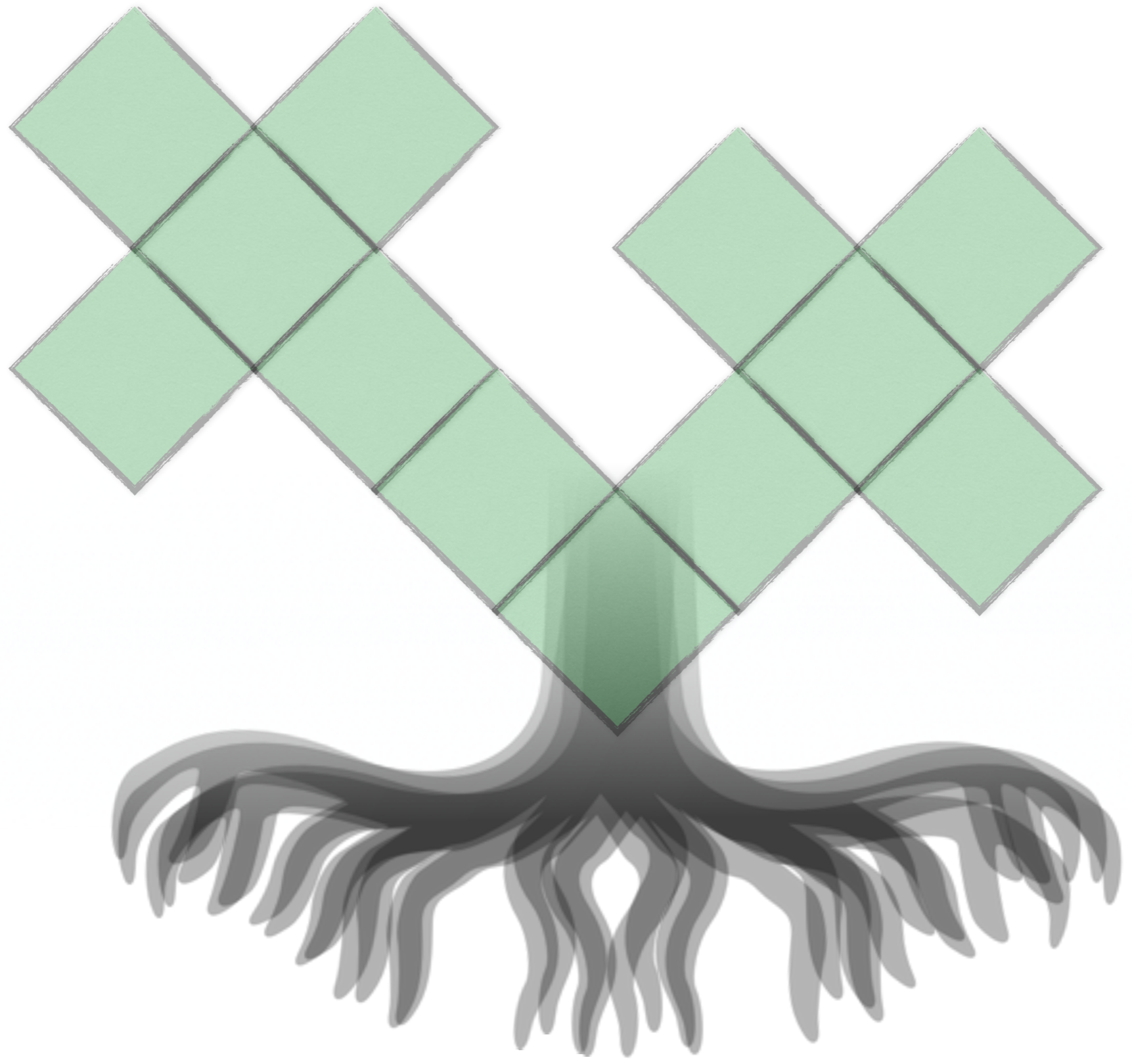


Tree-Kangaroo

Hopscotch



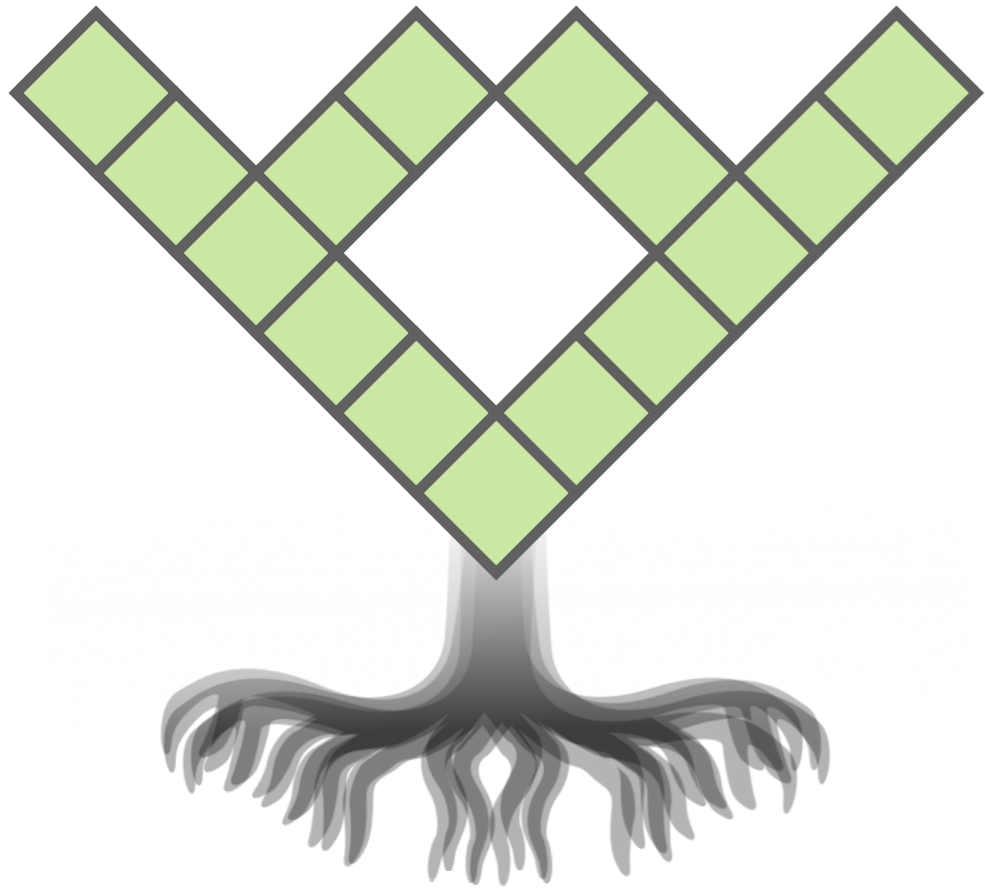


Tree-Kangaroo

Hopscotch



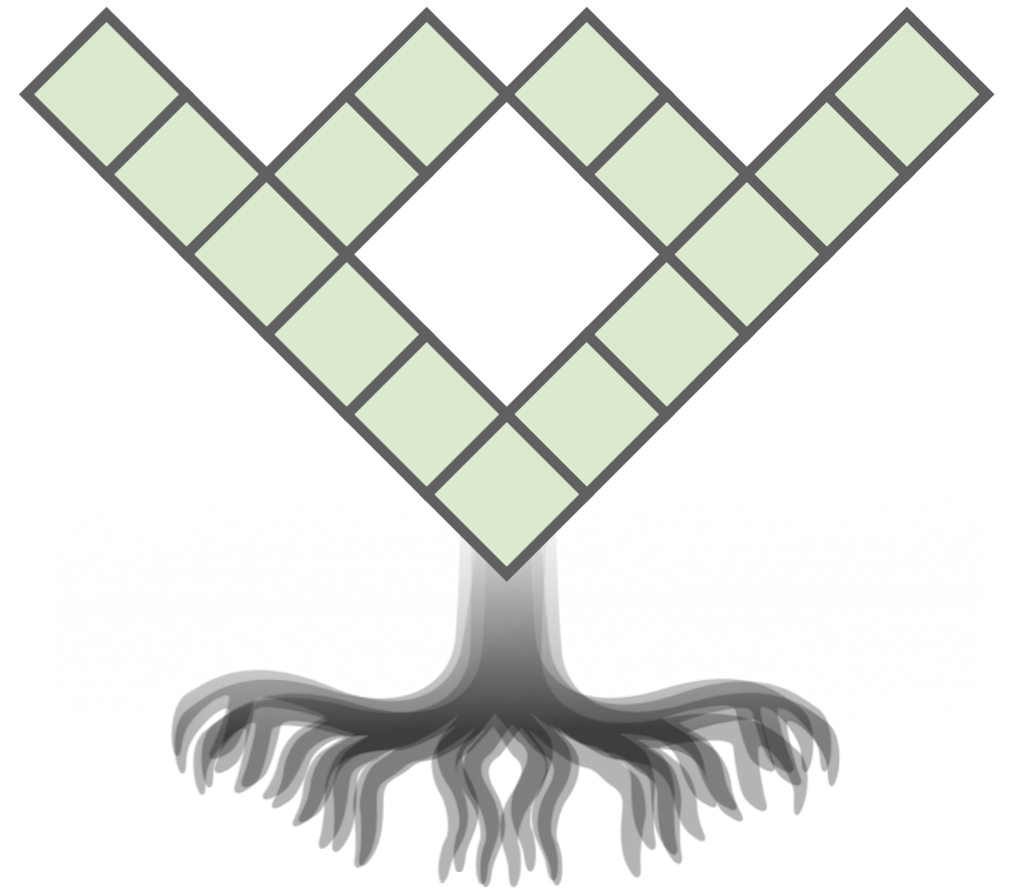
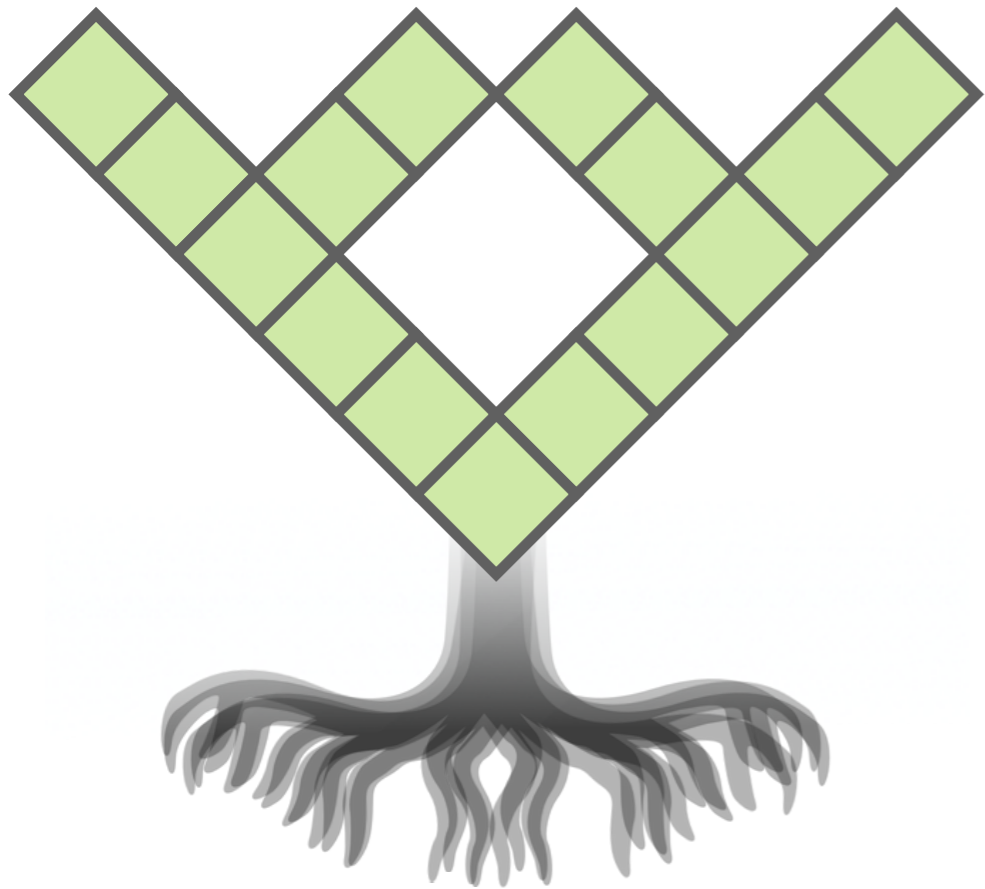
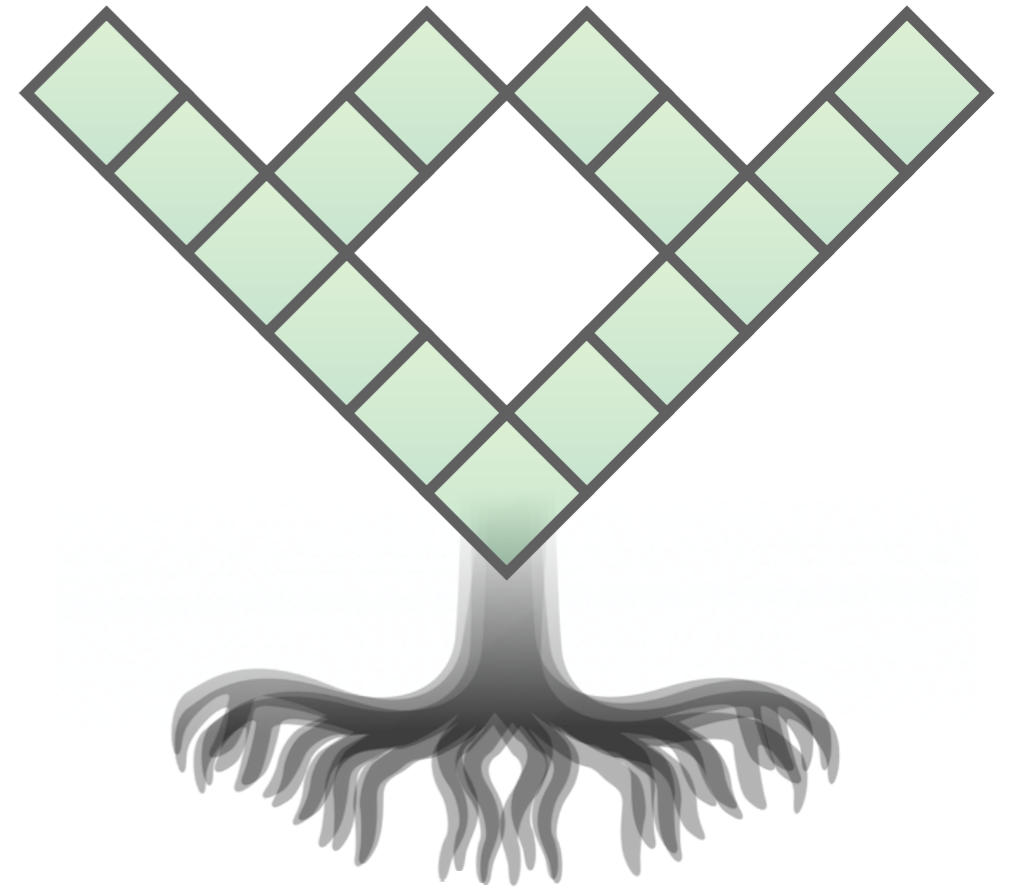
"Mammals of Australia", Vol. II Plate 50
by John Gould (1804-1881)

