

Swift Playgrounds - Apple

Learn to Code 1

Introduction

Swift Playgrounds is an educational app for iPad that makes coding fun and interactive. Swift Playgrounds is designed with accessibility in mind and supports VoiceOver, Zoom, and Larger Text, so that students who are blind or have low vision can learn to code. This book contains tactile layouts corresponding to 3D puzzles in the Swift Playgrounds app. Swift Playground puzzle worlds are based on a 3D grid, which you'll navigate to collect gems and toggle switches while you learn to code in Swift. While most of these puzzles stay the same on each page, some puzzles in the app are dynamic and change - those are noted as "dynamic layout." You will find the overview key in the front of the book.

Explore the key to familiarize yourself with the symbols, textures, and braille abbreviations that will be used in the graphics. Then move on to explore each graphic.

The graphics are tactile, braille, high-contrast ink print, and large print text in order to be universally accessible.

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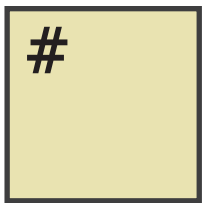
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Swift Playgrounds Learn to Code 1 Key



Land block with height. Numeric indicator has been omitted.



Unreachable/water block



Player's starting point and direction



Gem



Obstacle (two obstacles together along a grid line can create a wall)



Stairs



Open switch



Closed switch



Portal with colour noted in braille:

