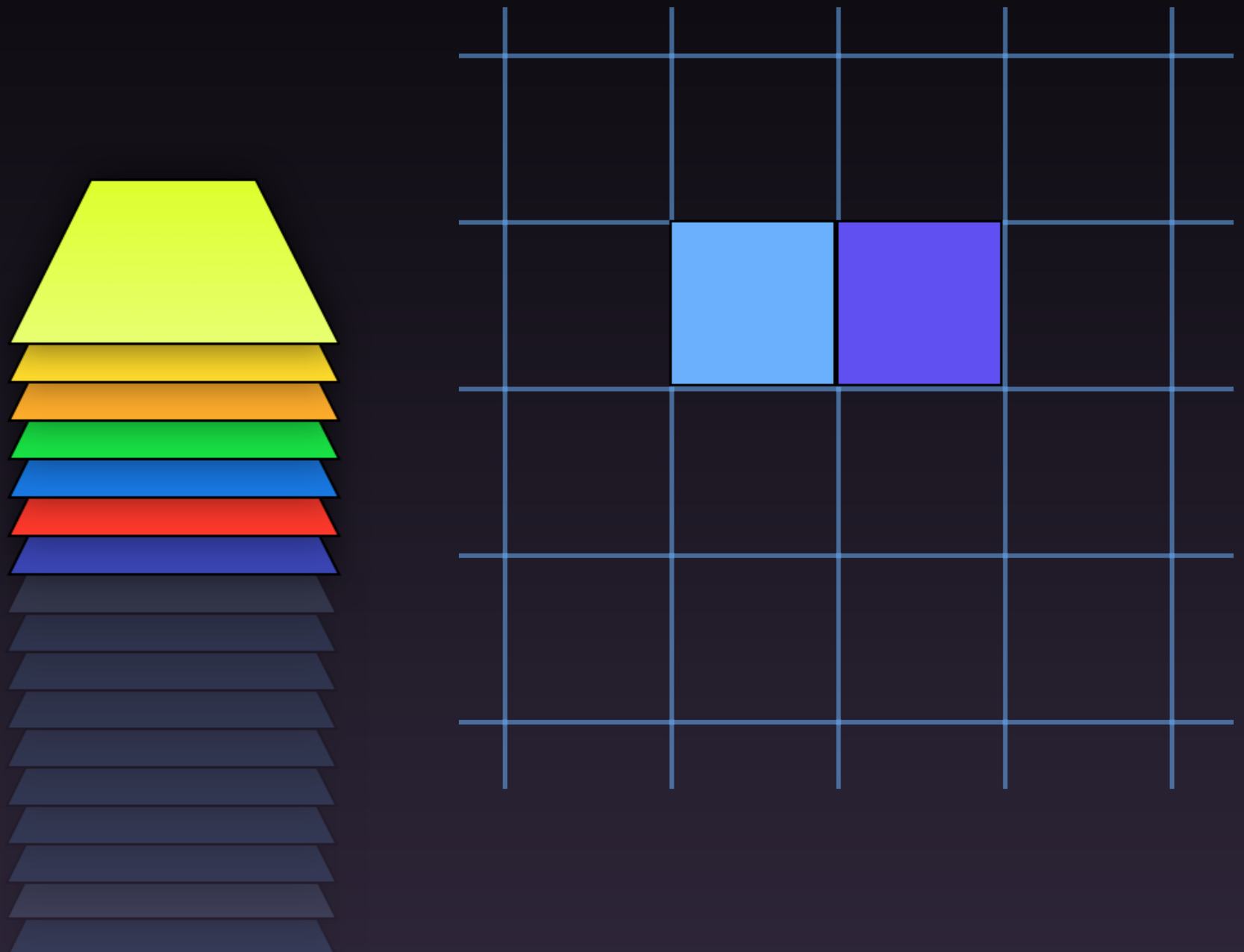

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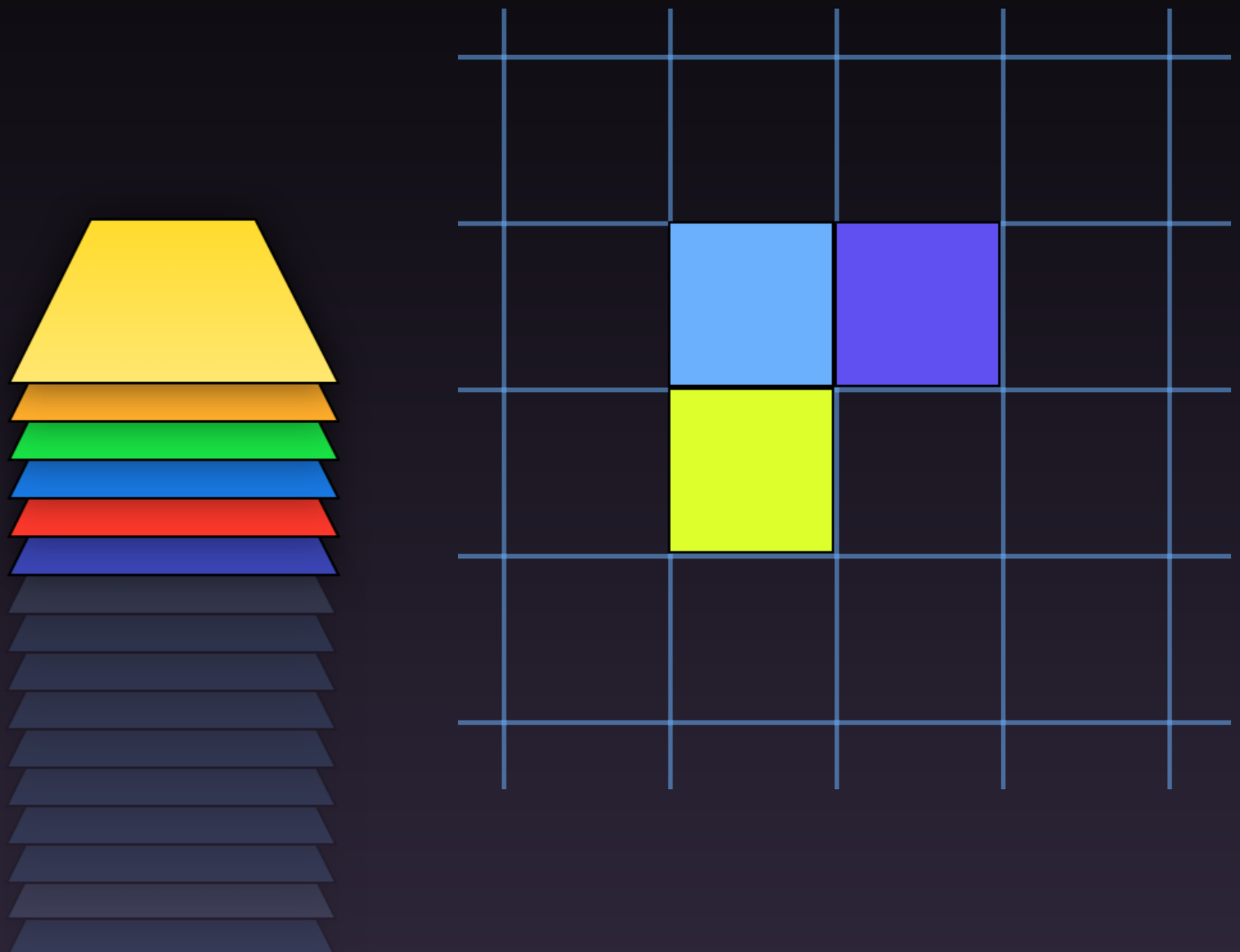