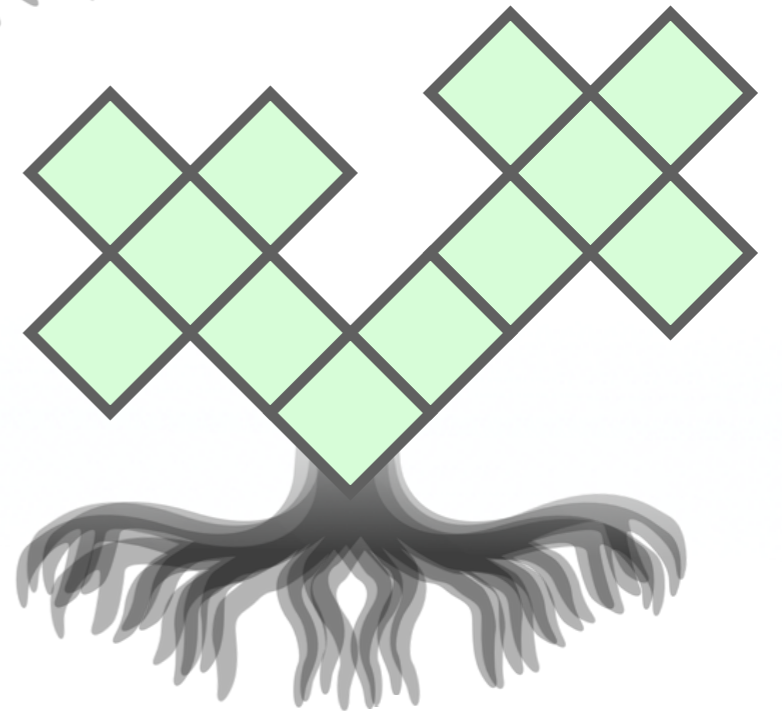
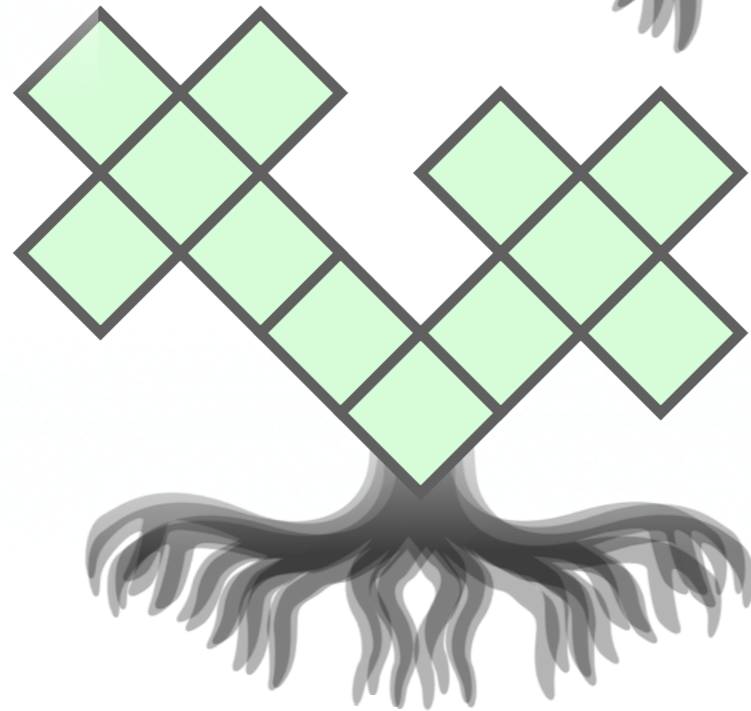
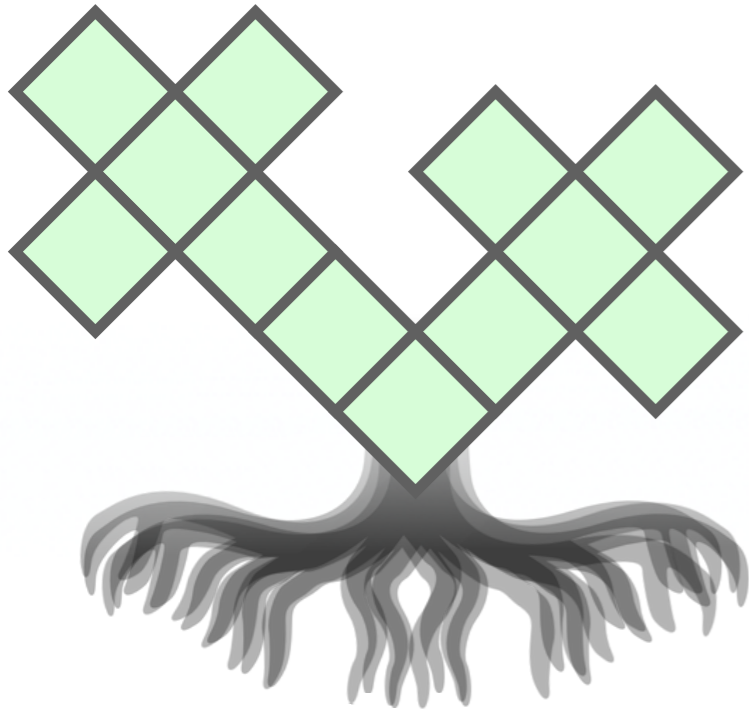
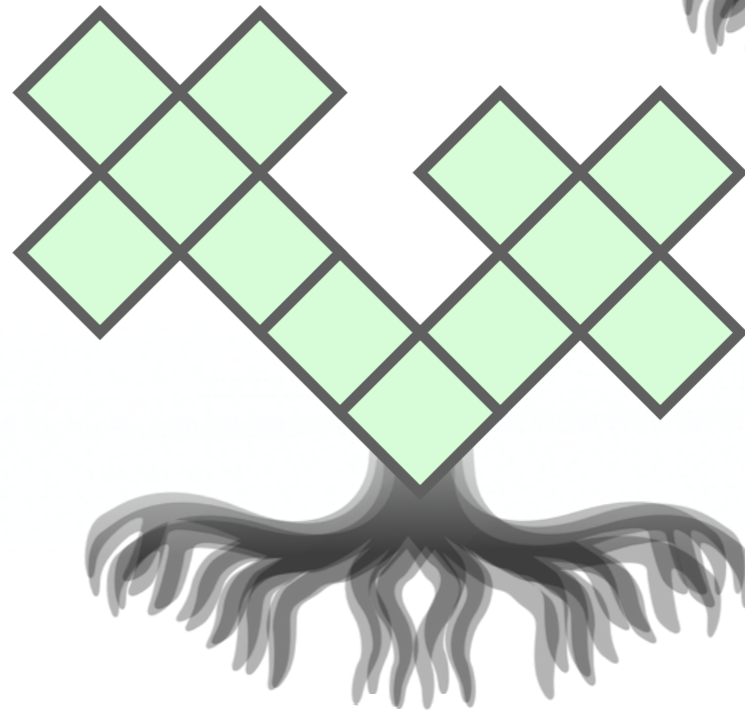
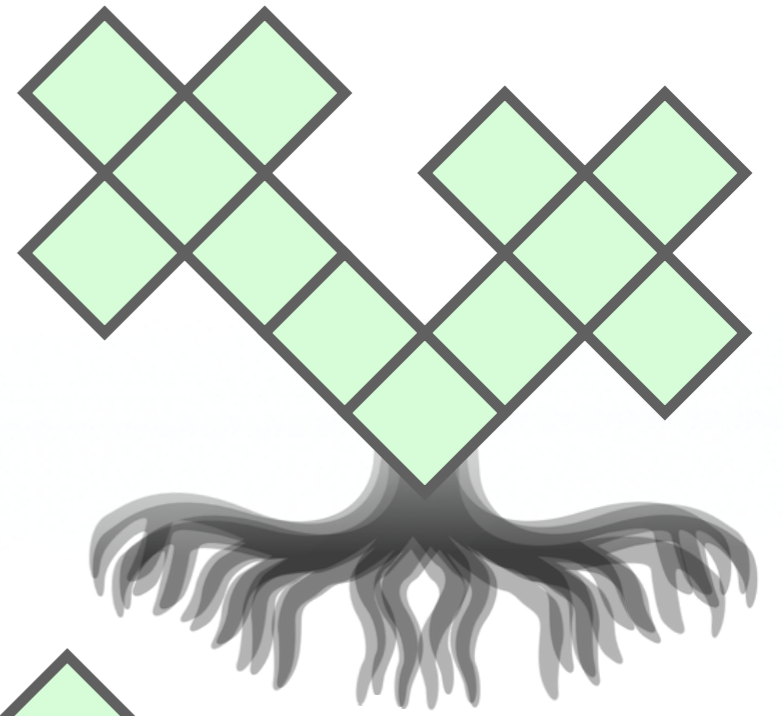
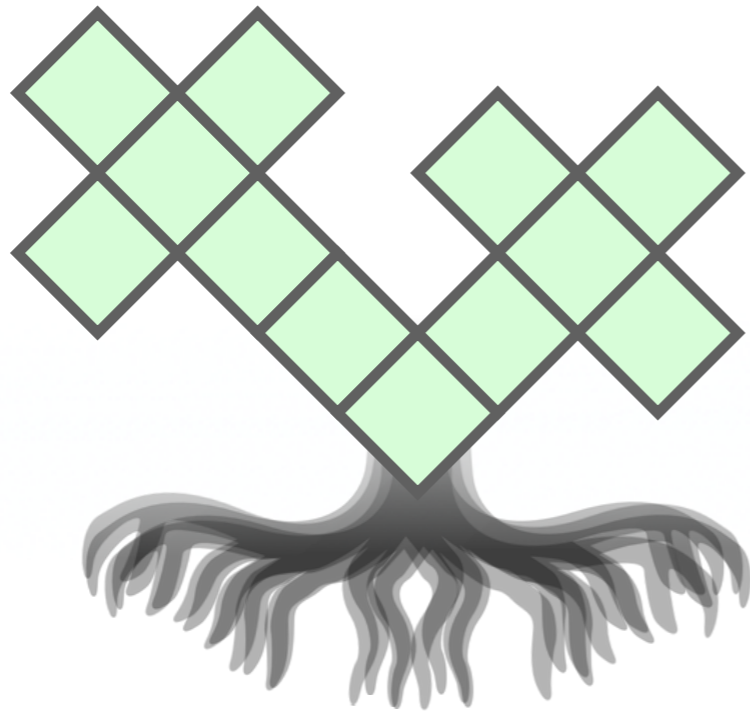


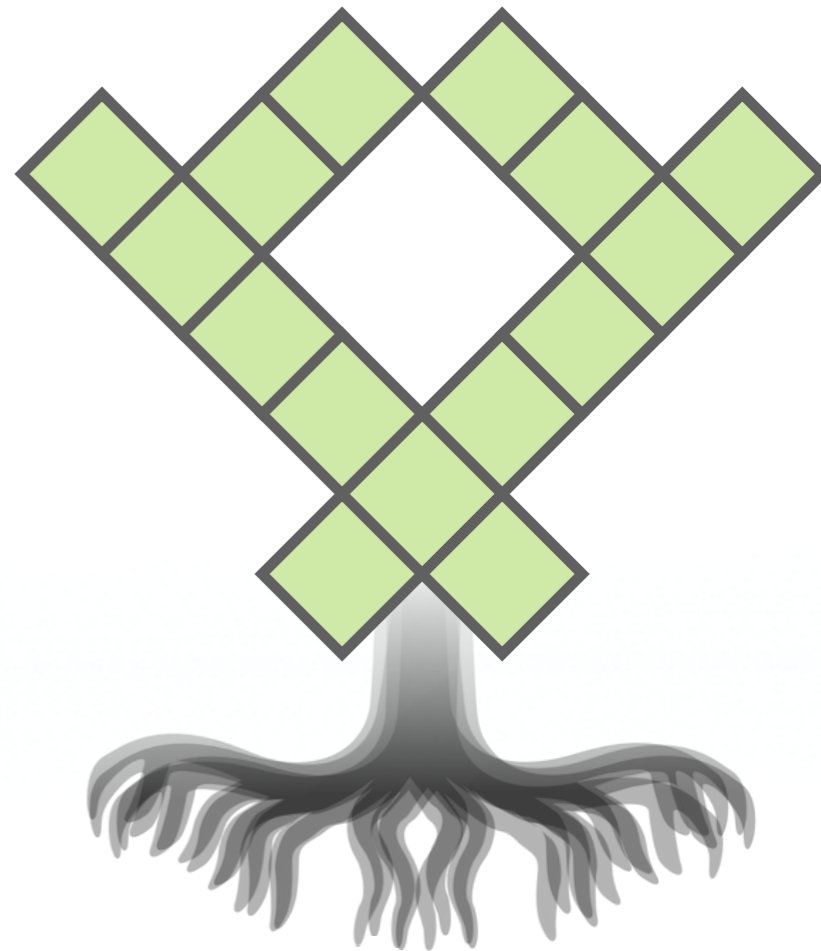
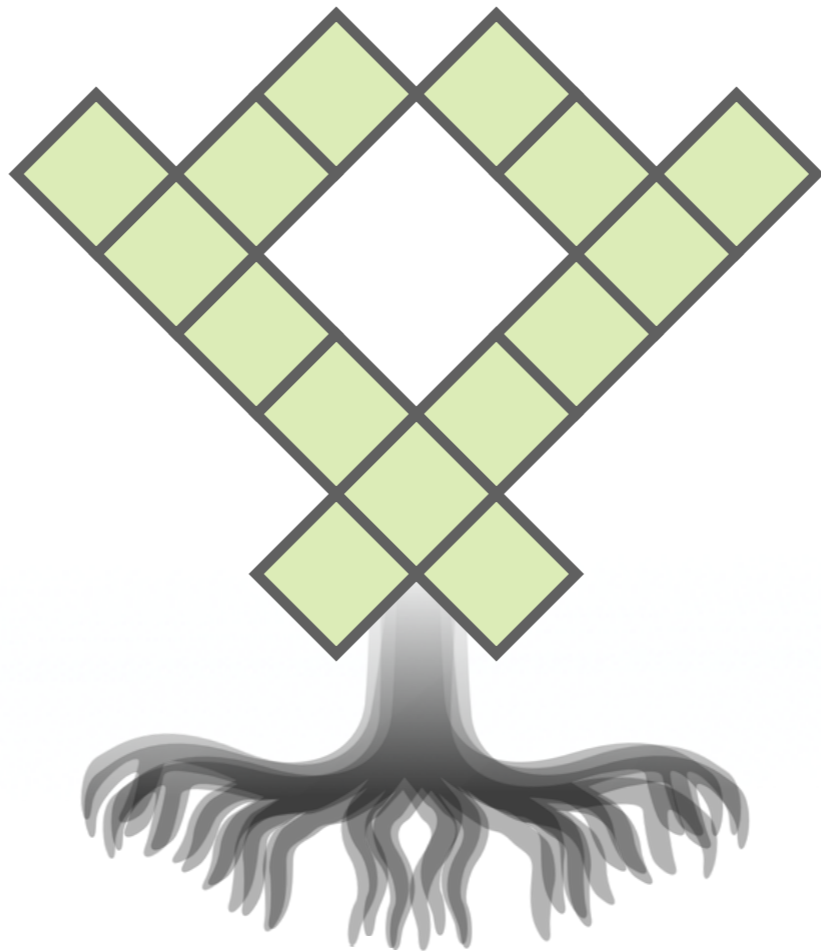
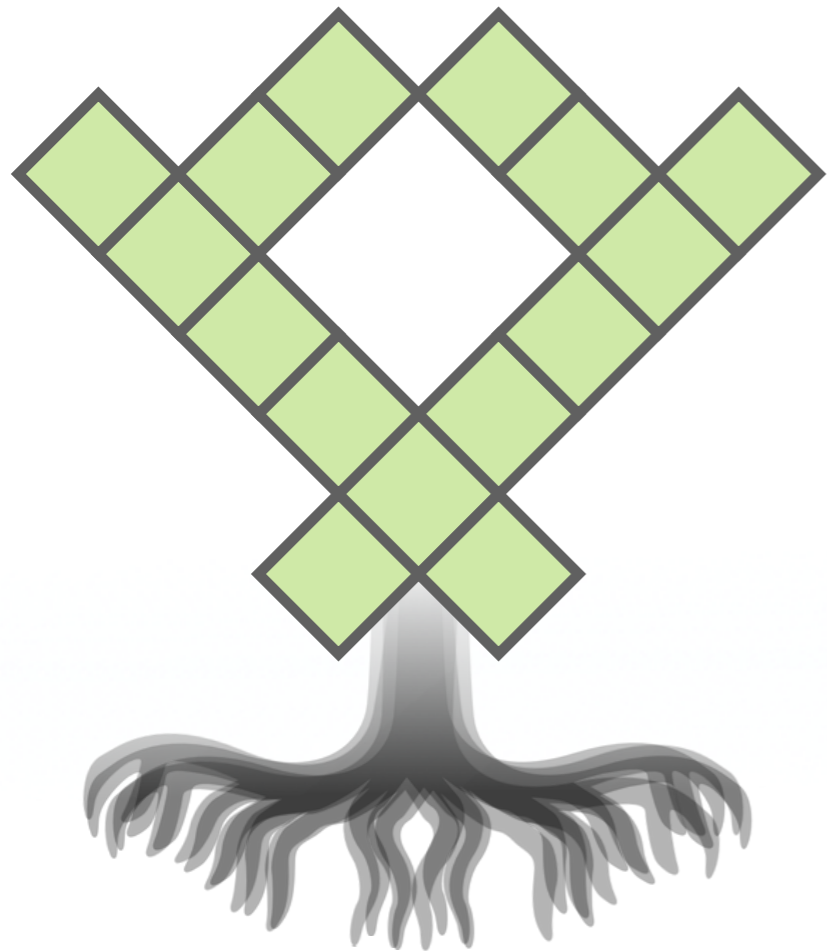
Tree-Kangaroo
Hopscotch



