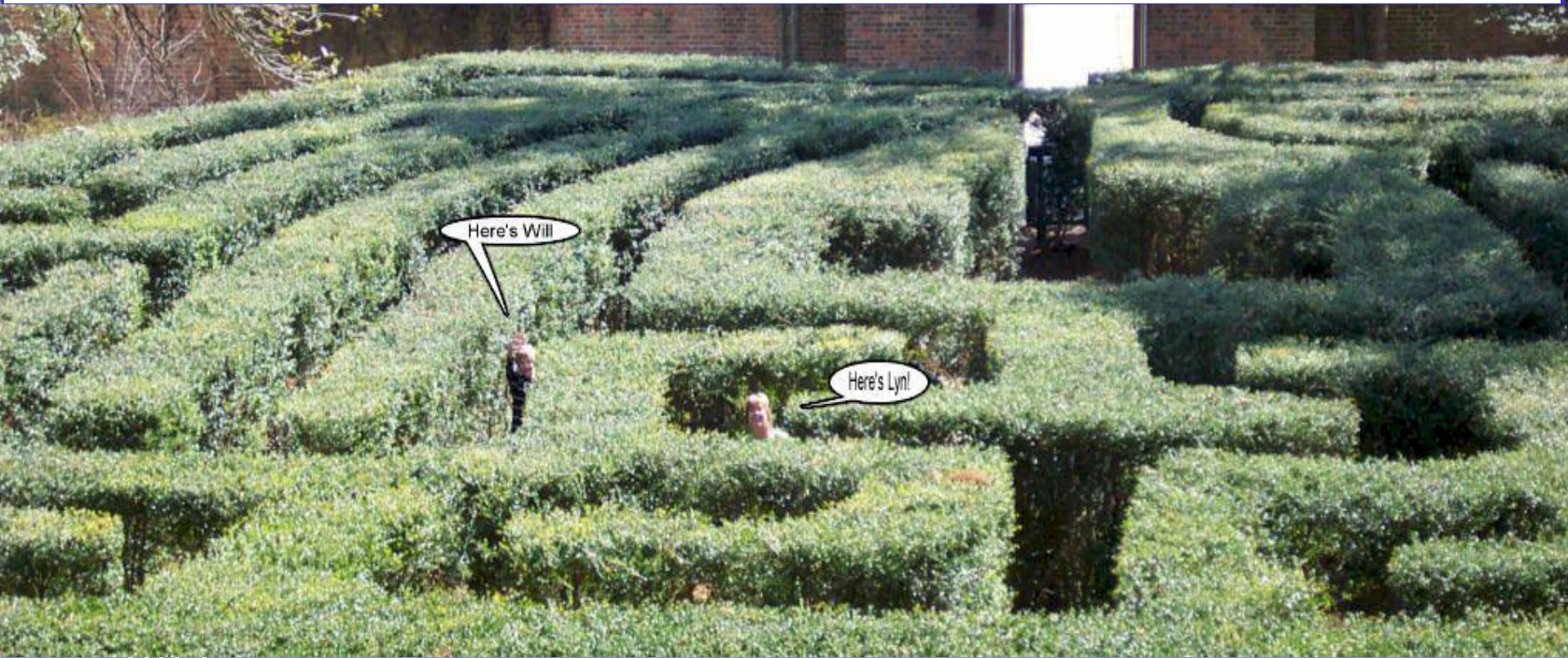


waar is hier de uitgang?



Universiteit
Leiden

Algoritmen in het Doolhof
Ouderdag DLF 27-3-21
Hendrik Jan Hoogeboom

fundamenteel

foundations of
computer science

logica

systemen

digital
systems design

computer-
architectuur²

wiskunde

continue
wiskunde

lineaire
algebra

softwarelijn

programmeer-
methoden

programmeer-
technieken

algoritmiëk

databases

datastructuren²

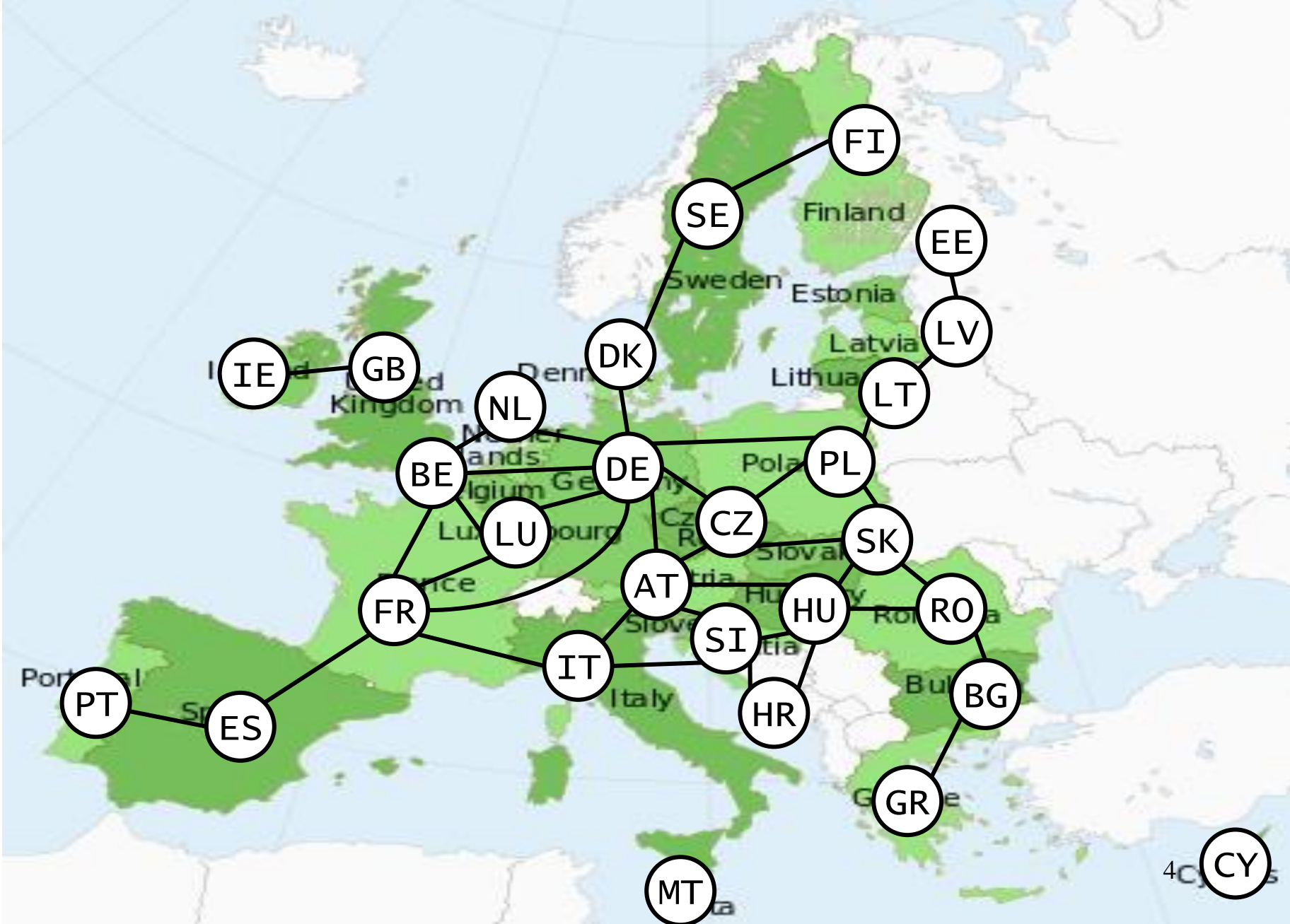
ondersteunend

oriëntatie
informatica

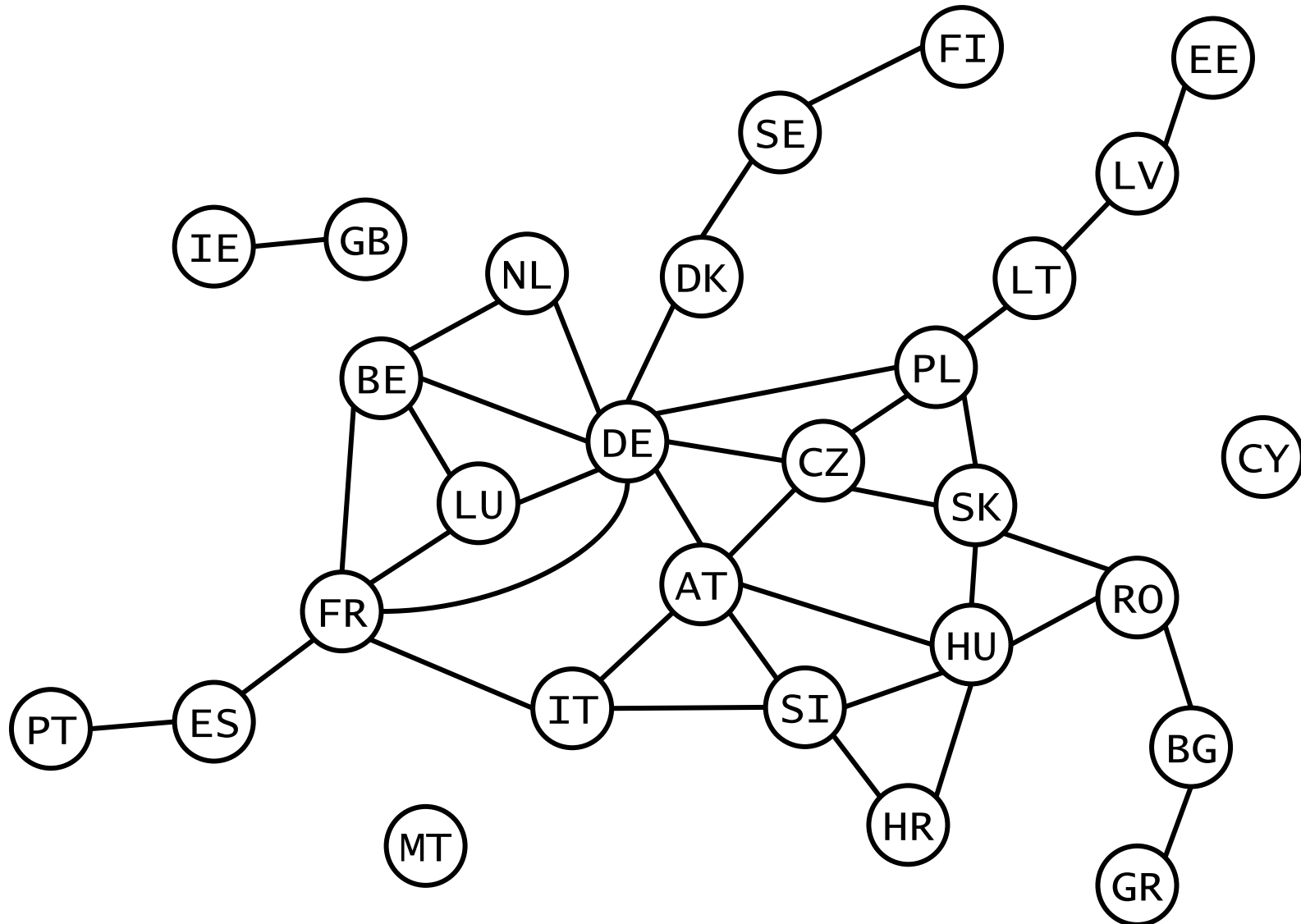
studeren en
presenteren

verzamelingen	ch. 1	Set Theory
relaties	ch. 2	Relations
functies	ch. 3	Functions
recursie & inductie		
grafen	ch. 8	Graph Theory
	9	Directed Graphs
bomen	ch. 10	Binary Trees
	8.8	Tree Graphs
	9.4	Rooted Trees
equivalenties	ch. 2.8	Equivalence Relations
	3.4	Modular Arithmetic
	3.7	Cardinality
talen & automaten	ch. 12	Languages, Automata