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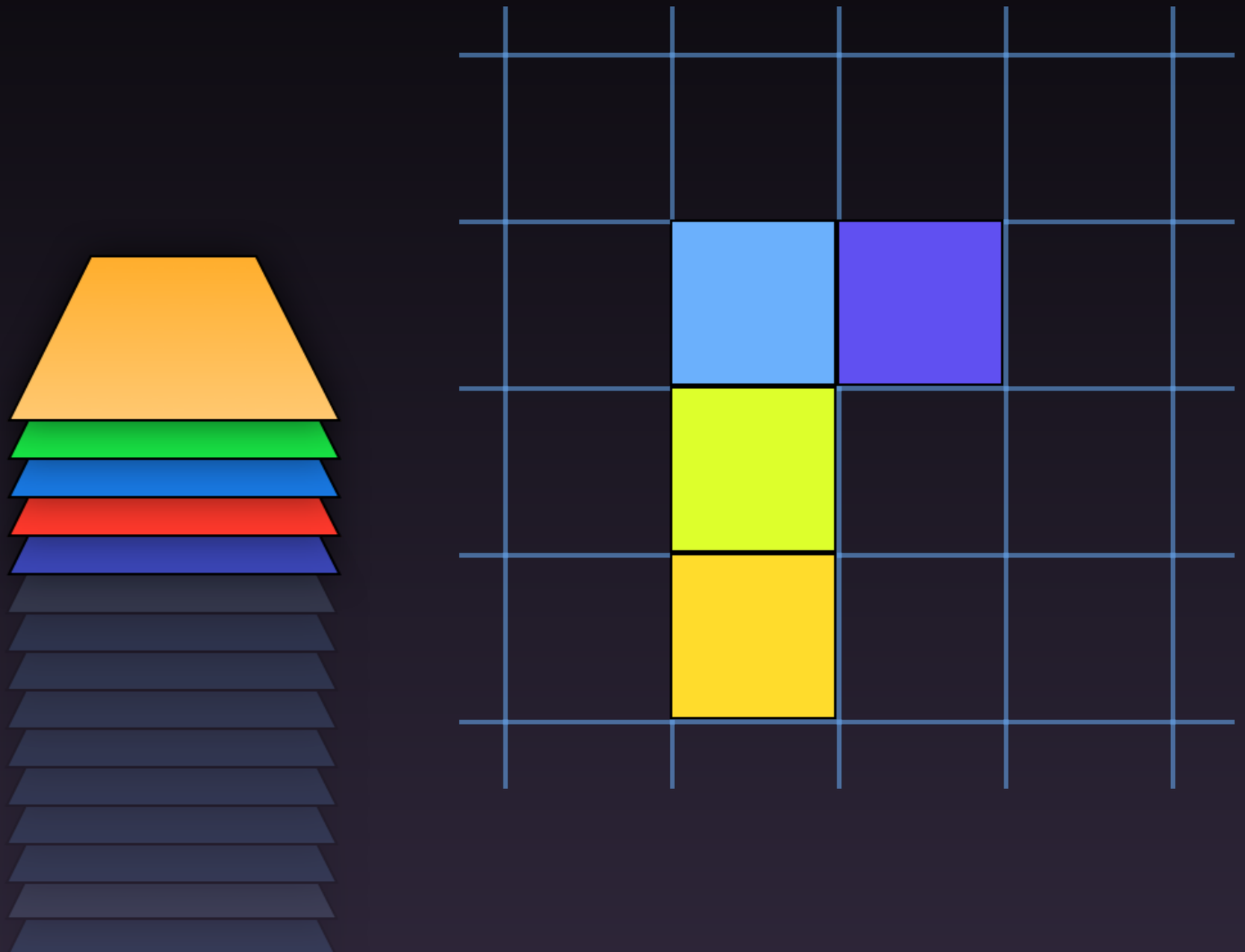