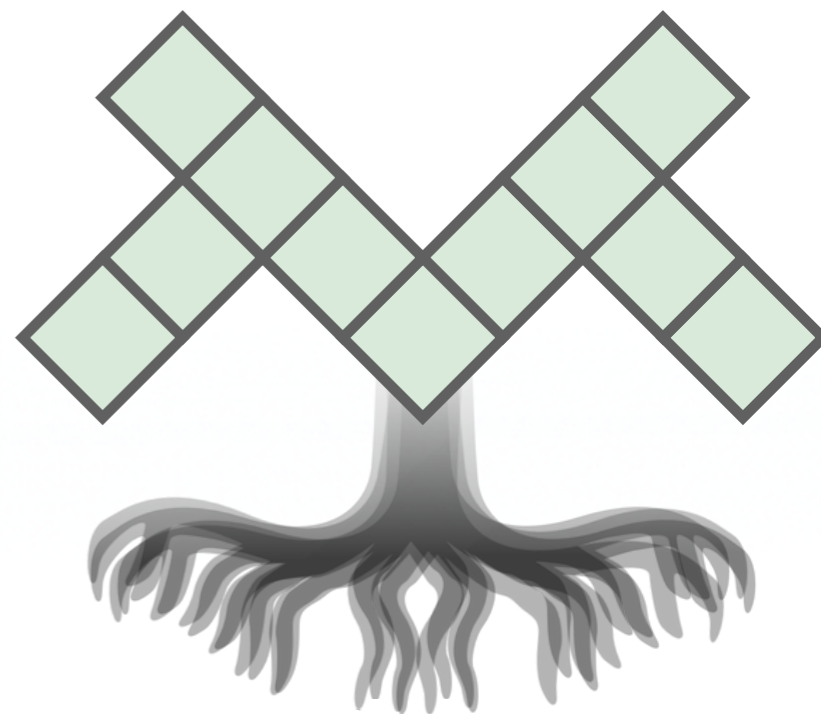
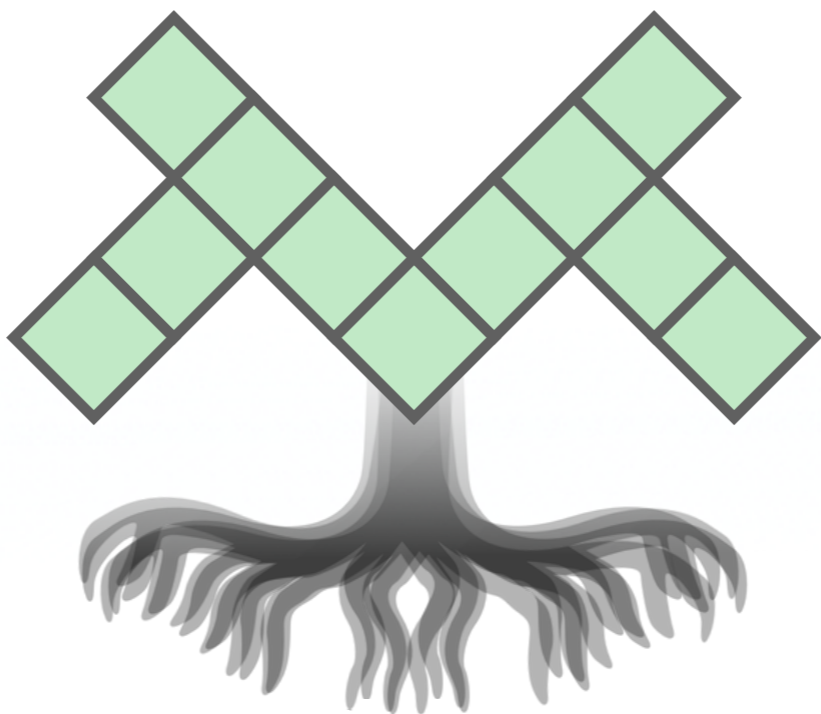
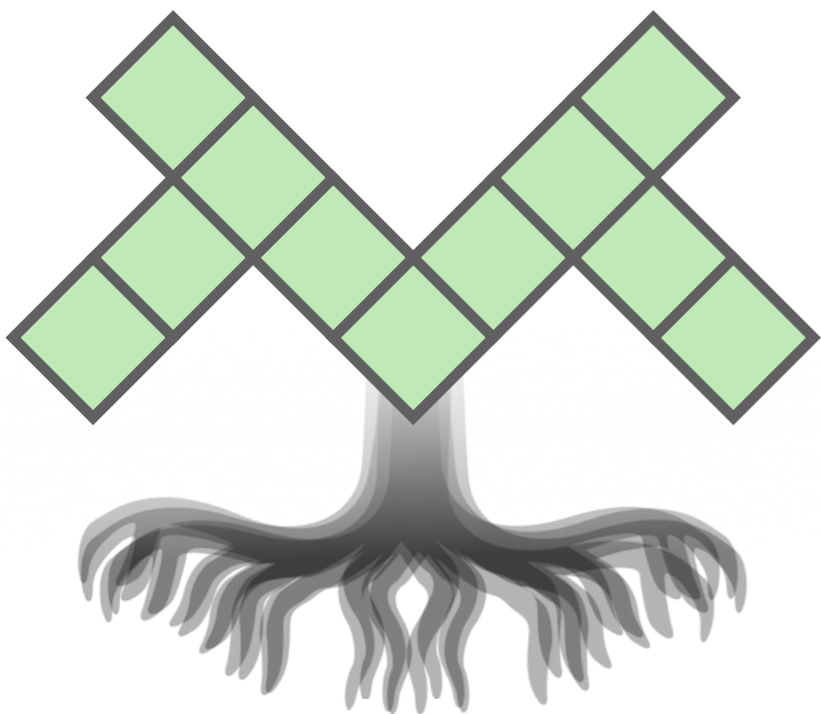
"Mammals of Australia"
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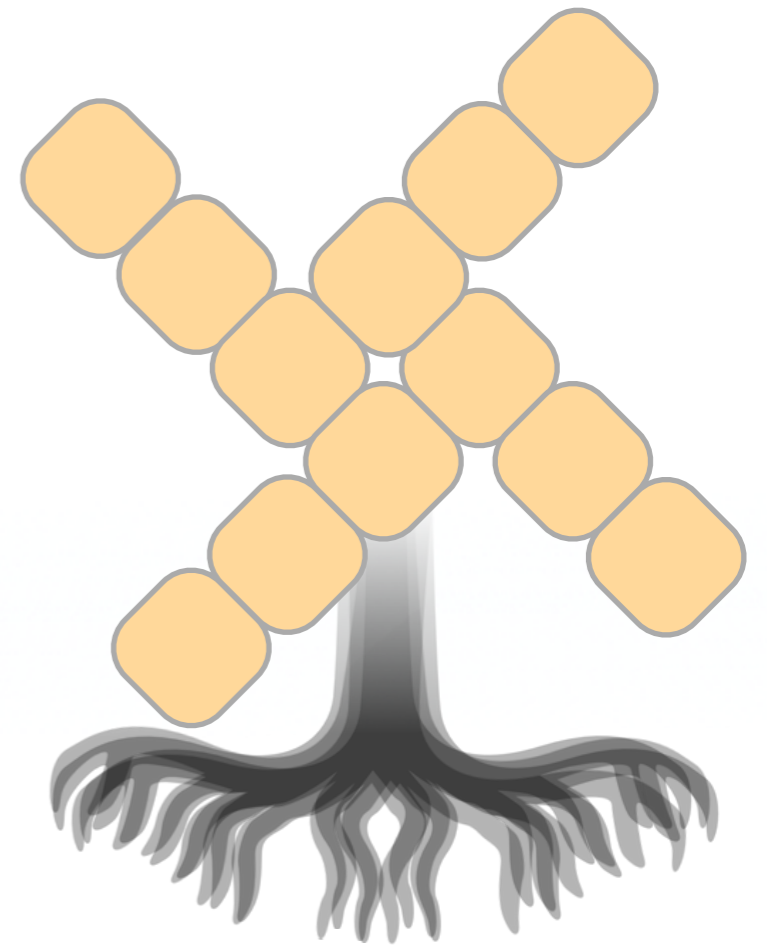
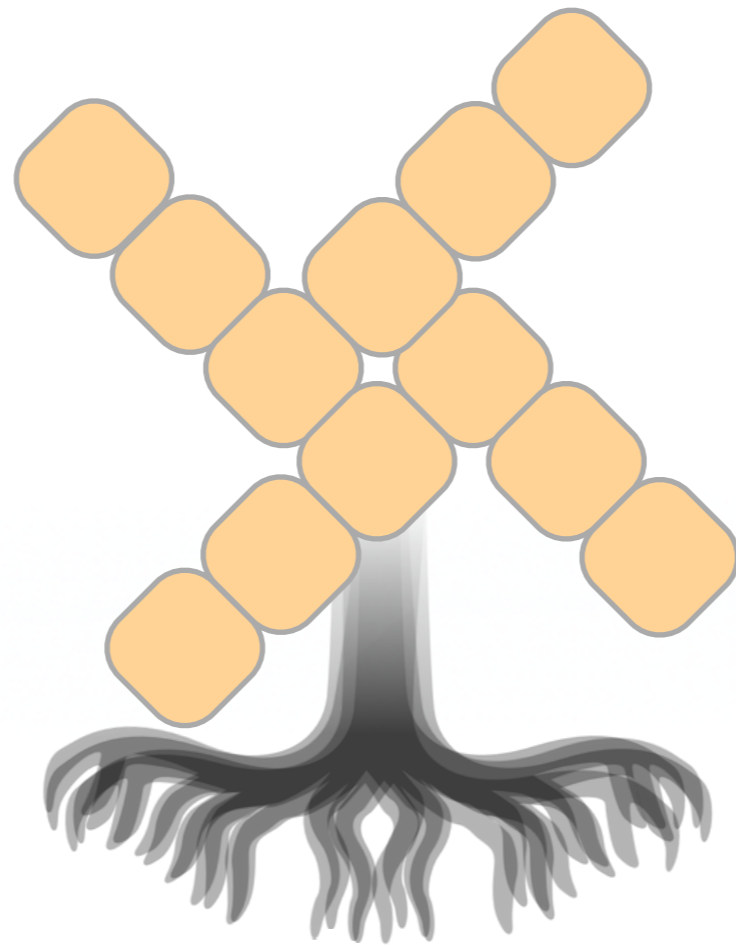
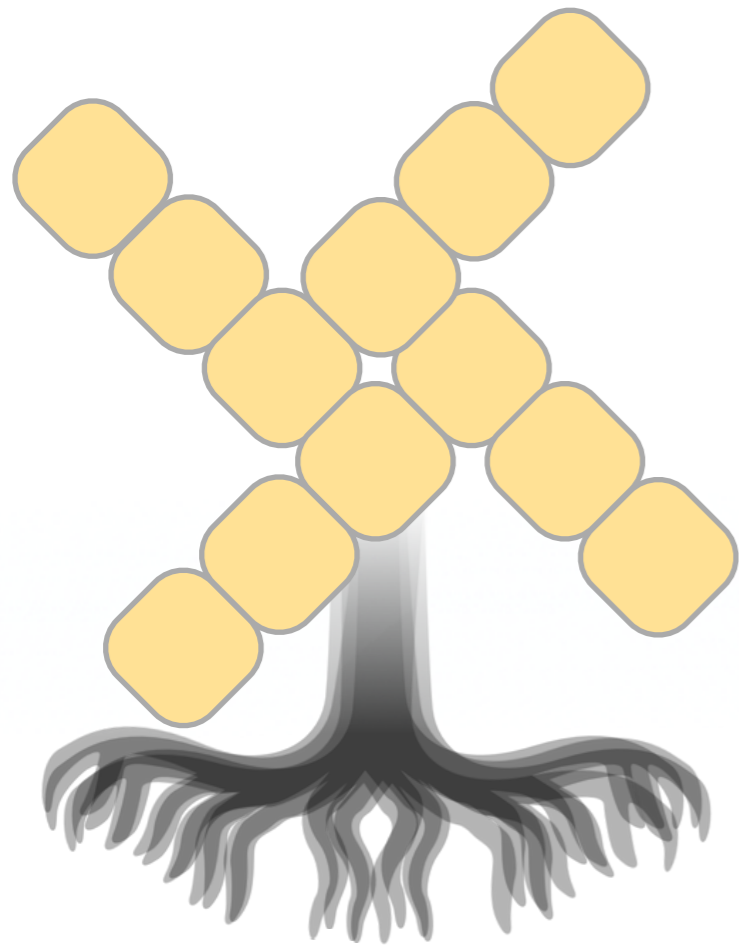