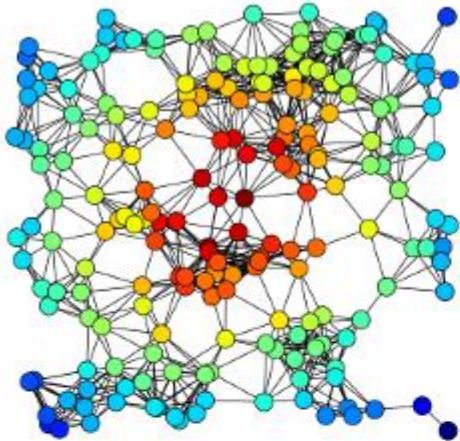
buren in Europa



buren in Europa

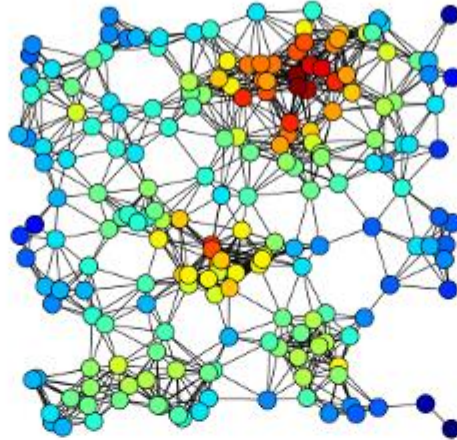


graph centrality



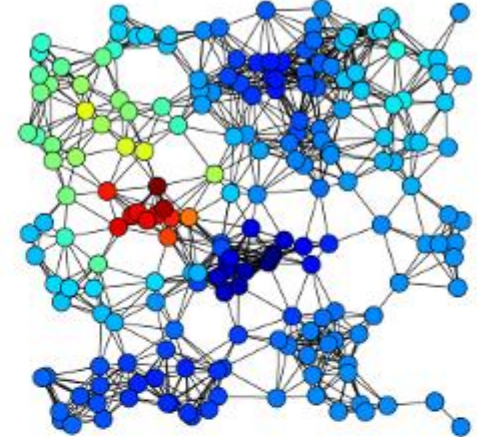
B

closeness

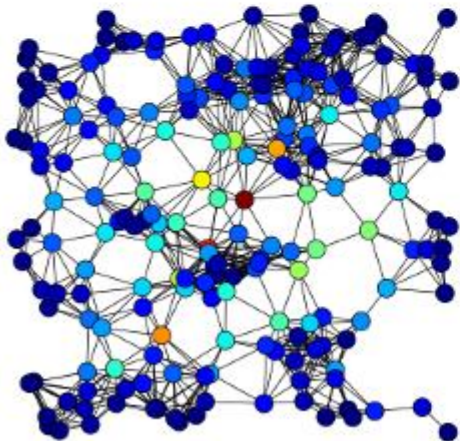


D

degree

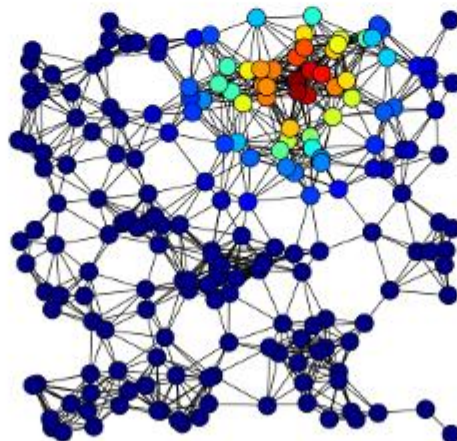


F

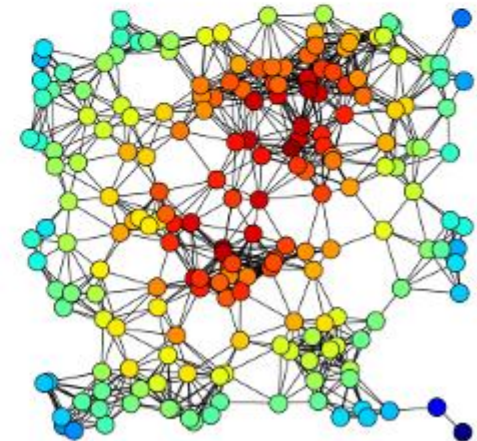


A

betweenness

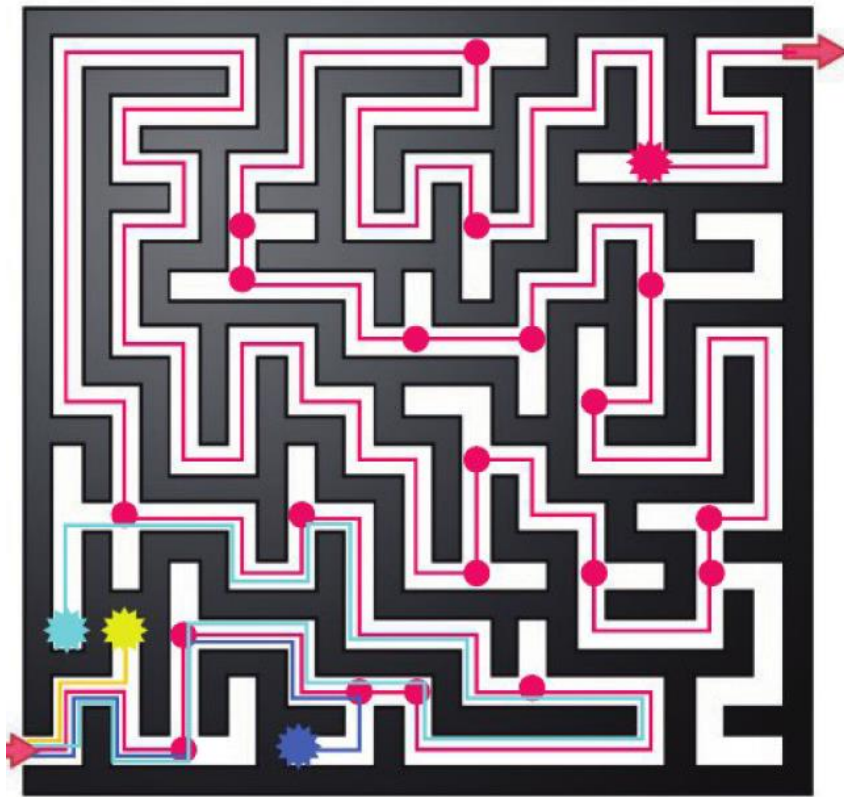


C

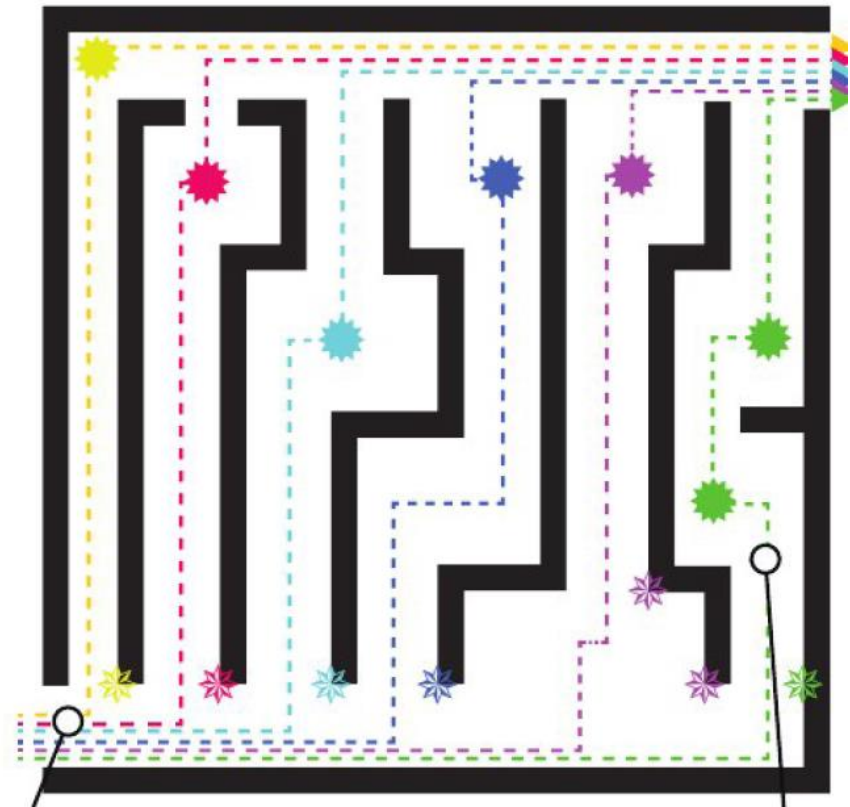


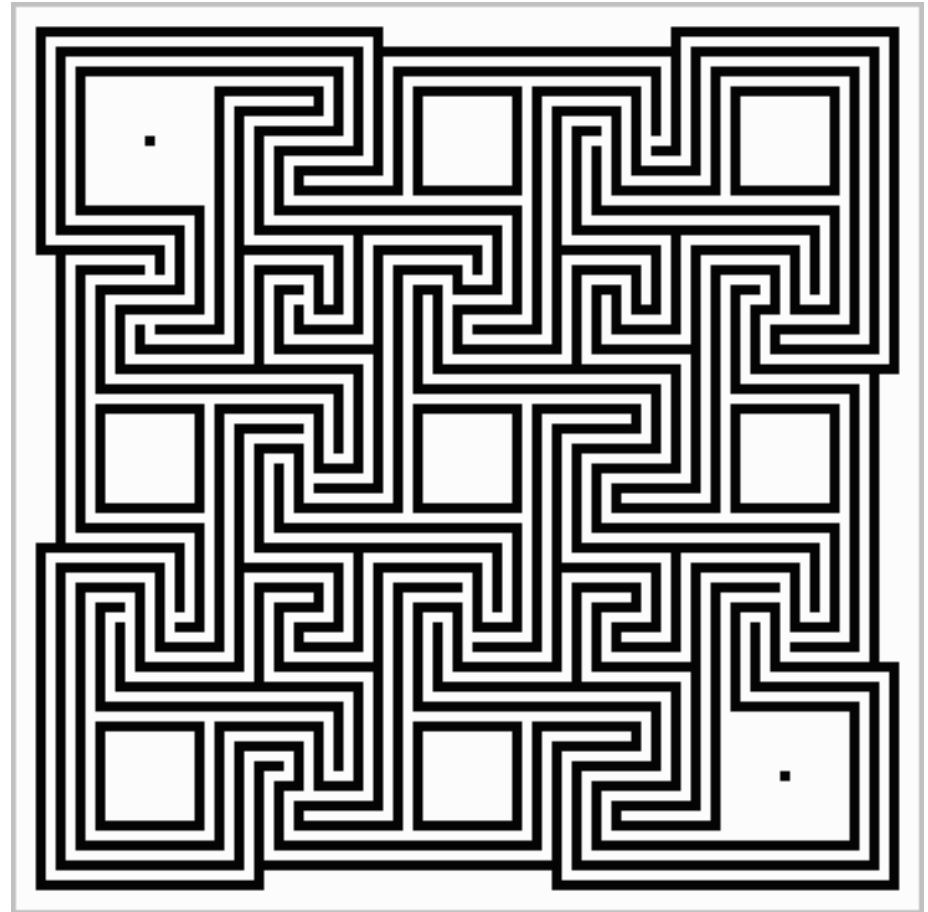
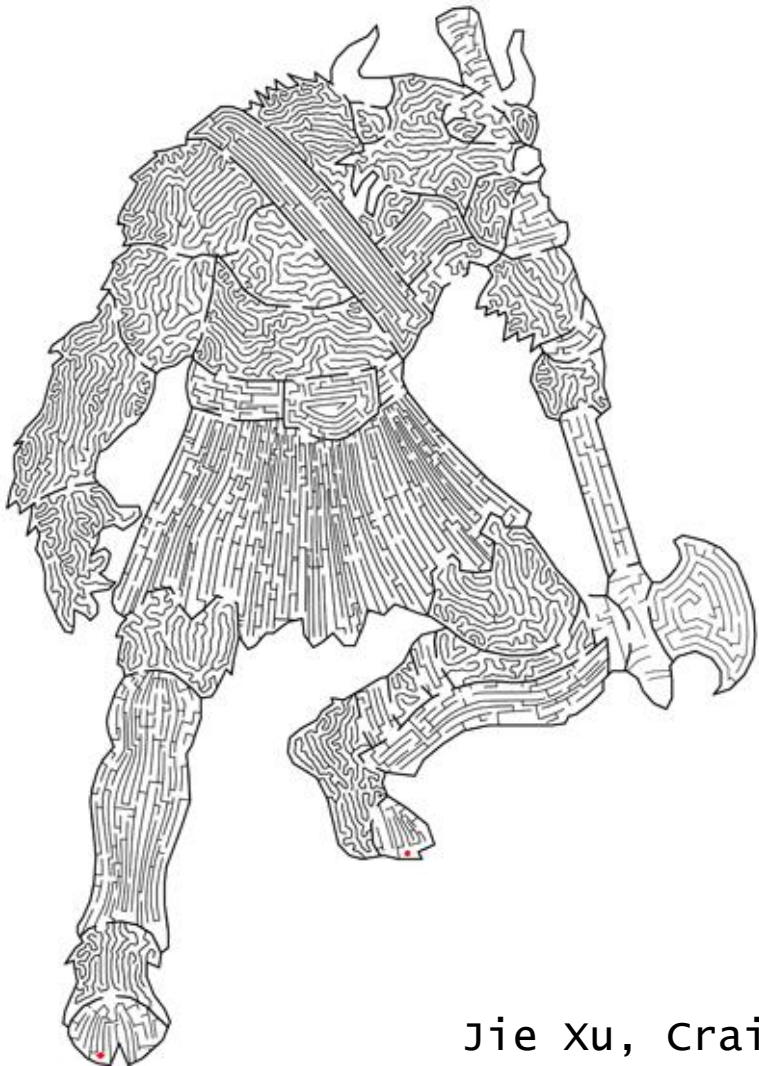
E

**Ziekenhuis/wetgeving
als een doolhof**



**Vereenvoudigd ziekenhuis/
simpelere wetgeving**



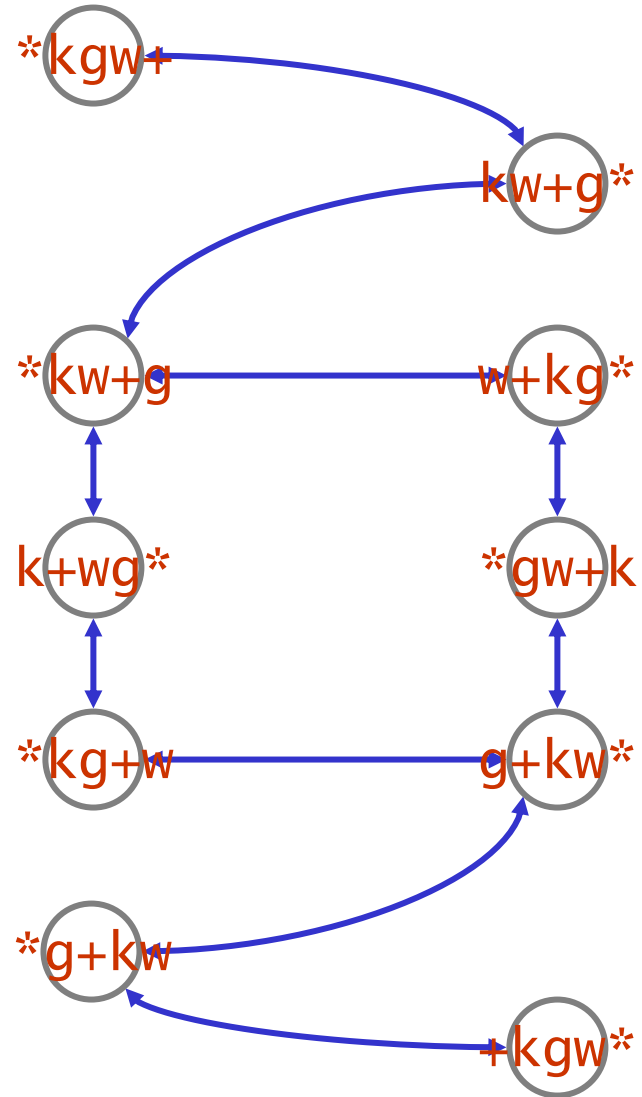
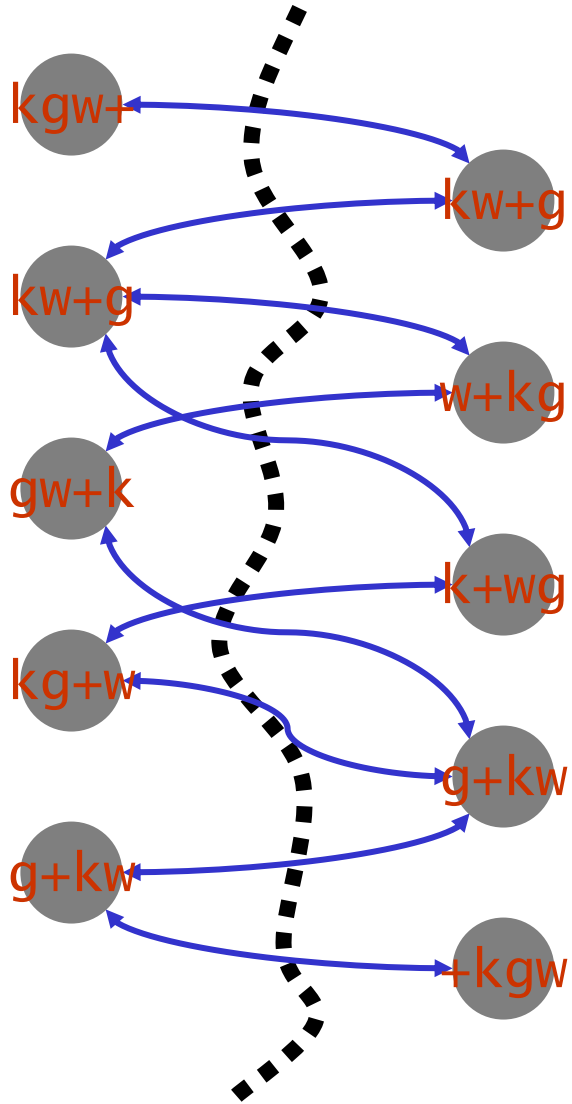


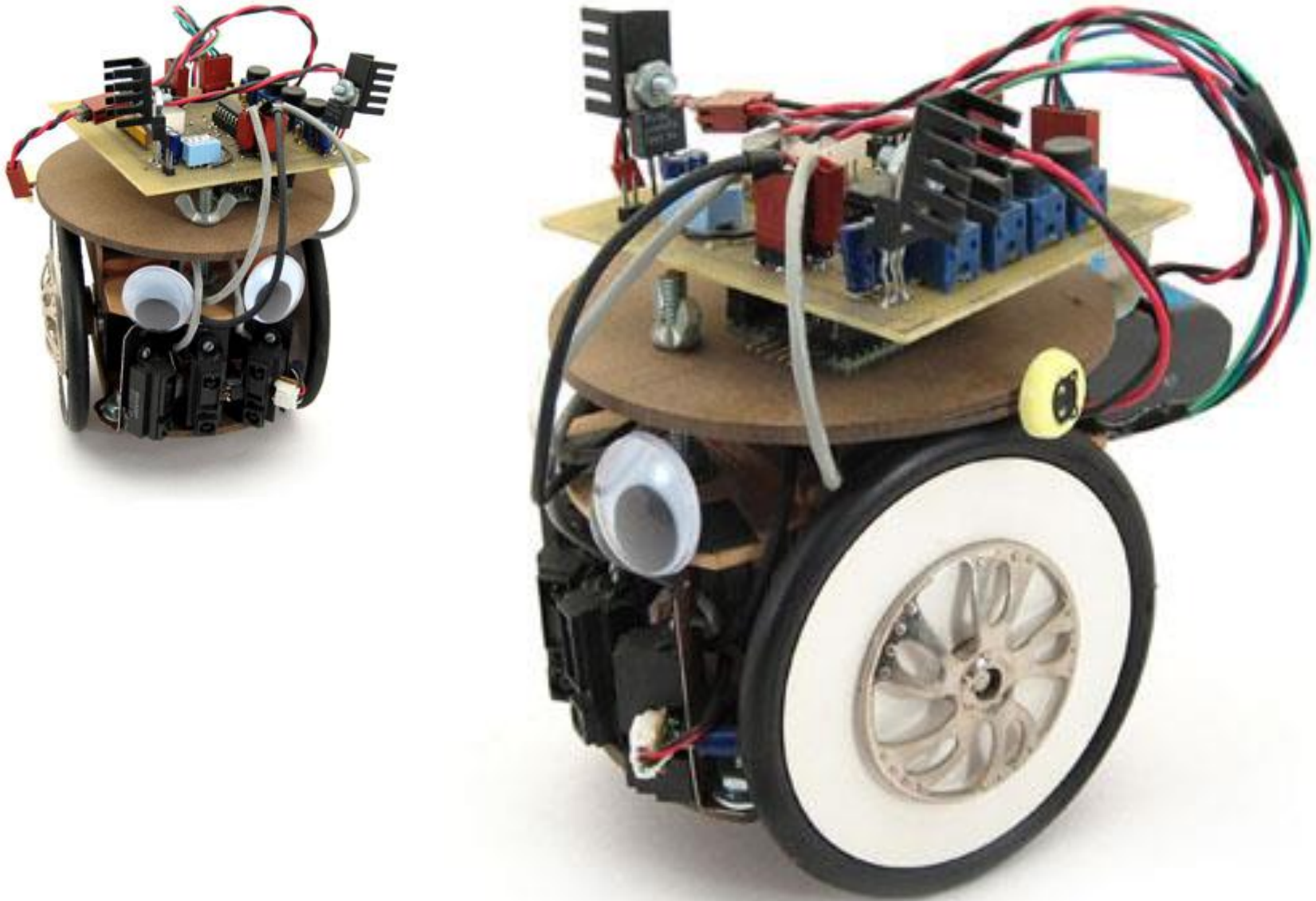
<http://www.clickmazes.com/>

Jie Xu, Craig S. Kaplan: Image-guided maze construction.
ACM Transactions Graphics 26 (2007) 29