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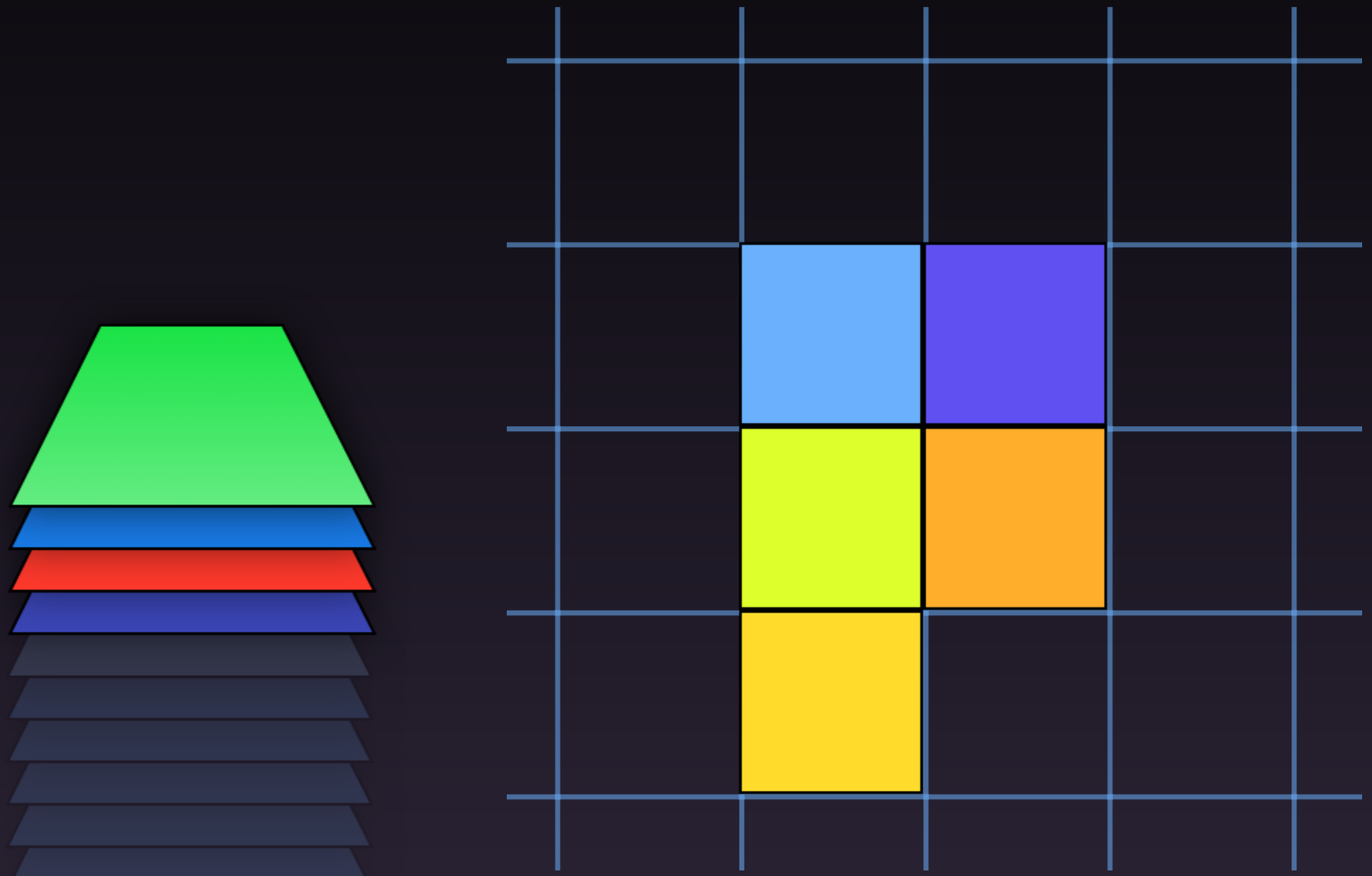

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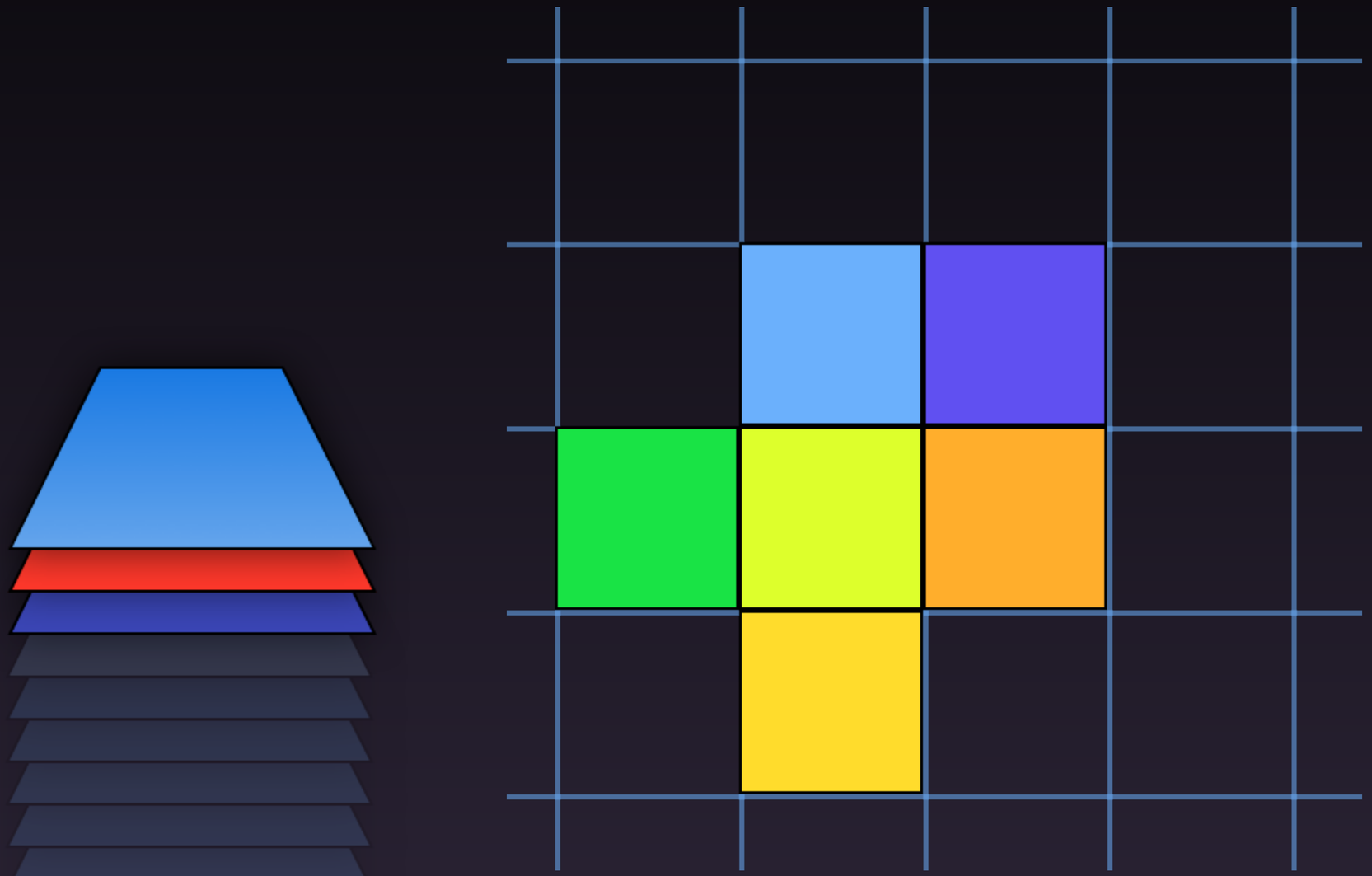