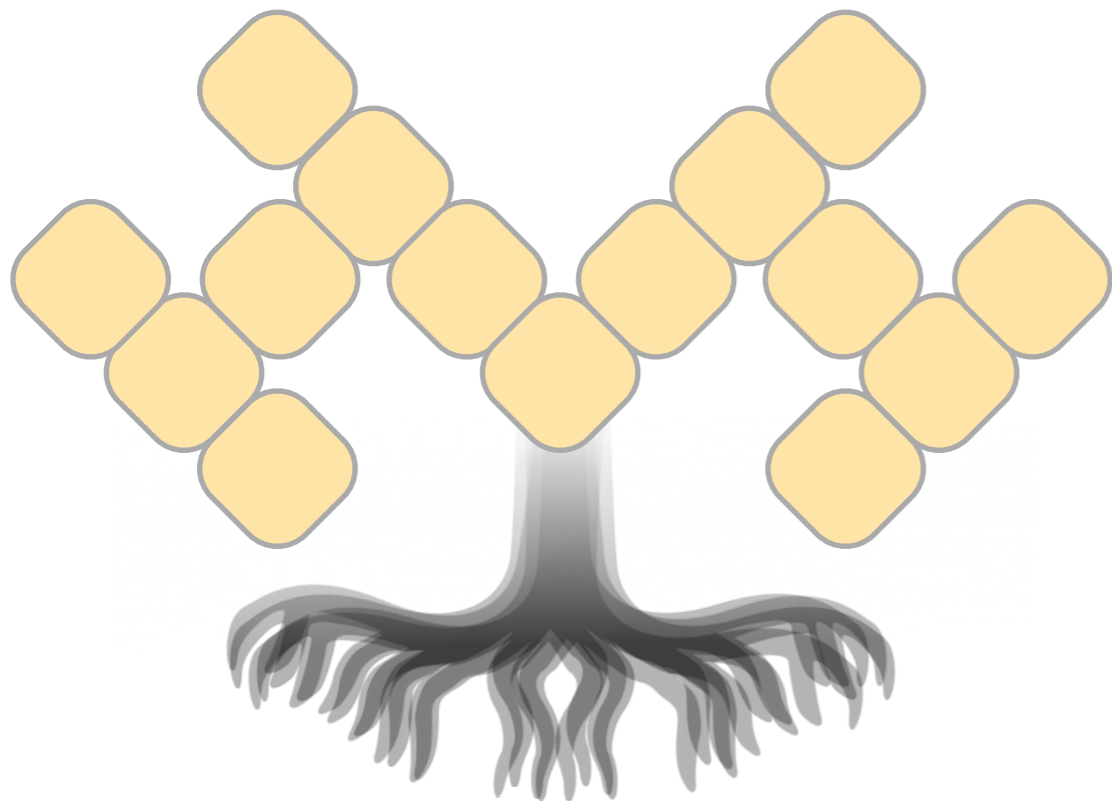


Tree-Kangaroo Hopscotch

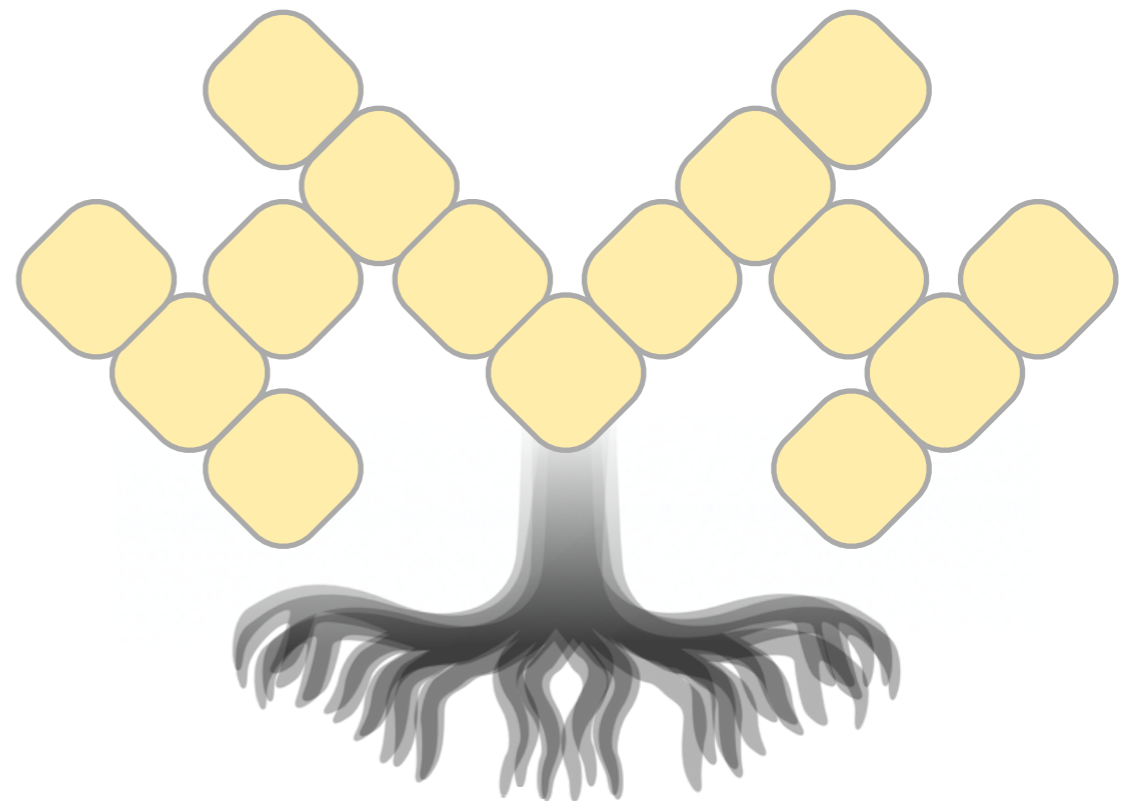


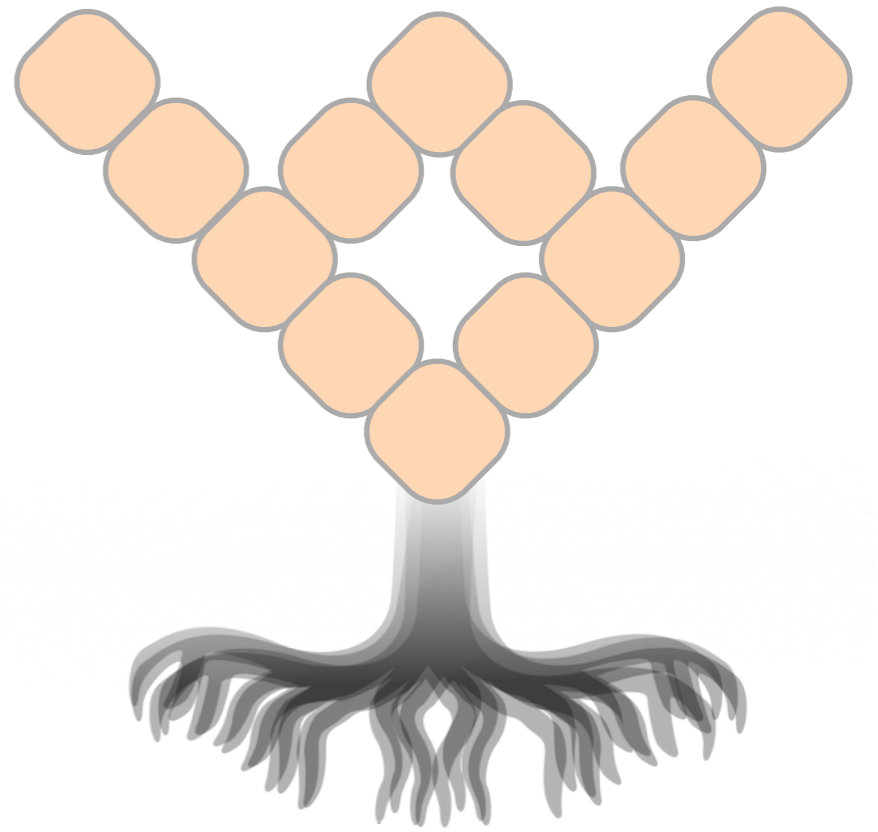
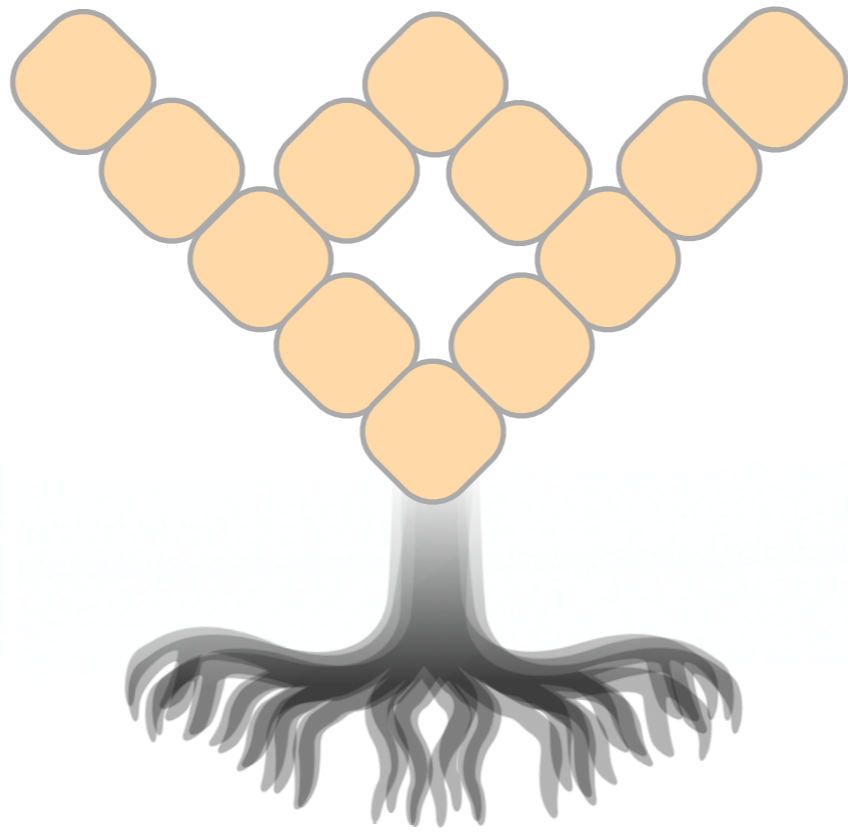
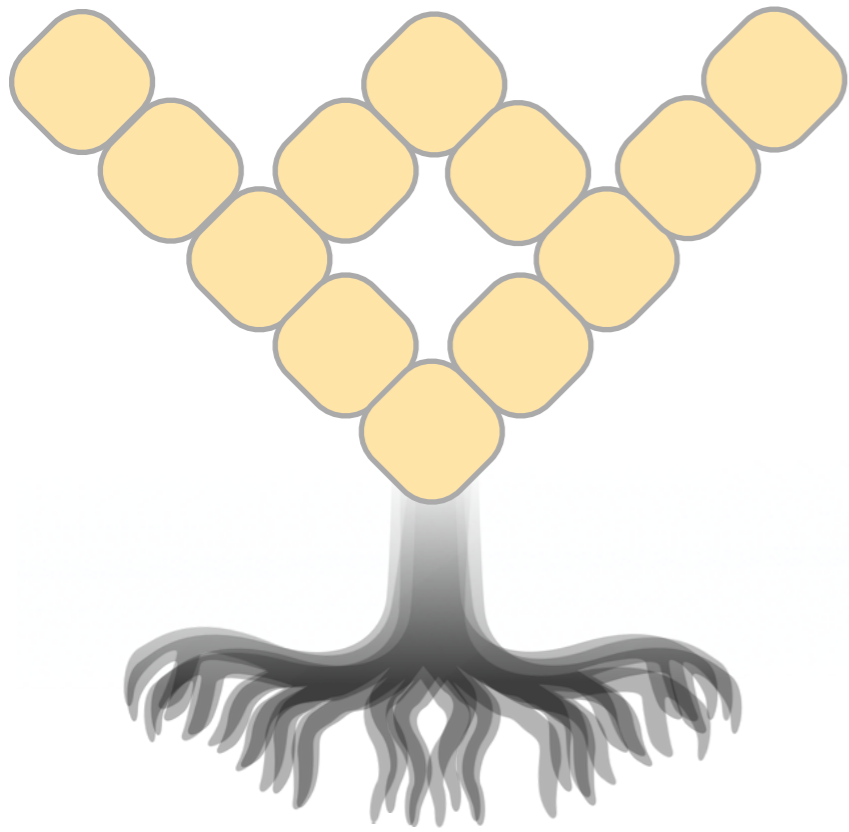


Tree-Kangaroo Hopscotch

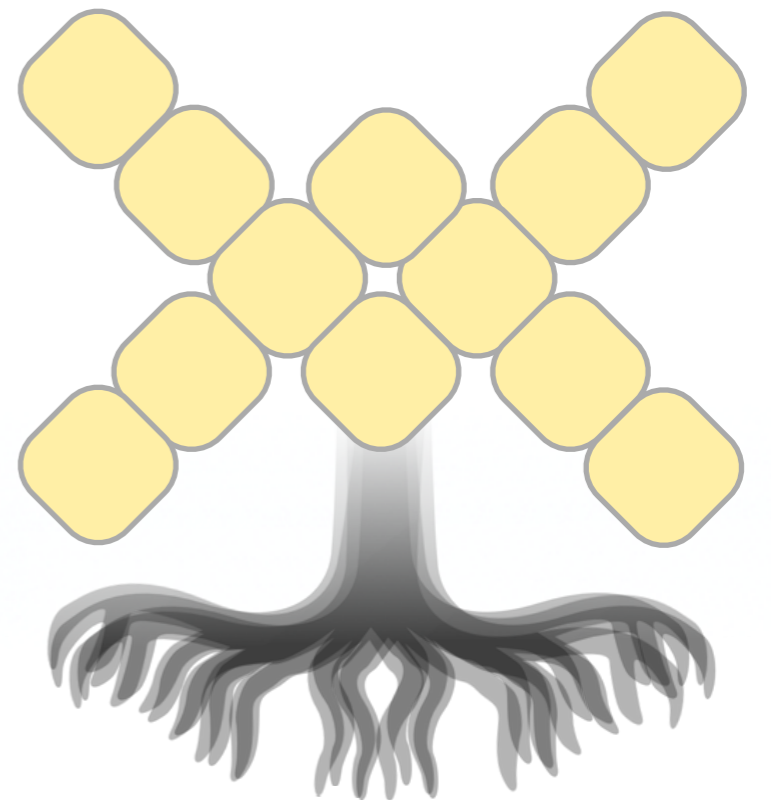
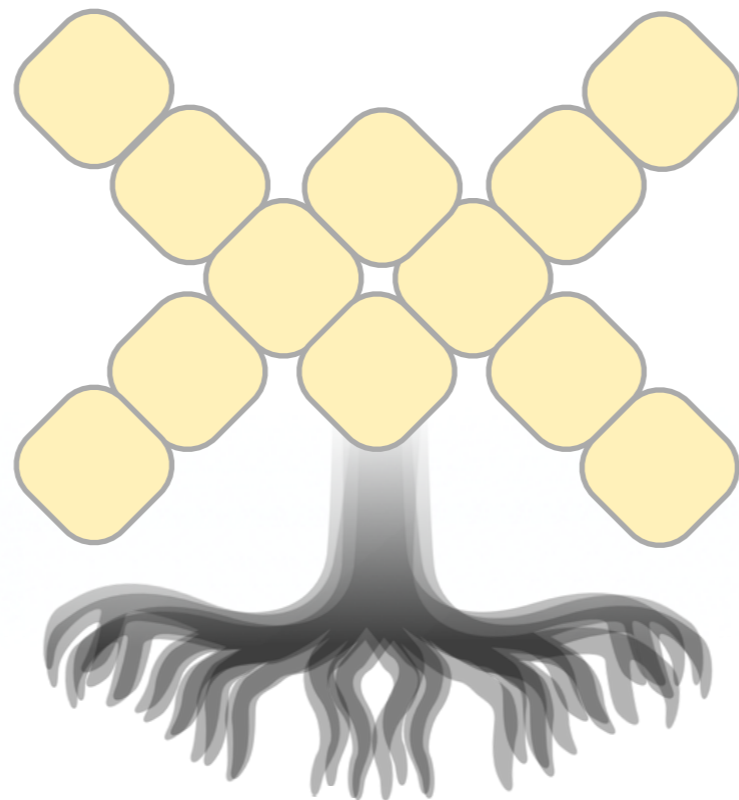
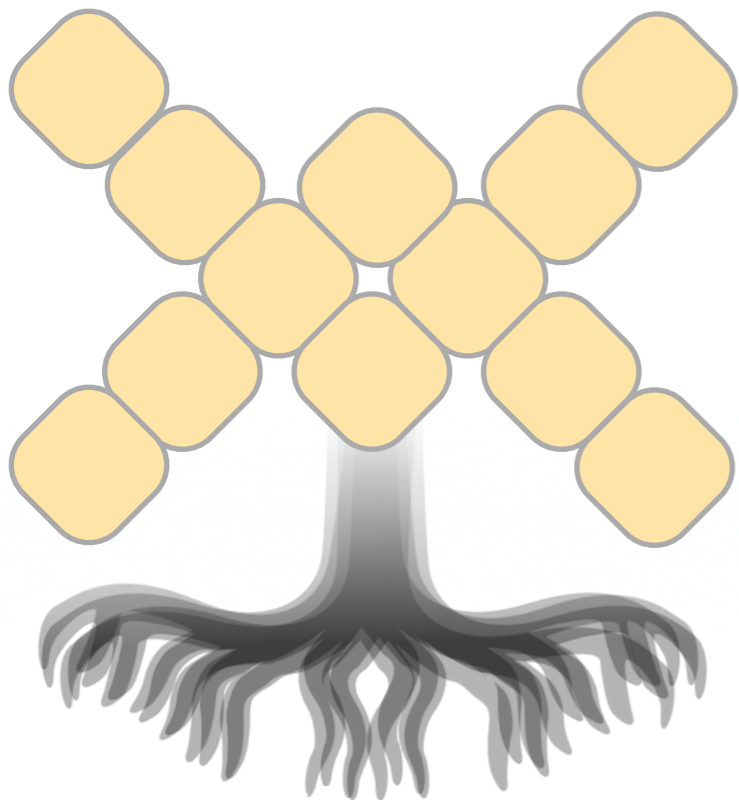