kool, geit, wolf



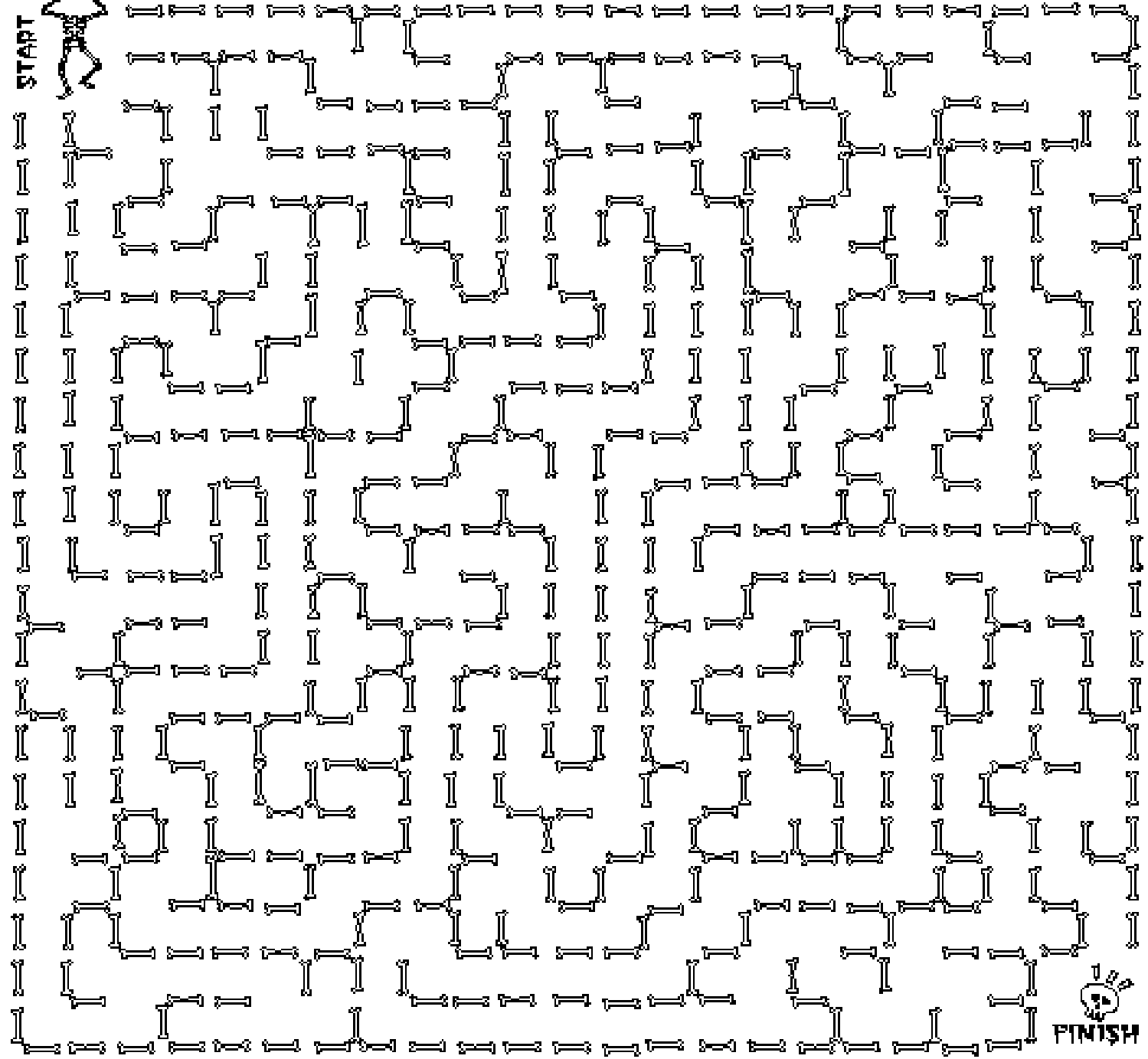


snoeien

spelregels

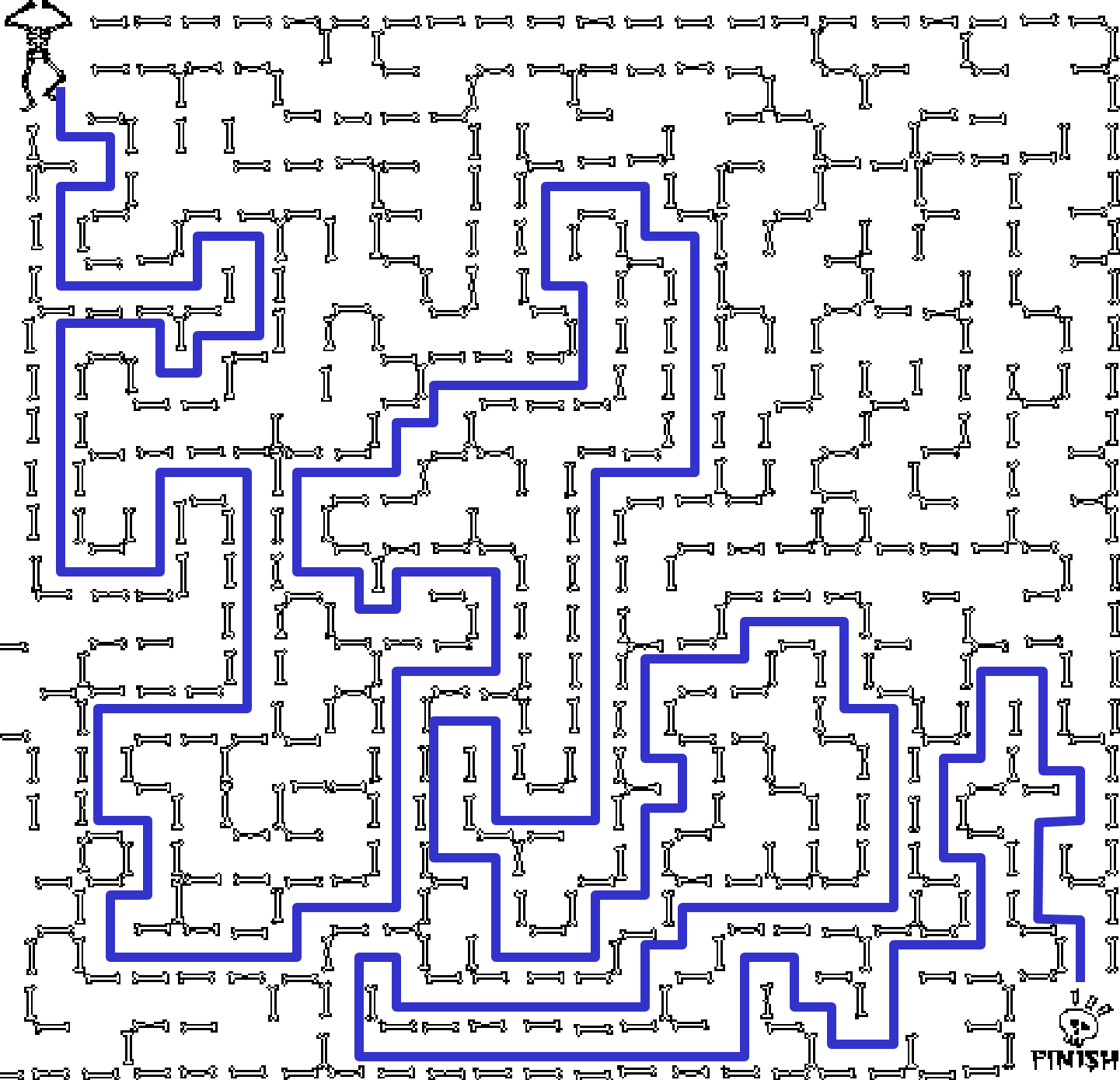
rechthoekig doolhof
kaart is bekend
doodlopende paden

START



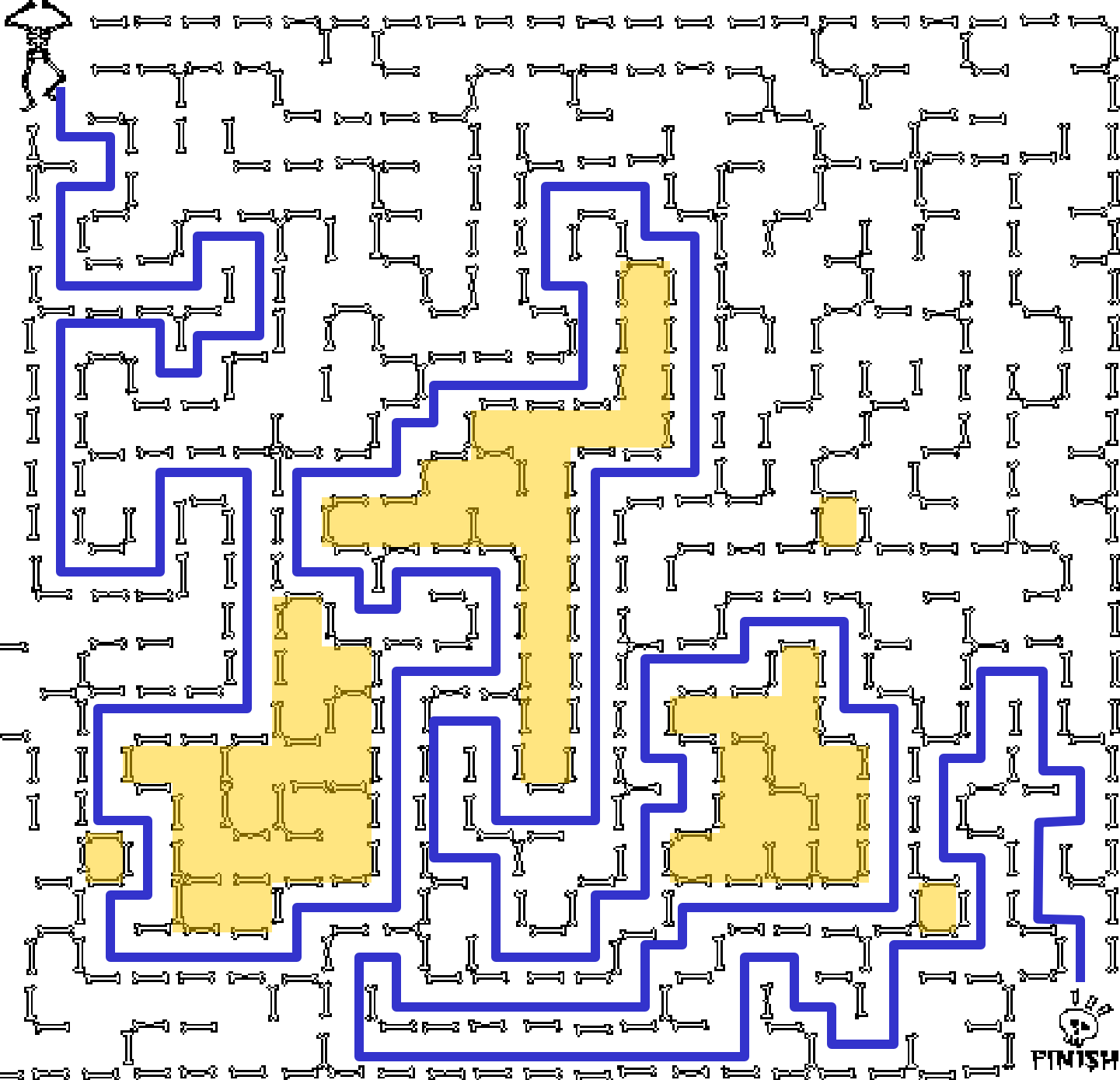
FINISH

START



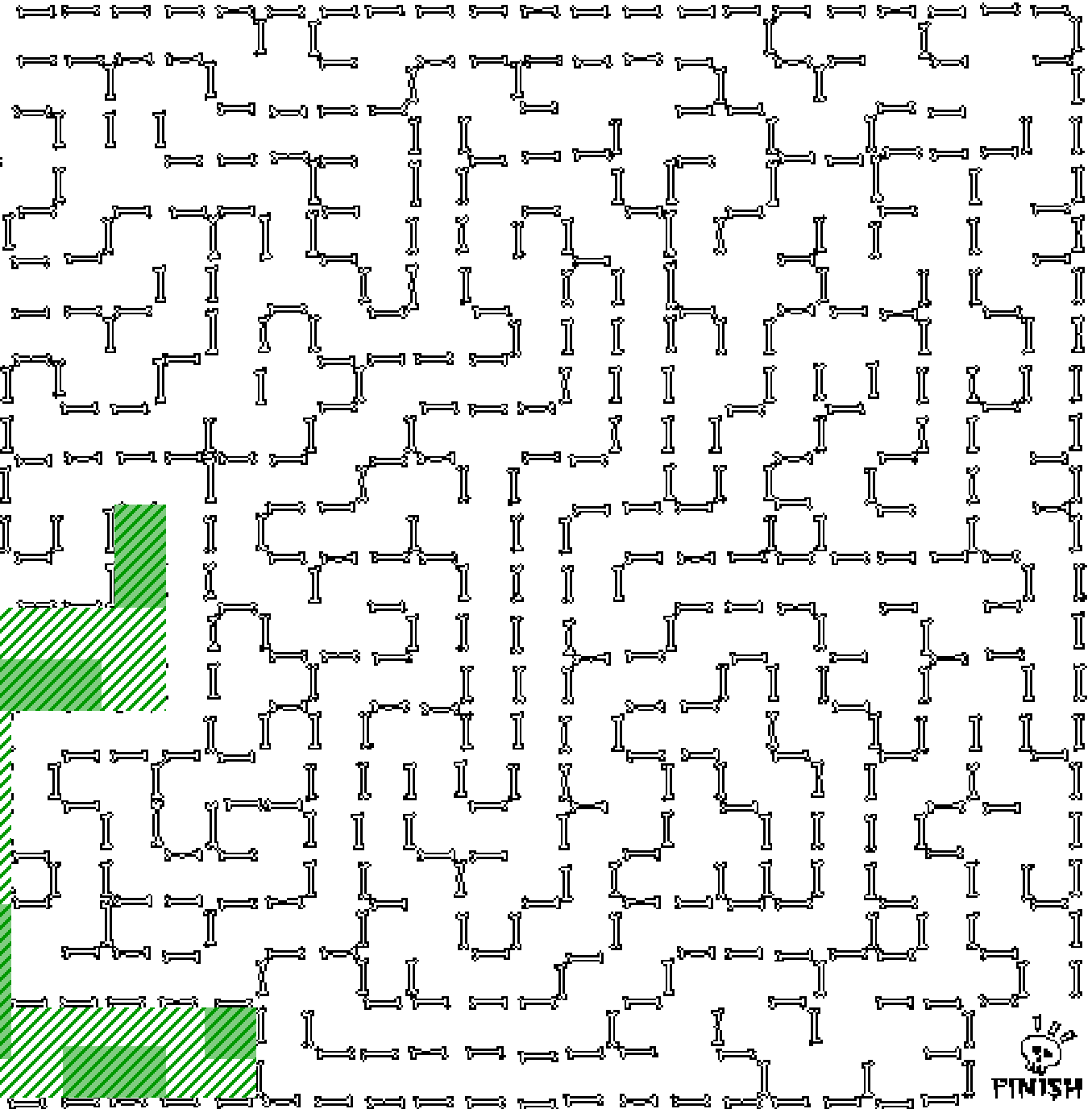
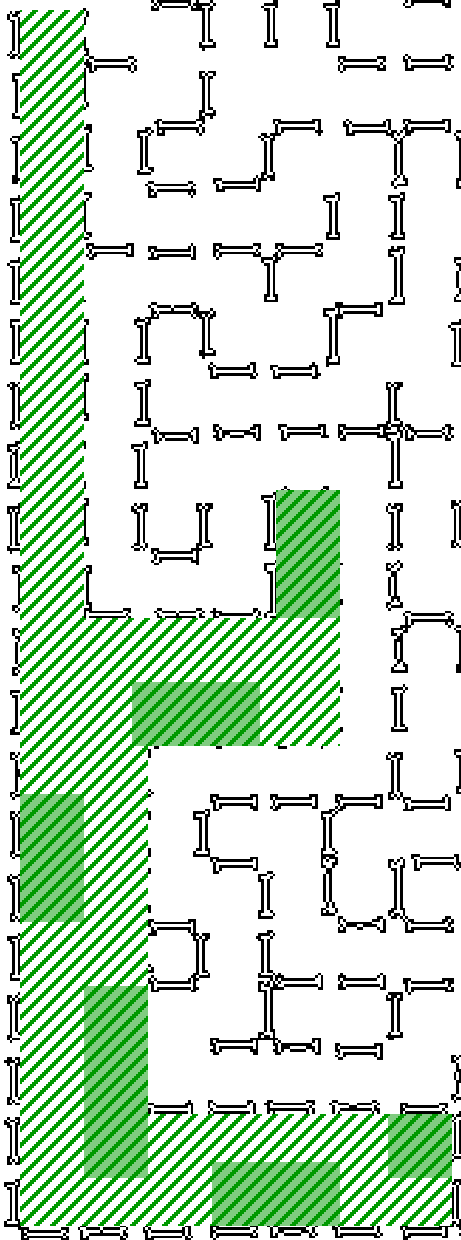
FINISH