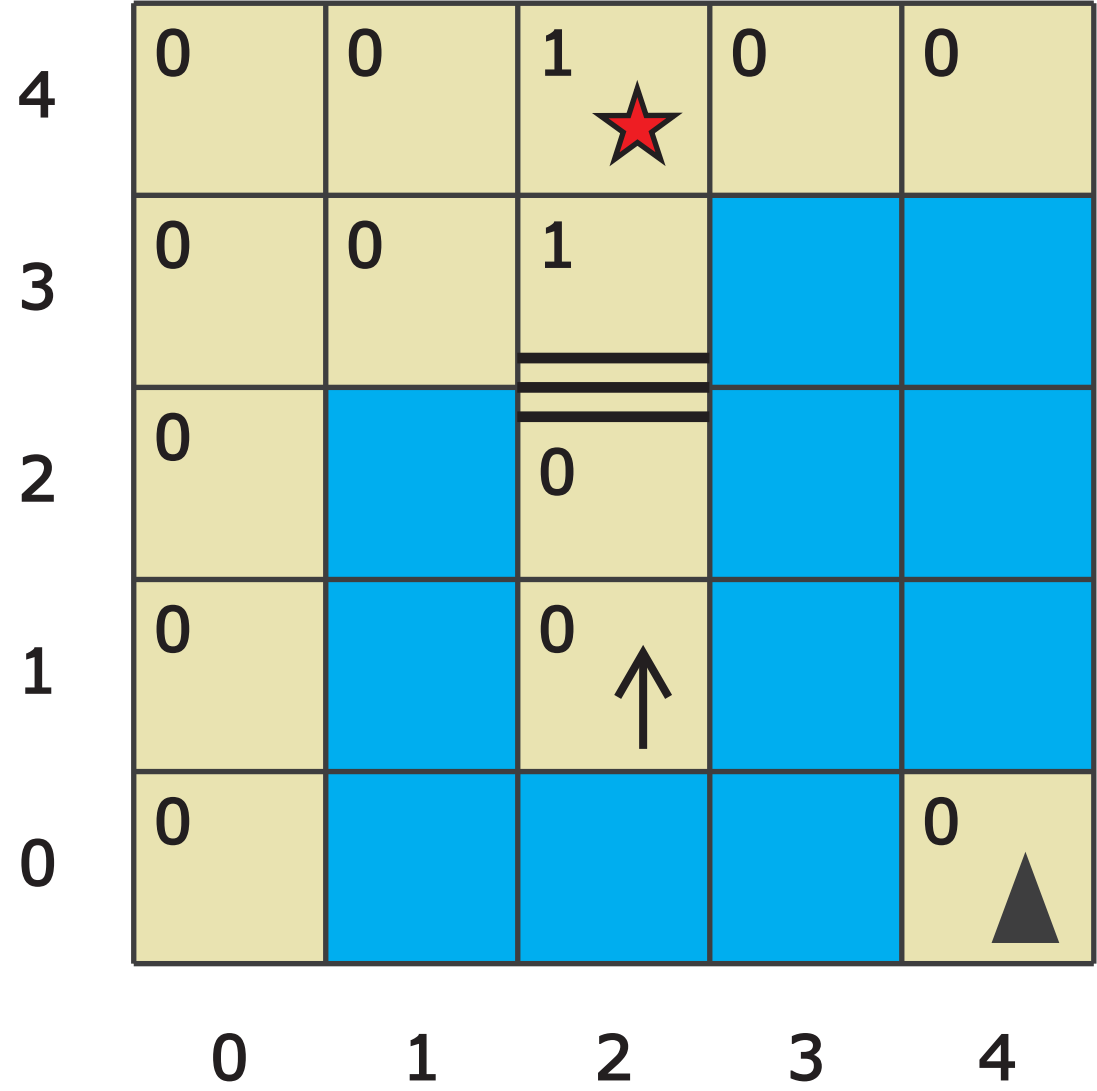
● Blue

● Green

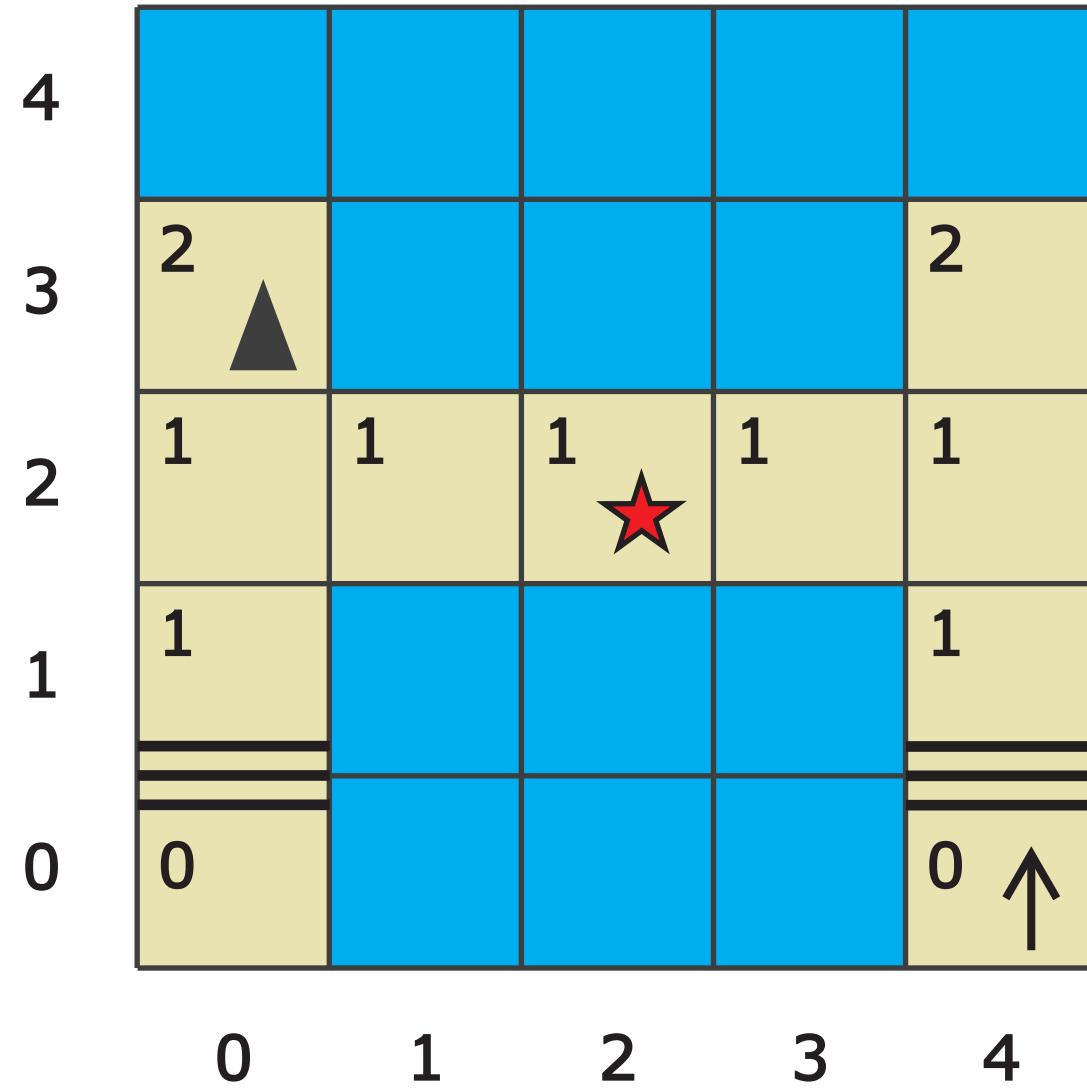
● Pink

● Yellow

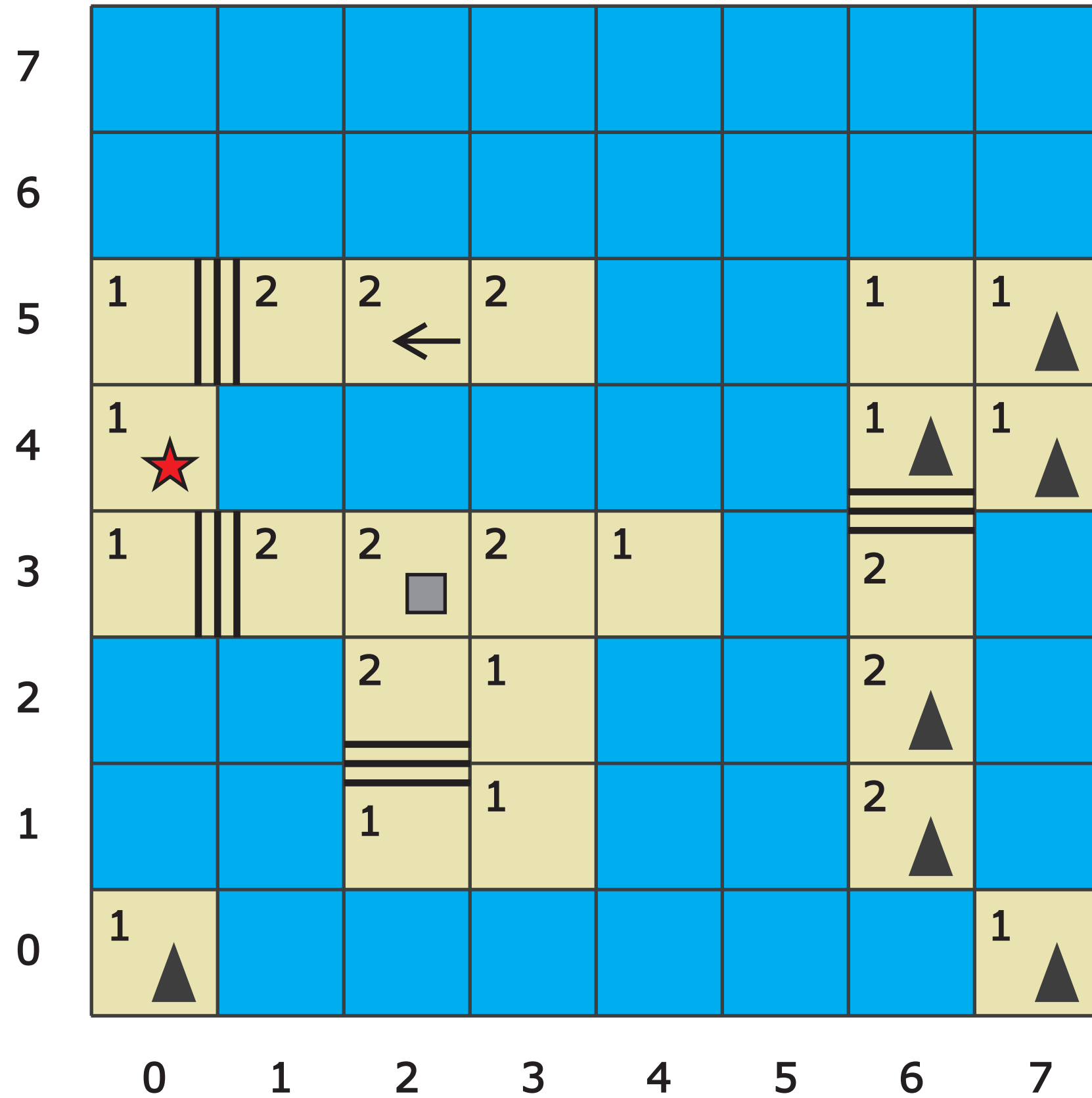
Issuing Commands



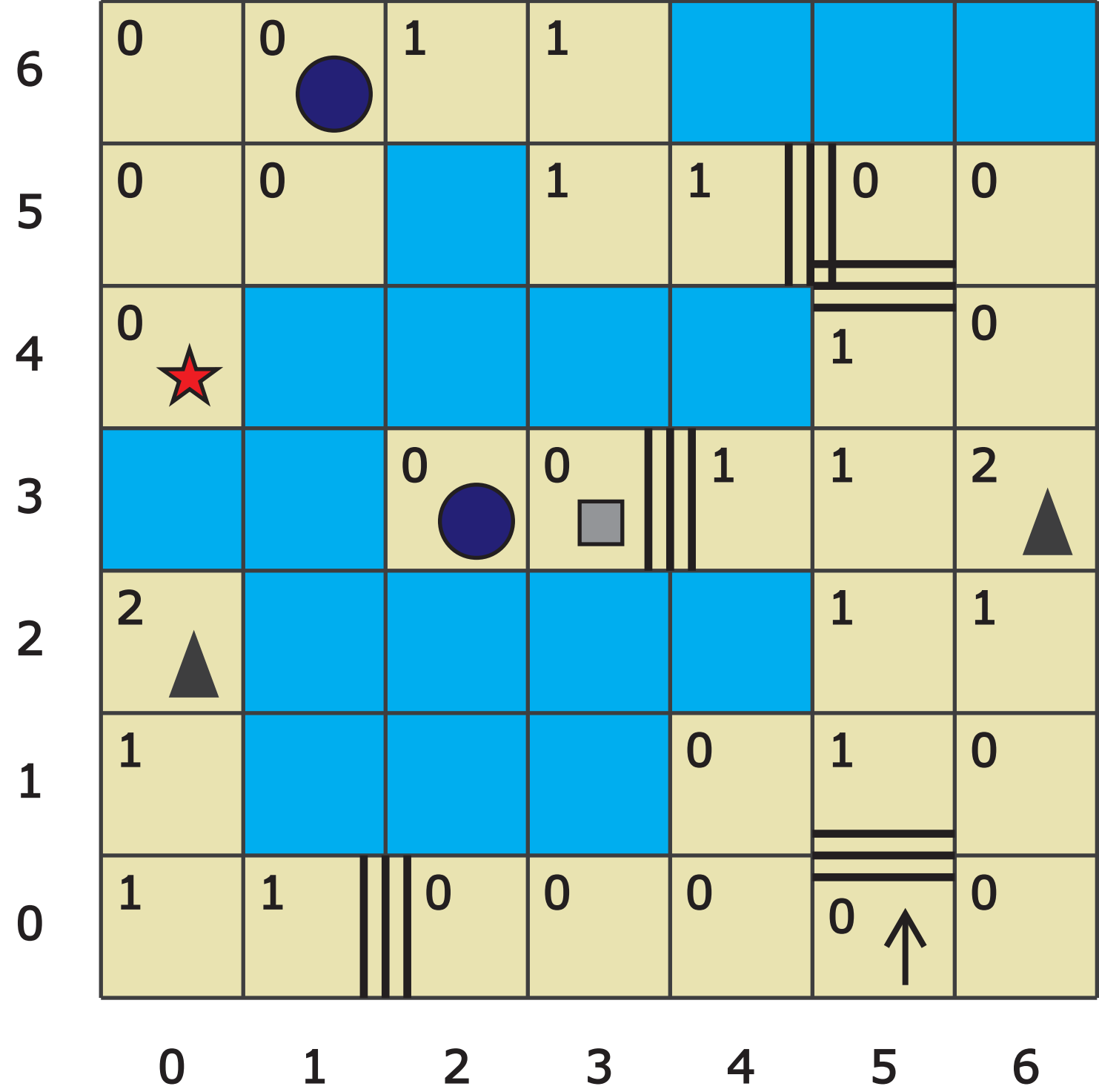
Adding a New Command



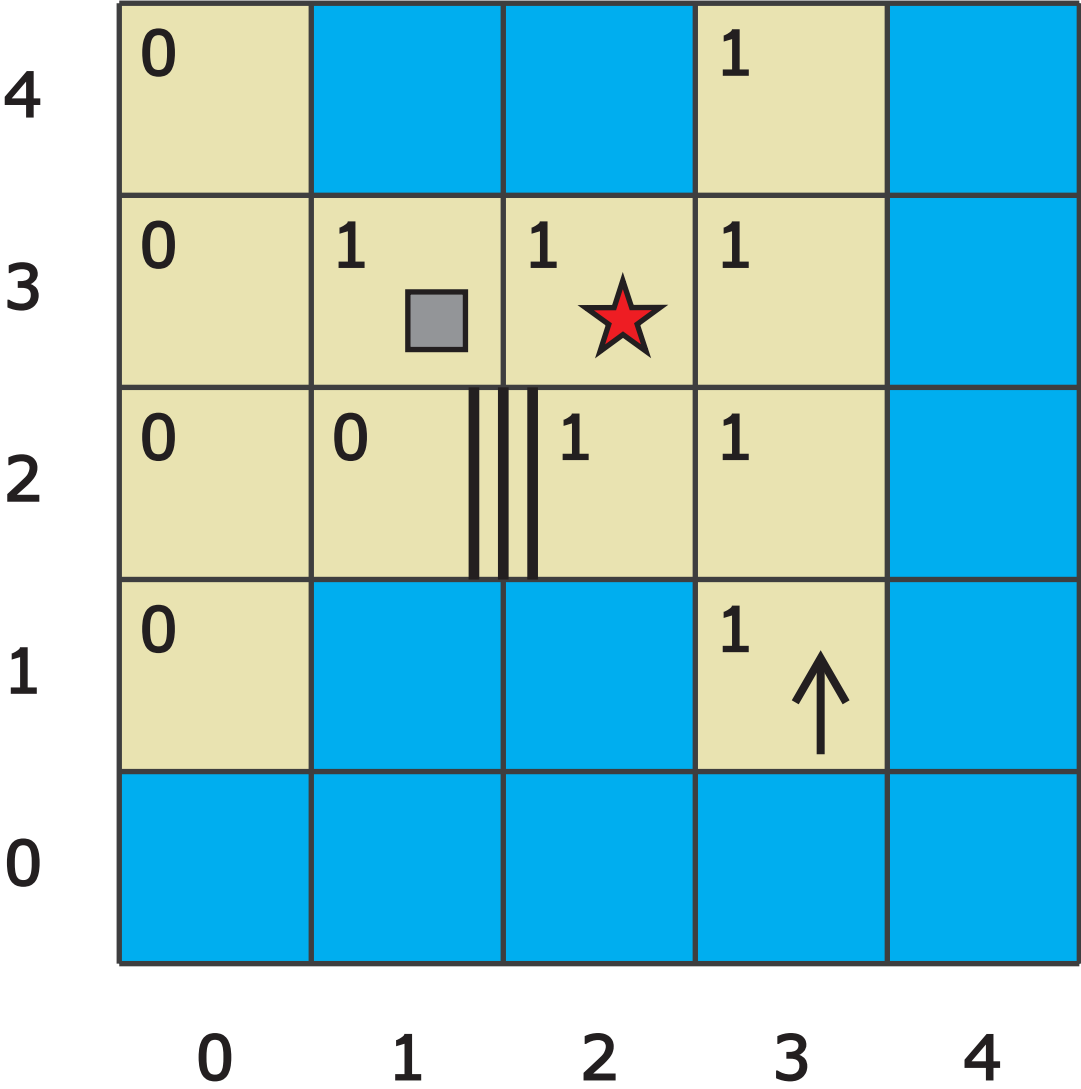
Toggling a Switch