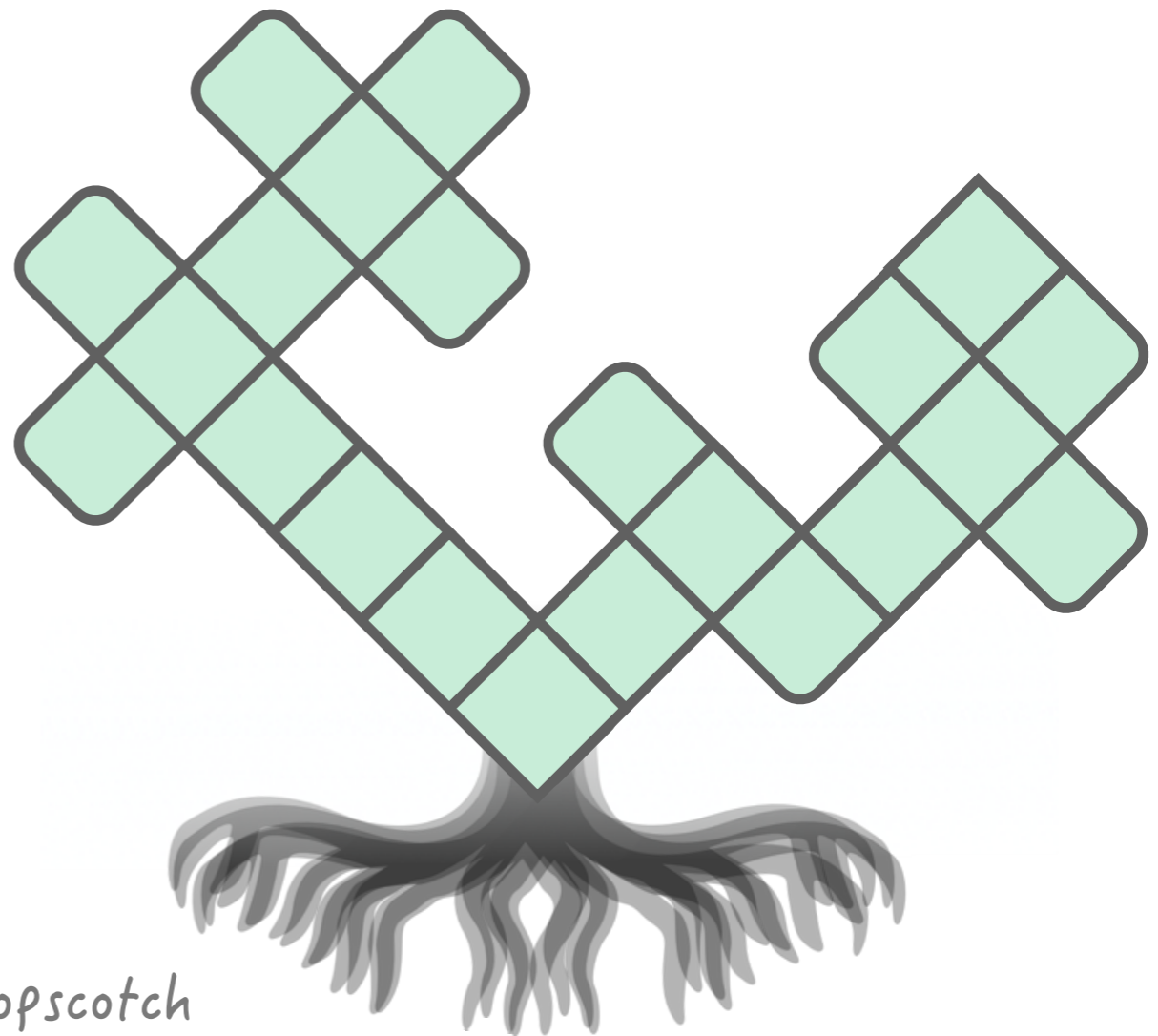
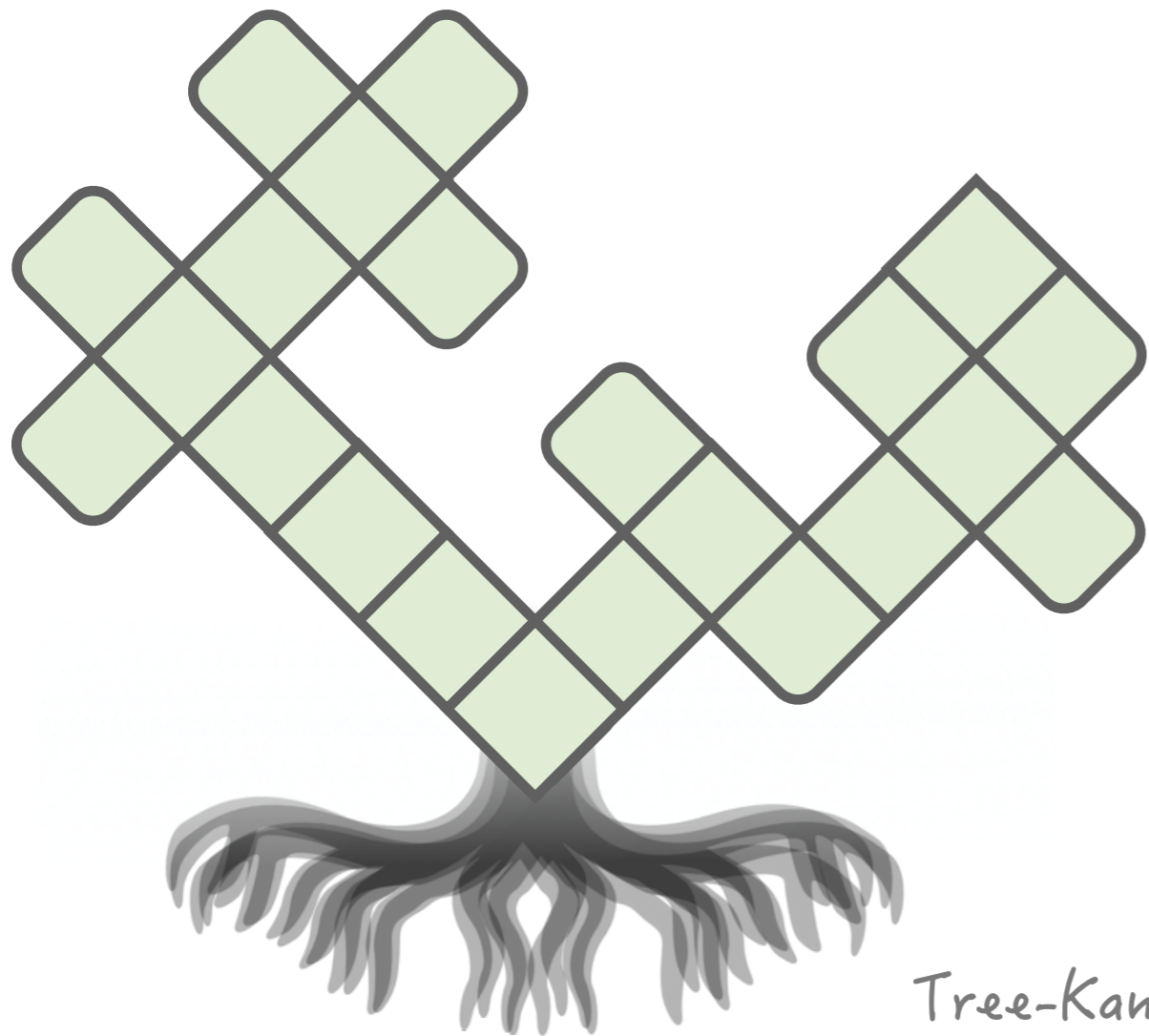
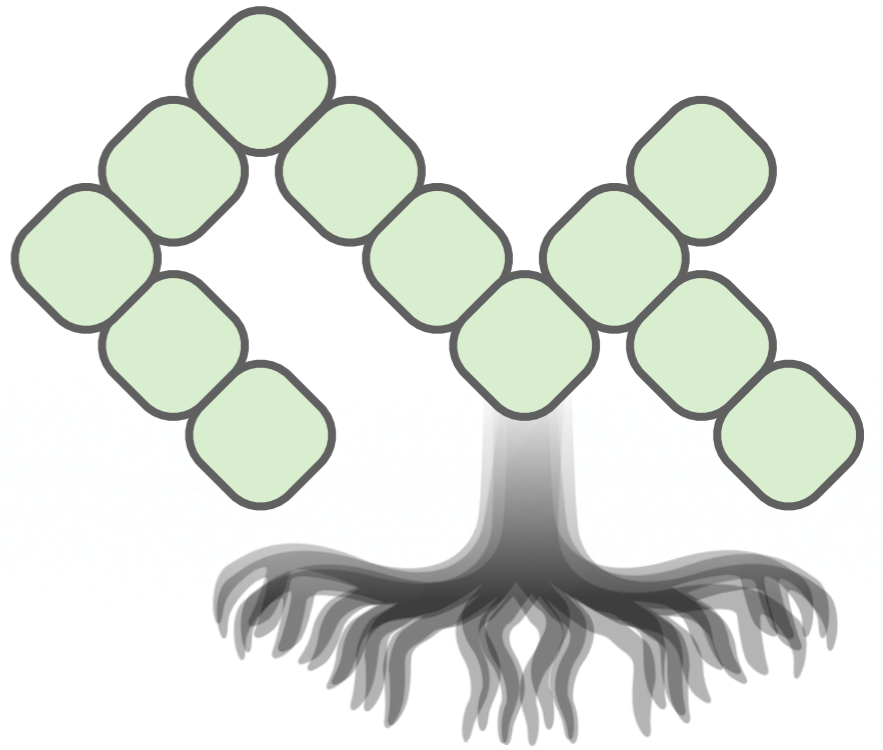
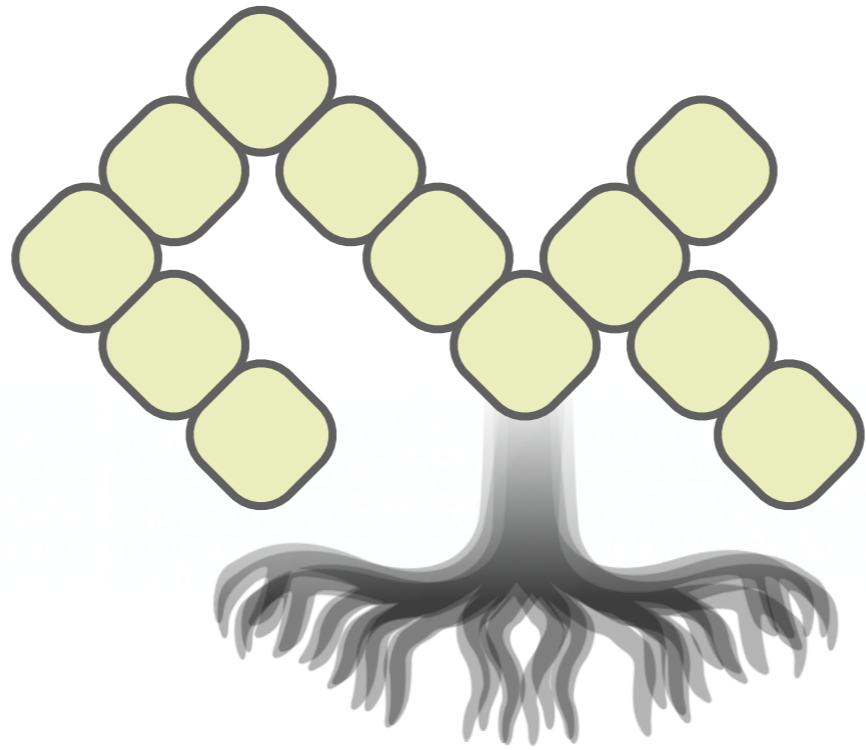
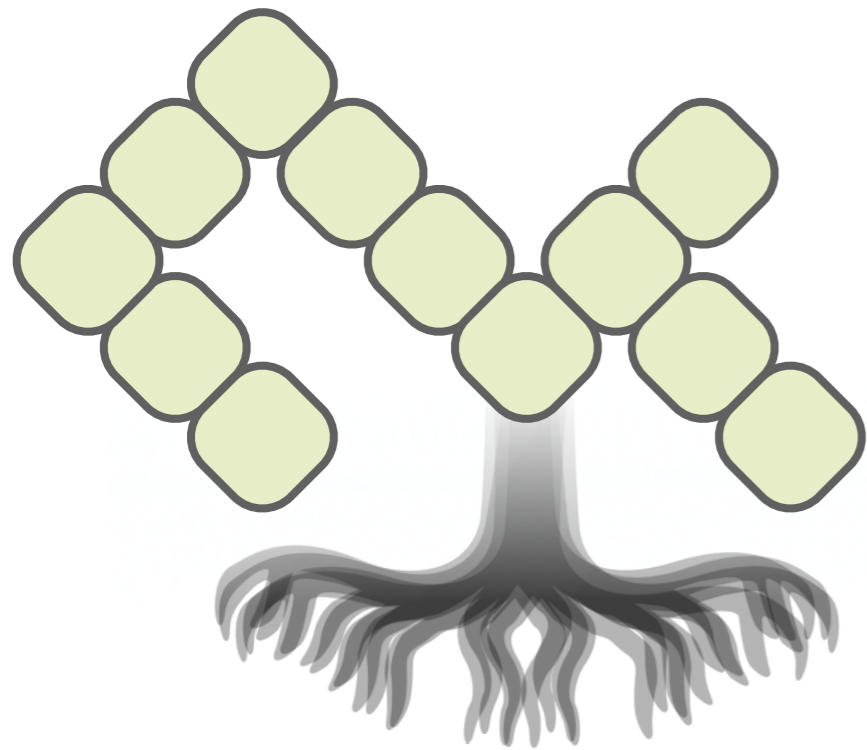
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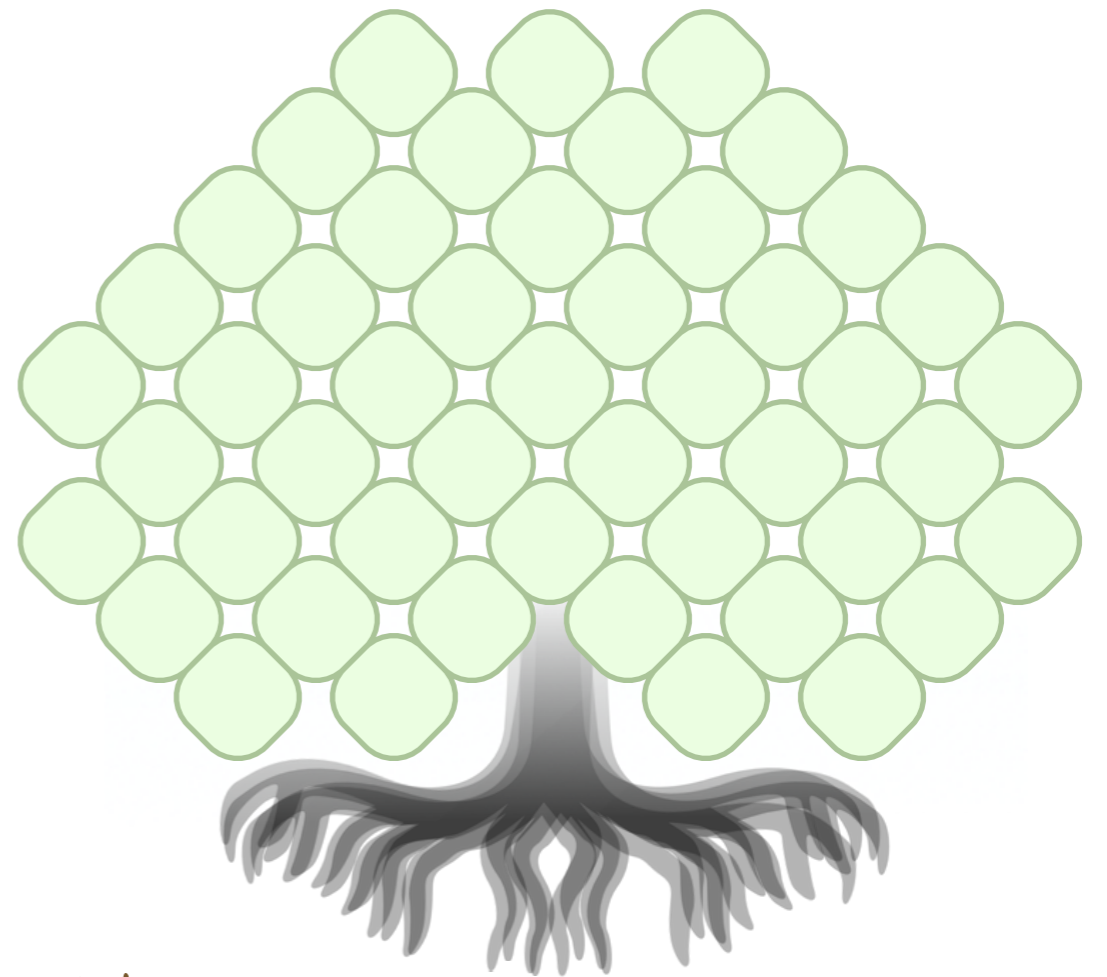
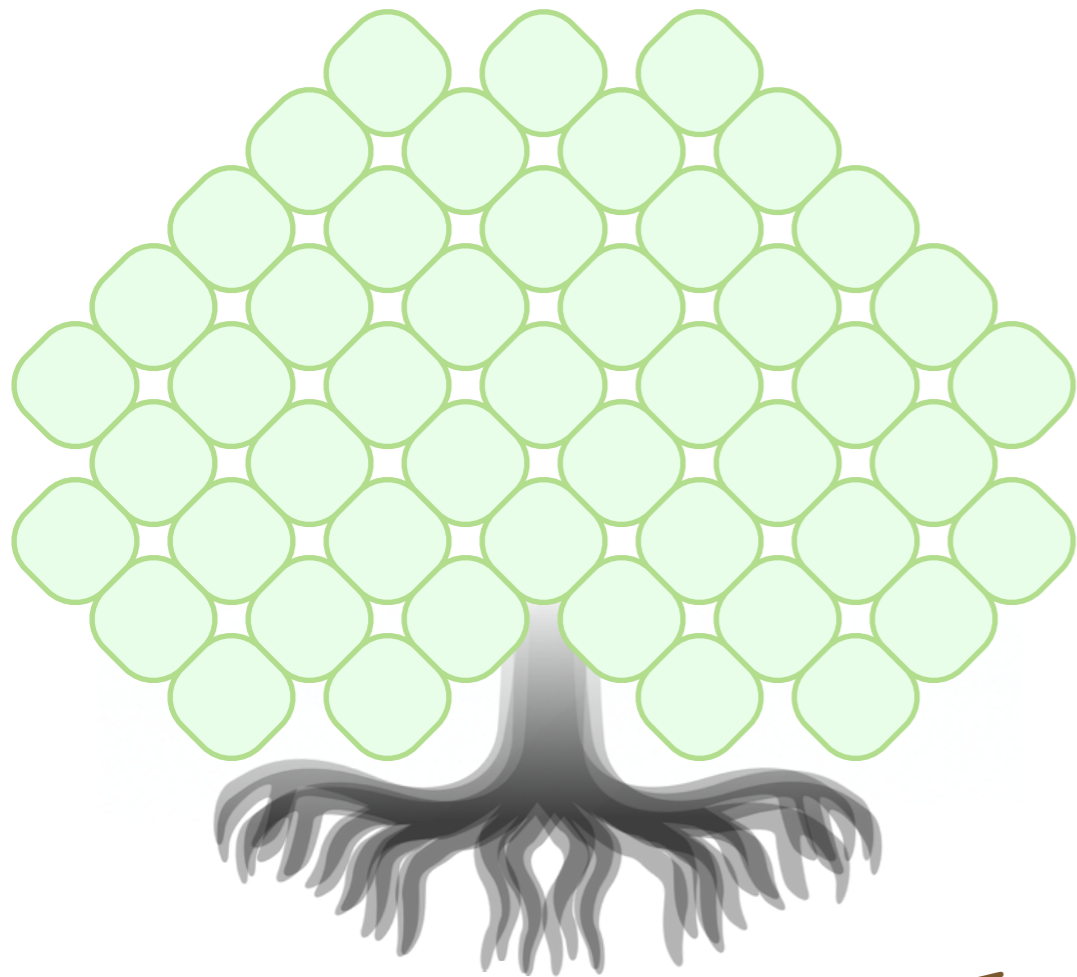