START



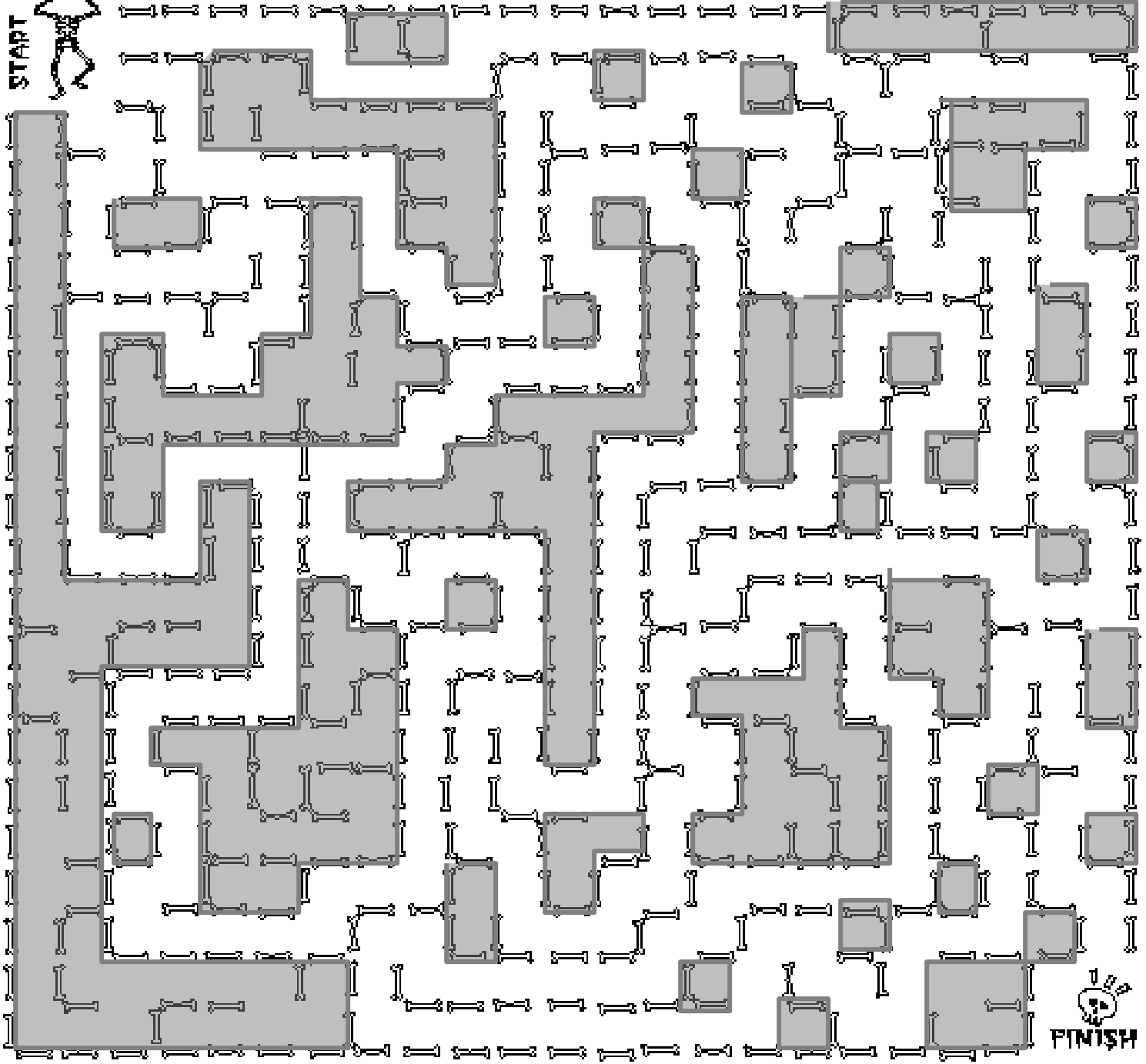
FINISH

START



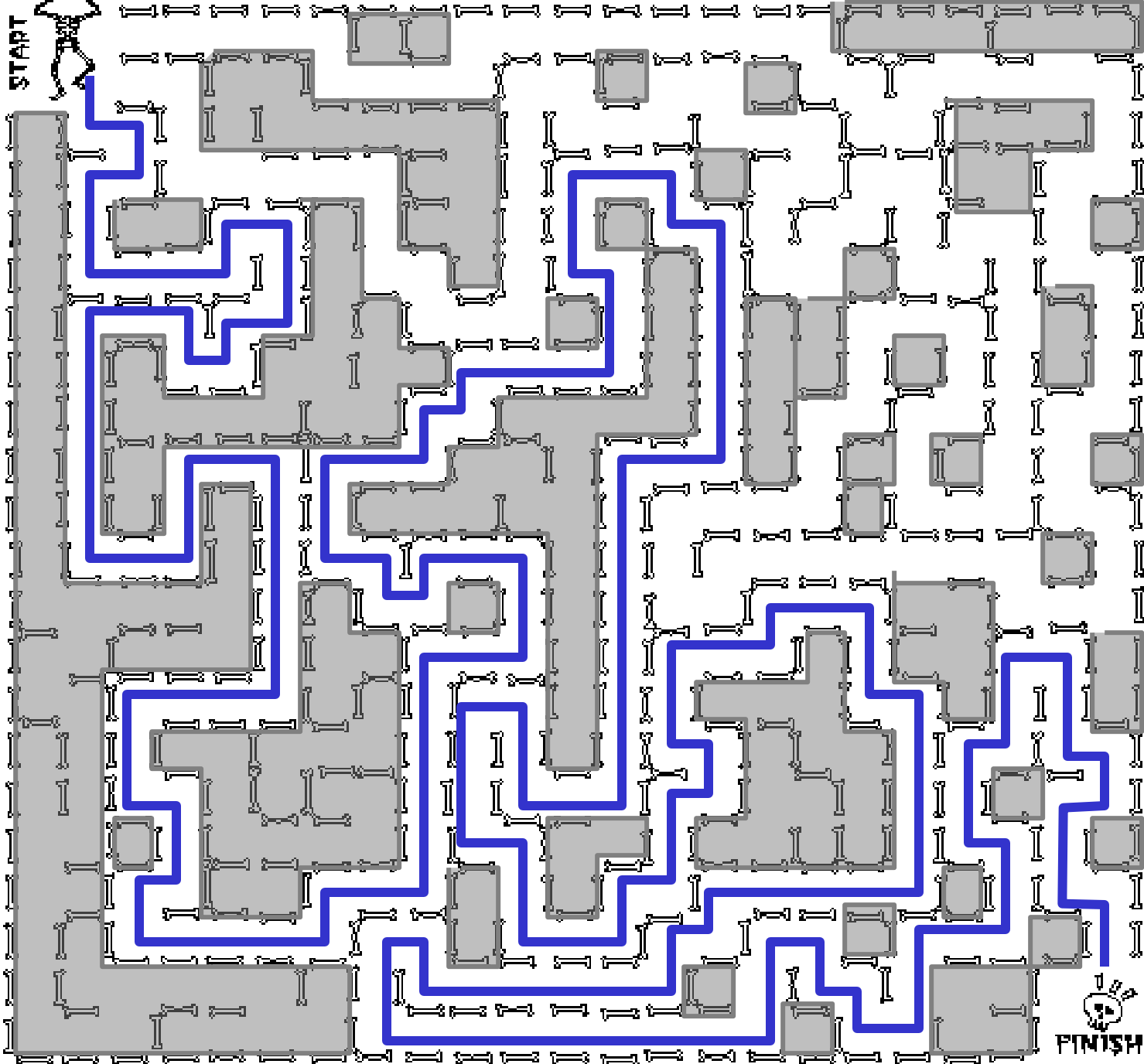
FINISH

START



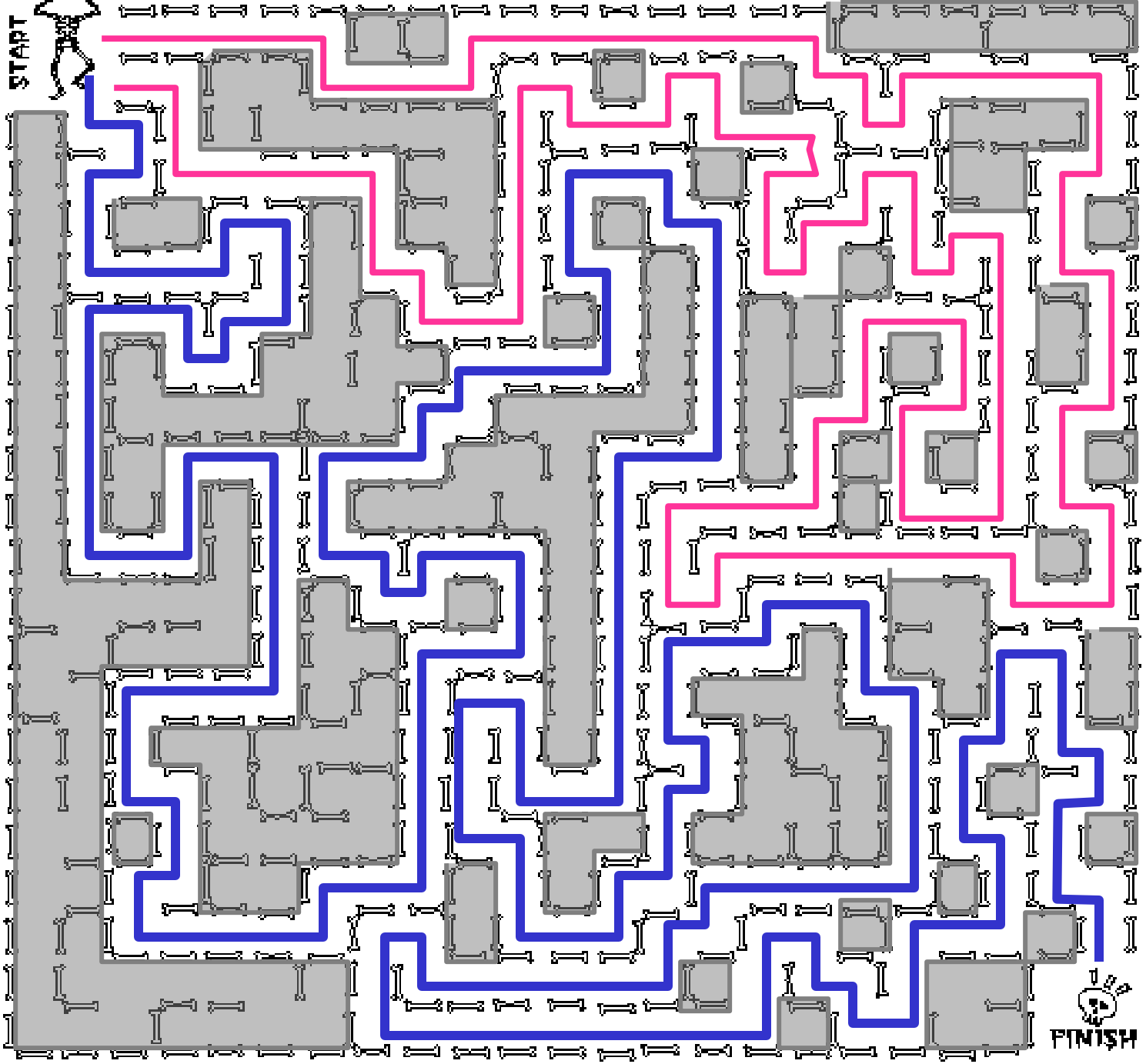
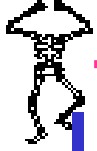
FINISH

START



FINISH

START

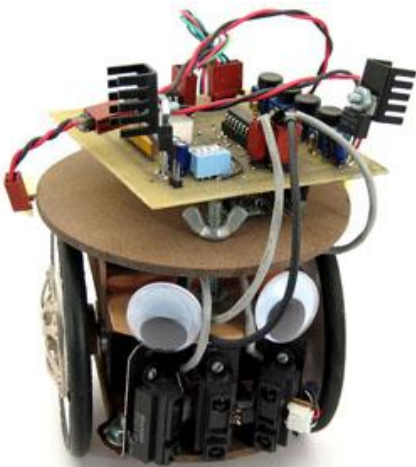


FINISH

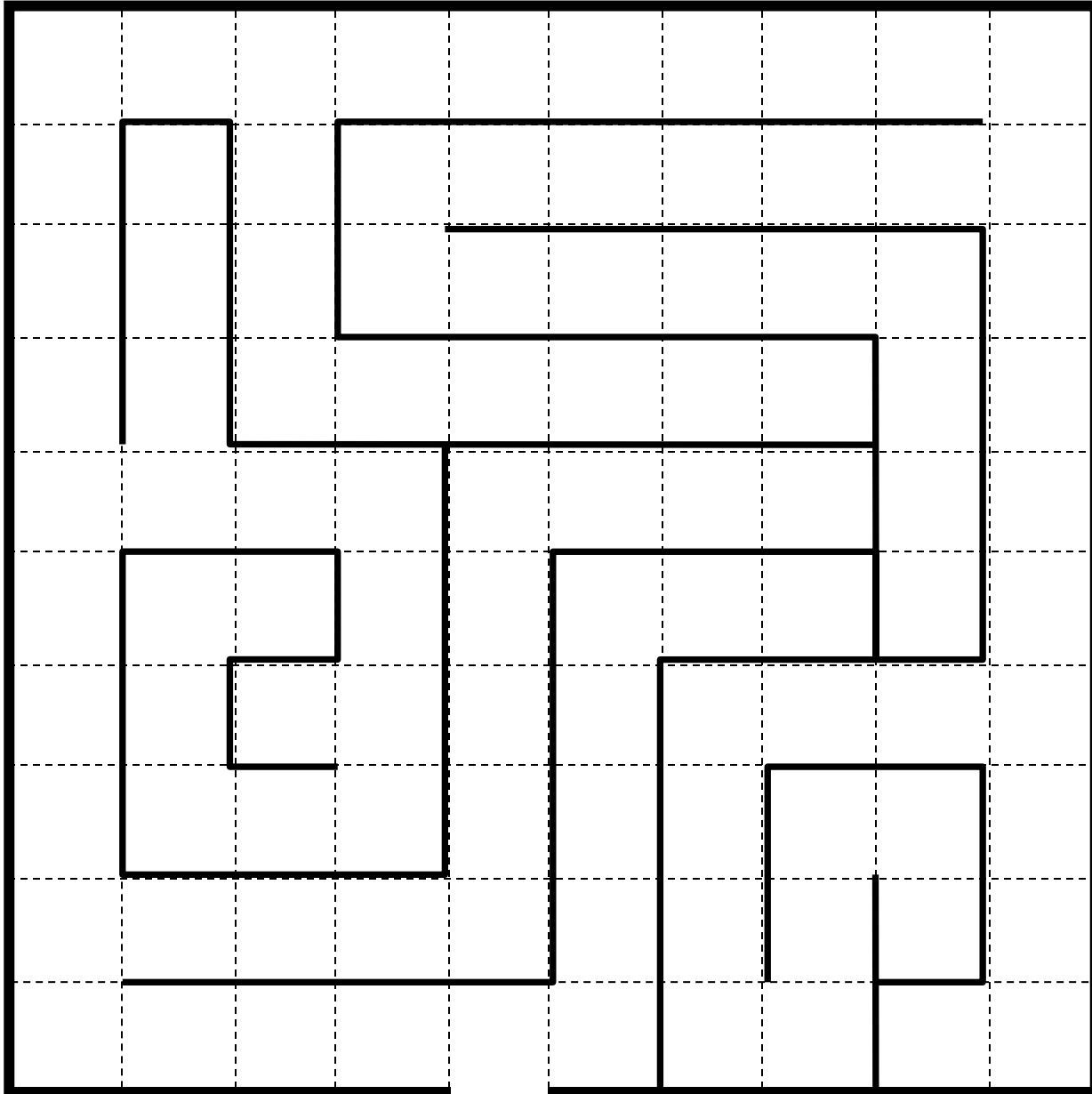
ronddoelen

spelregels

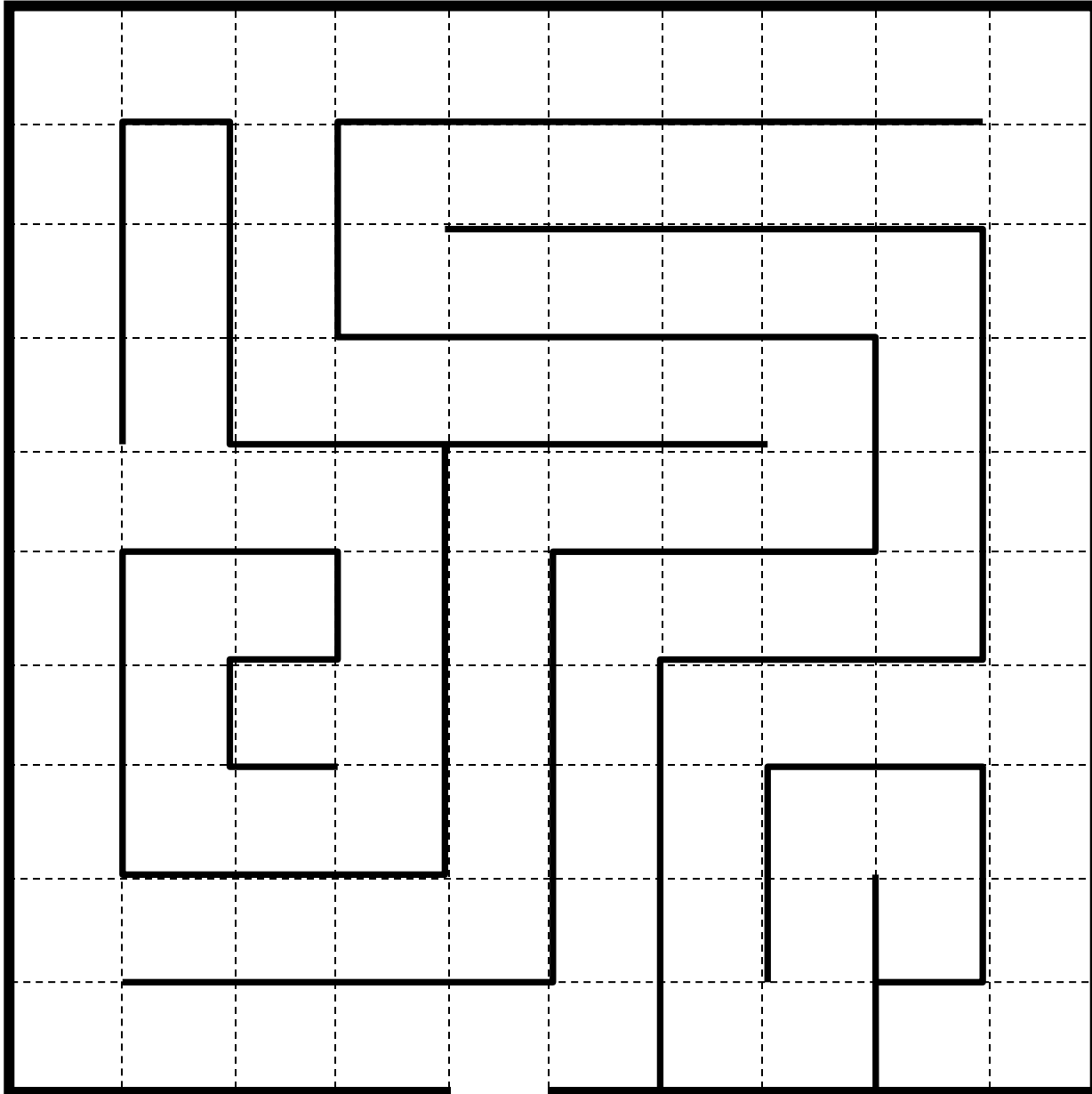
rechthoekig doolhof
doorzoeken: 'algoritme'
zonder kaart
ingang = uitgang