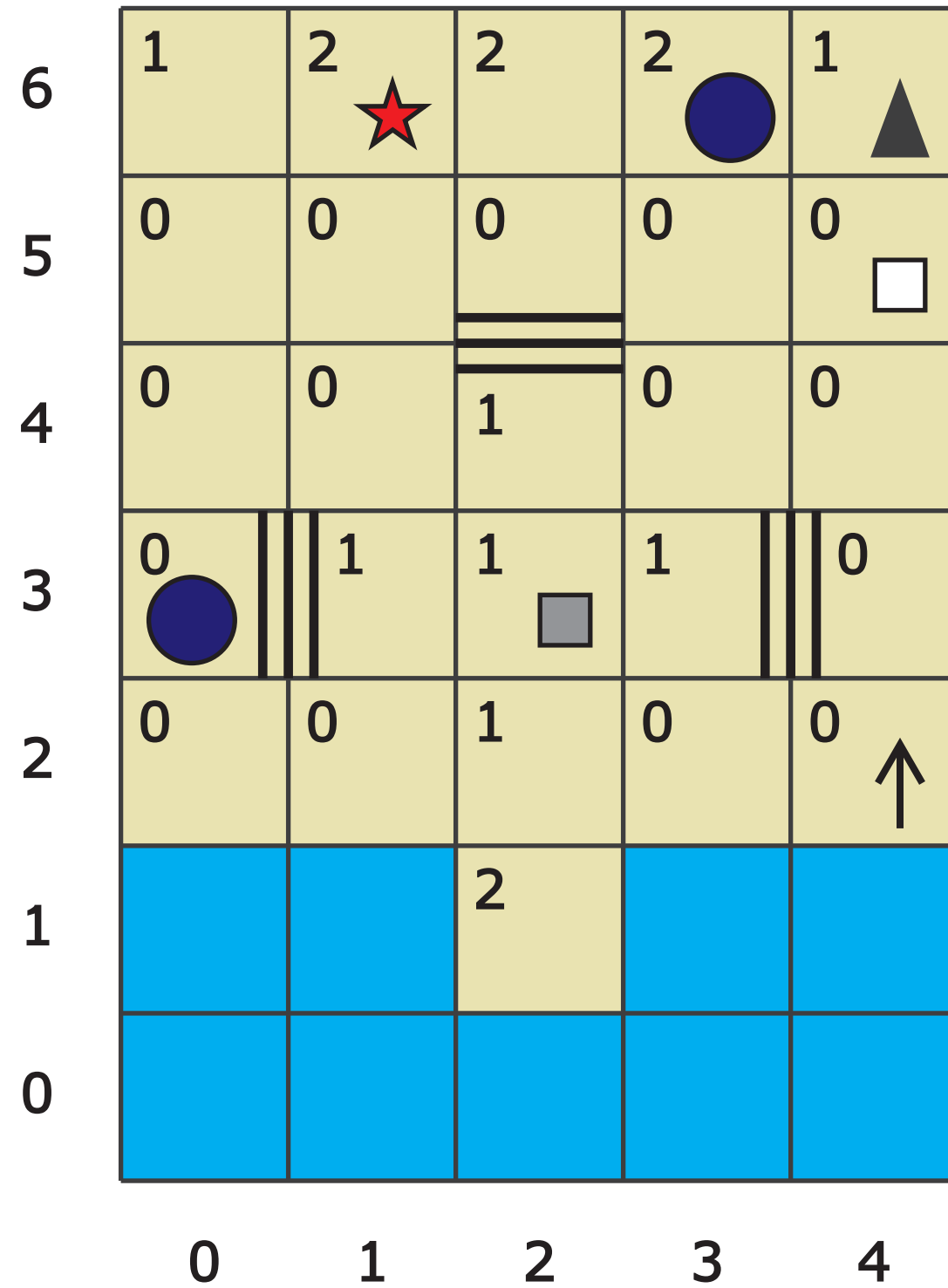
Portal Practice



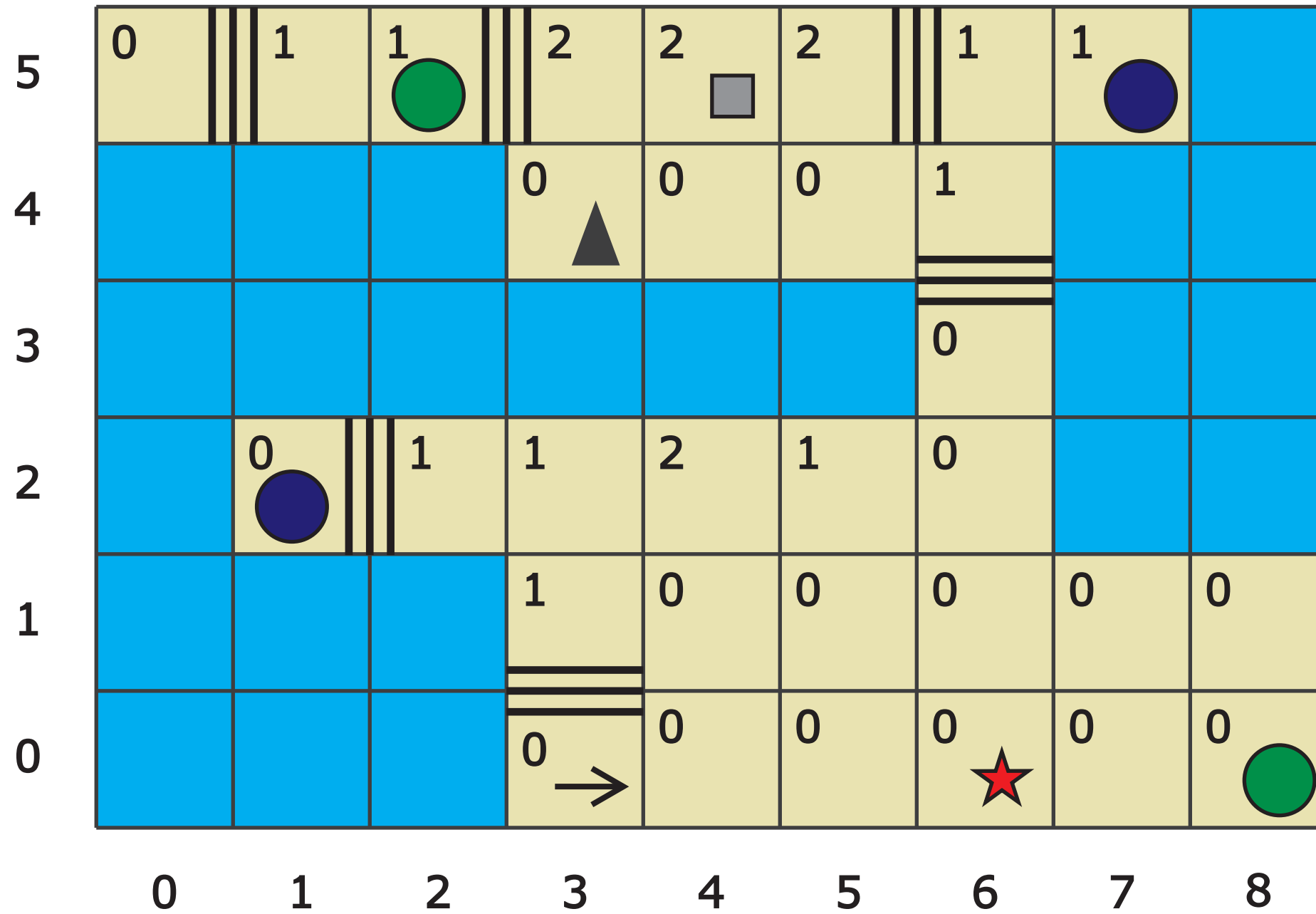
Finding and Fixing Bugs



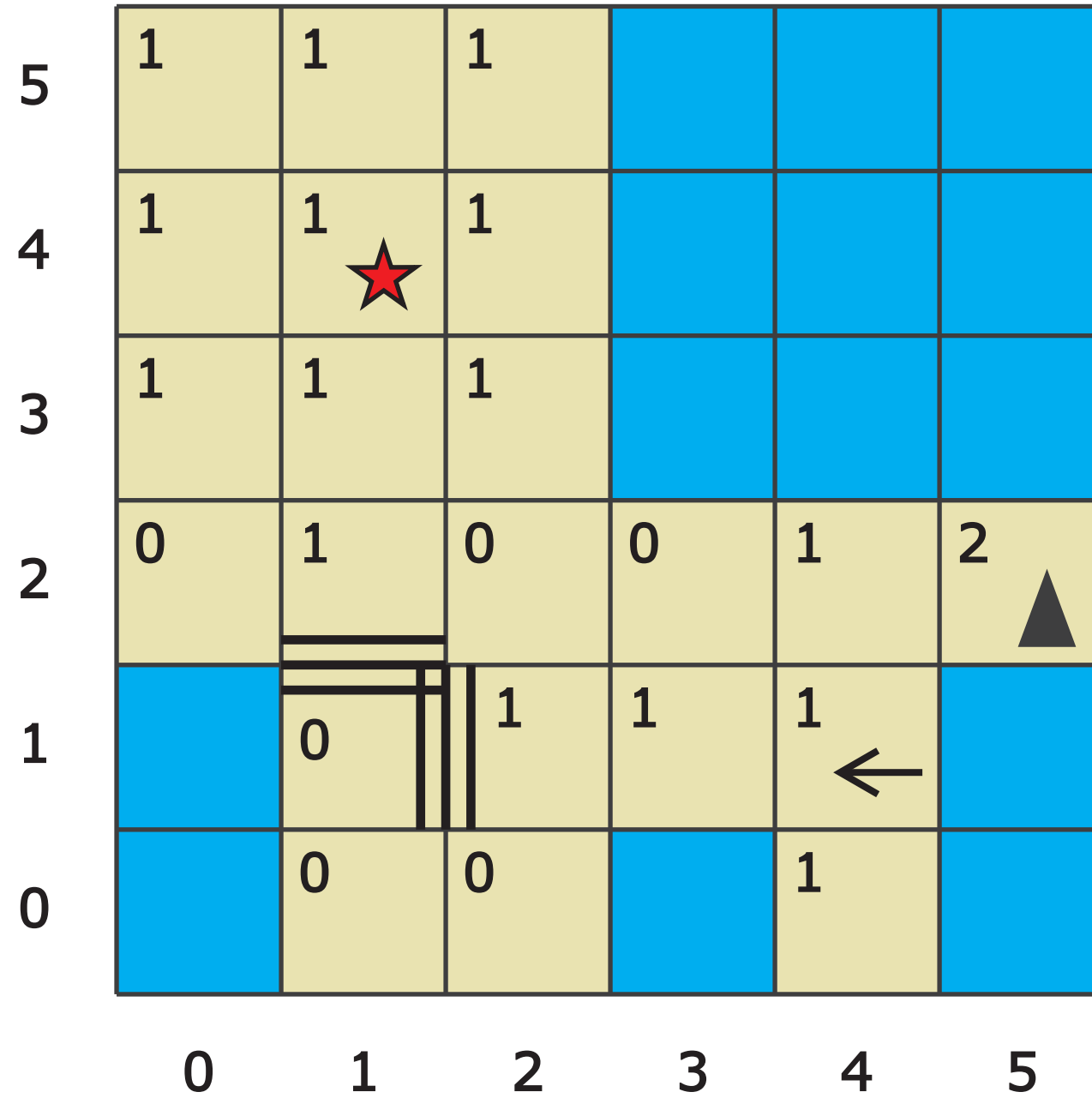
Bug Squash Practice



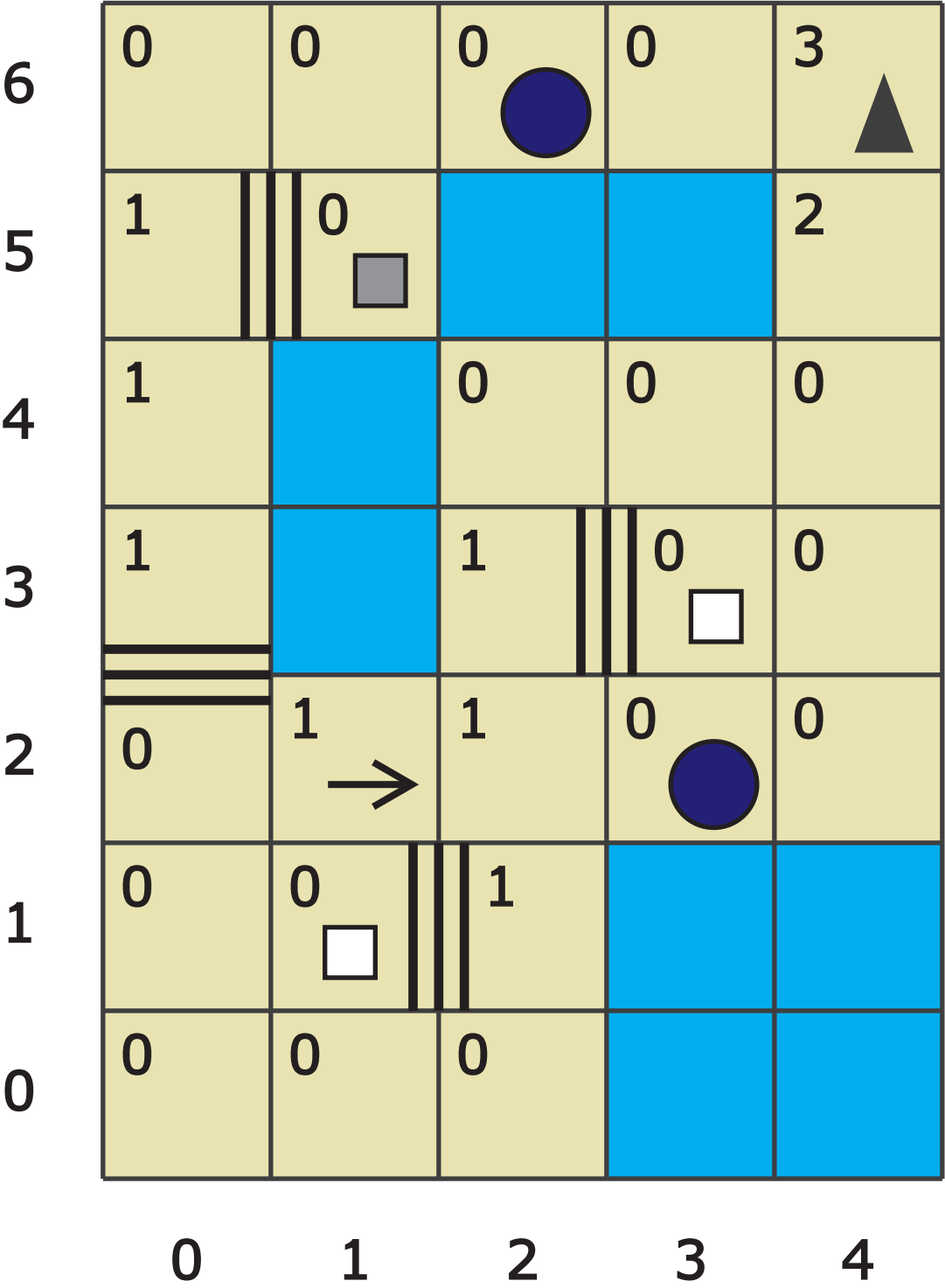
The Shortest Route



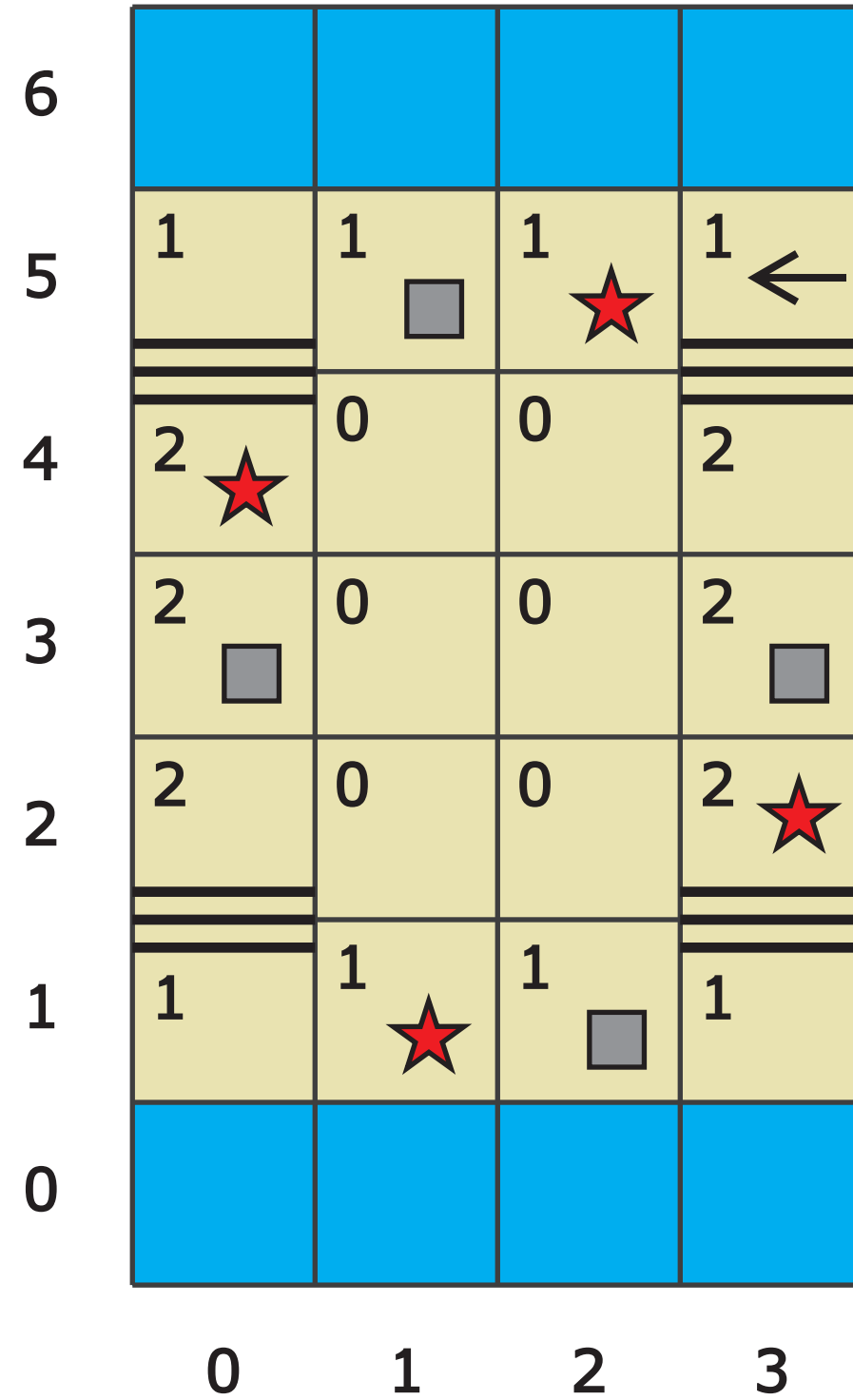
Composing a New Behavior