Tree-Kangaroo Hopscotch

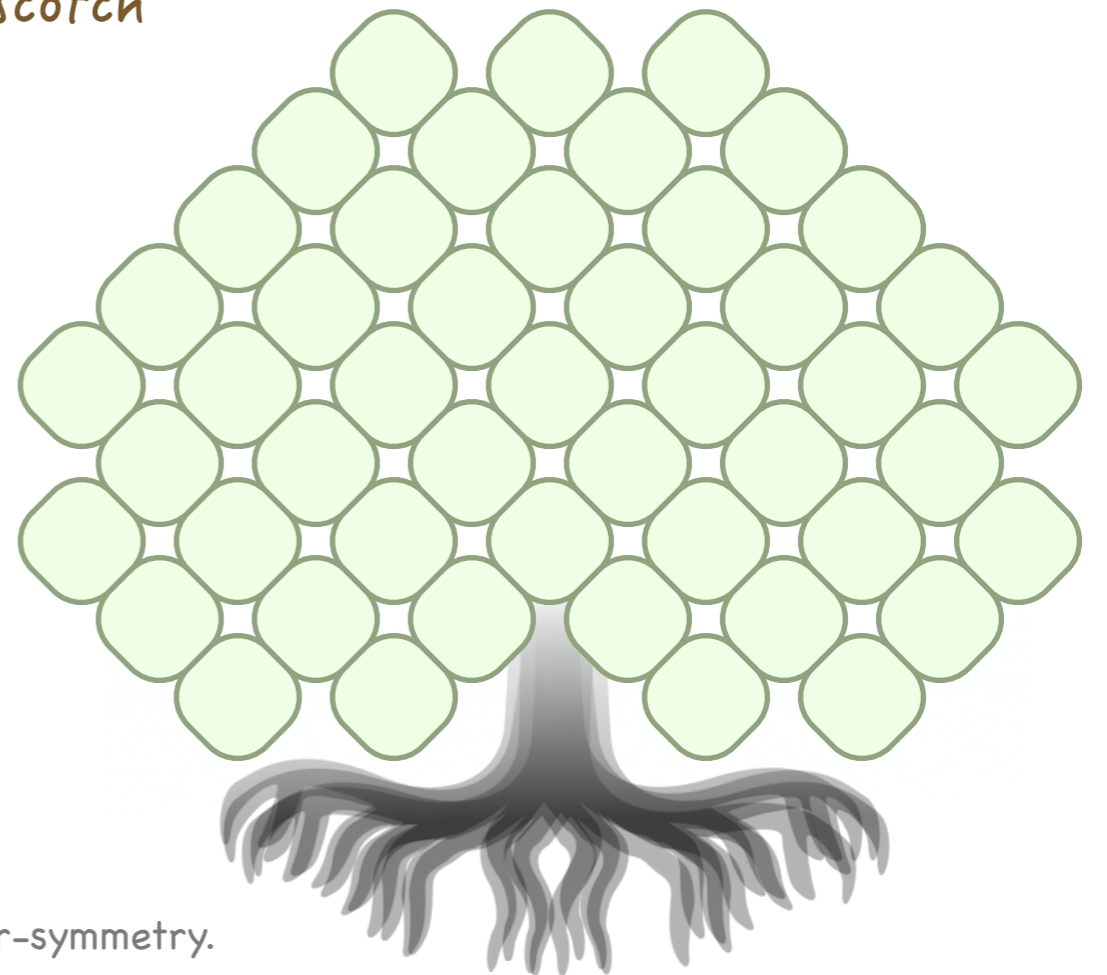
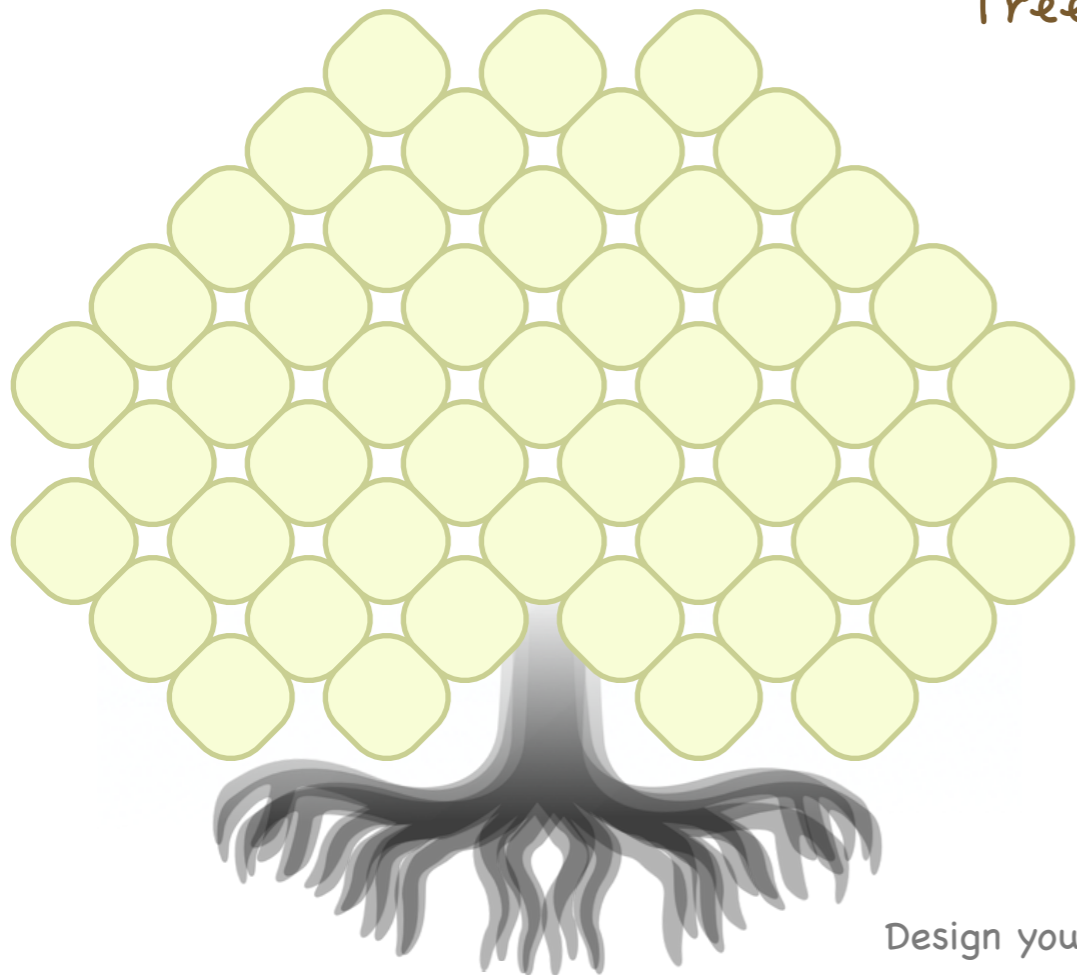




Tree-Kangaroo Hopscotch
Complete with consecutive numbers.