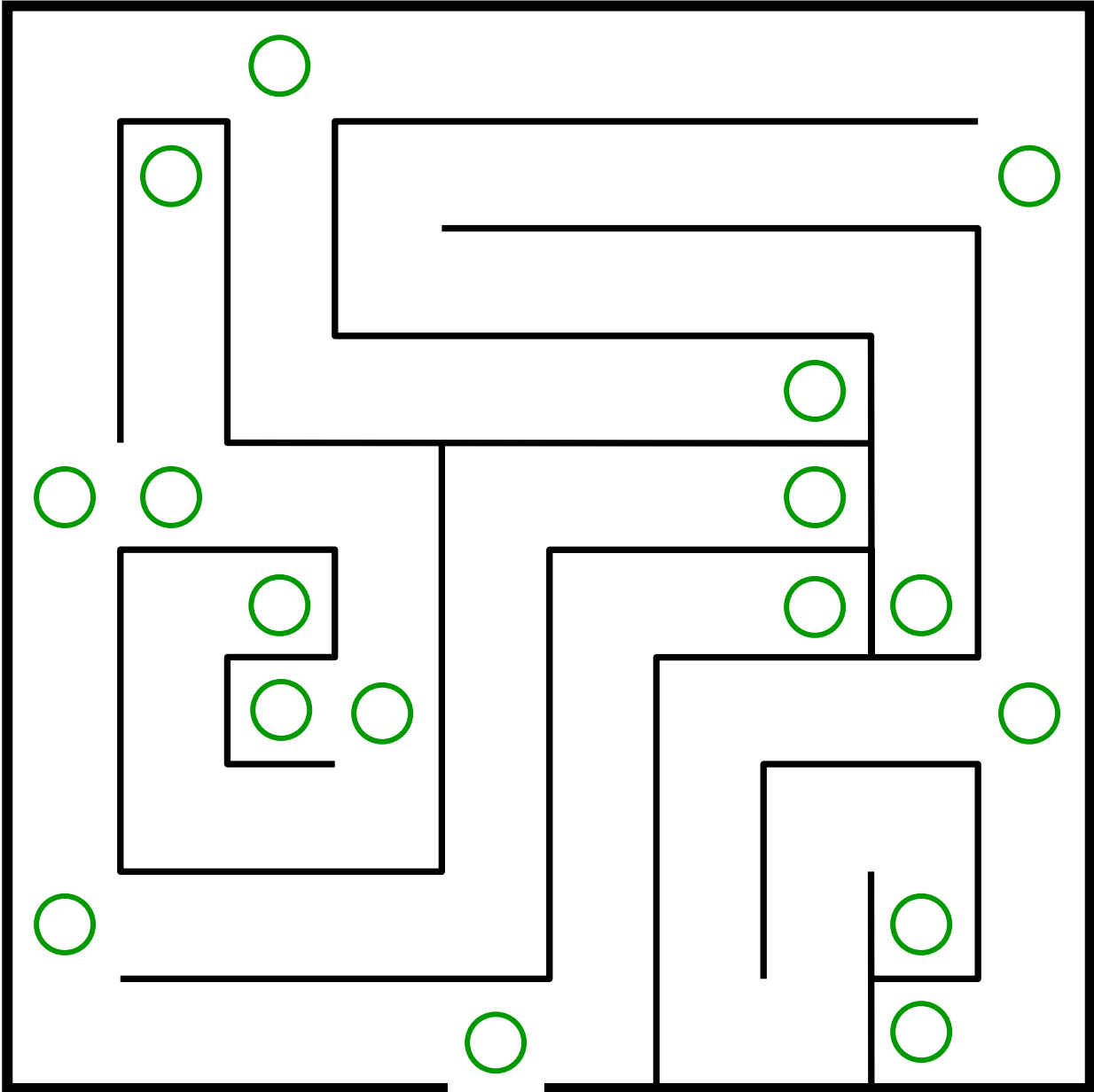


volg de muur

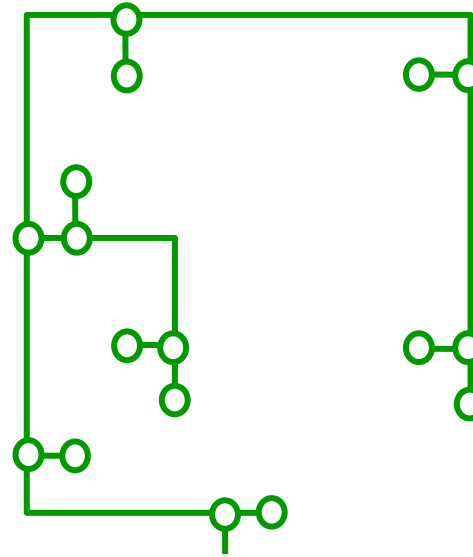
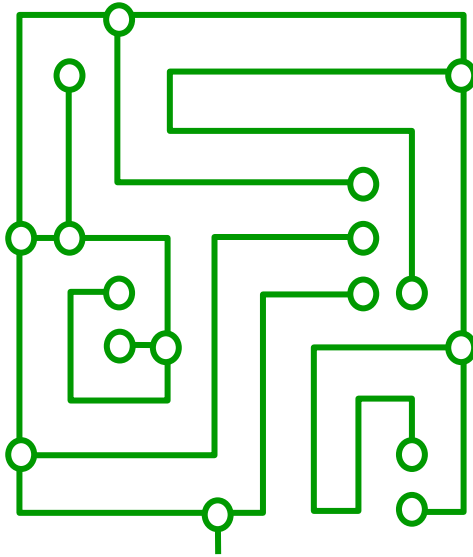


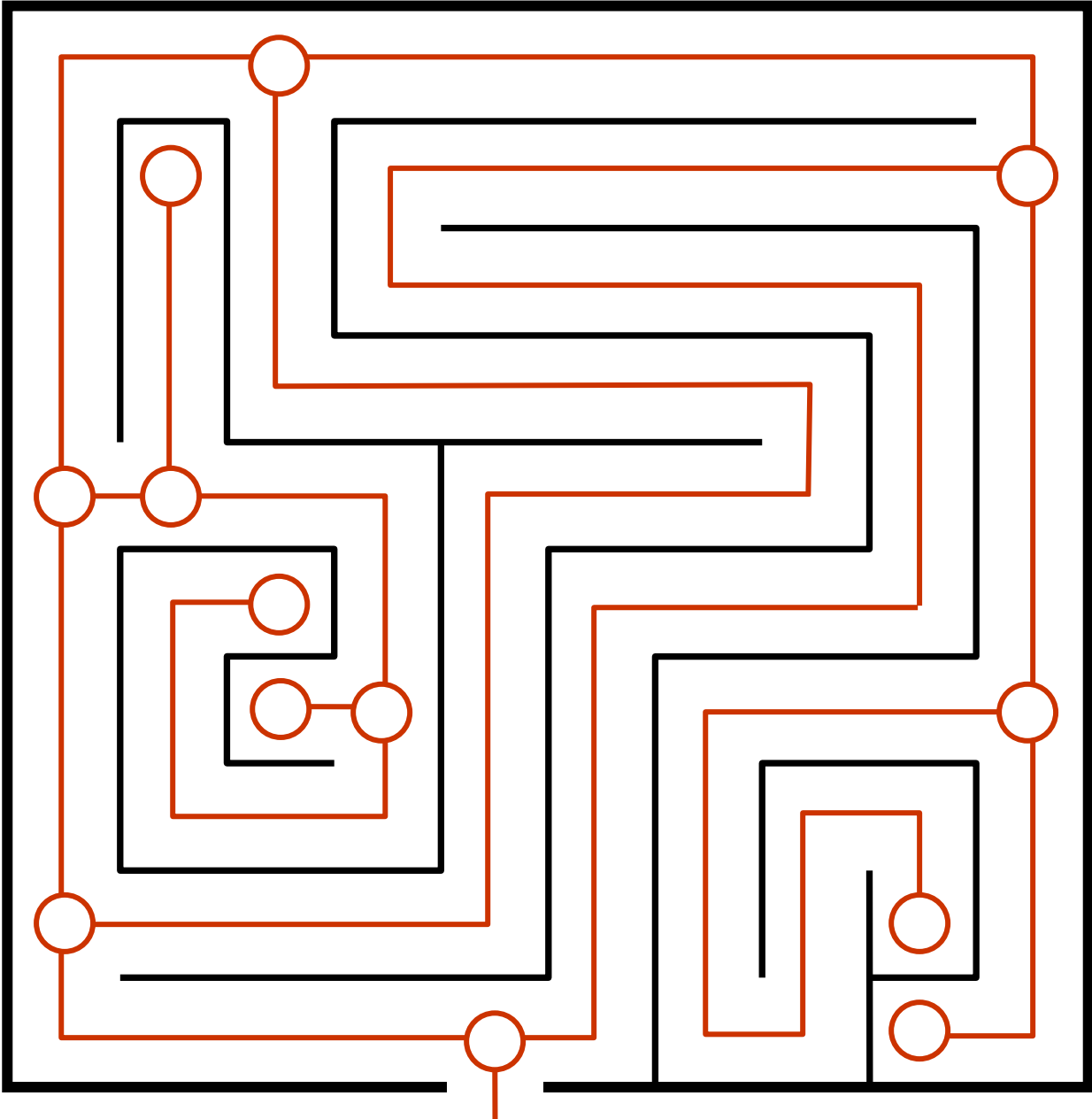
volg de muur (2)



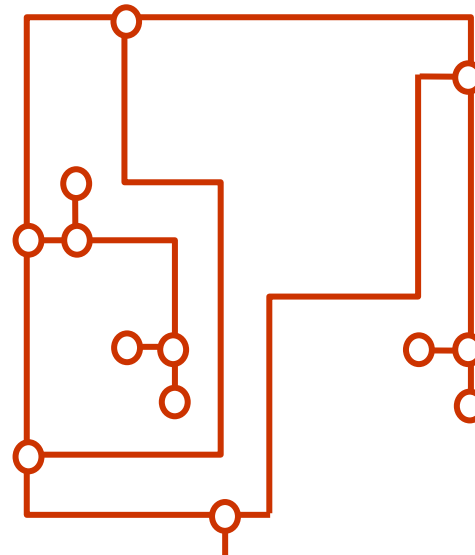
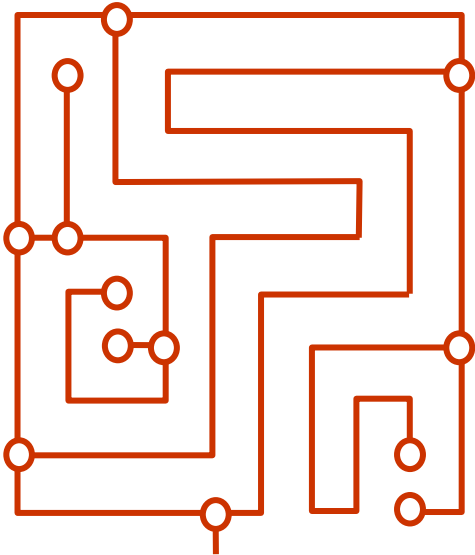
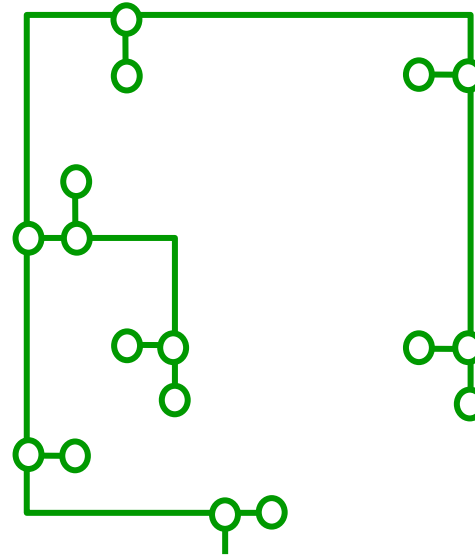
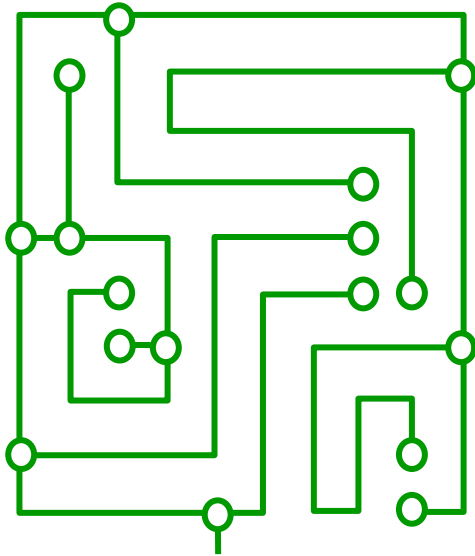


structuur (1)





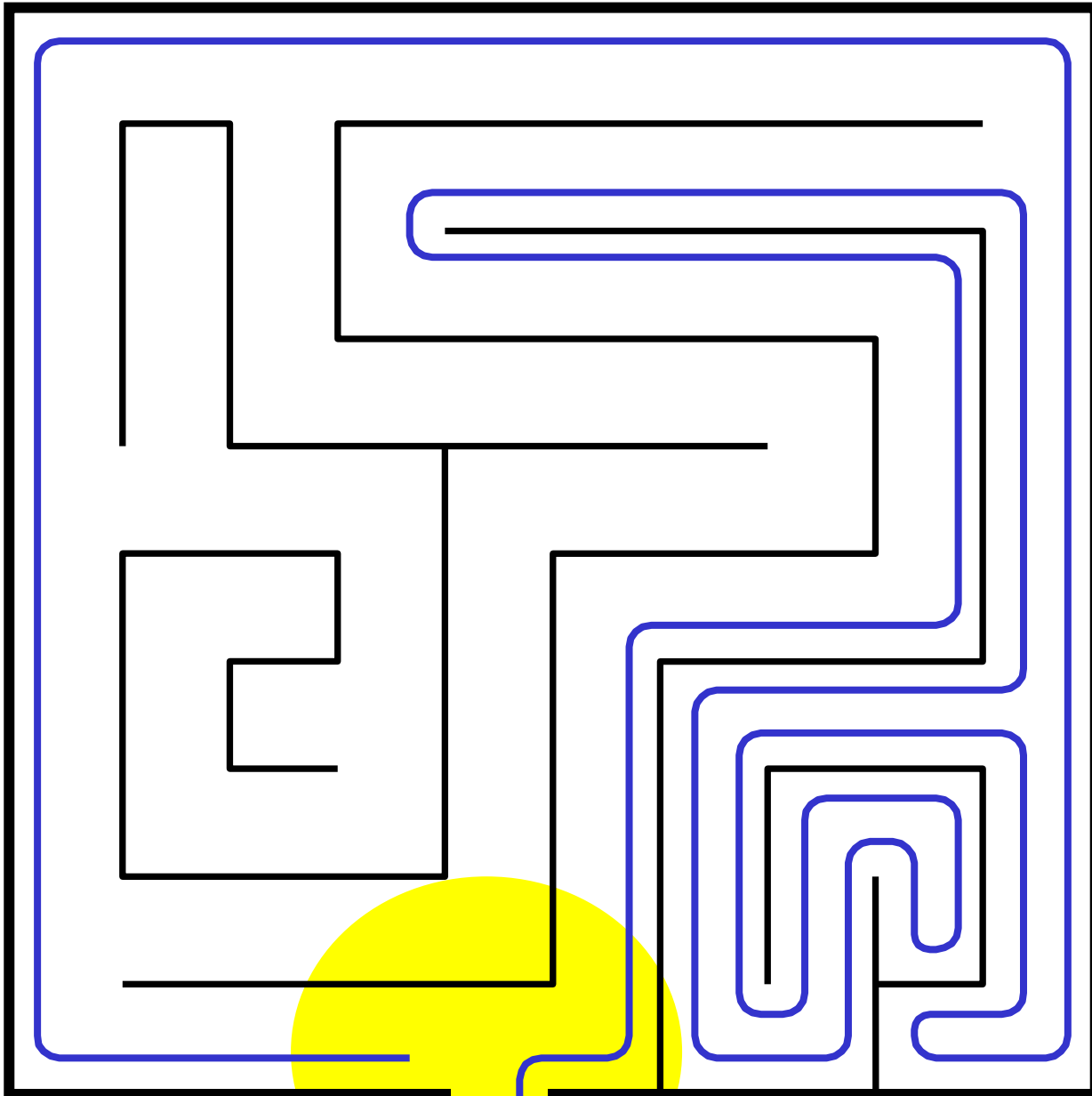
structuur (2)