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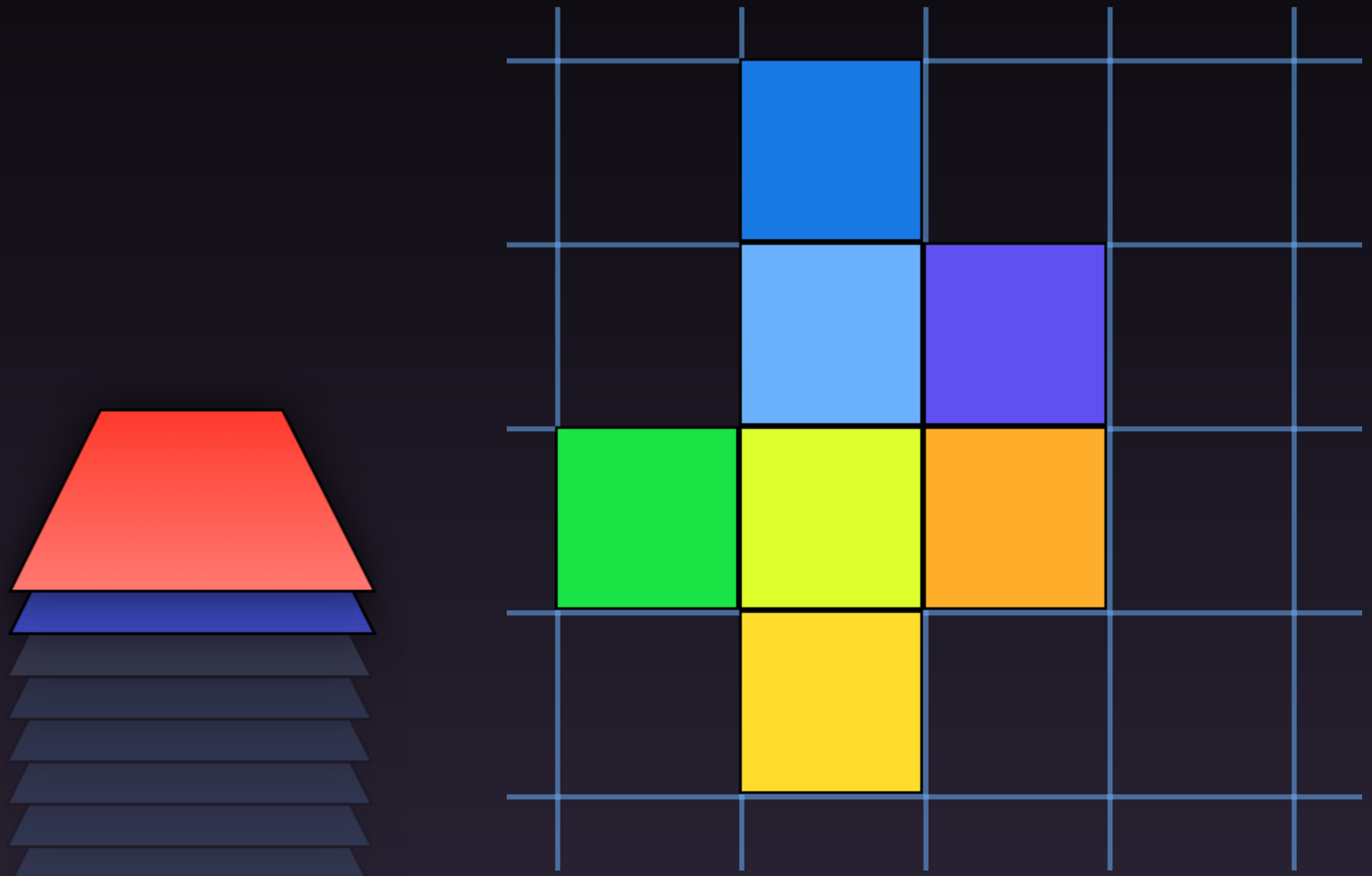