Tree-Kangaroo Hopscotch

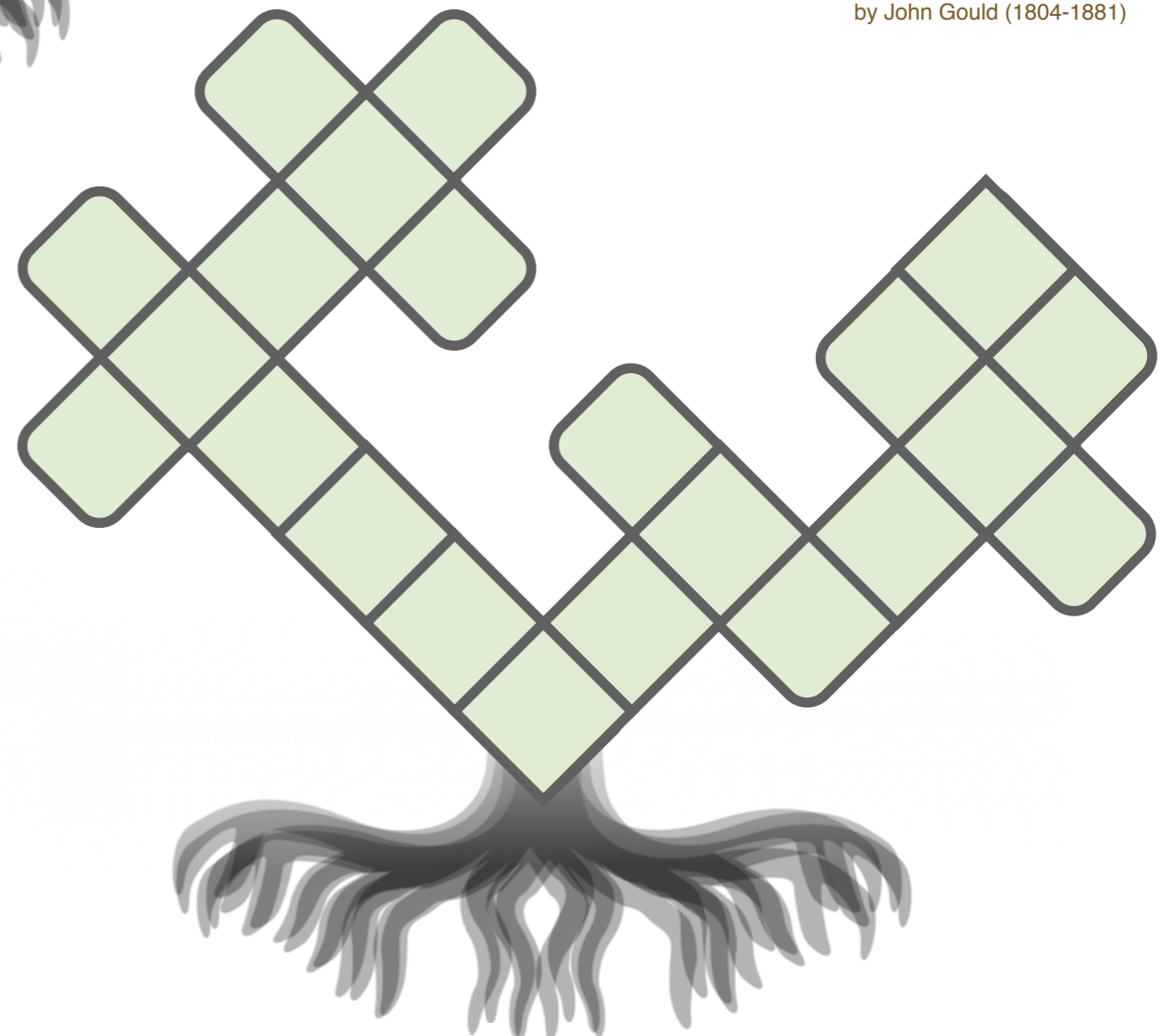
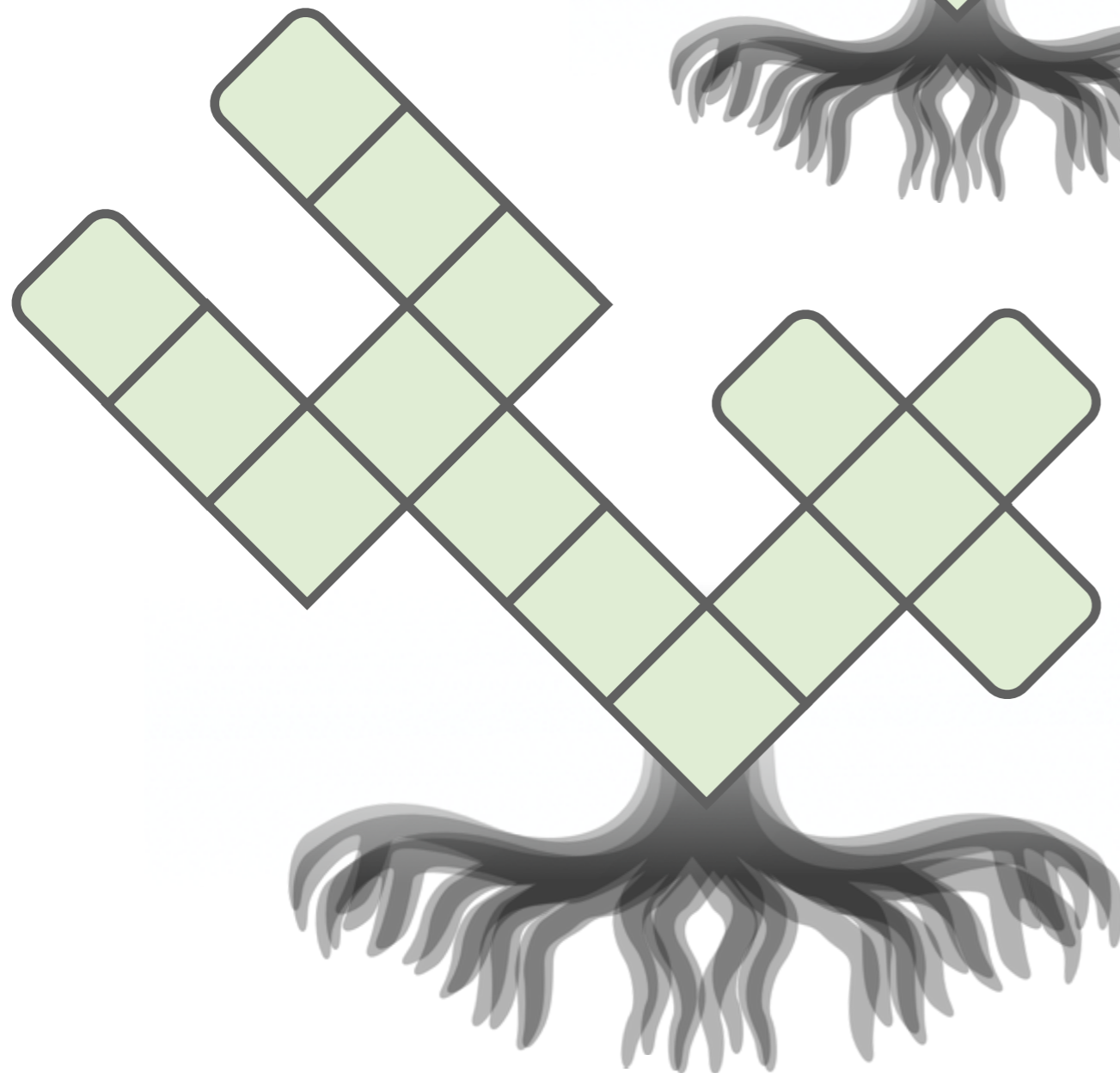
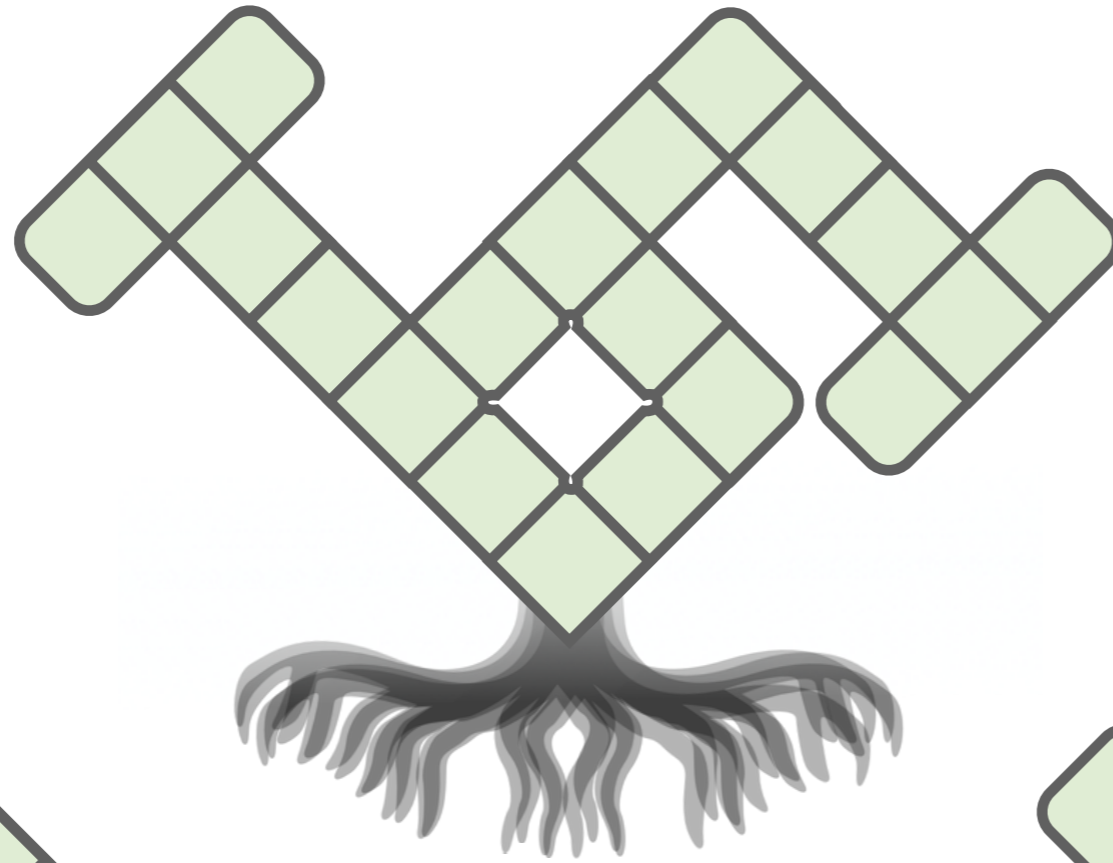


Design your own tree with mirror-symmetry.

Tree-Kangaroo Hopscotch



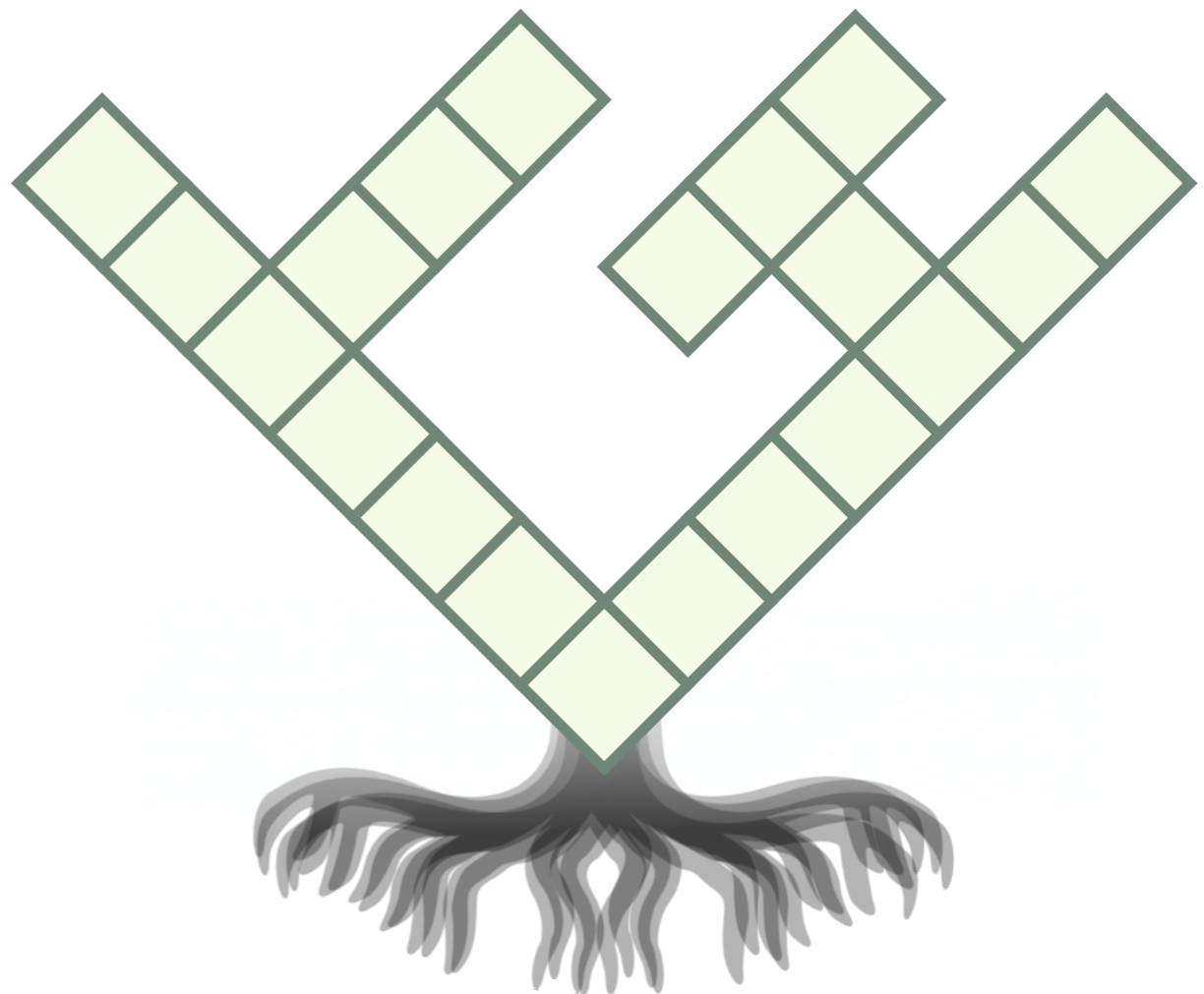
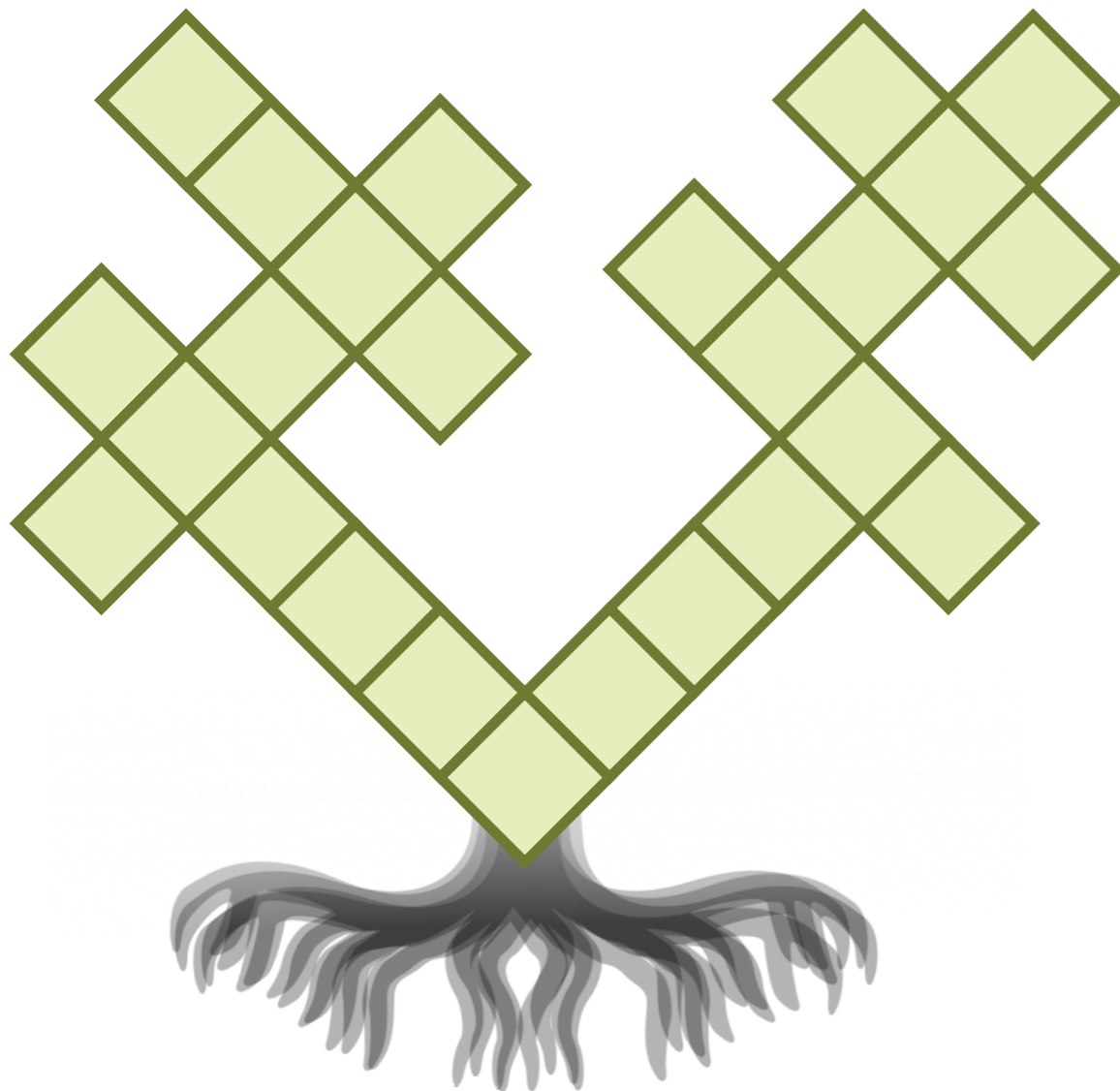
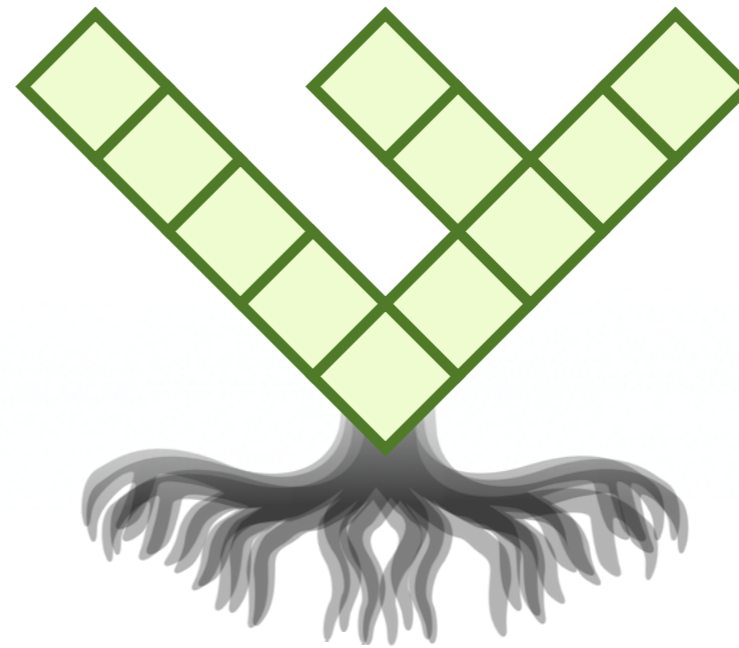
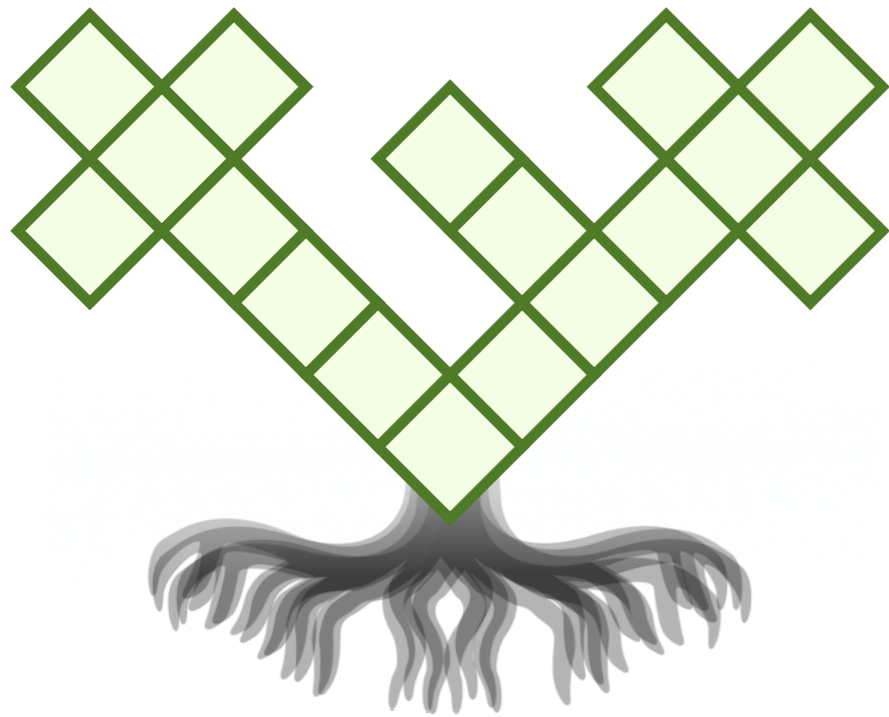
"Mammals of Australia", Vol. II Plate 50
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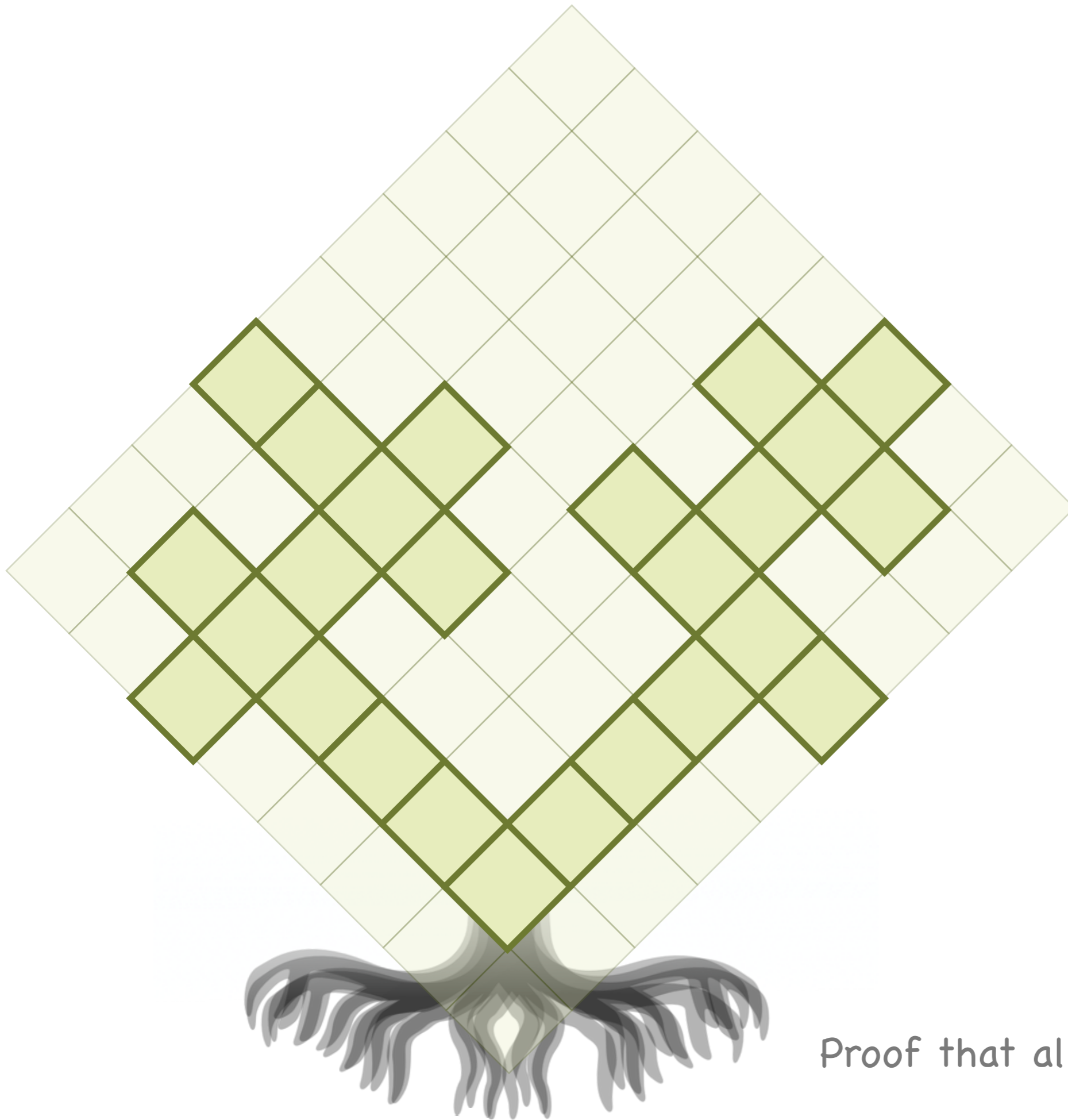