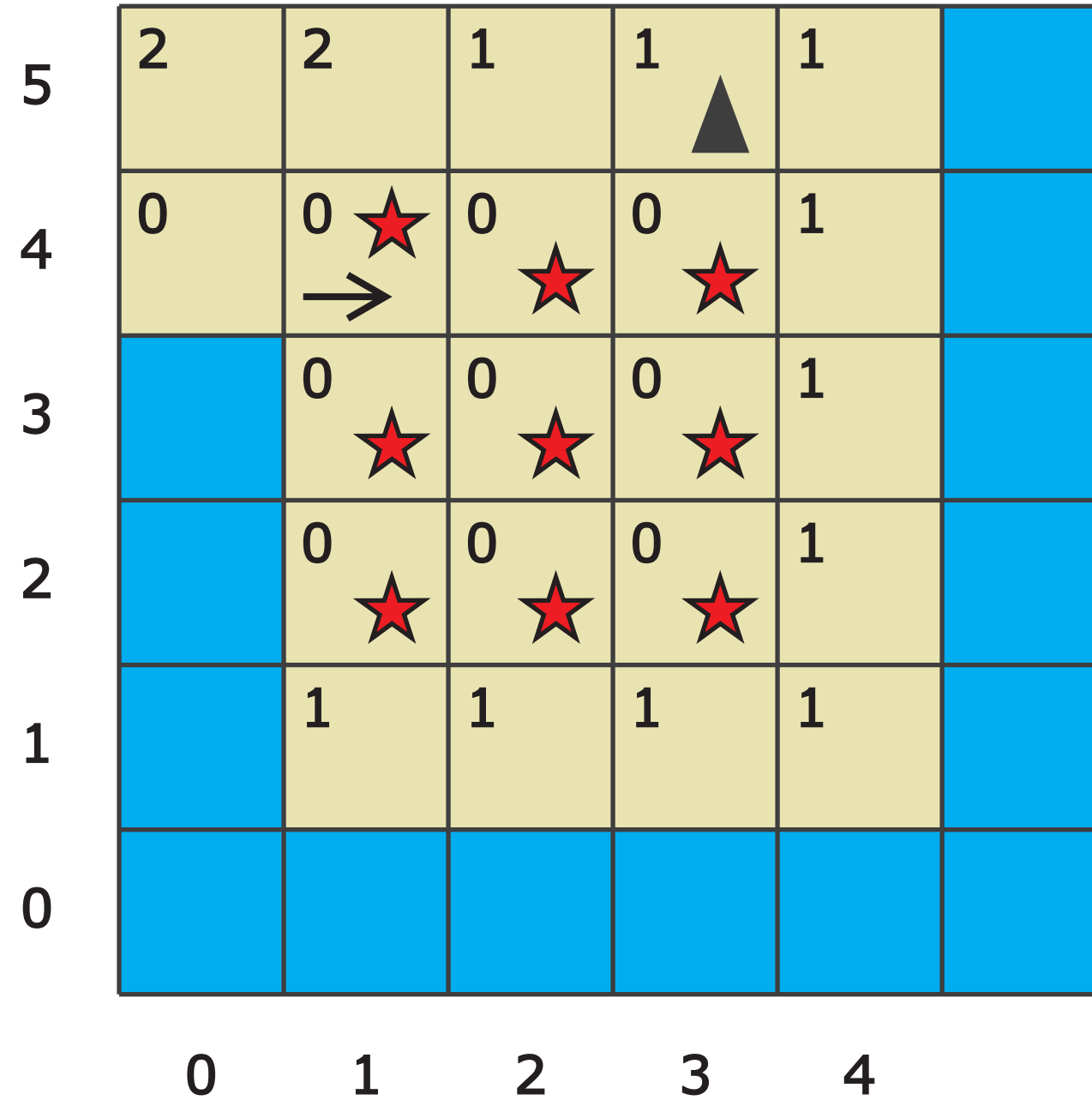
Creating a New Function



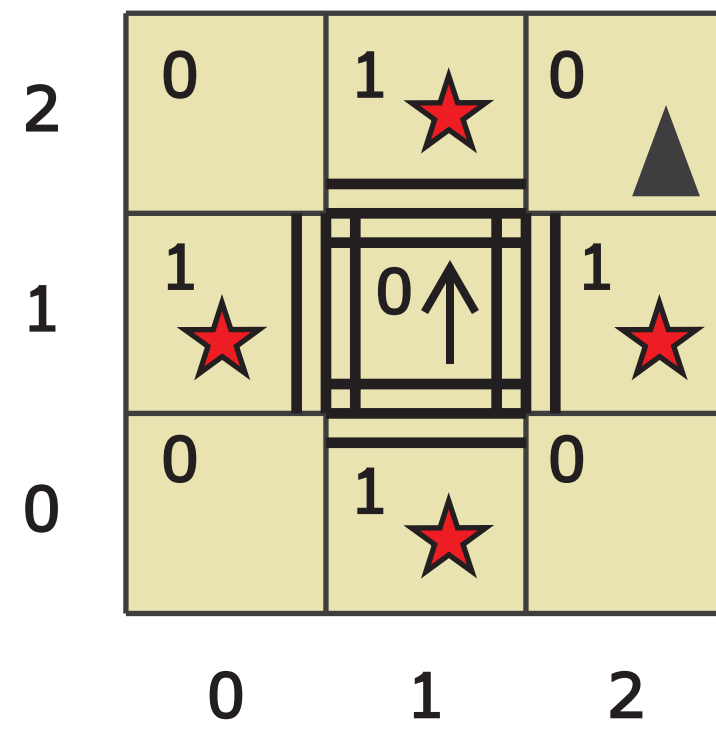
Collect, Toggle, Repeat



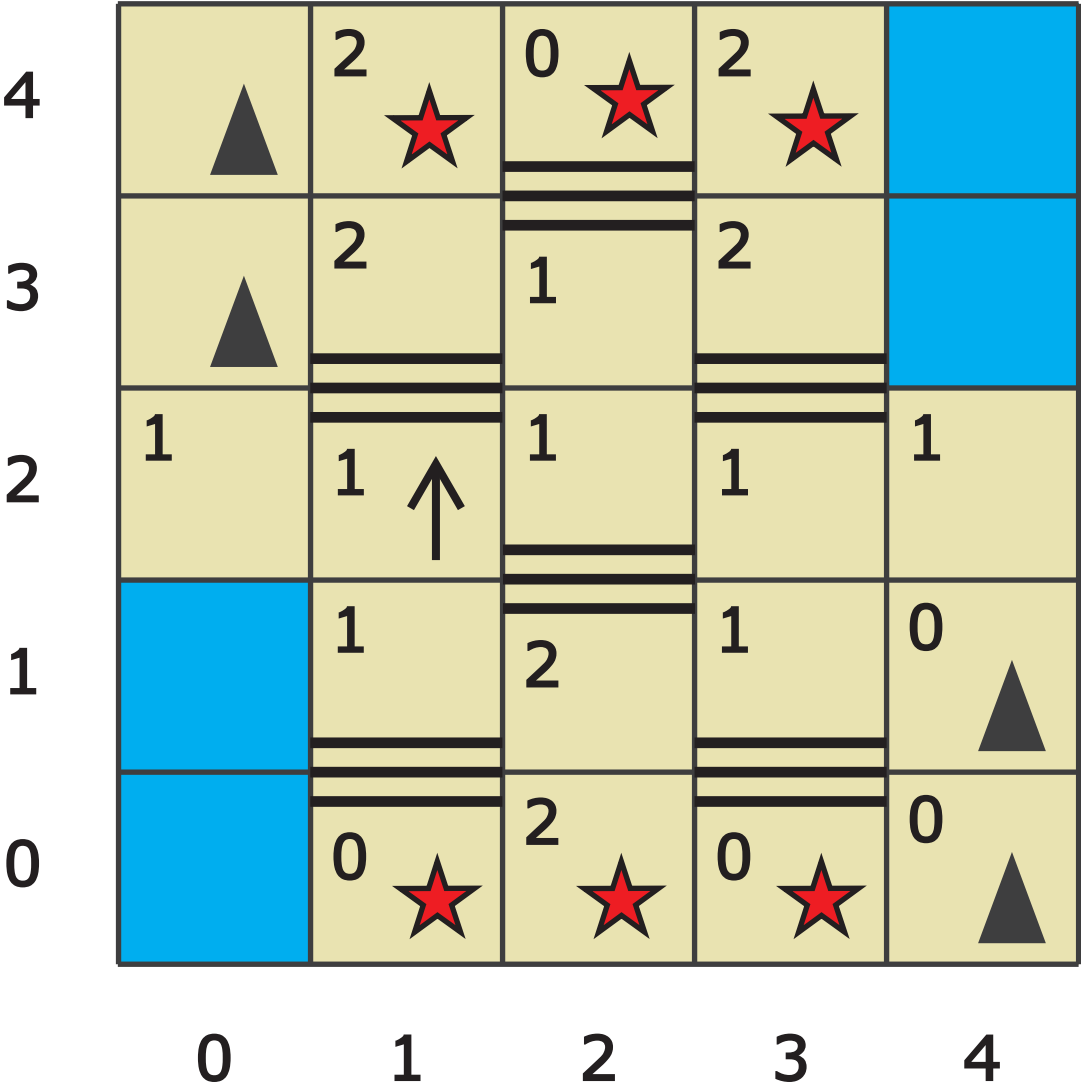
Across the Board



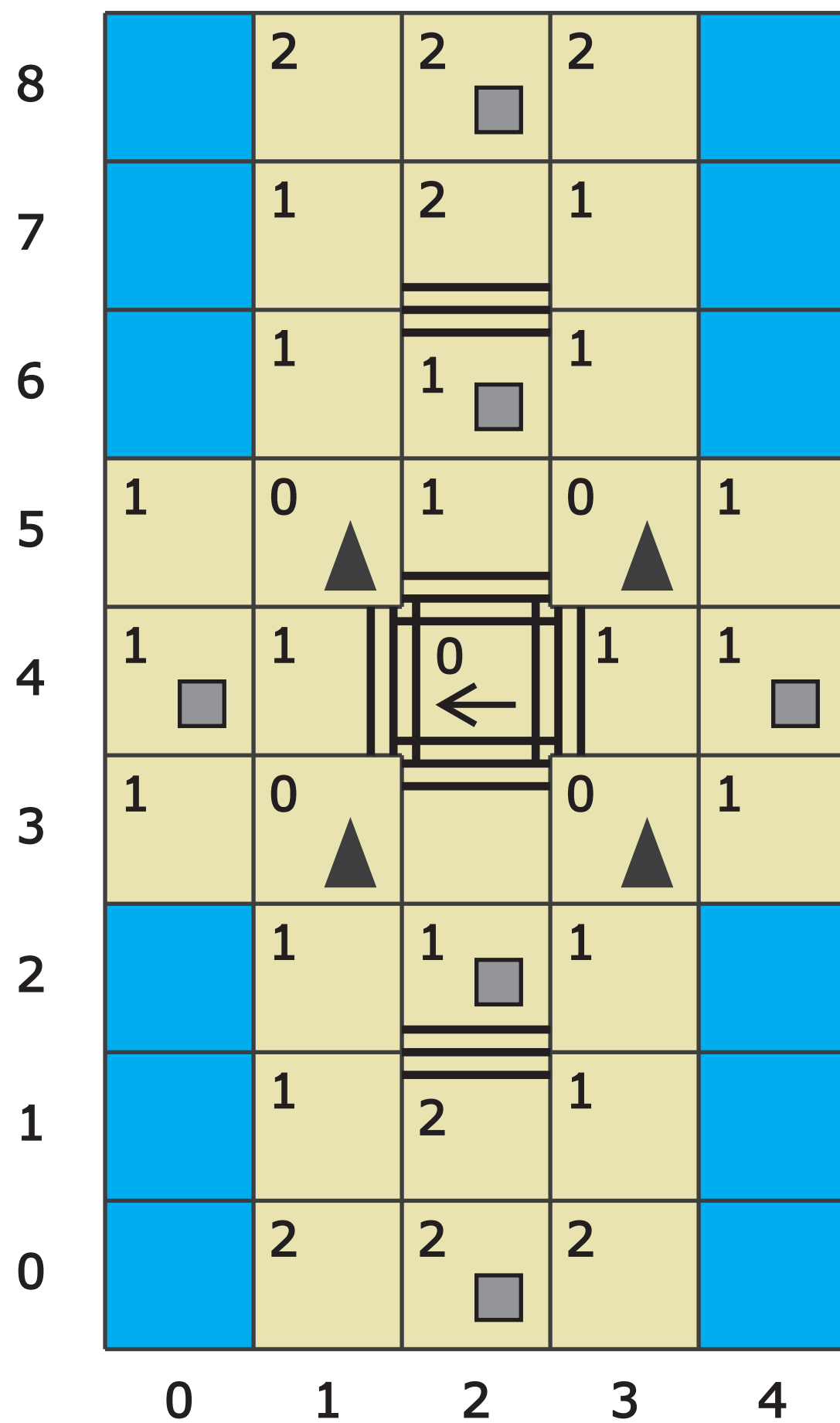
Nesting Patterns



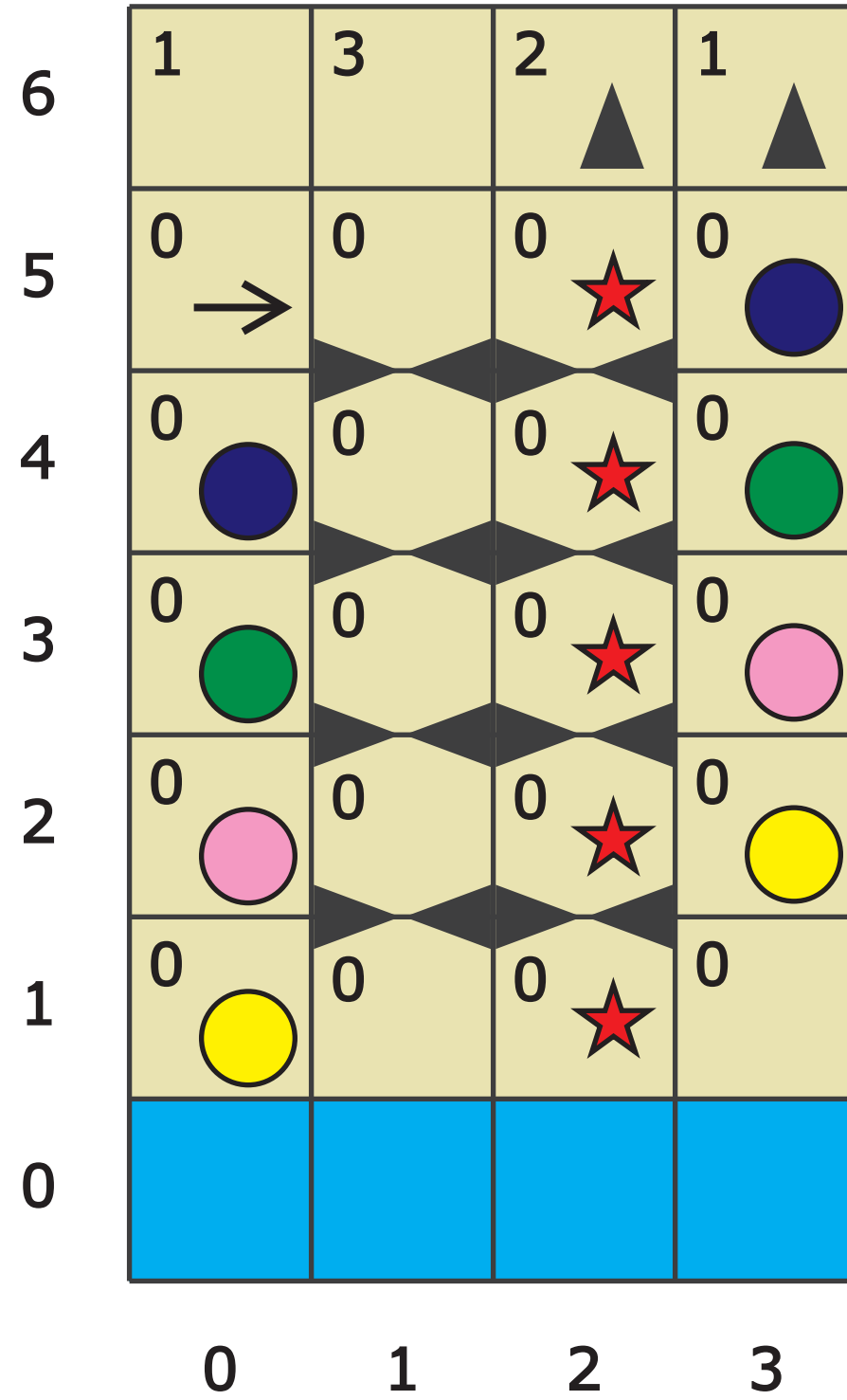