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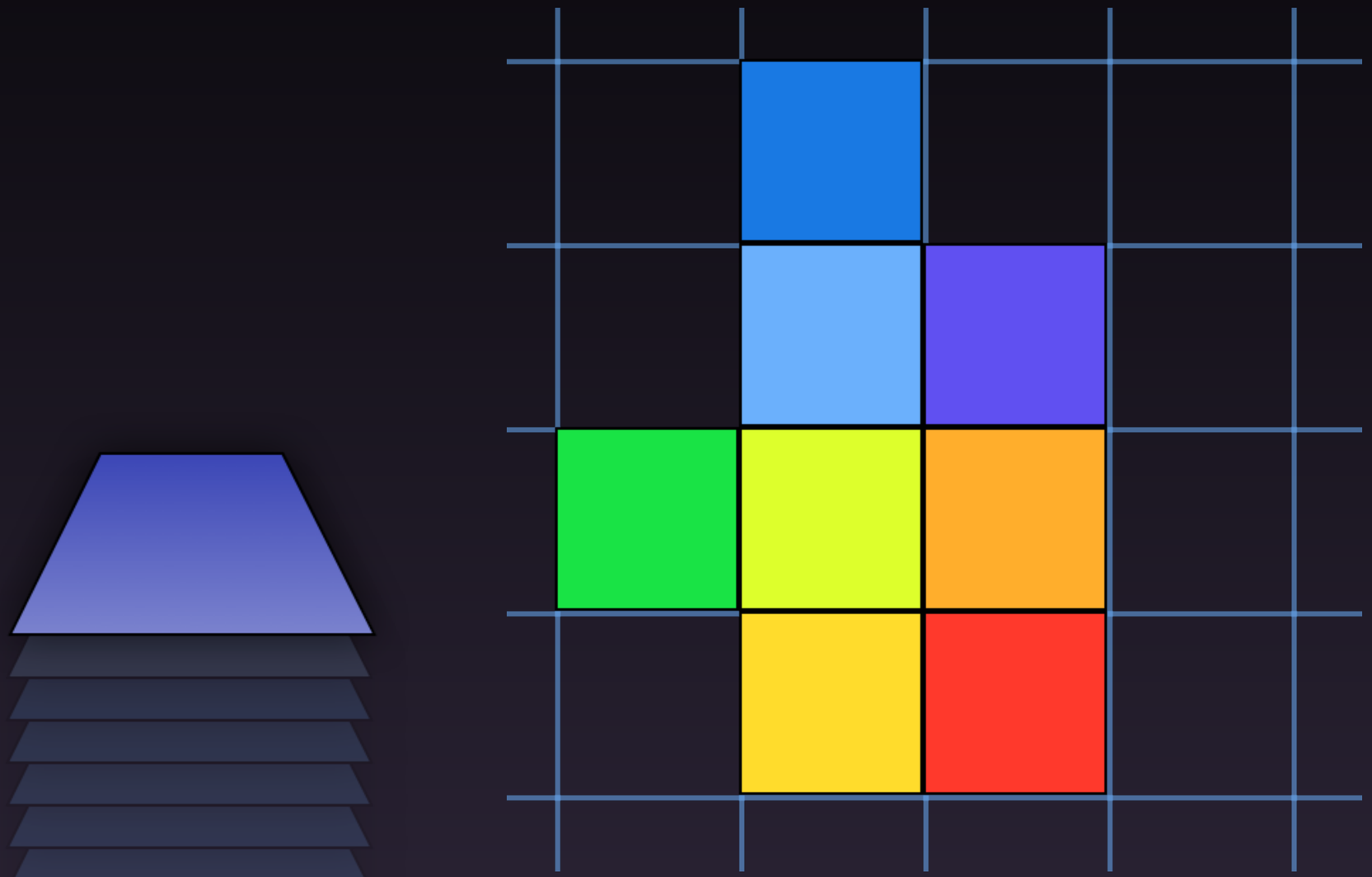