Tree-Kangaroo Hopscotch

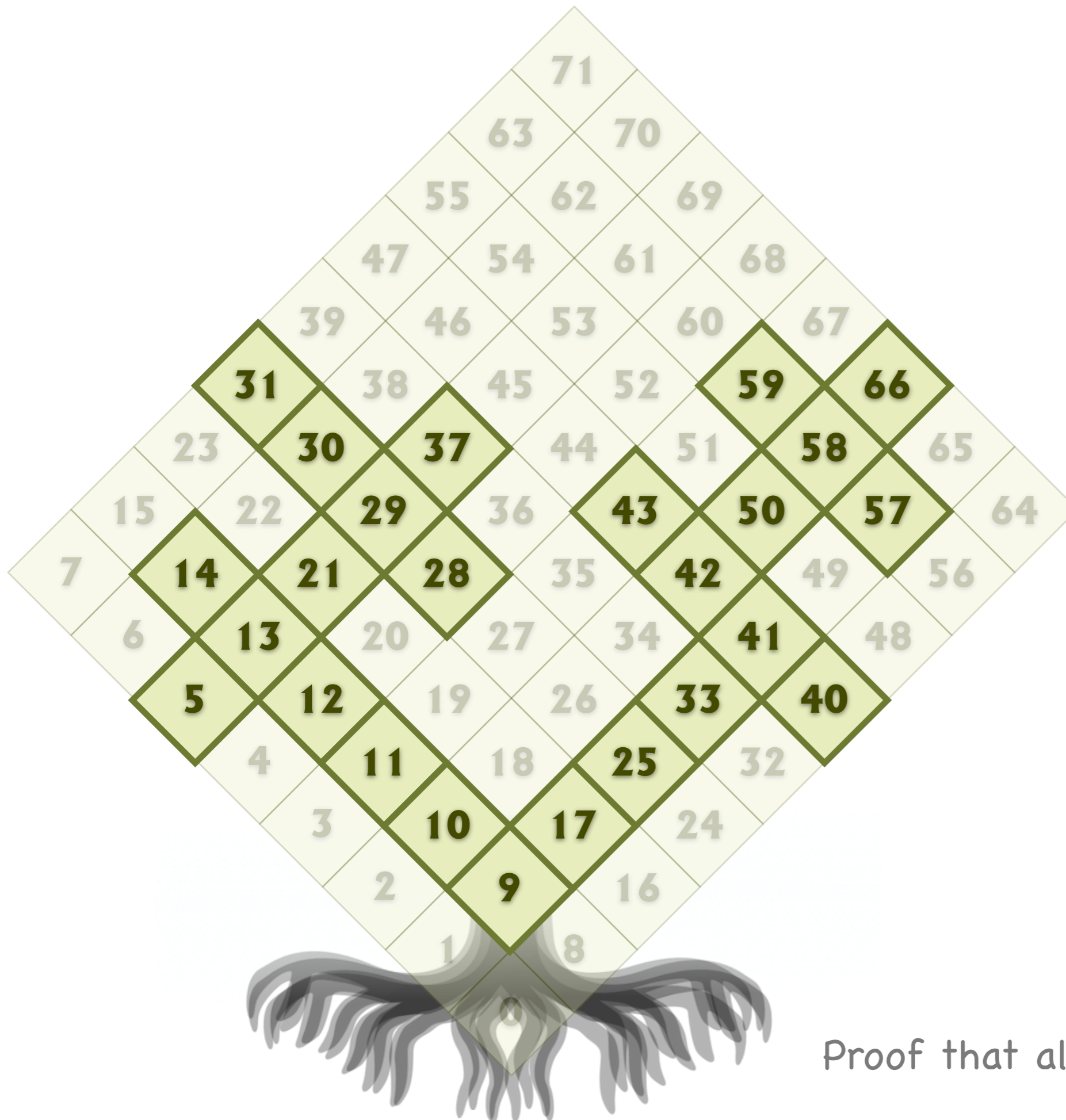


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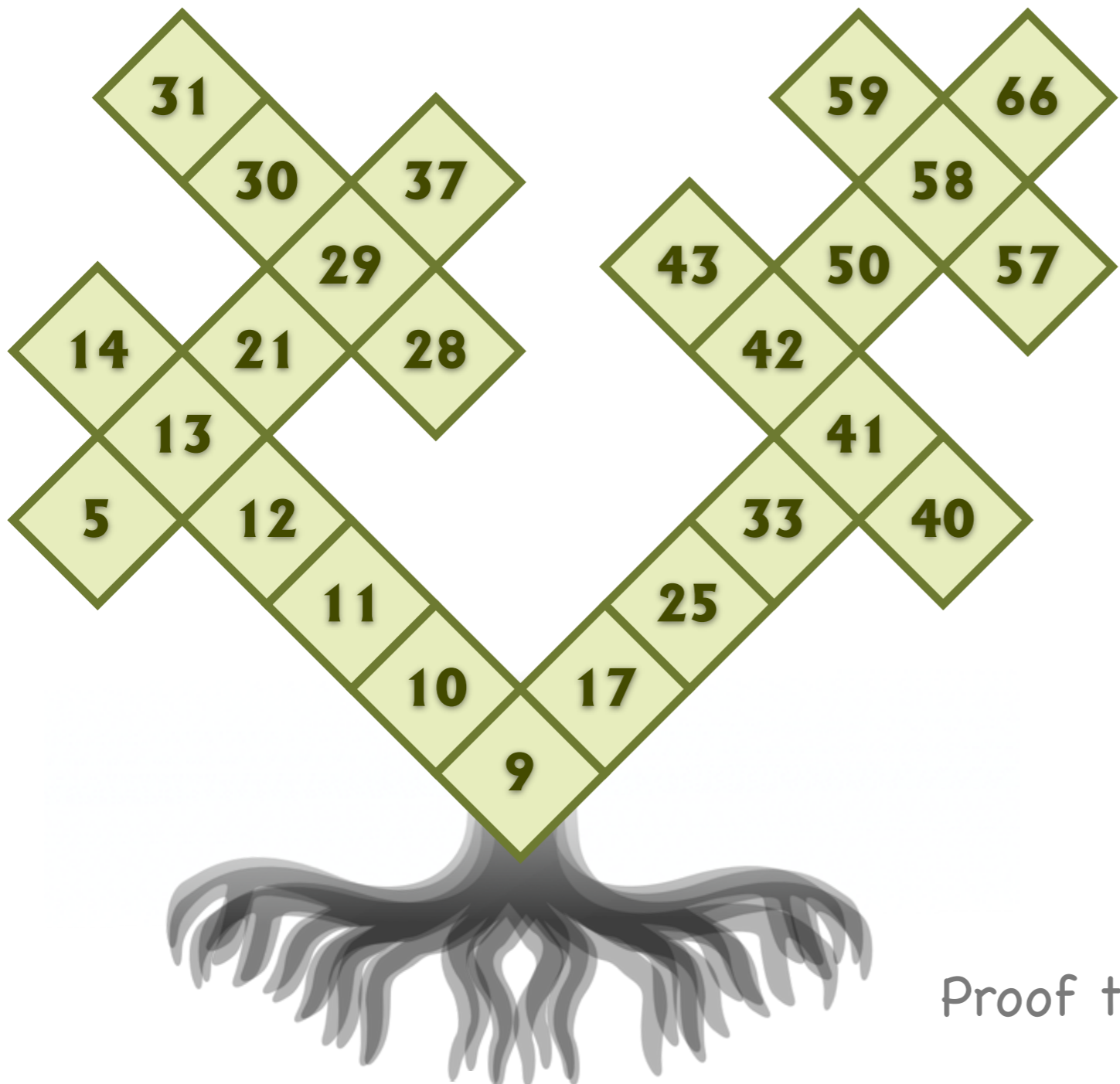




Proof that all trees can be solved.



Proof that all trees can be solved.

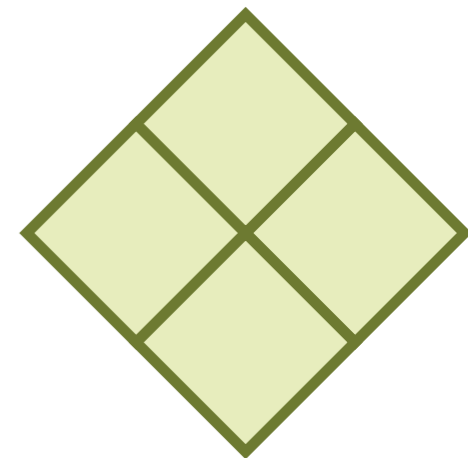


Proof that all trees can be solved.

\$100 Challenge

Can a tree be created with the following properties?

- 1) it has a vertical axis of mirror symmetry.
- 2) it can be solved with consecutive integers 0 to n.
- 3) each branch is at least 3 long.
- 4) there are at least two branches.
- 5) No part of the tree is a clump of four squares:



On March 14th of any year where I have 10+ entries, I will award \$100 to the smallest tree submitted with these properties. Such a tree may not exist. I have not found one. Email entries to gord@mathpickle.com with the subject "Tree Kangaroo Hopscotch \$100 Challenge"

Put Your Students in a Pickle!

I'm a father of two elementary school children, a mathematician, and designer of puzzles and board games. Students call me Dr. Pickle. There is nothing I enjoy more than stumping students and having them stump me.

I founded MathPickle.com in 2010 to inject new ideas into the classroom. MathPickle's primary objective is to get thirteen curricular unsolved problems into classrooms worldwide - one for each grade K-12. A conference in November 2013 established the thirteen unsolved problems. To aid with the dissemination of these awesome problems, MathPickle is looking at setting up a \$1,000,000 reward - the prize money to be split between the person who solves a problem and their most inspirational K-12 educator.

MathPickle is also developing a range of curricular puzzles like the ones you'll find on MathPickle.com. These help teachers with their number one challenge:

“How to engage the spectrum of student ability?”

Whenever an elementary school teacher wants to teach addition, she will invariably face 20% of students who already know how to add and another 20% who are struggling with last year's curriculum. How can she engage the top students without losing the bottom students? How can she engage the bottom students without boring the top students?

One solution: Parents of top students often ask that their child be allowed to accelerate through the curriculum. This exacerbates the problem for future teachers, and sets up a failure-impooverished education experience for the bright student.

A wiser approach is to use curricular puzzles, games and mini-competitions to simultaneously teach curriculum to the students who need it, and to deflect top students into tough problem solving activities. This is never time wasted, because problem solving is the primary reason we teach mathematics.

The experience of mathematics should be profound and beautiful. Too much of the regular K-12 mathematics experience is trite and true. Children deserve tough, beautiful puzzles.

Gordon Hamilton
MMath, PhD