Slotted Stairways



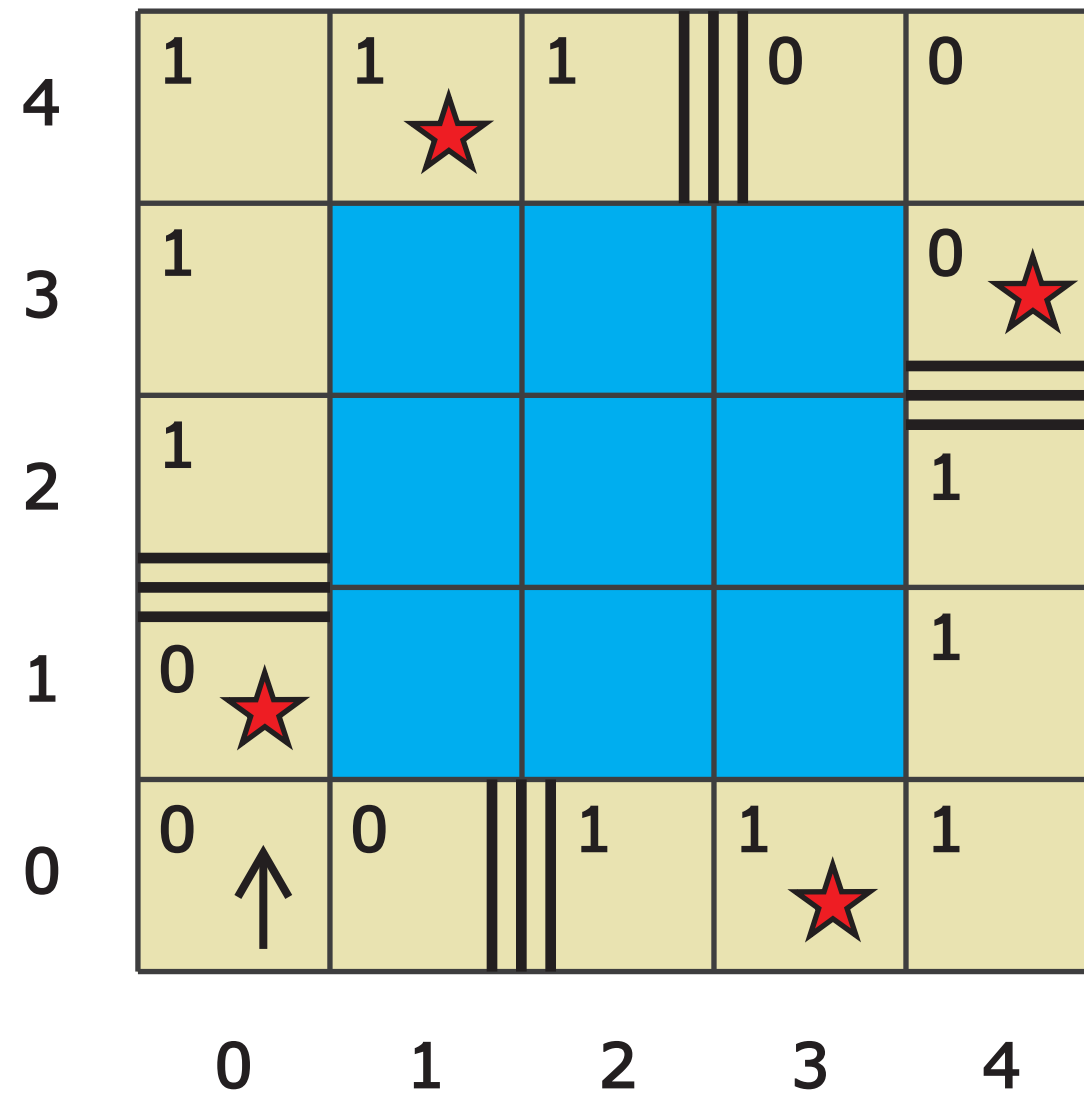
Treasure Hunt



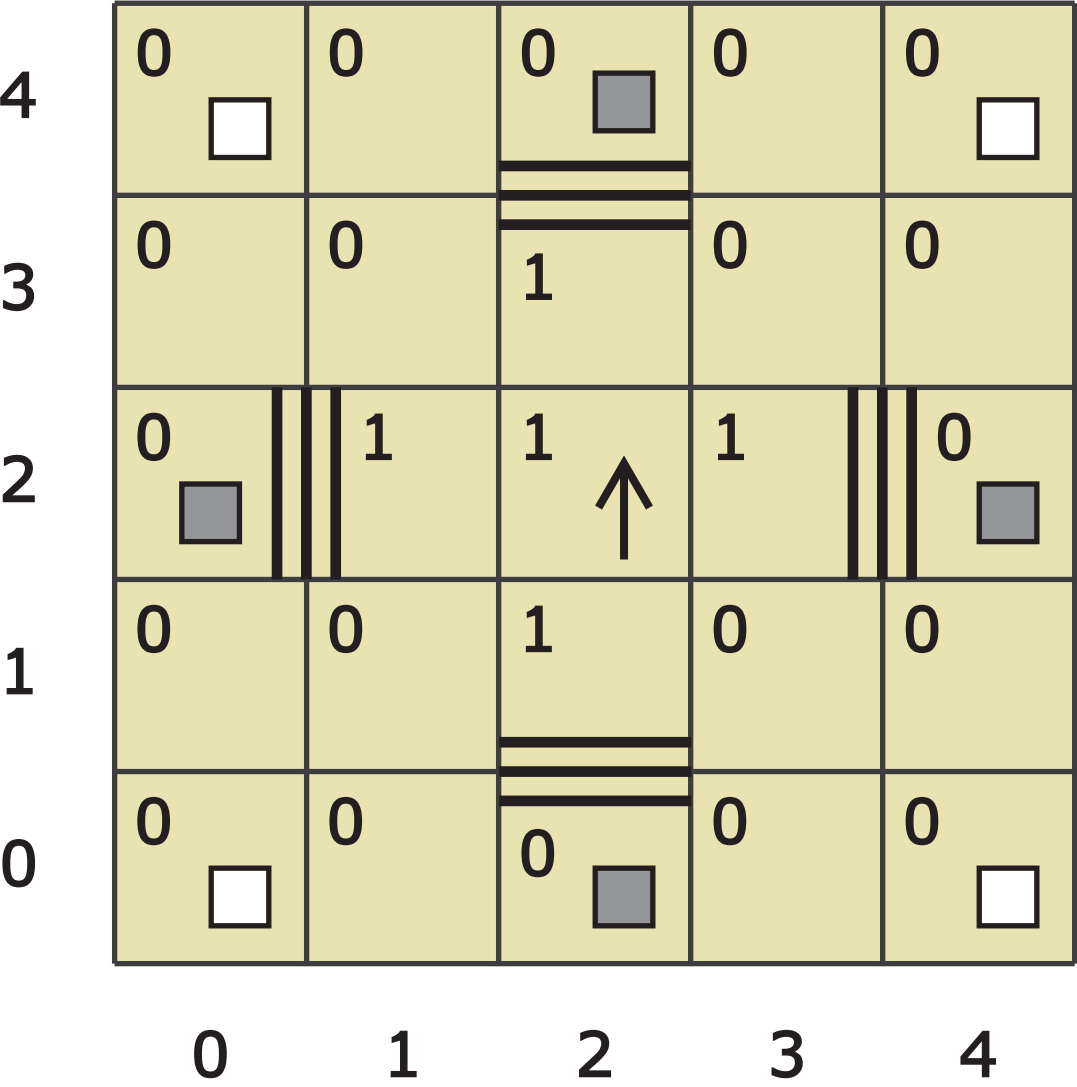
Using Loops



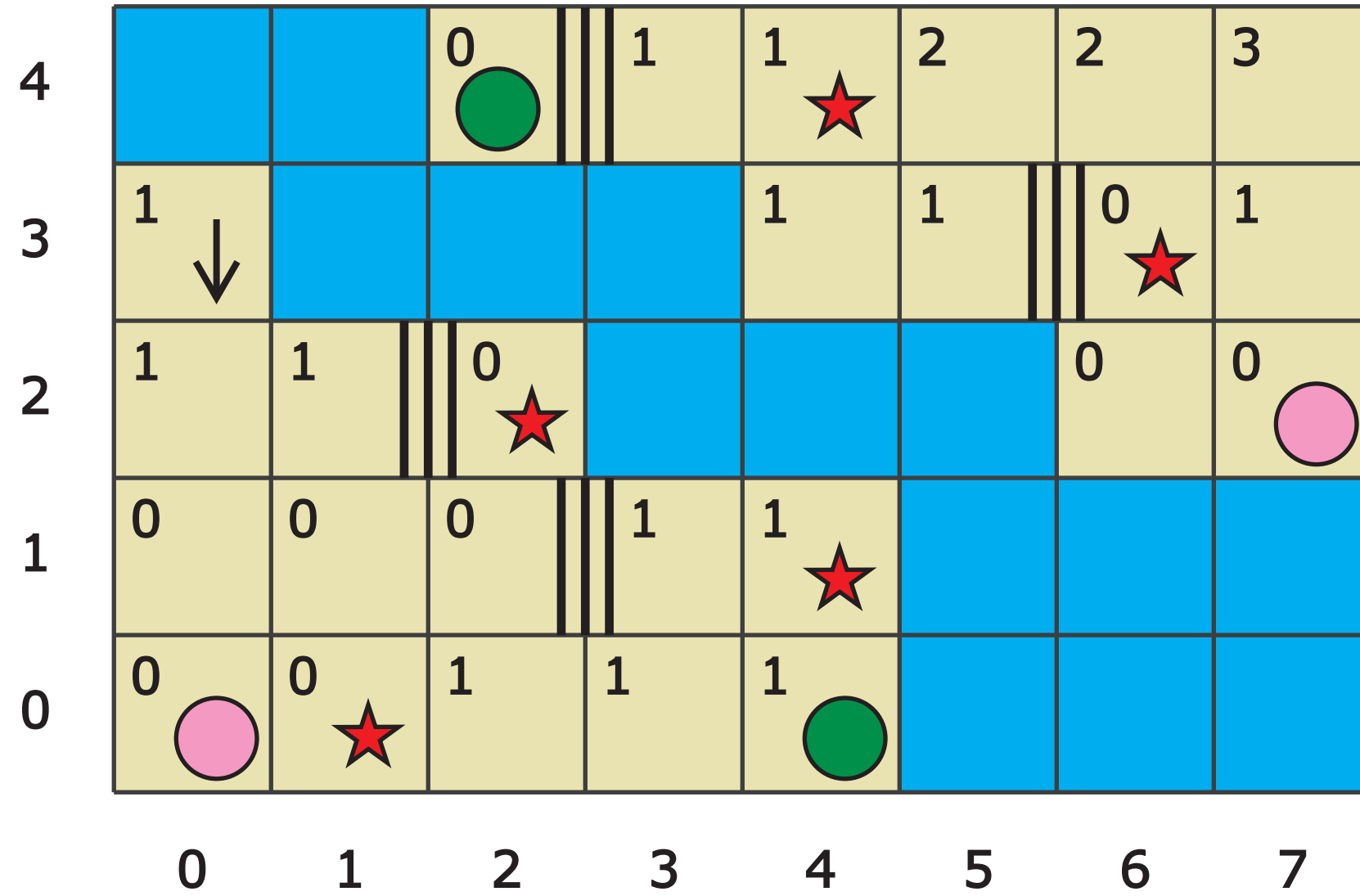
Looping All the Sides



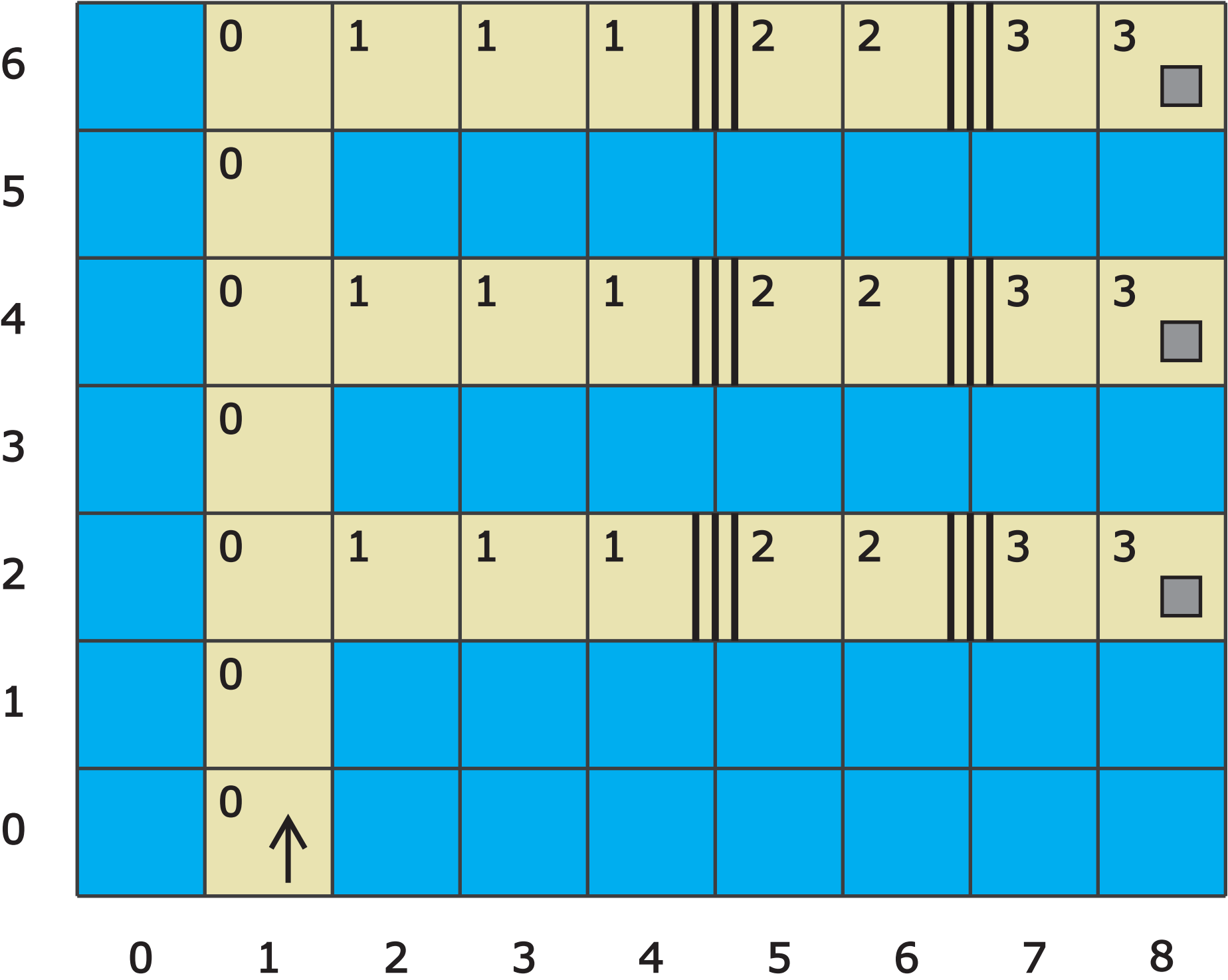
To the Edge and Back



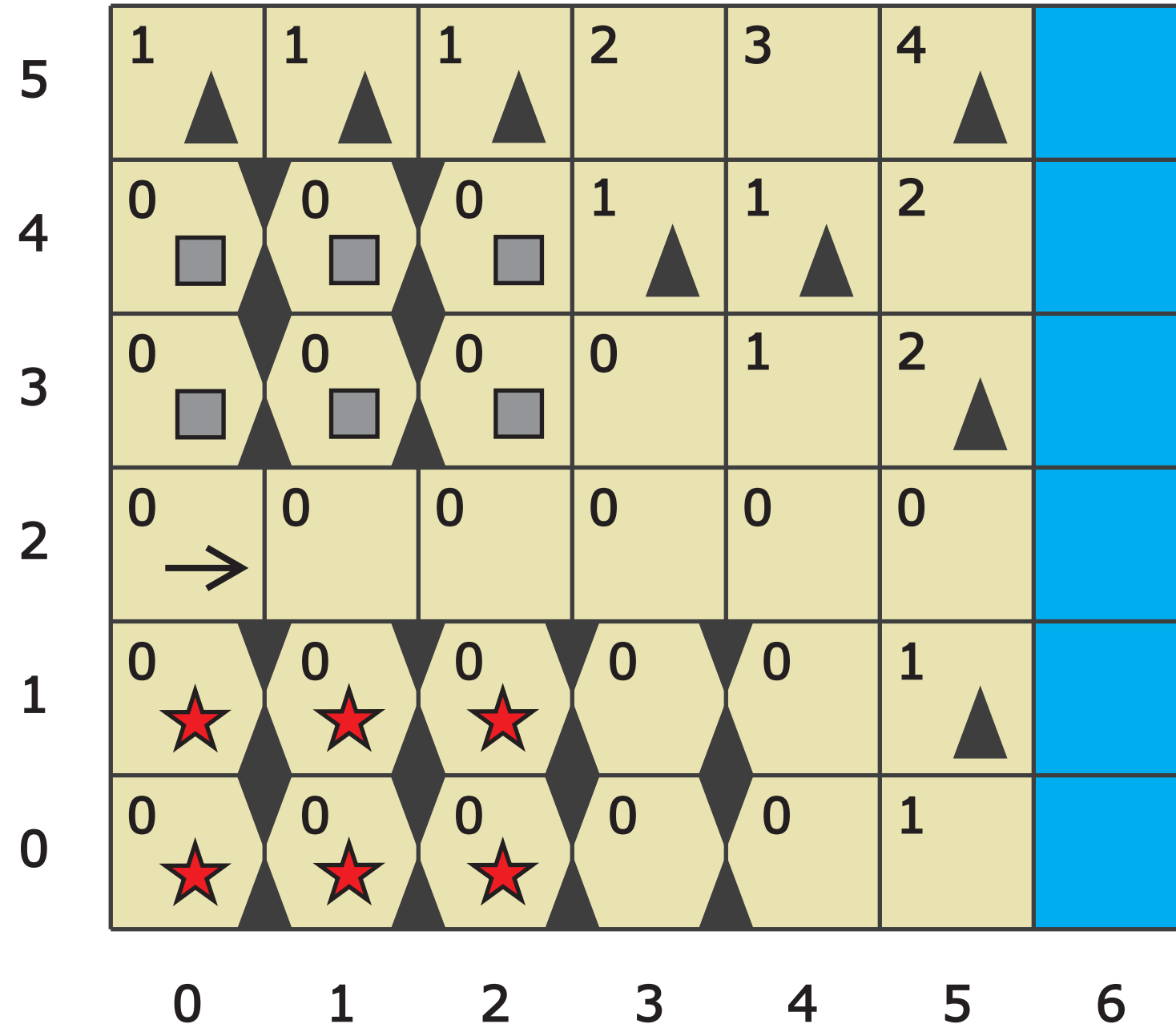
Loop Jumper