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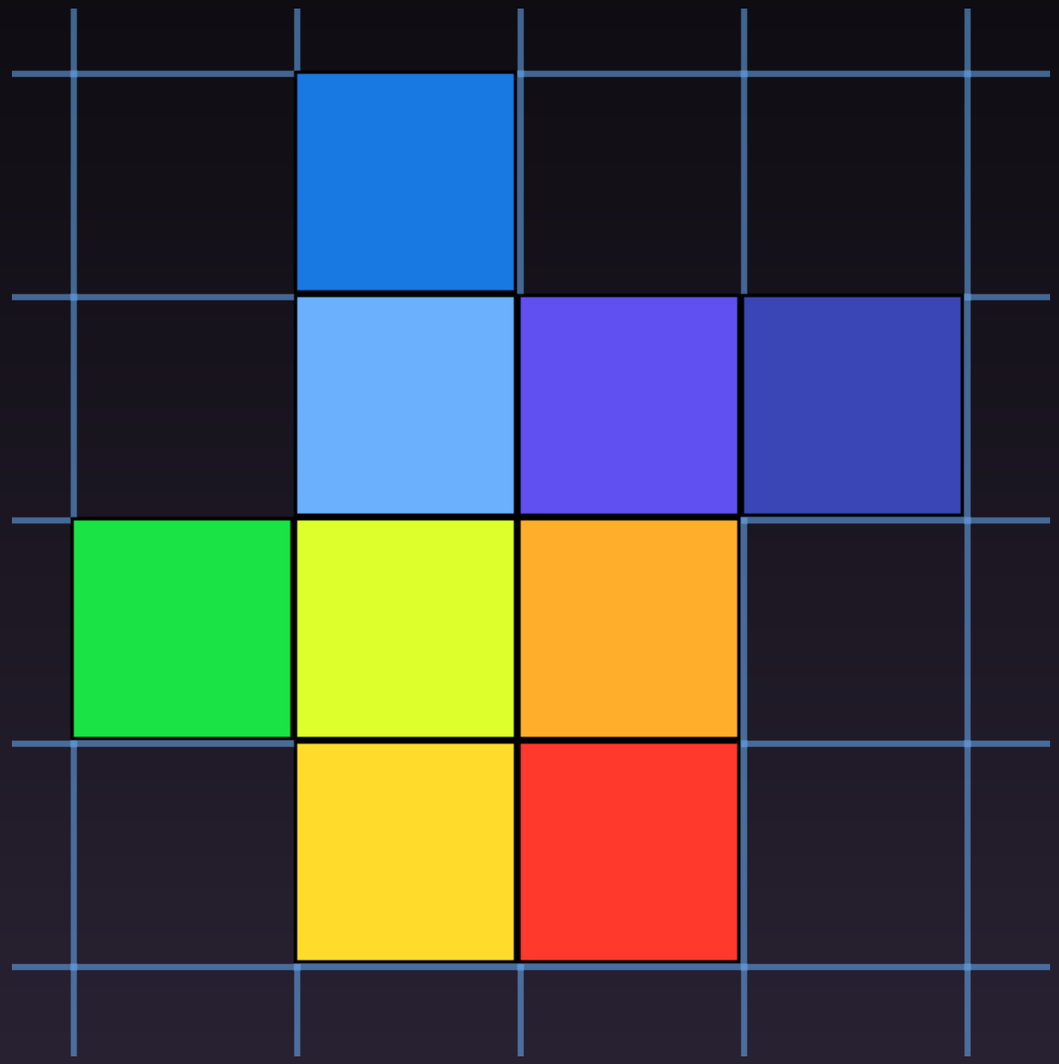
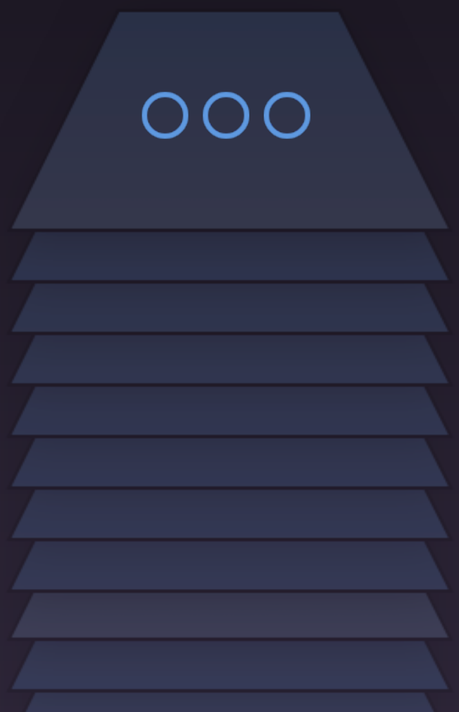




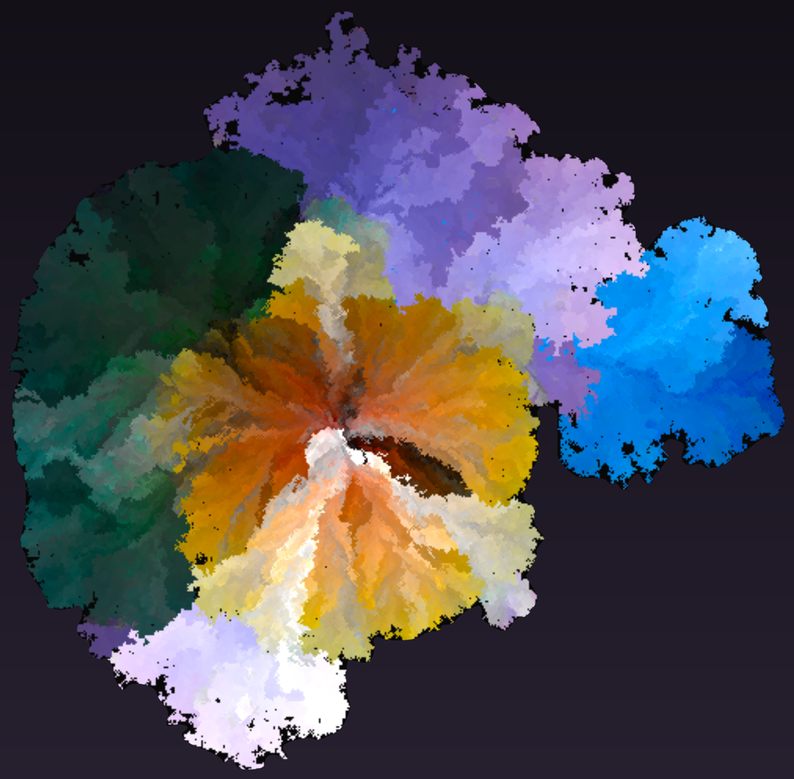
All colors, ordered by hue

This was a photograph of...

This was a photograph of...