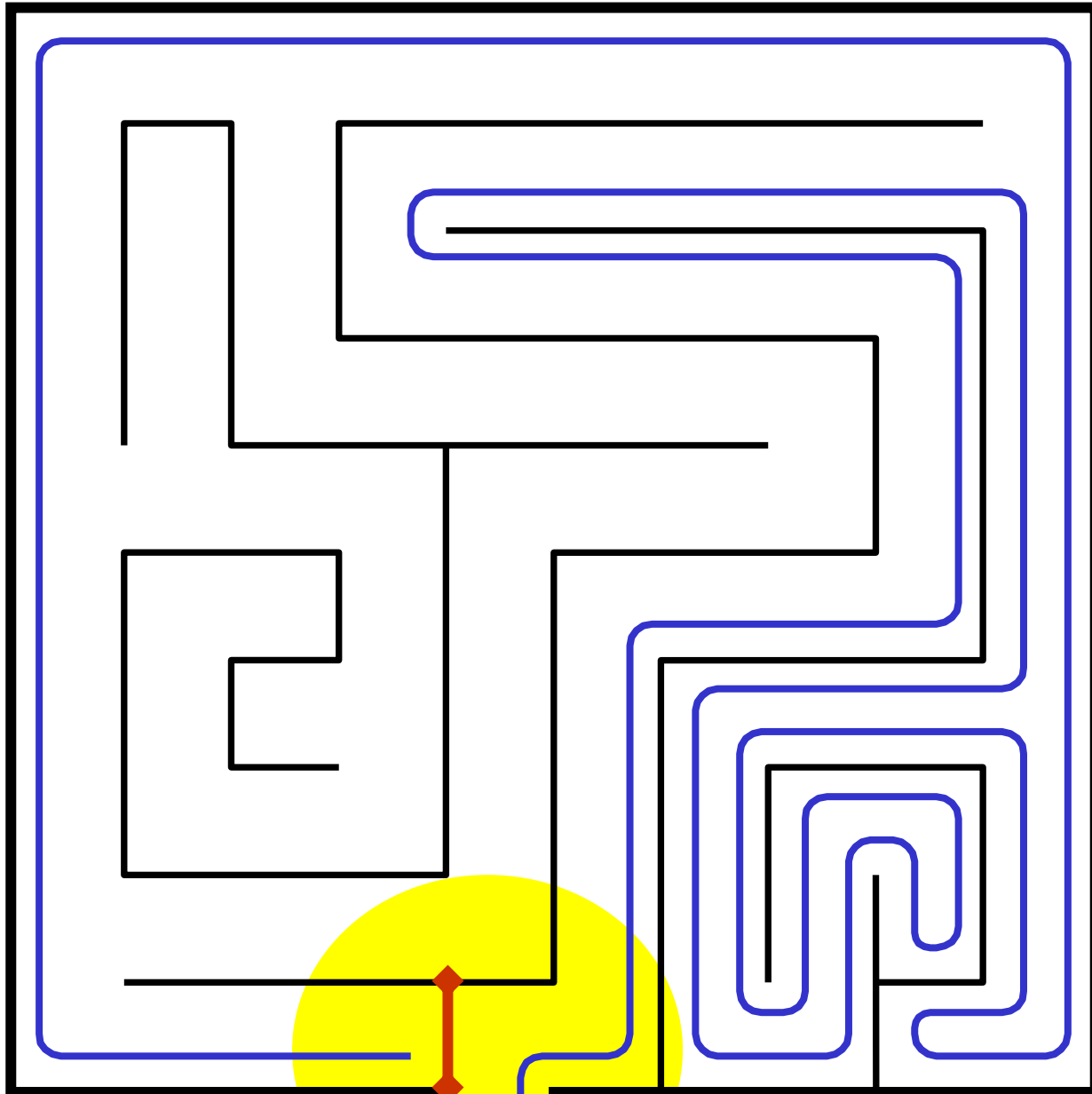
de draad van Ariadne



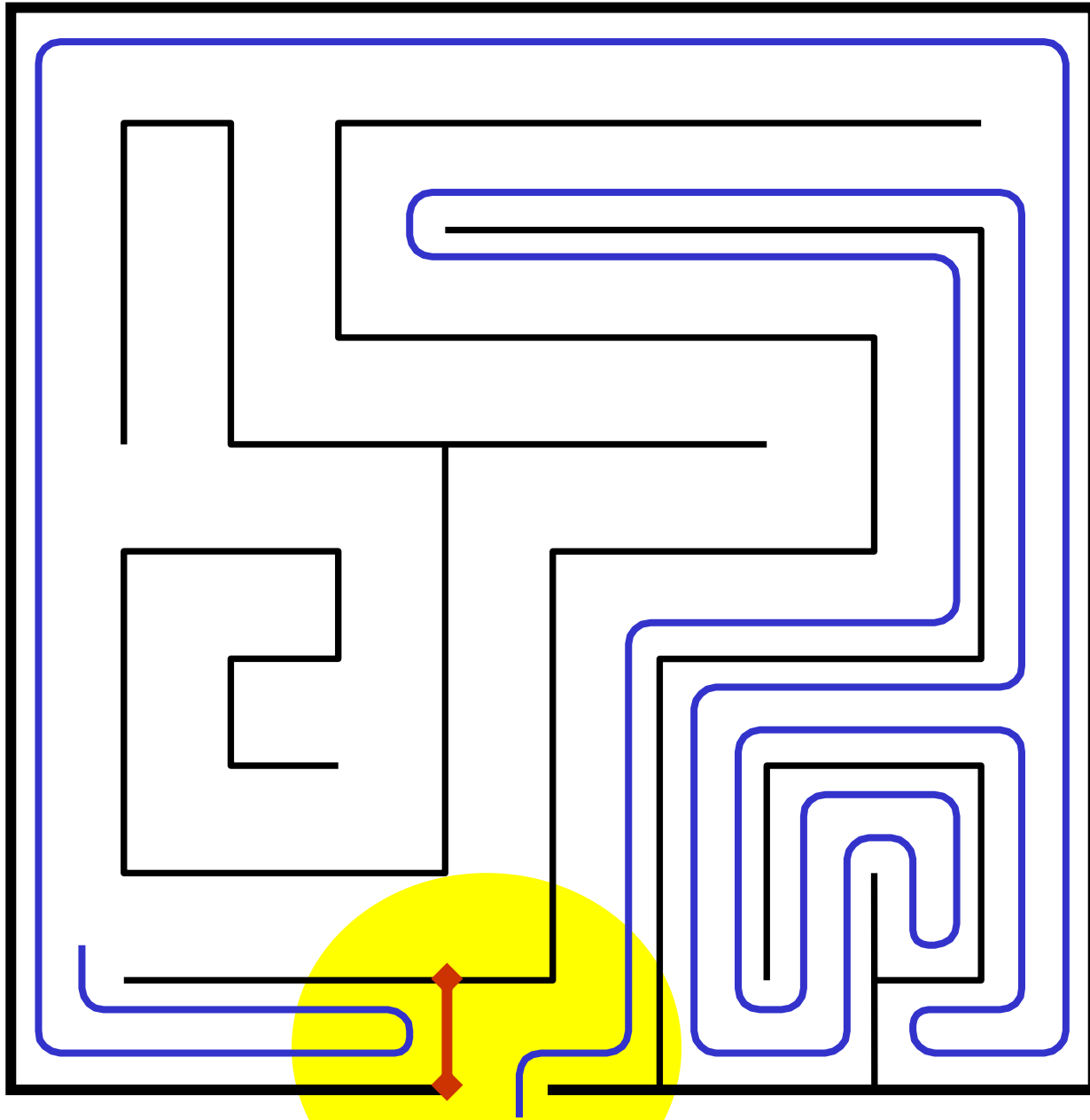
met een touw

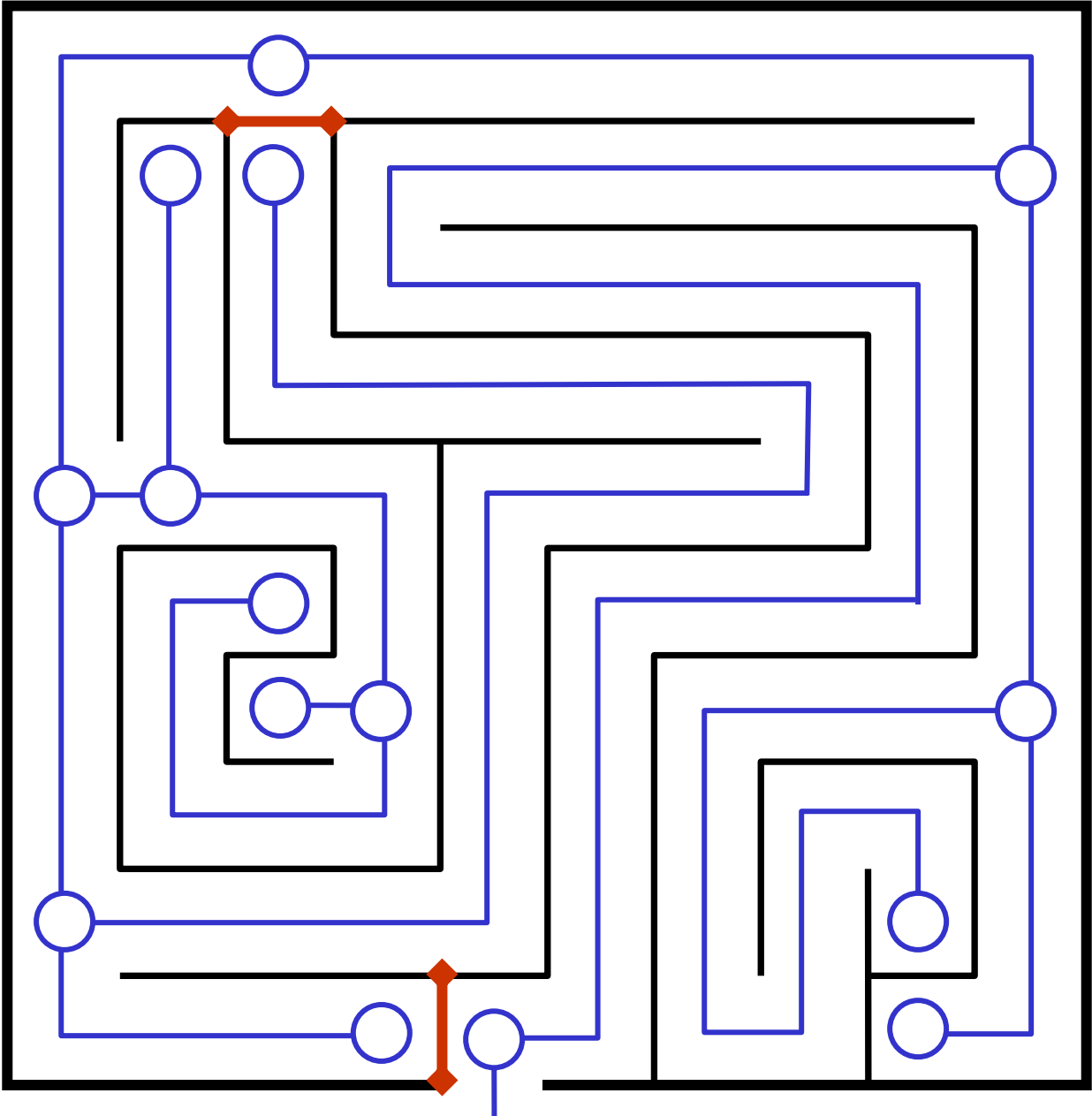


met een touw

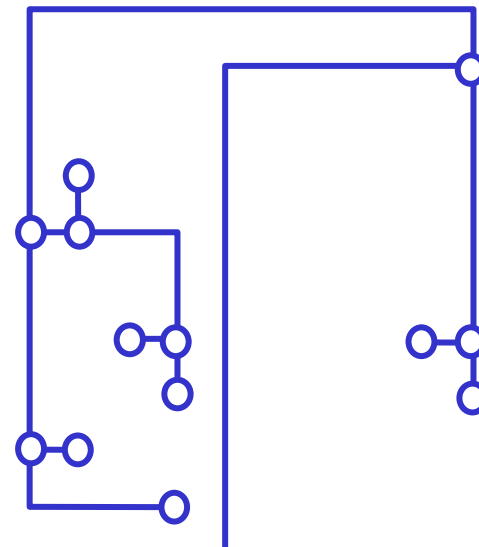
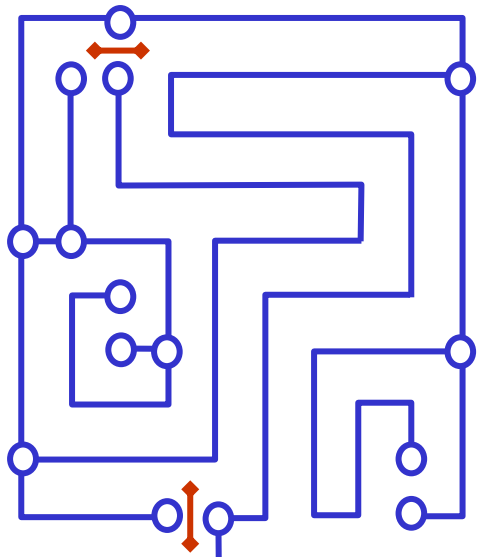
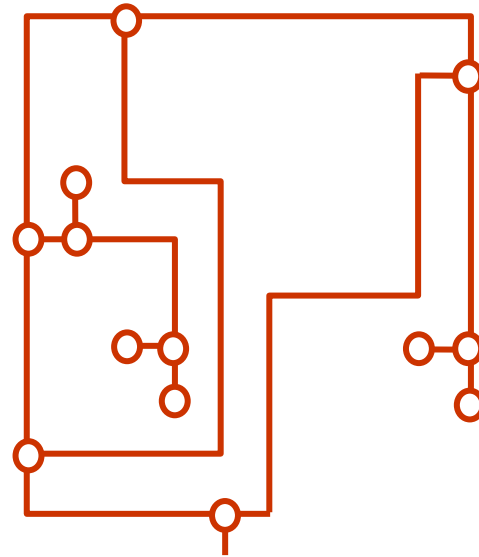
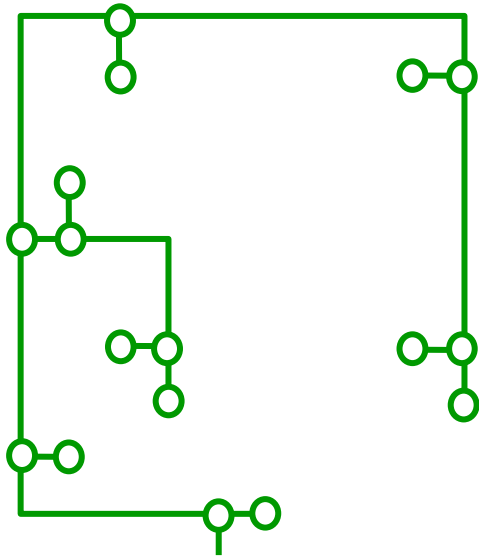