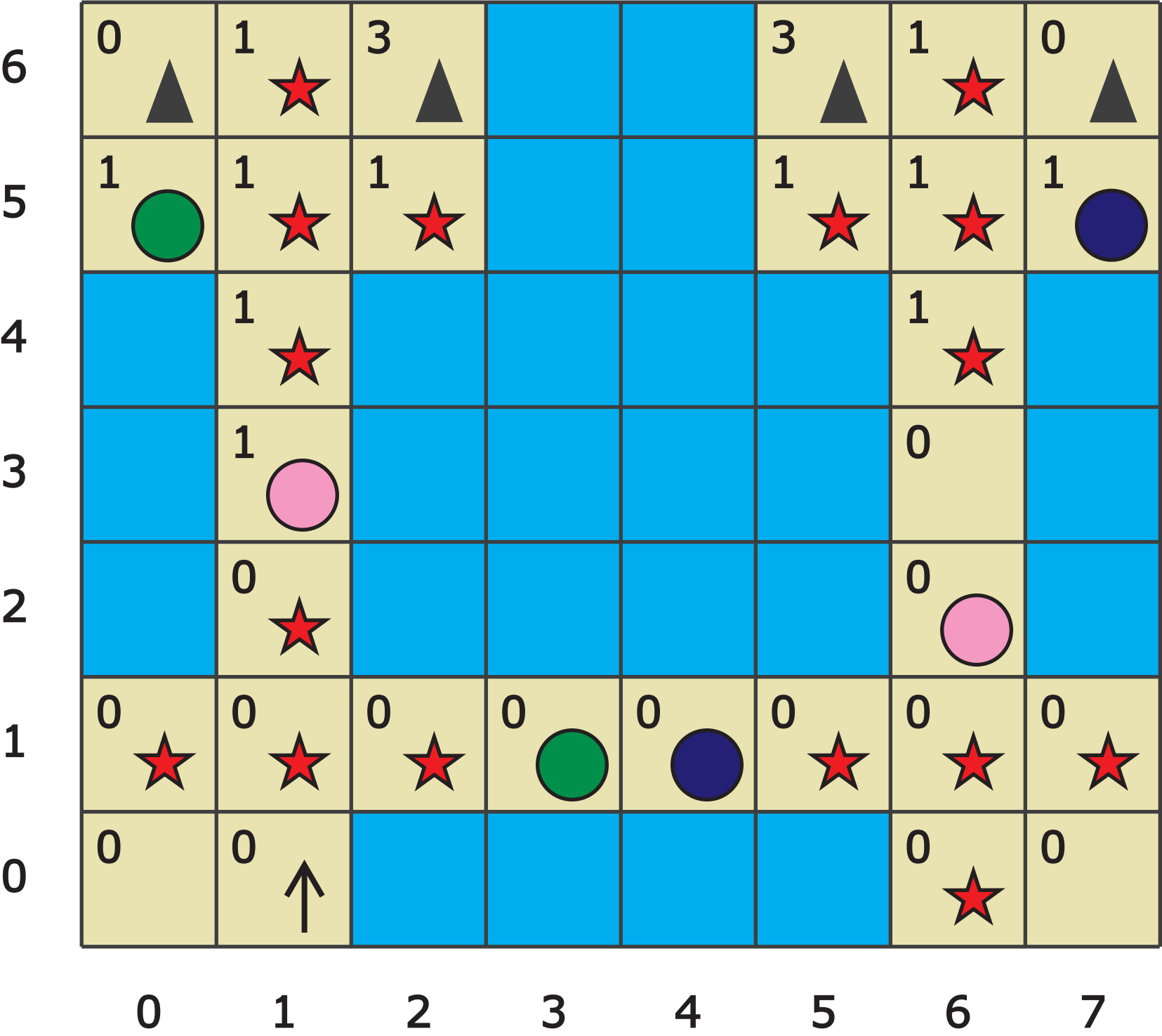
Branch Out



Gem Farm

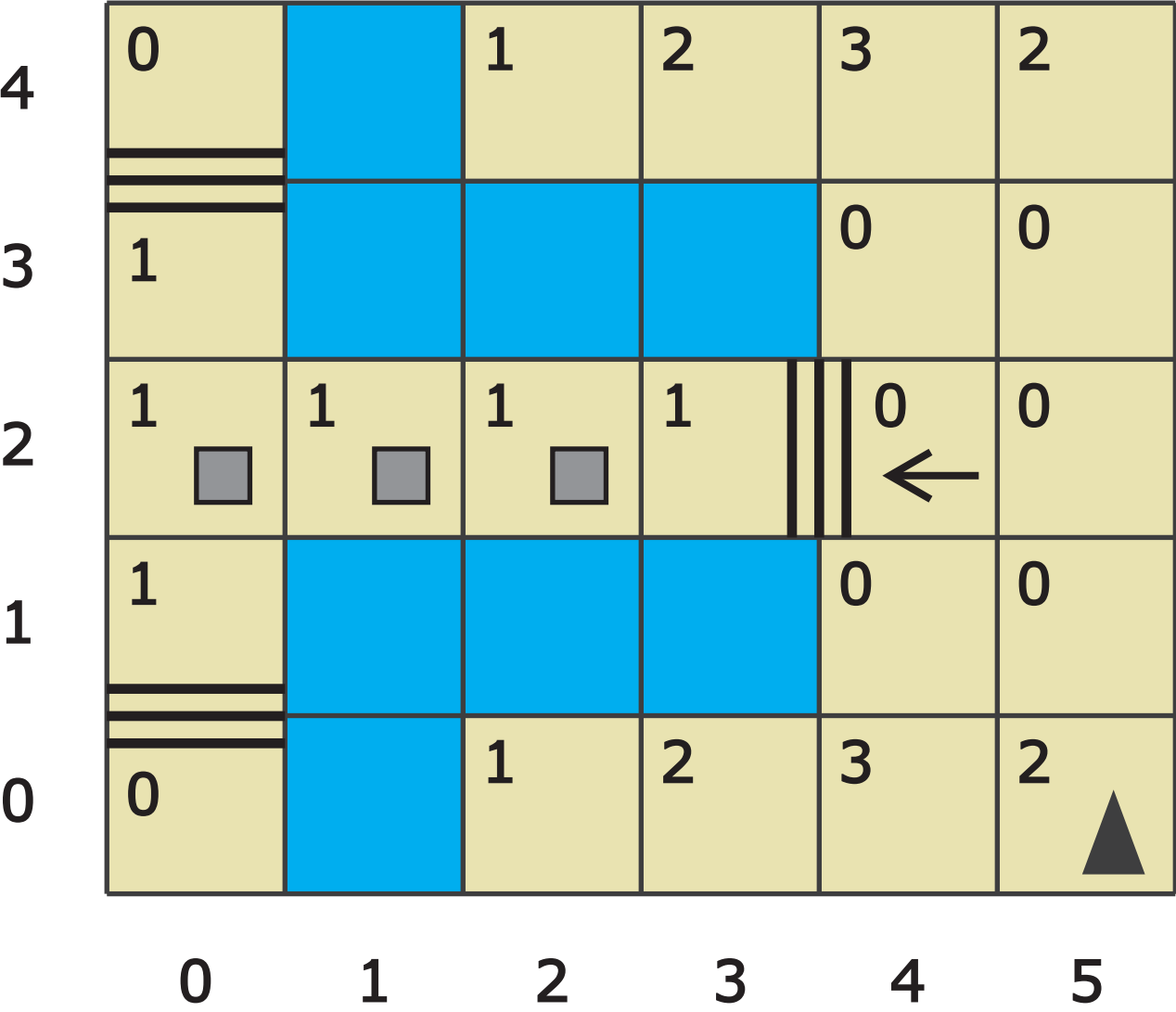


Four Stash Sweep



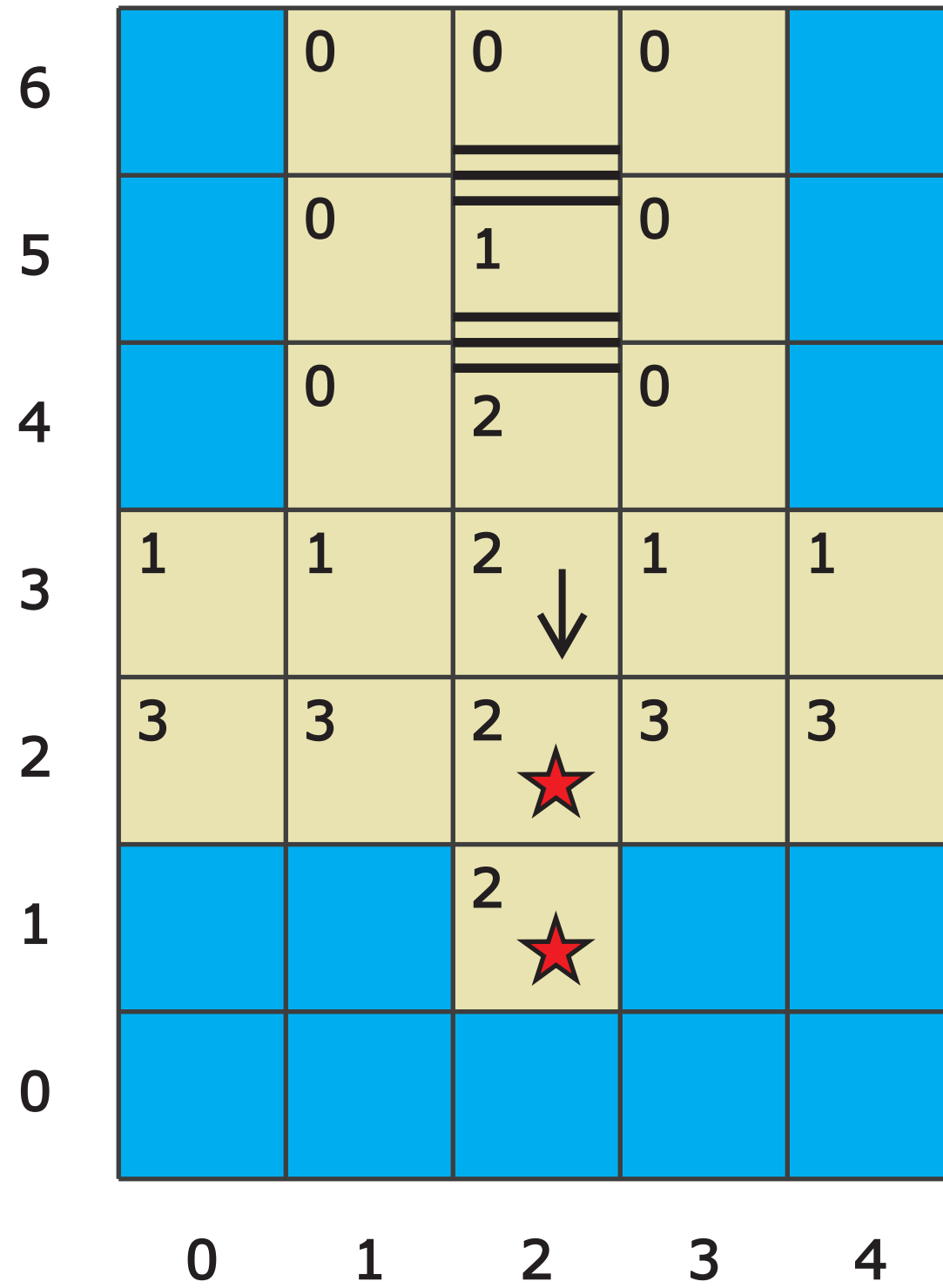
Checking for Switches

Dynamic Layout



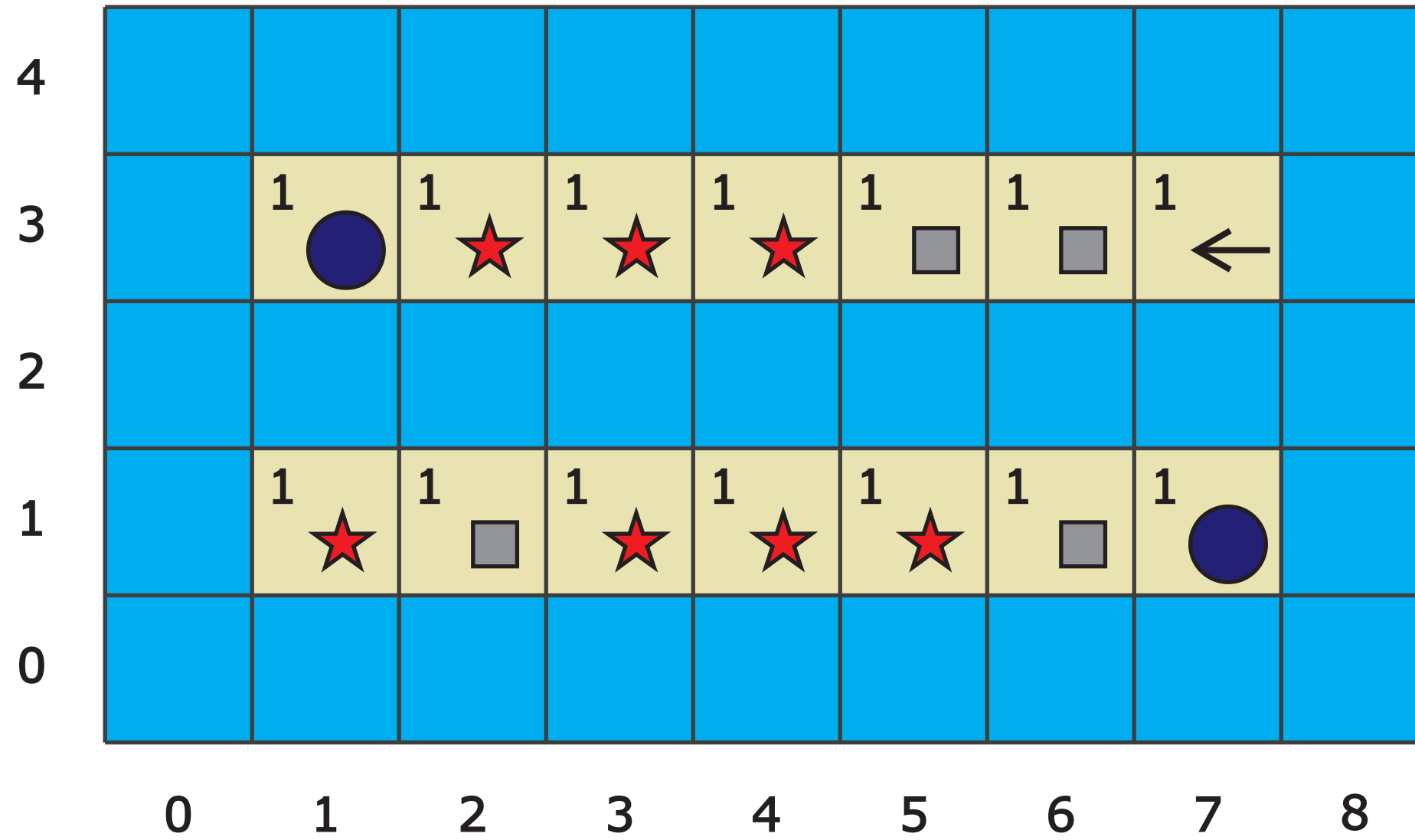
Using else if

Dynamic Layout

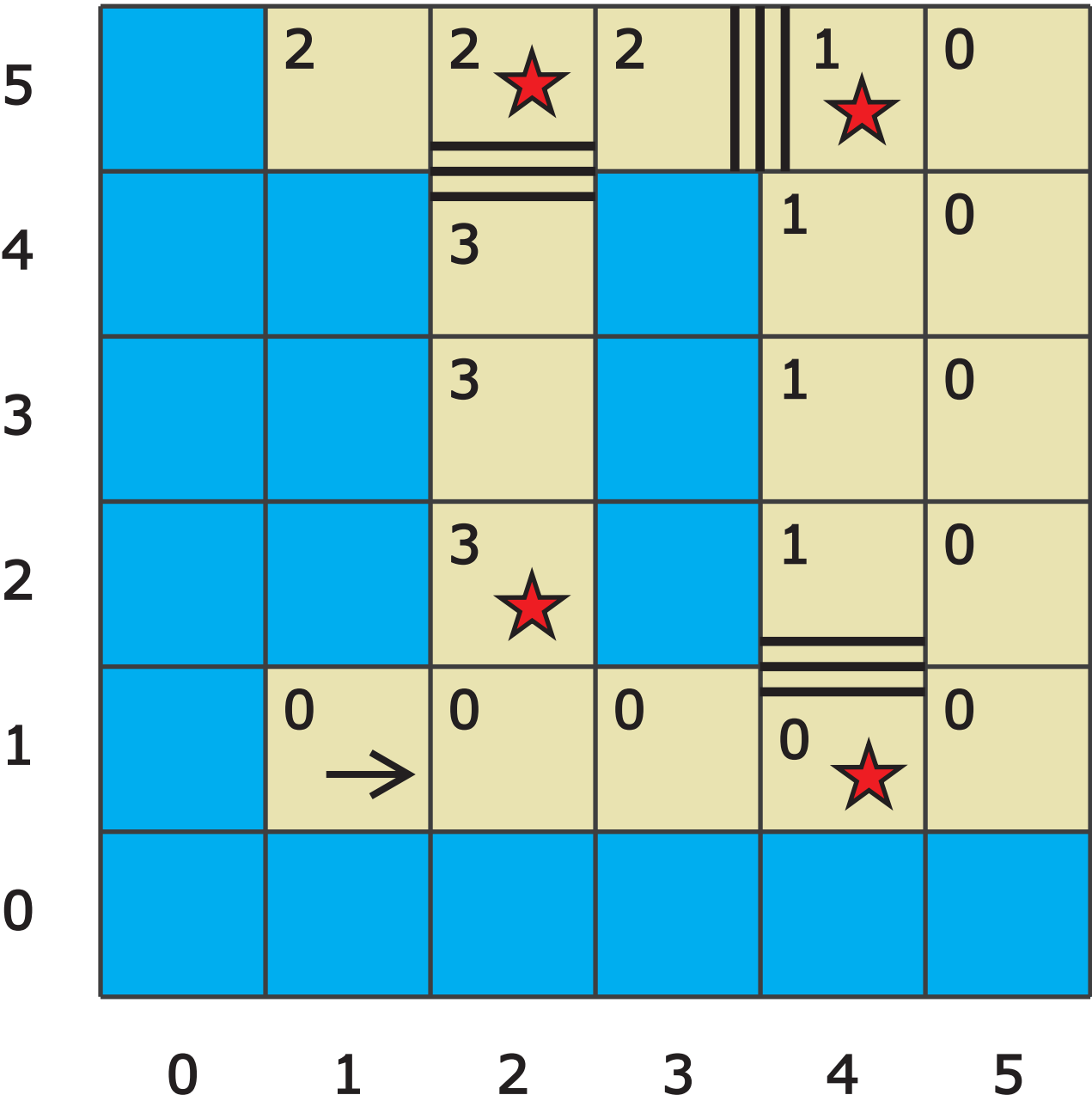