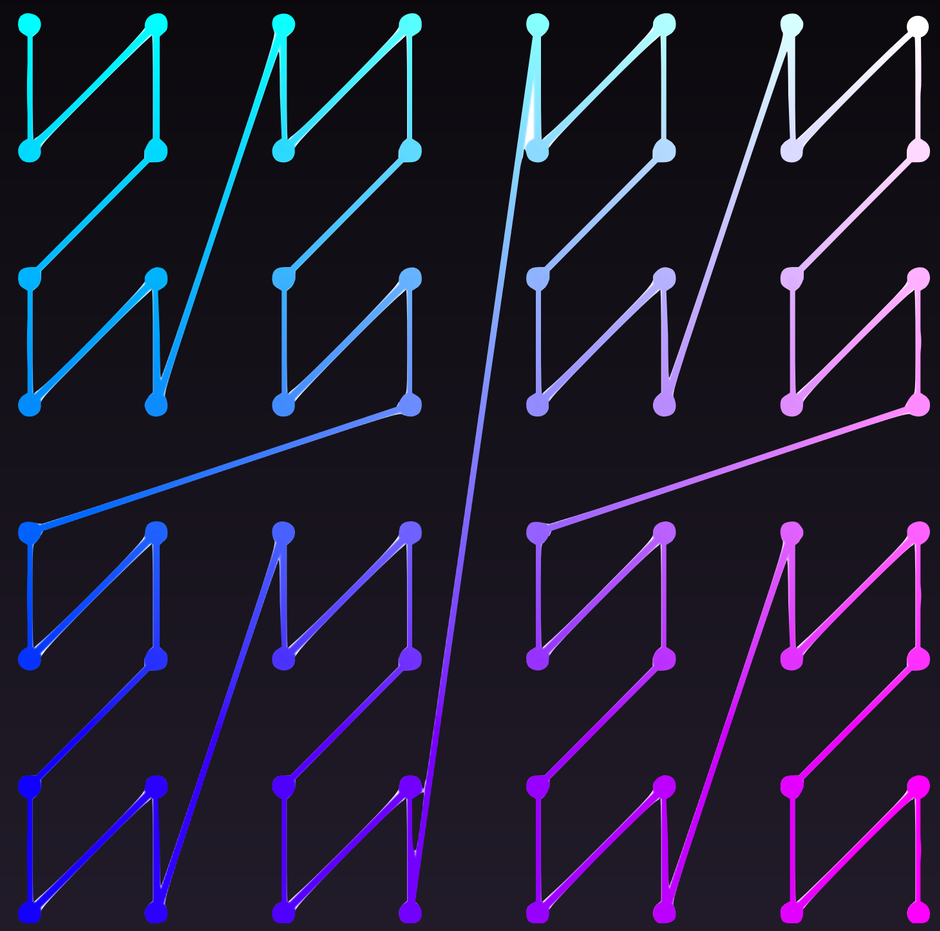
The Technical Side

Lots of pixels, not enough time.



Placing a pixel is slow: O(size of frontier)

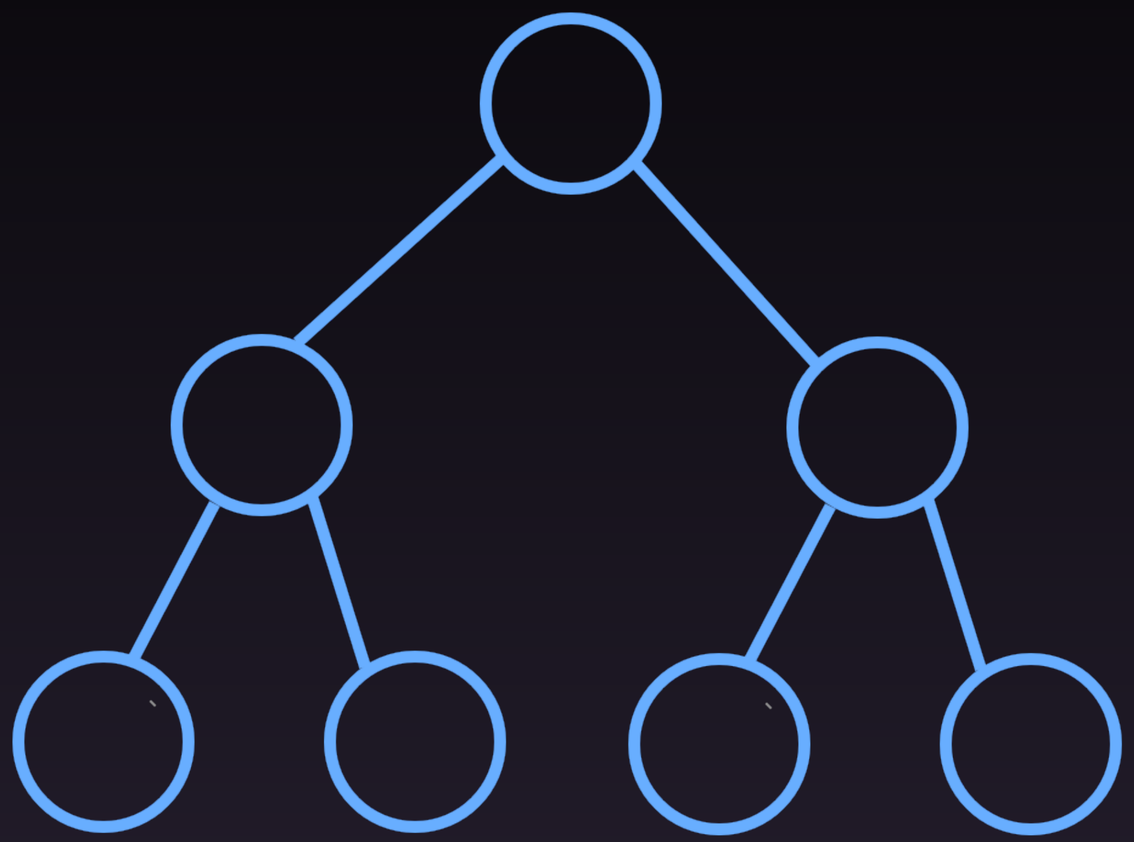
Solution: Spatial Search



Efficient approximate nearest-neighbor search

in low-dimensional spaces (Chan 2006)