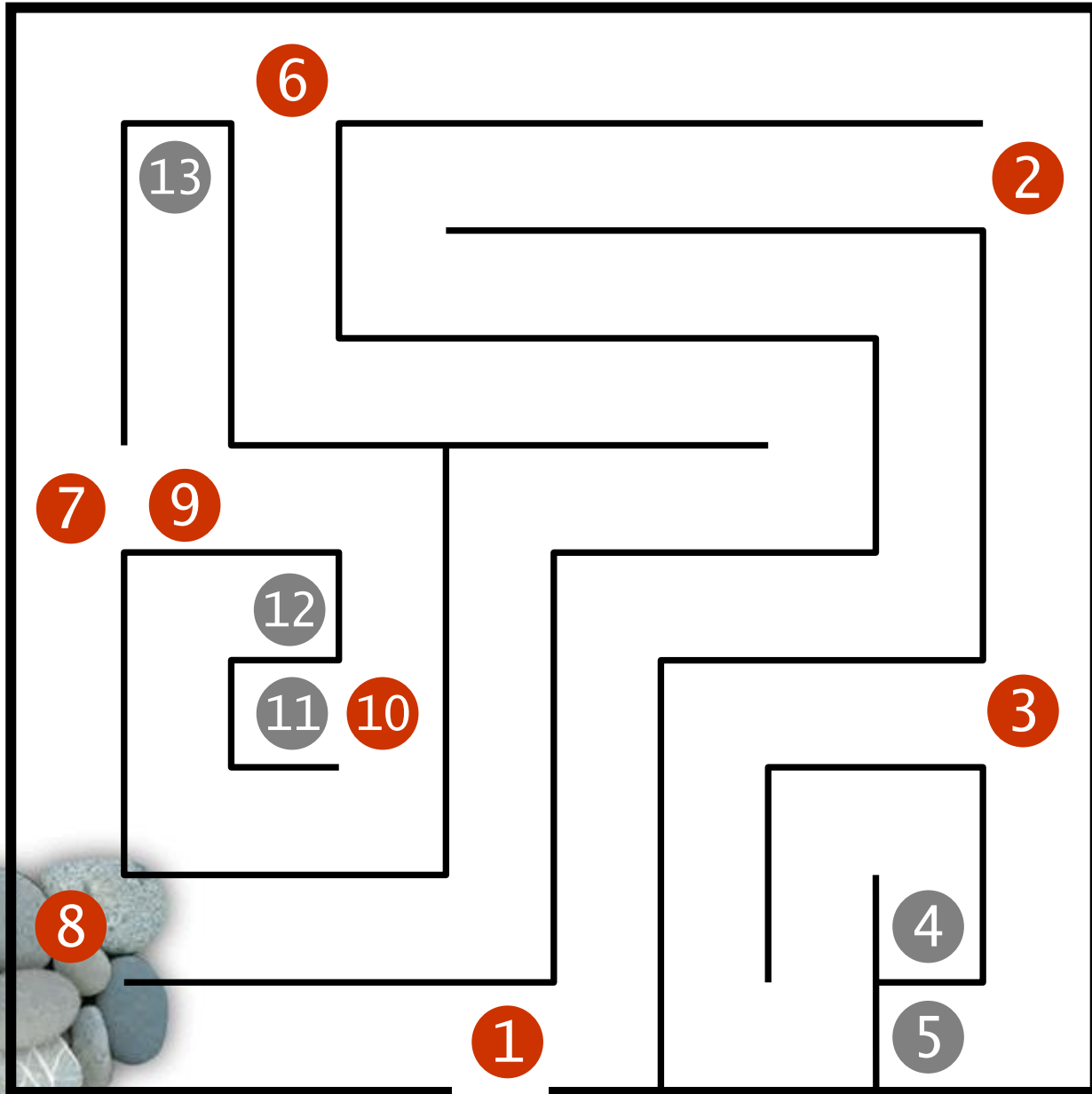
met een touw





structuur (3)

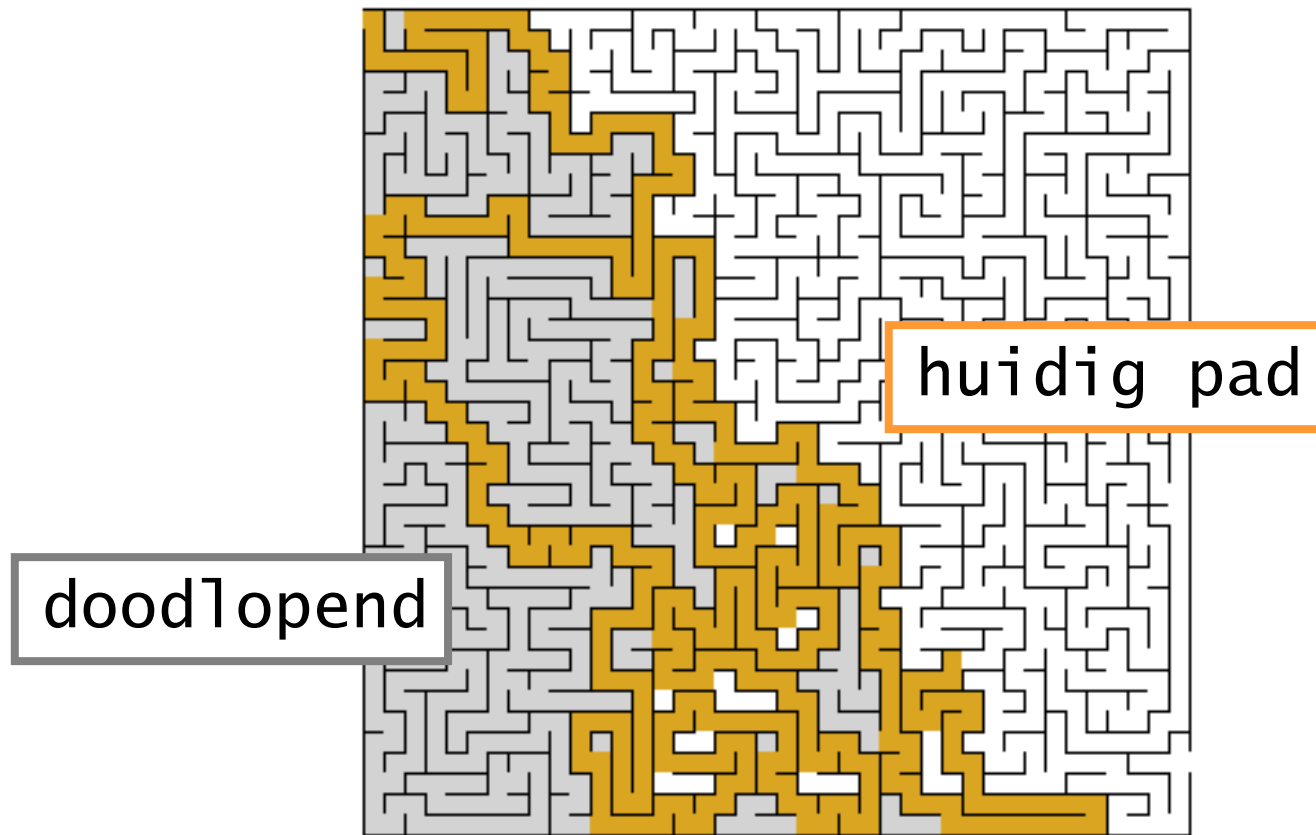


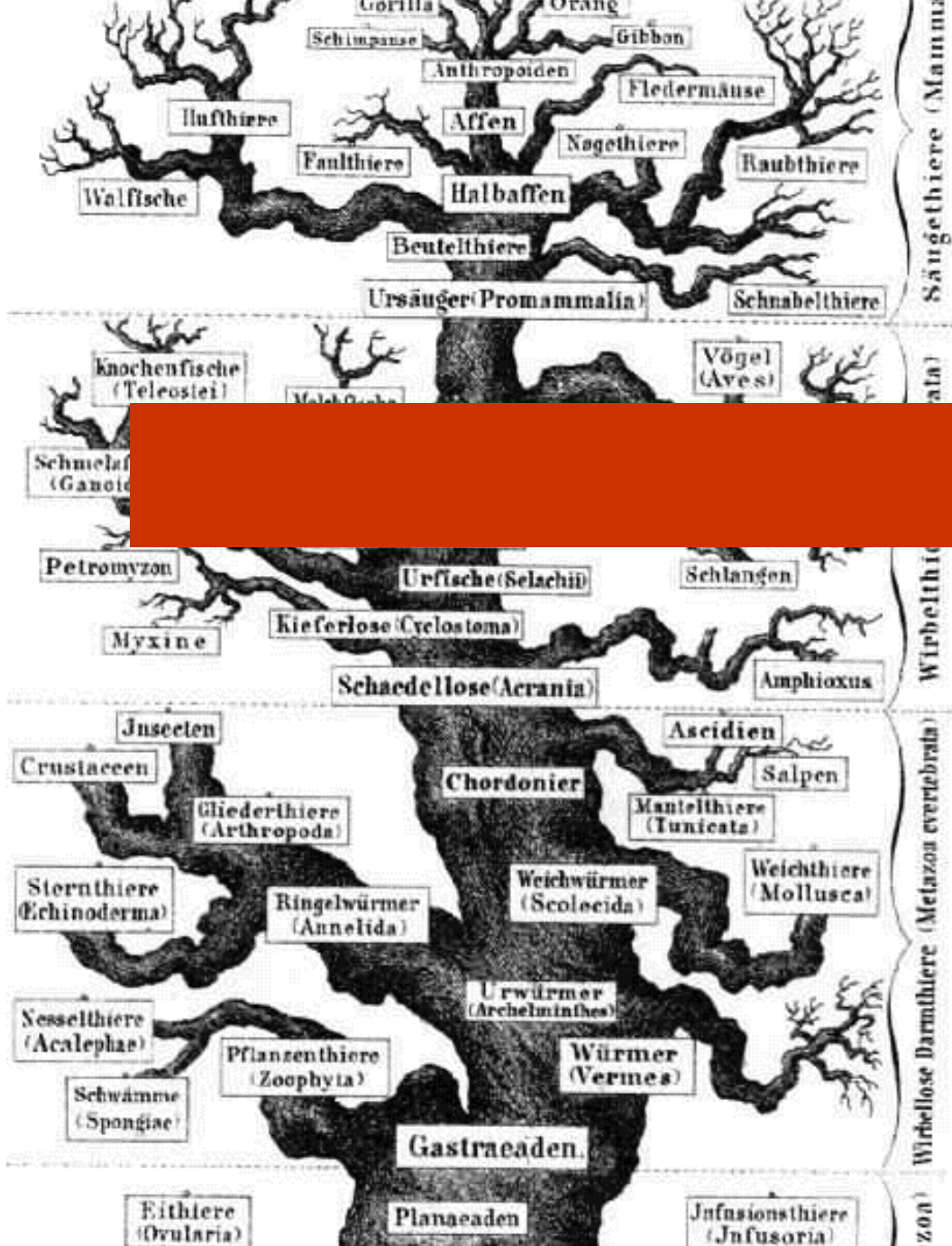


'backtrack'

jitus.github.io/maze/

Maze Solver

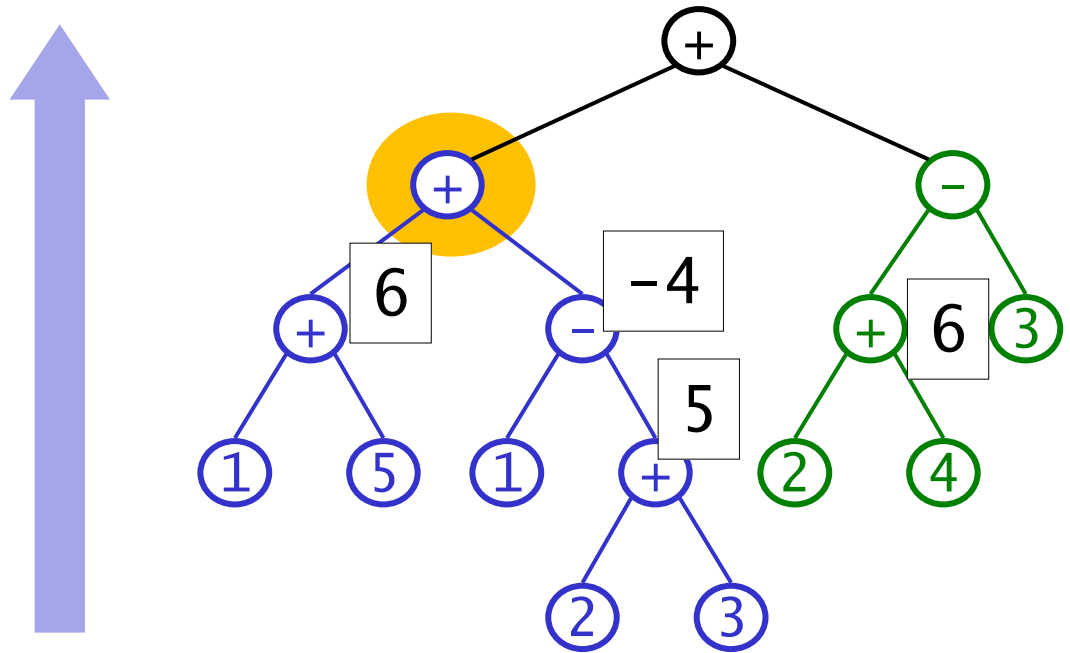




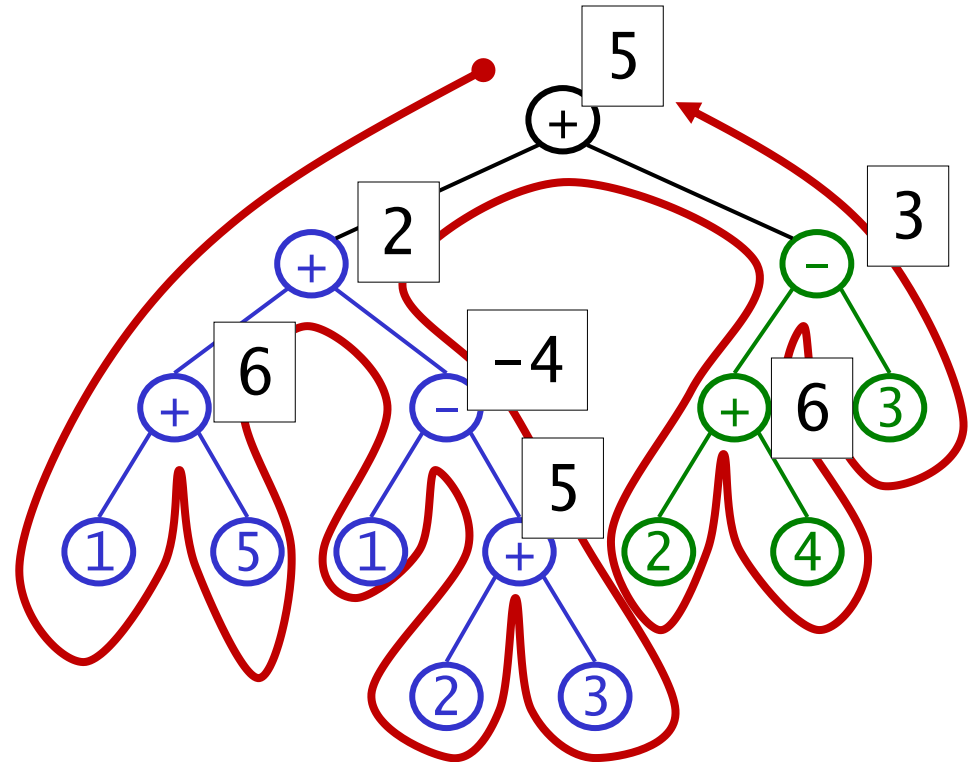
bomen

gegevensopslag

The "genealogical tree" of Haeckel. Jena (1874)



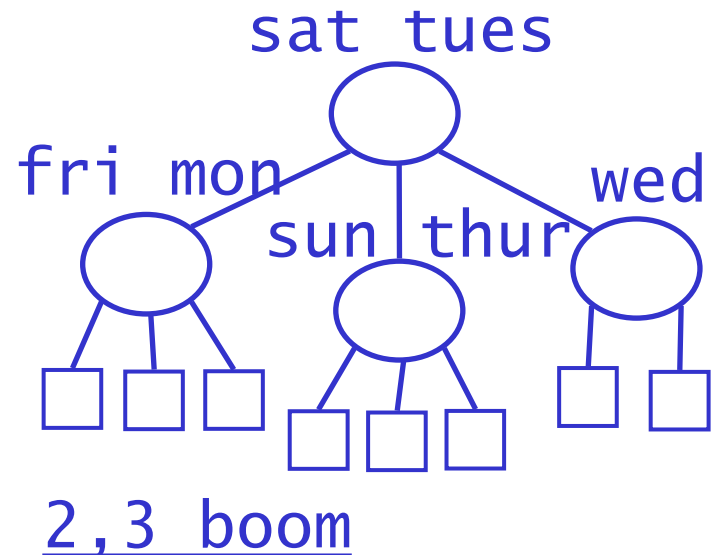
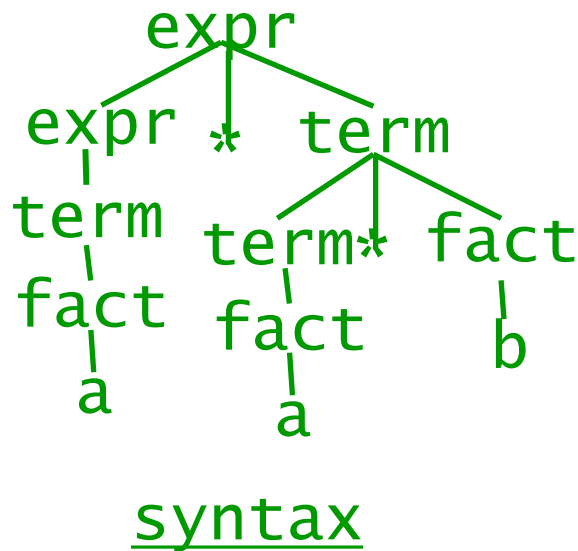
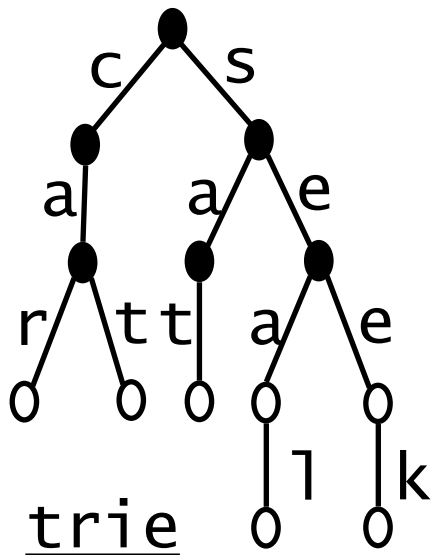
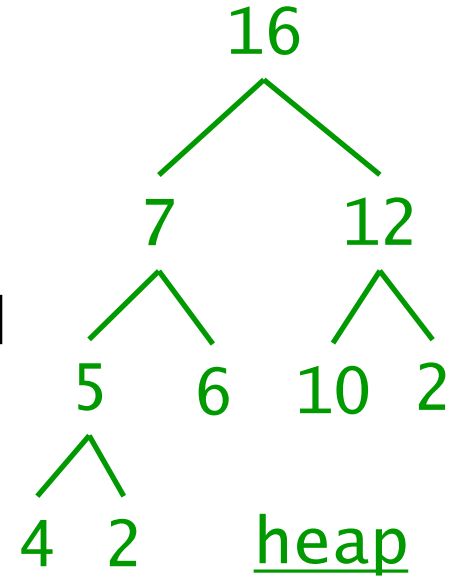
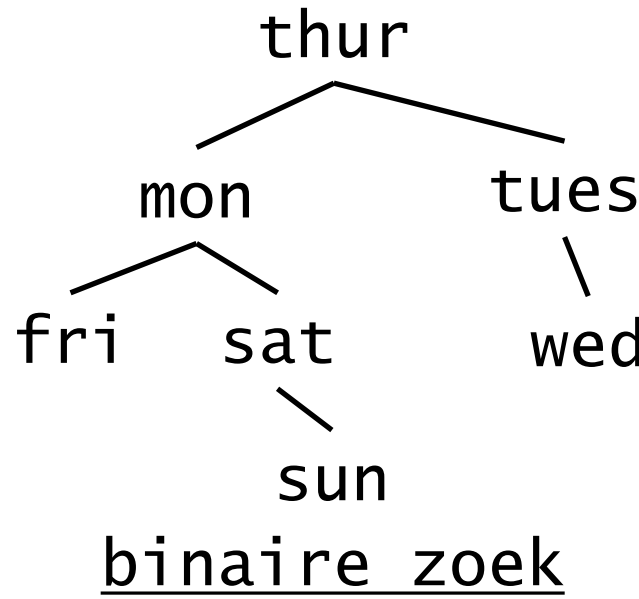
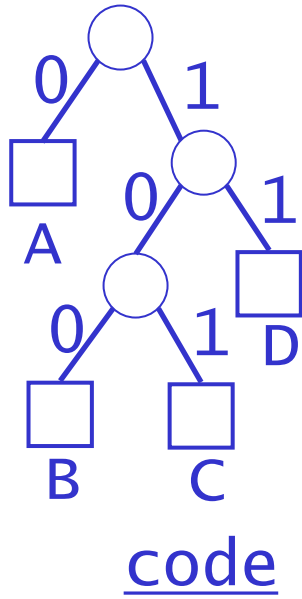
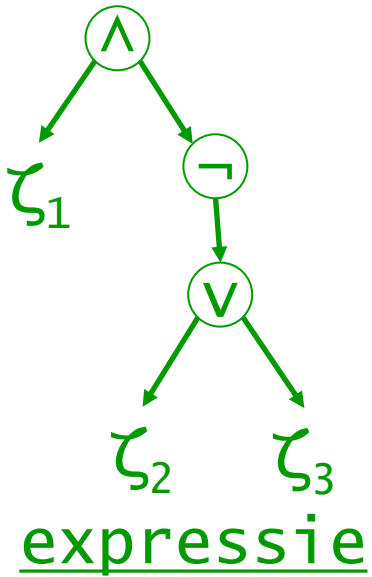
$$((1+5)+(1-(2+3))) + ((2+4)-3)$$