Looping Conditional Code

Dynamic Layout

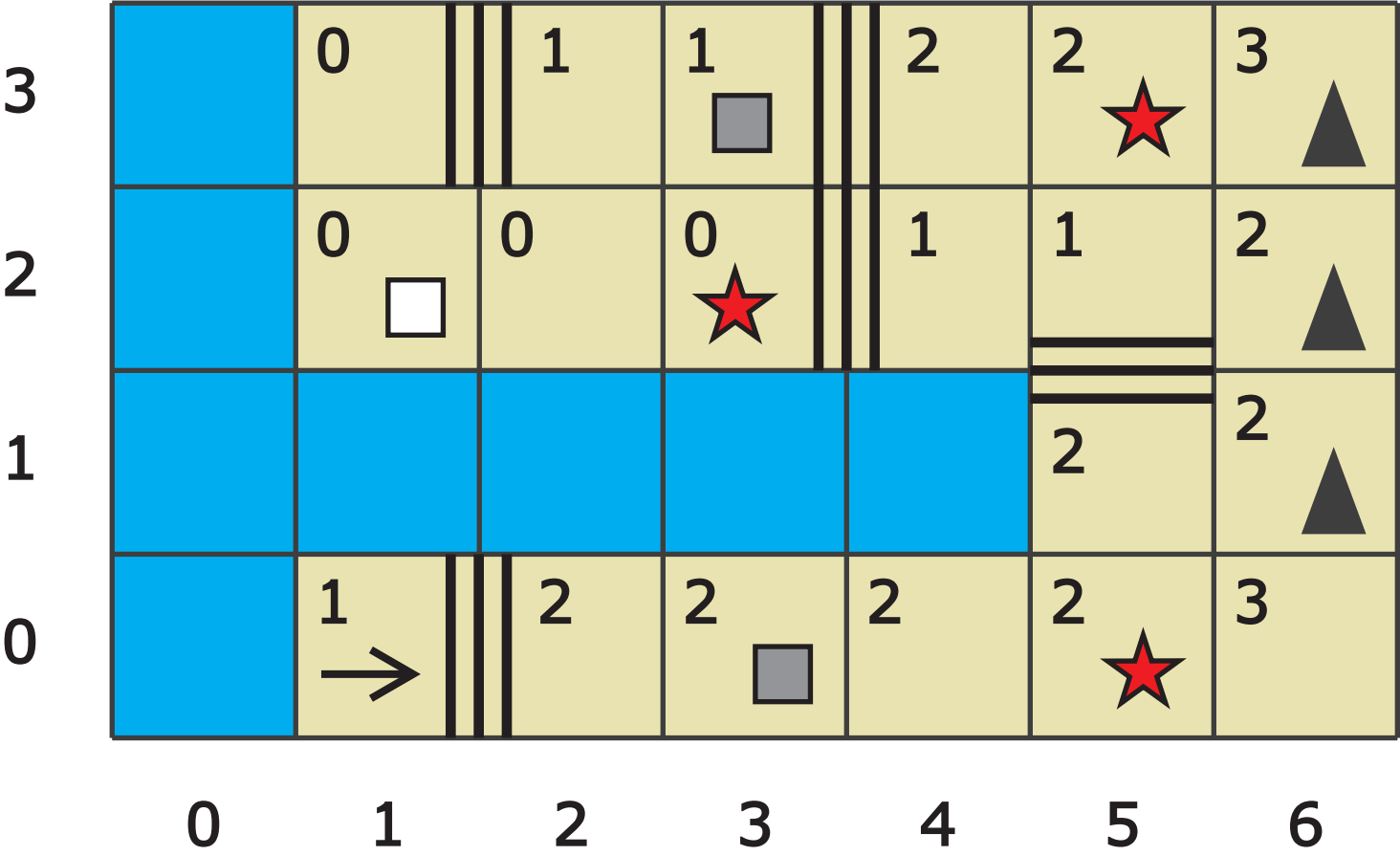


Conditional Climb



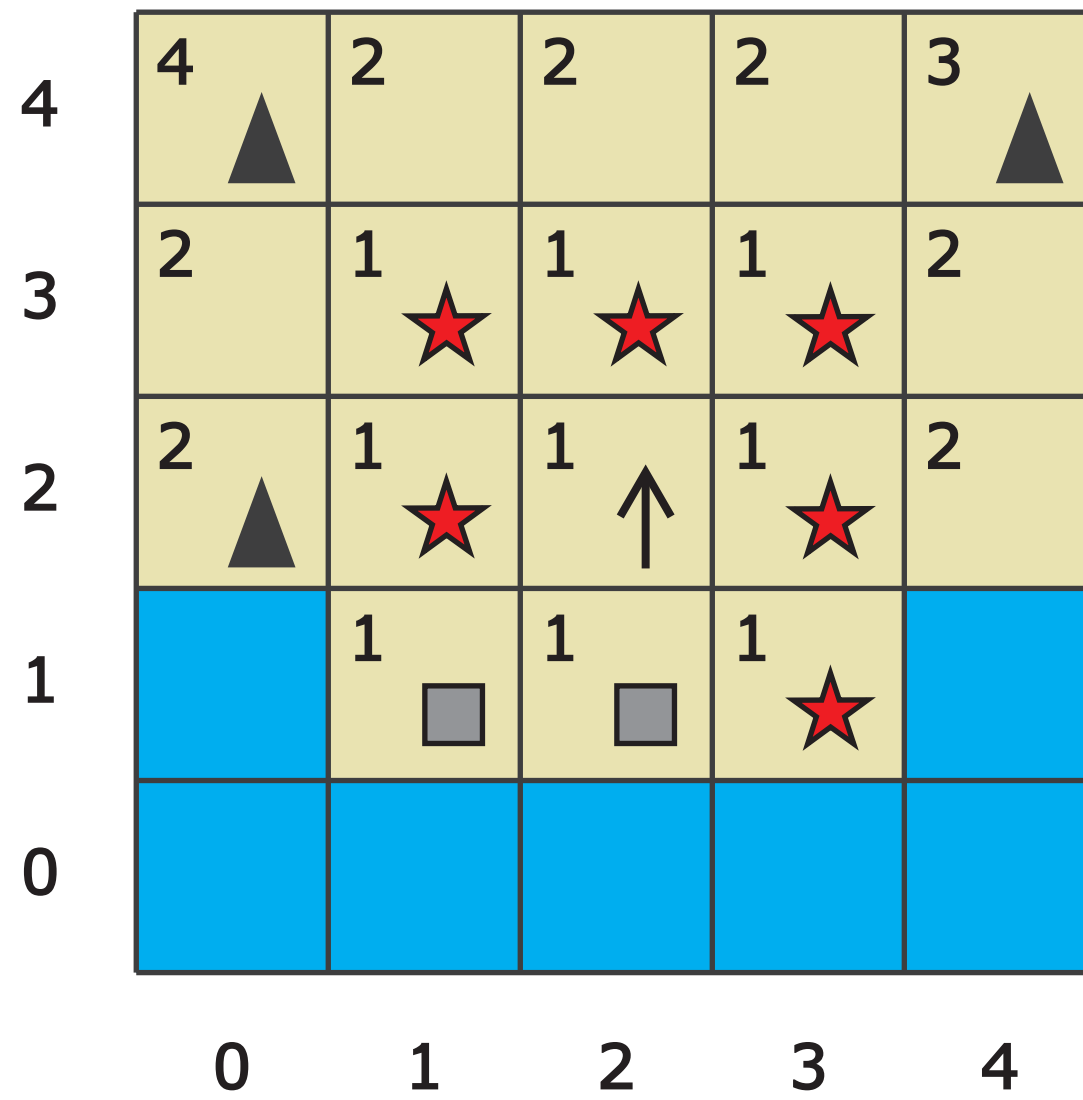
Defining Smarter Functions

Dynamic Layout

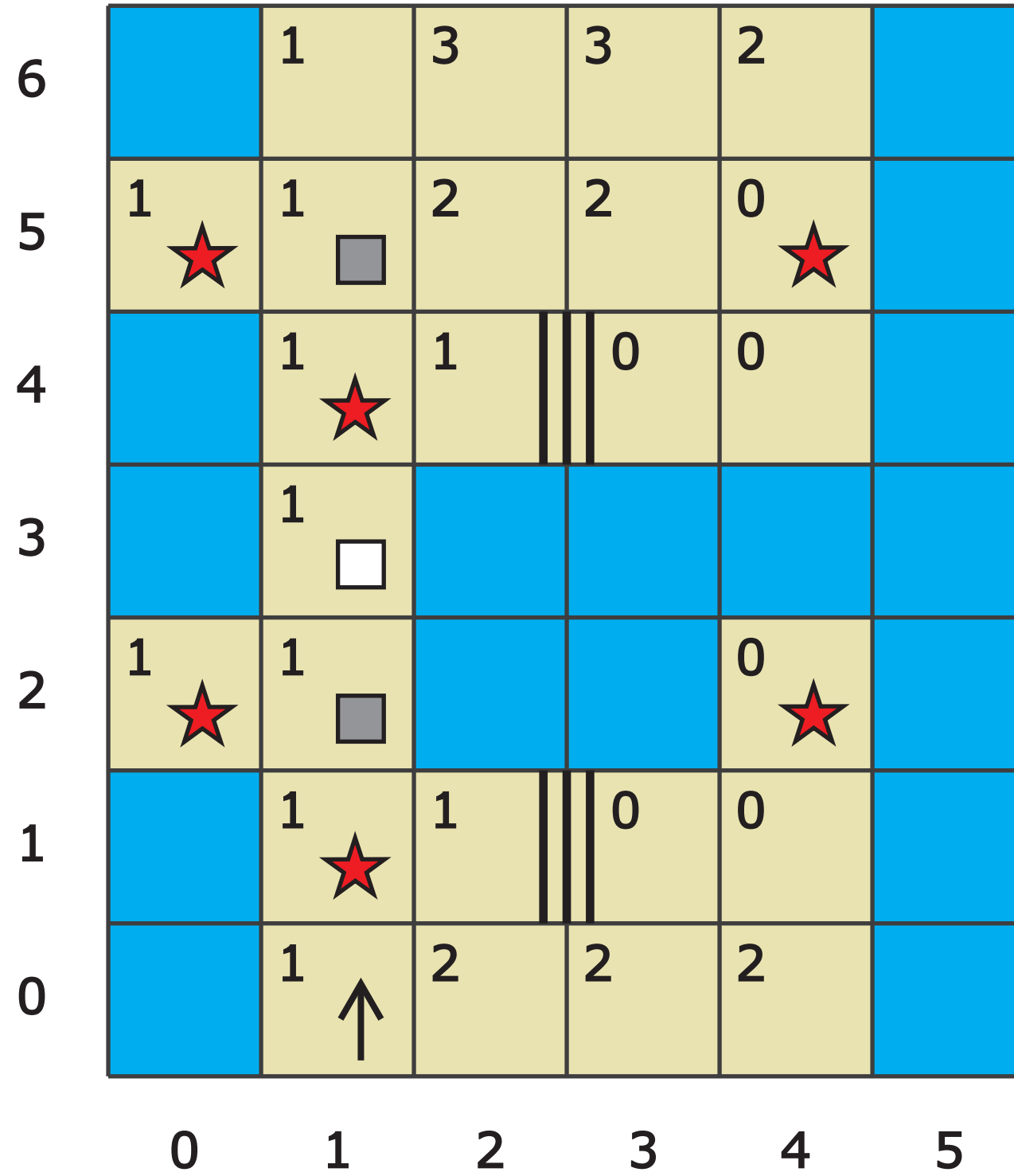


Boxed In

Dynamic Layout

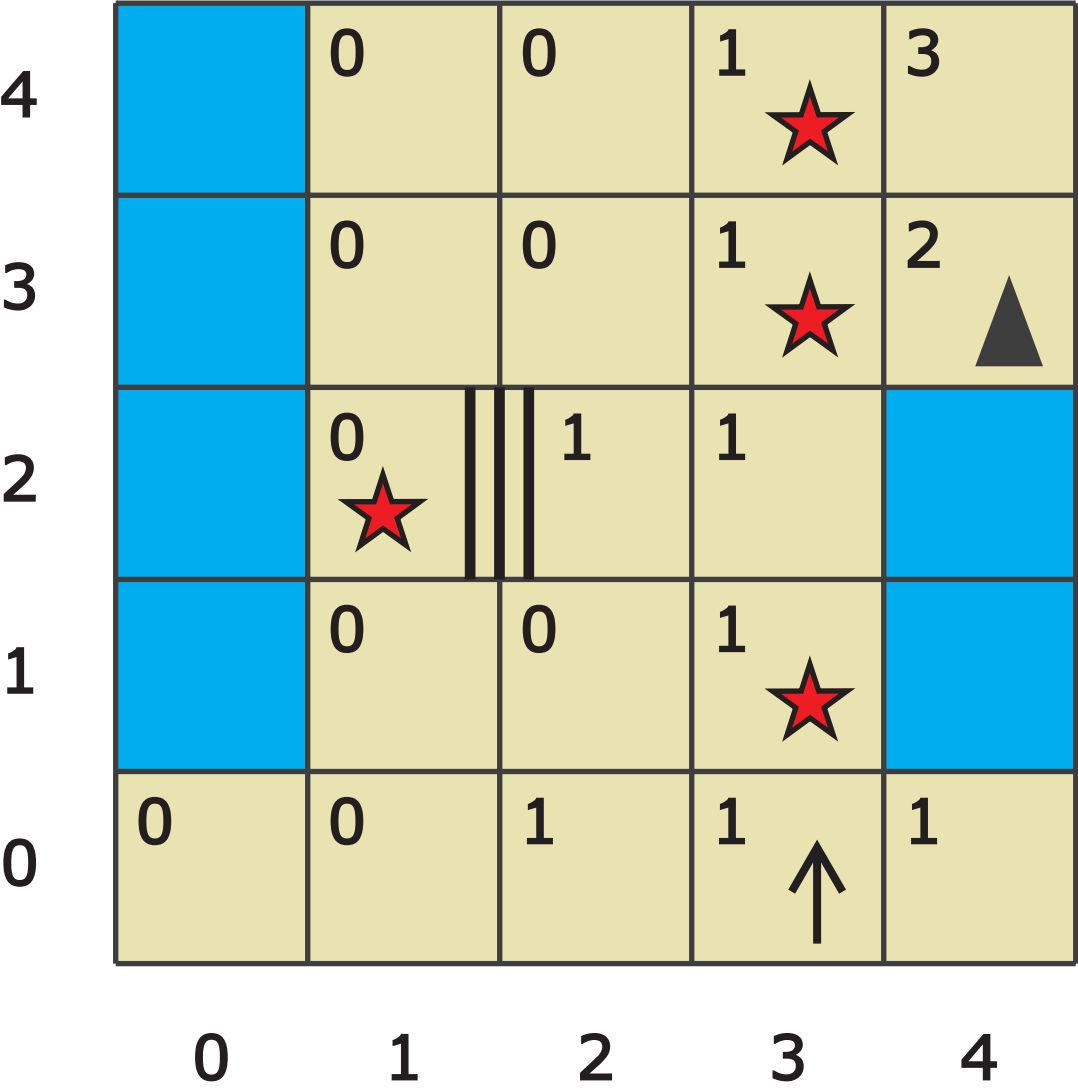