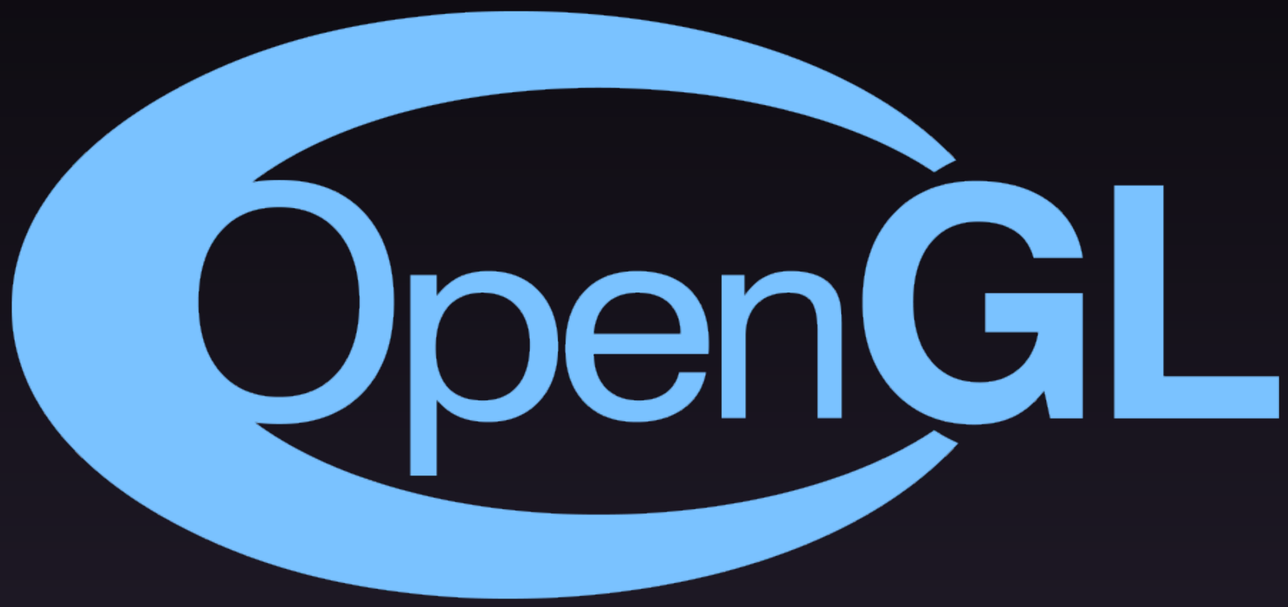
Treap



Self-balancing binary search tree for unique values

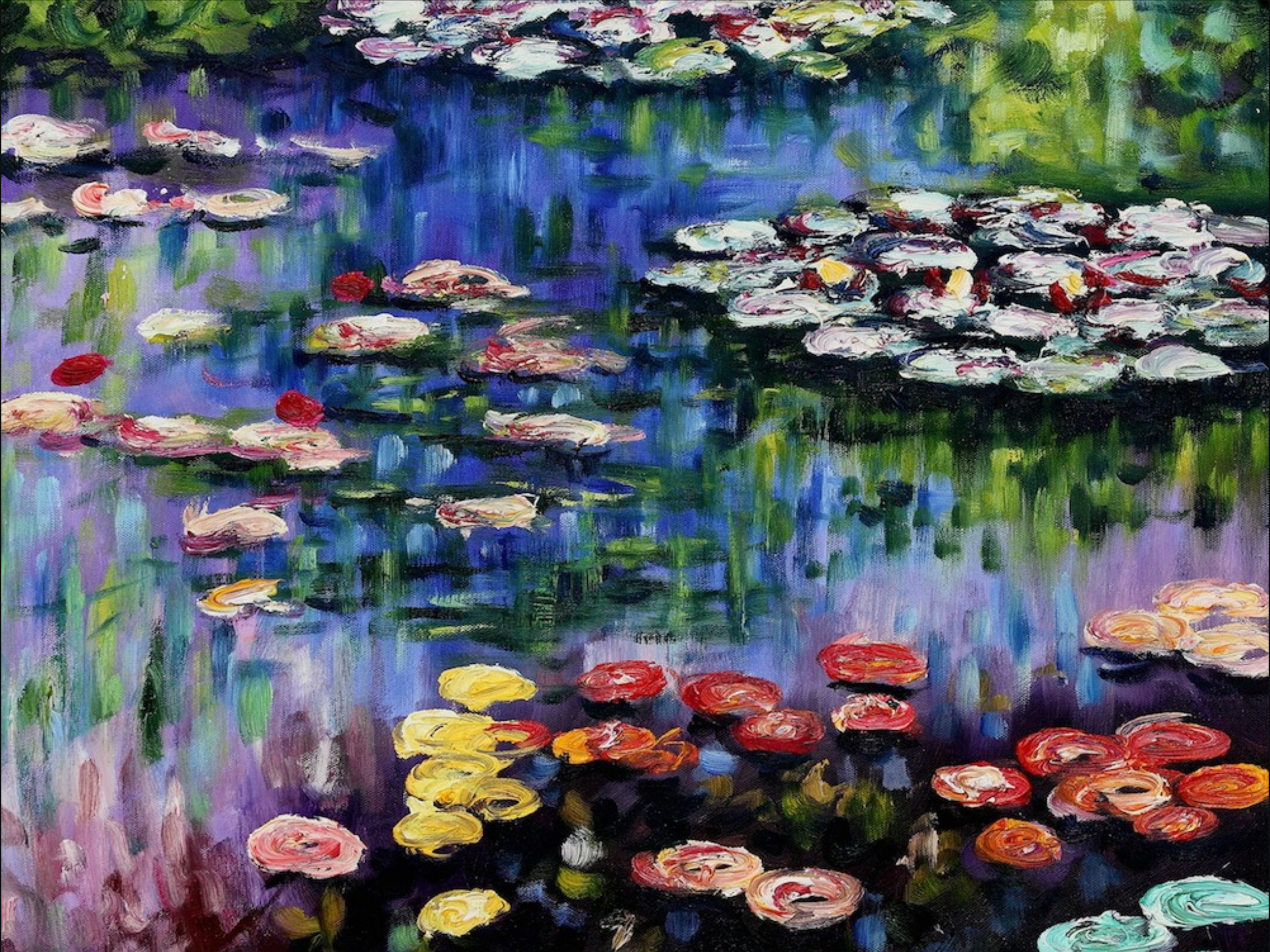
Lets you maintain a sorted list with fast insertions + deletions

Interactive Graphics



A small starter kit for OpenGL development

Basic standalone example + utility functions



Thank You!

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Github: @**yurivish**

Repository: **Julia-Playground**

Original thread: **goo.gl/Kv34Hk**