HYPERGRAPHS

quilting again — represented as hypergraph — data structure?

pluck only 1 edge
- check for cycles
  → if yes → ERROR
- if ok (acyclic)
- then remove low order nodes until all gone
- reverse order and ... that is the quilt order!

any (one) shared edge
① label all the areas (nodes)
② label the edges (hyperedges)

x, y, color
→ find area based on corners?
→ smallest area w/o anything lines?
→ need segments and not just points?
→ can find ... based on the points maximum + intersections.
→ use labels for the sections?
→ extend lines straight?
① use area labels
② each line 1 edge
③ create member graph
④ test for cycles

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id	x	y	value
1	x_1	y_1	line 1
1	x_2	y_2	line 2
1	x_3	y_3	line 2
1	x_4	y_4	line 3

① CROP
if y > xmax, xmay
x < xmin, ymin
y > ymax, ymax
y < ymax, ymin

② reduce → only things in the area
intersect? overlap?
→ find if two shapes overlap
* need code to crop to section of any shape
→ hold "BORDER" object for ...?

id	line id	xy	xy
1	1	$x_1 y_1$	$x_2 y_2$
1	2	$x_1 y_2$	$x_3 y_3$
1	3	$x_3 y_3$	$x_4 y_4$
1	4	$x_4 y_4$	$x_1 y_1$

do each line in new section one at a time

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quilt ideas

→ make n squares
→ code areas and sort areas
→ put down biggest first
  — add shadow
→ put down rest in order of size
  — add shadow
→ add details w/ quilting

1 1 1
1364
9400
299
800
6363

→ just split on all verticals
→ add for > 8"
→ do a 4 → 10" splits horizontal

idea ⑥ → shadows! applique?

overhead
① make shadow objects
② keep adding them
③ piece it?

→ create pieced designs
→ add shadows after w/ colors.

— has to be convex

rules for finding pieceable block?

dark	
#9C3B21	#303E58
#BD4327	#415462
#F6AC9C	#B8C2BA
#F2D0BF	#E4E6D8

white
gray

IDEA — generate a FPP random

borders are a special class of line
has 0 edges 1 section
① add a line
  a) pick 2 lines to connect
  b) pick an x/y on each line
② if new line intersects others
③ create new sections (based on the given line)
④ test if cycles in graph
  - if yes → remove line
⑤ min area?? remove it too small.

old section becomes 2 sections

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random shape — random strips
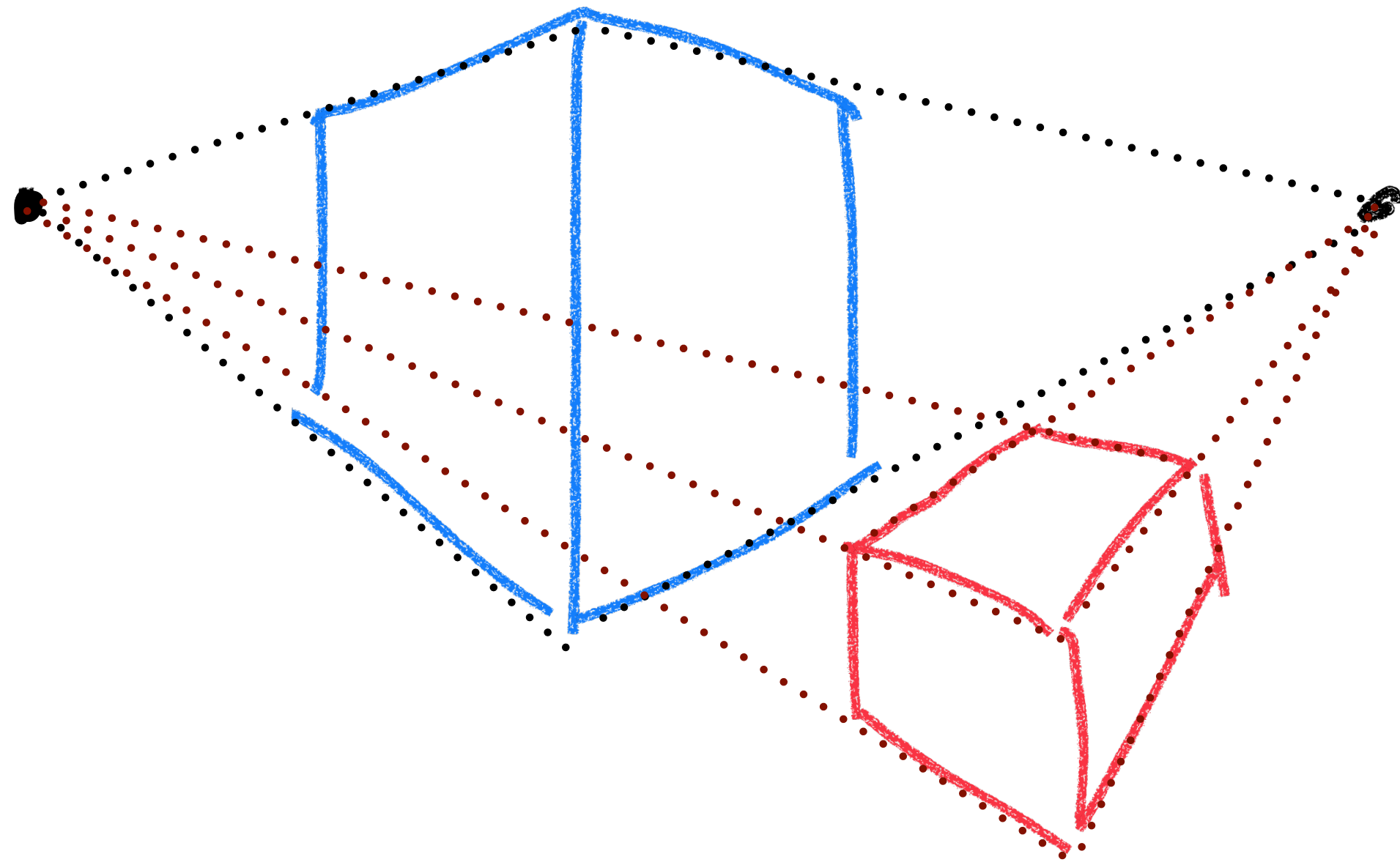→ color ideas?

3D log cabin

← color outside to make 5 colors

→ What if → all white strips? then do quilting with colors?

→ log cabin mona lisa? abe lincoln?
- use variety of colors
- contrast values

PIXELS → take ave color in shape

→ map average color of pixels overlap

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shaded w/ contrast color.

→ variations of colors.

Fuse two domains


```r
poly %>%
  ggplot() +
  geom_polygon(aes(x = x, y = y,
                   group = id, fill = value),
                   alpha = 1) +
  theme_void() +
  theme(legend.position = "none")
```