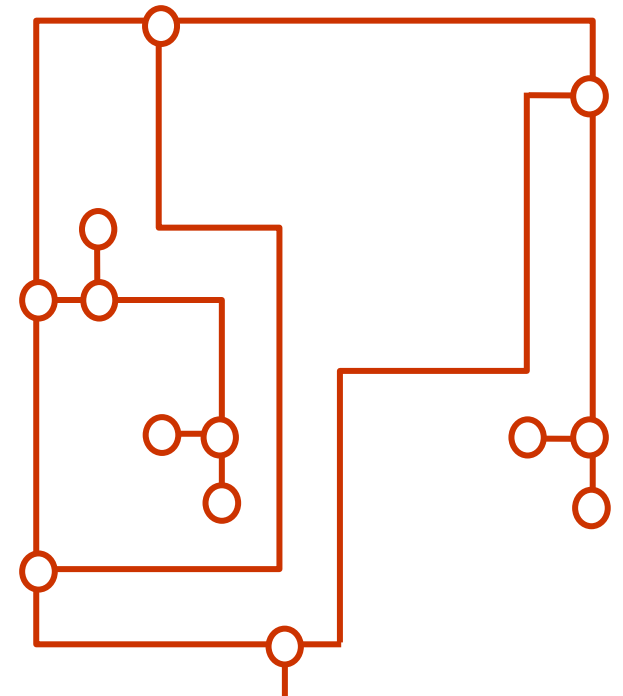
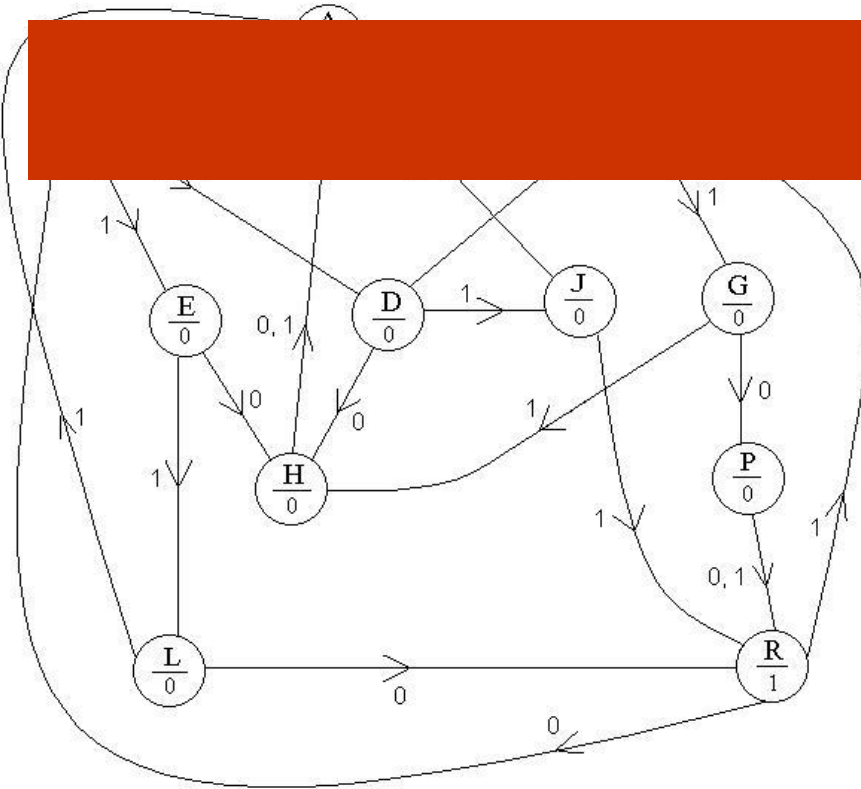
$$((1+5)+(1-(2+3))) + ((2+4)-3)$$

postorde evaluatie

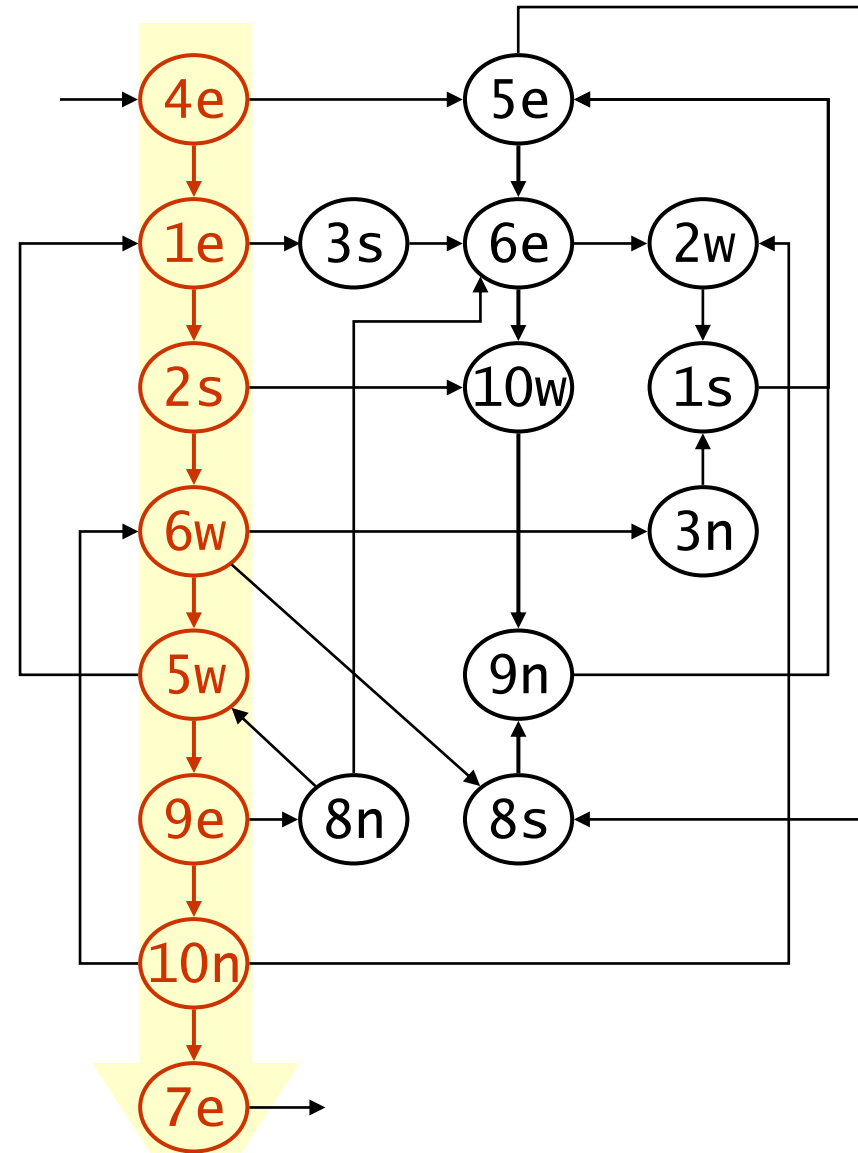
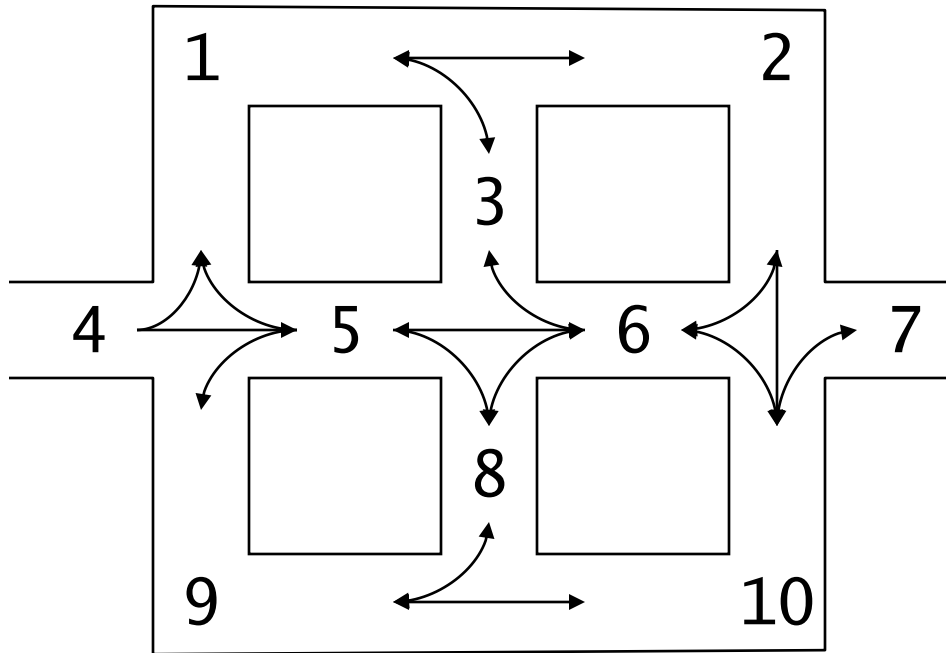
bomen, bomen, bomen ...



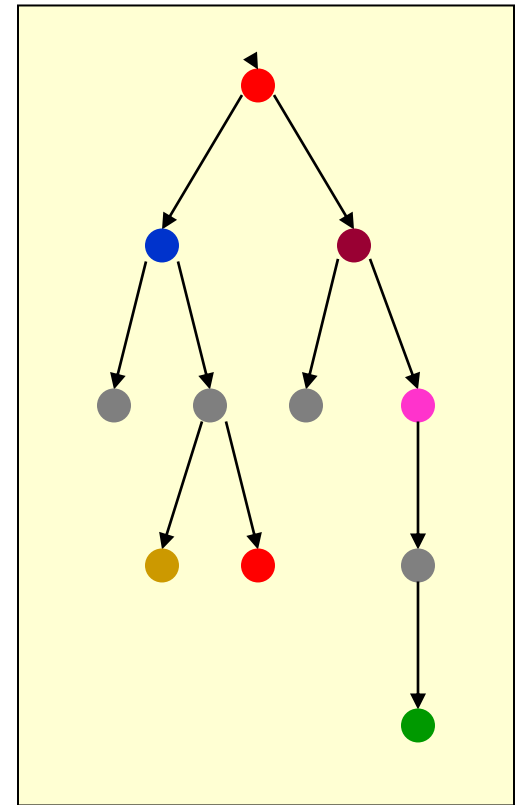
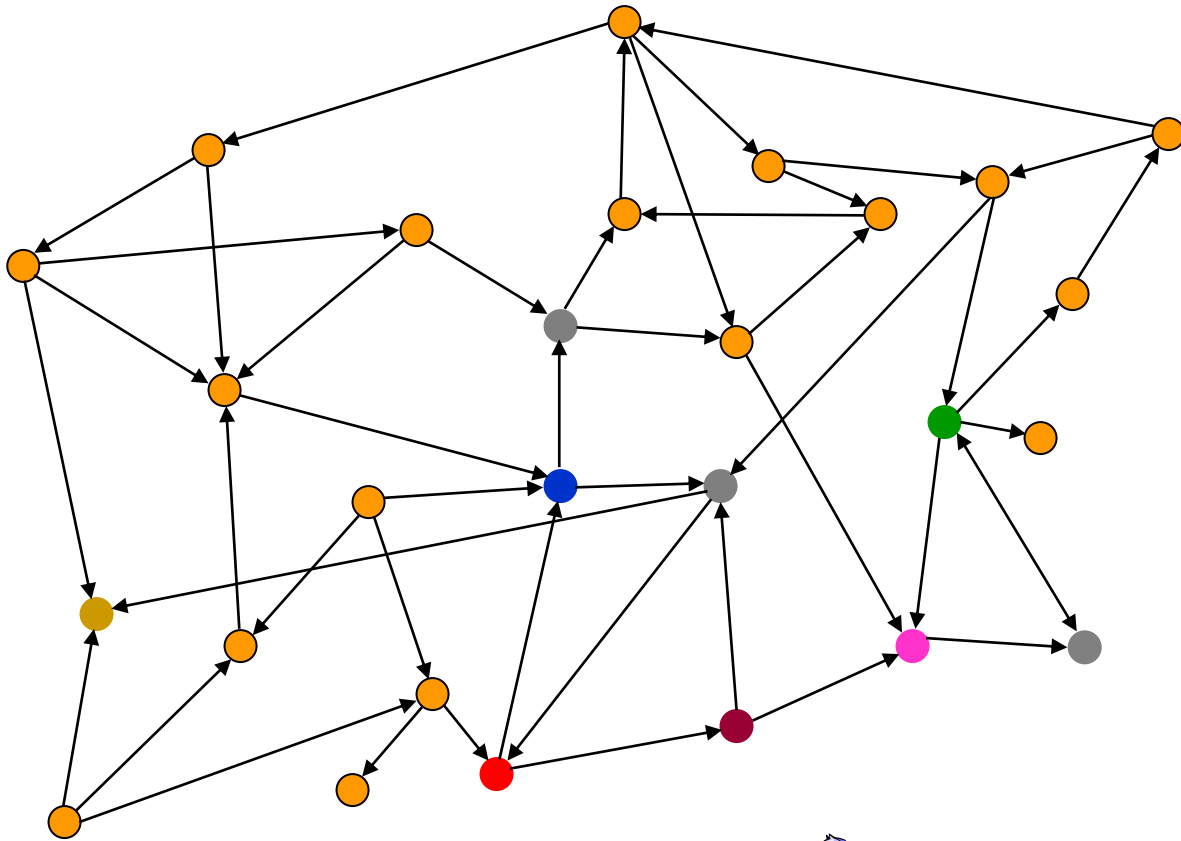
grafen



'algoritmiiek' state chart

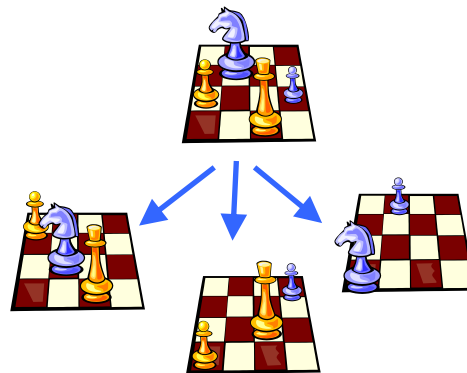


searching the state space



search tree

↑
heel veel
knopen



tot slot

op de camping ...



erg oude foto's ☺



... oefenen !