Decision Tree



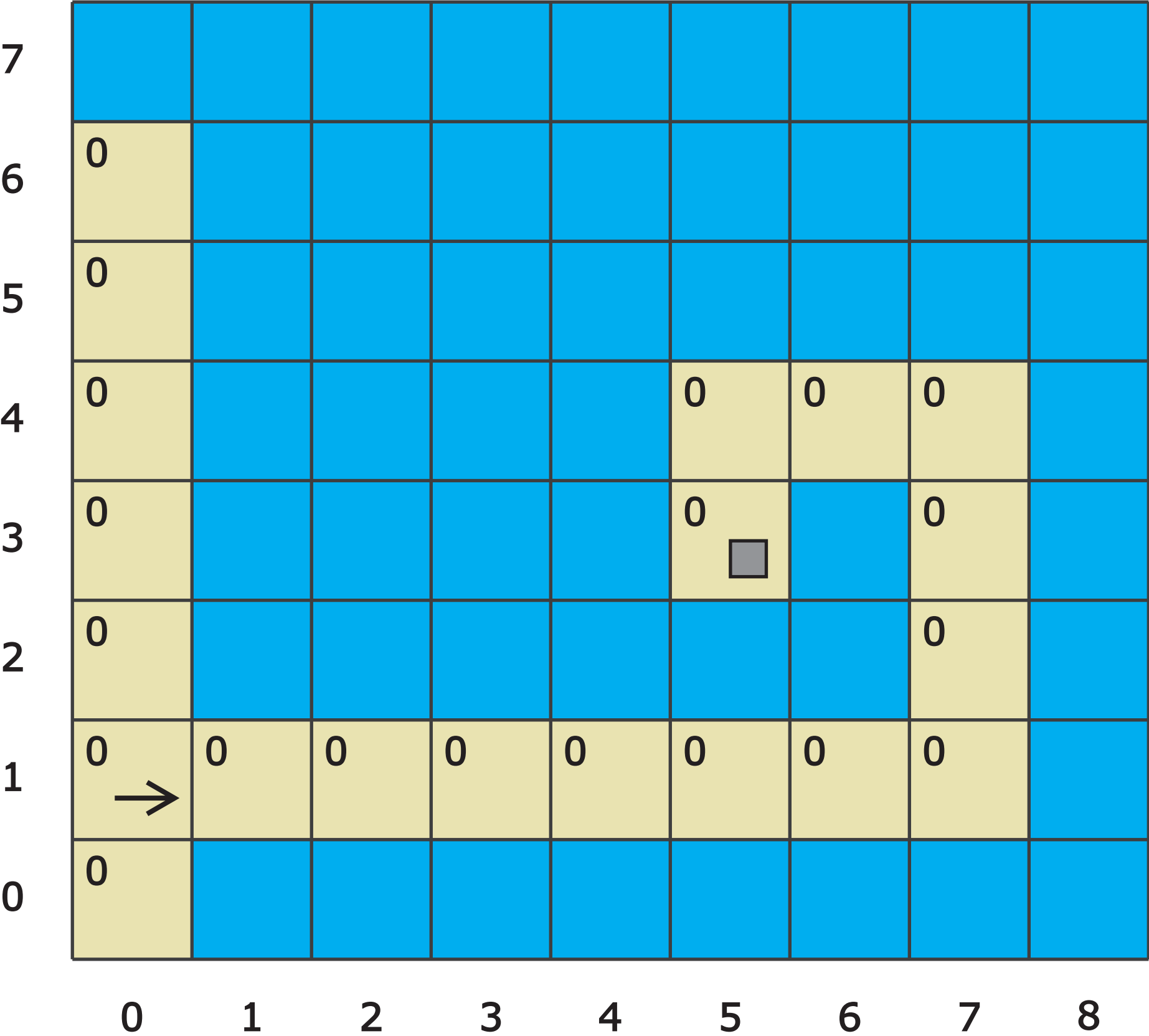
Using the NOT Operator

Dynamic Layout

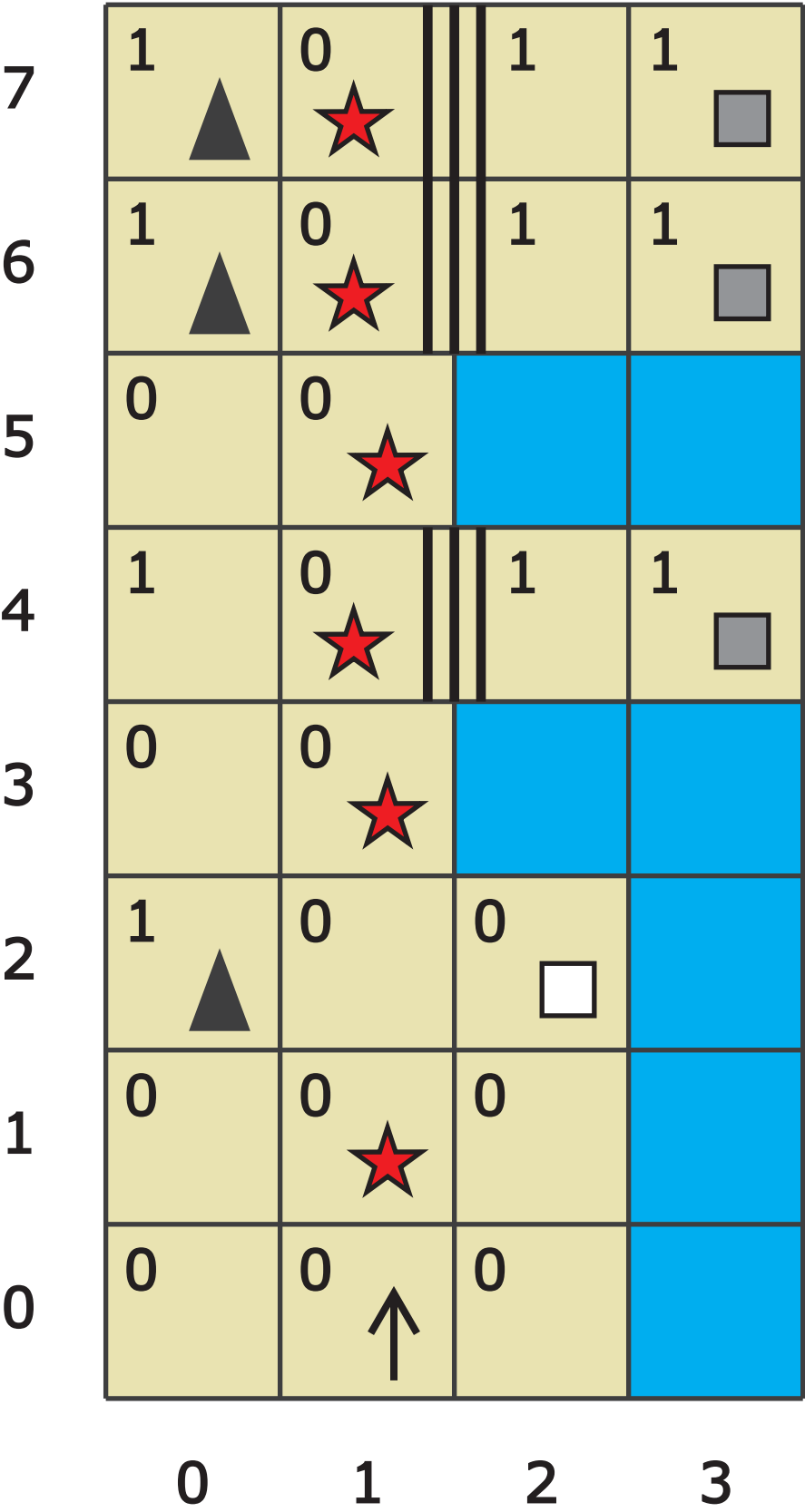


Spiral of NOT

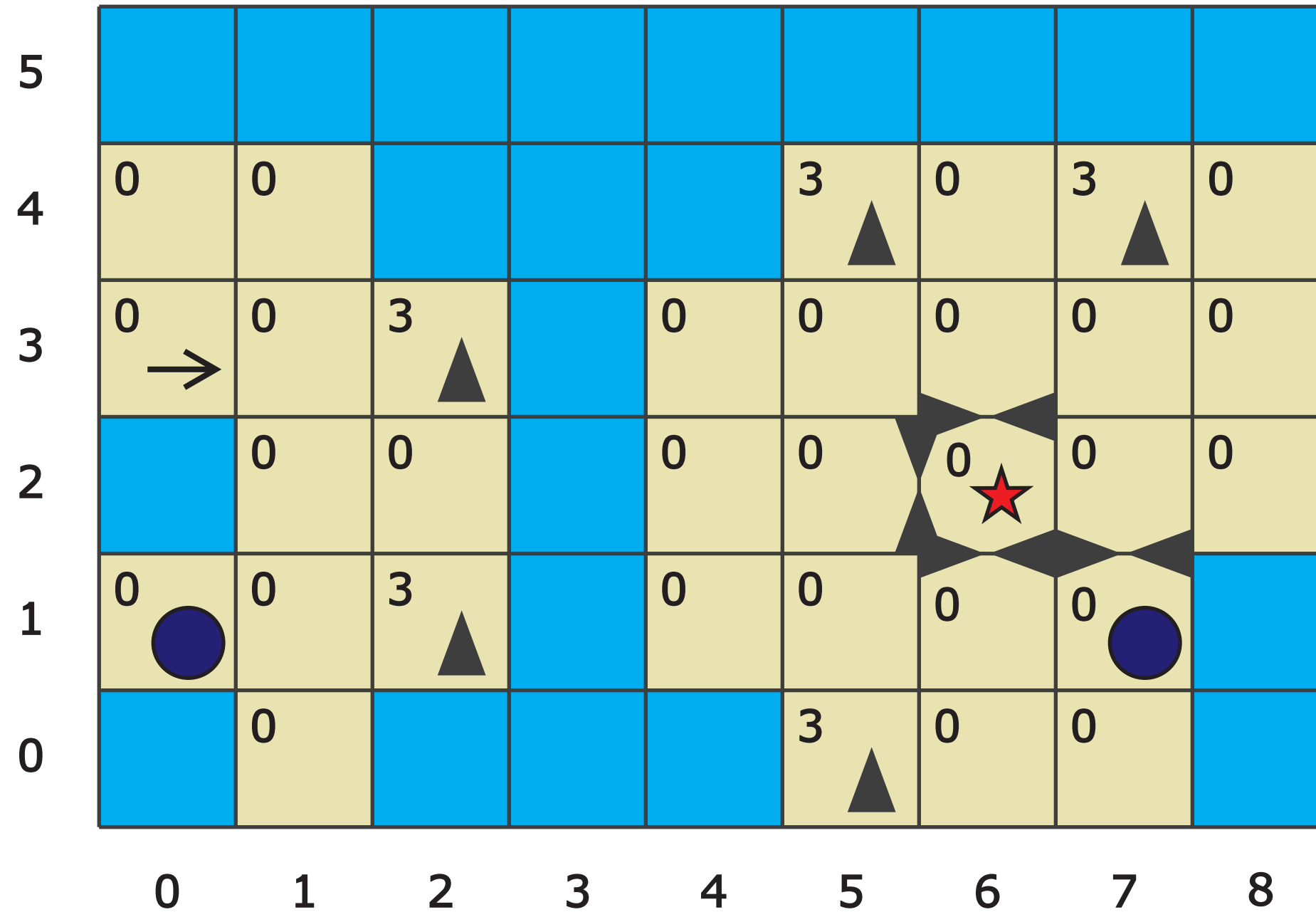
Dynamic Layout



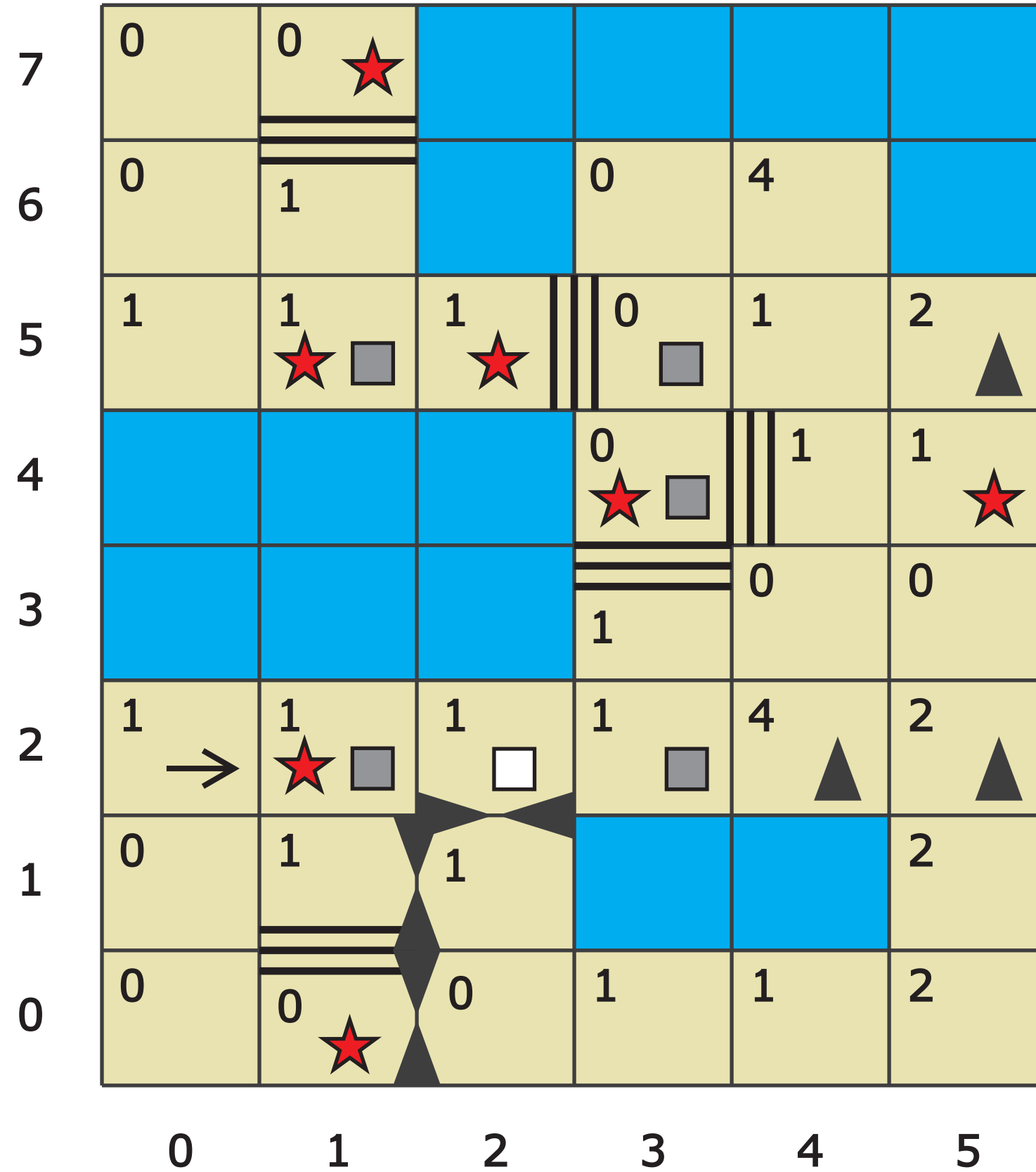
Checking This AND That



Checking This OR That

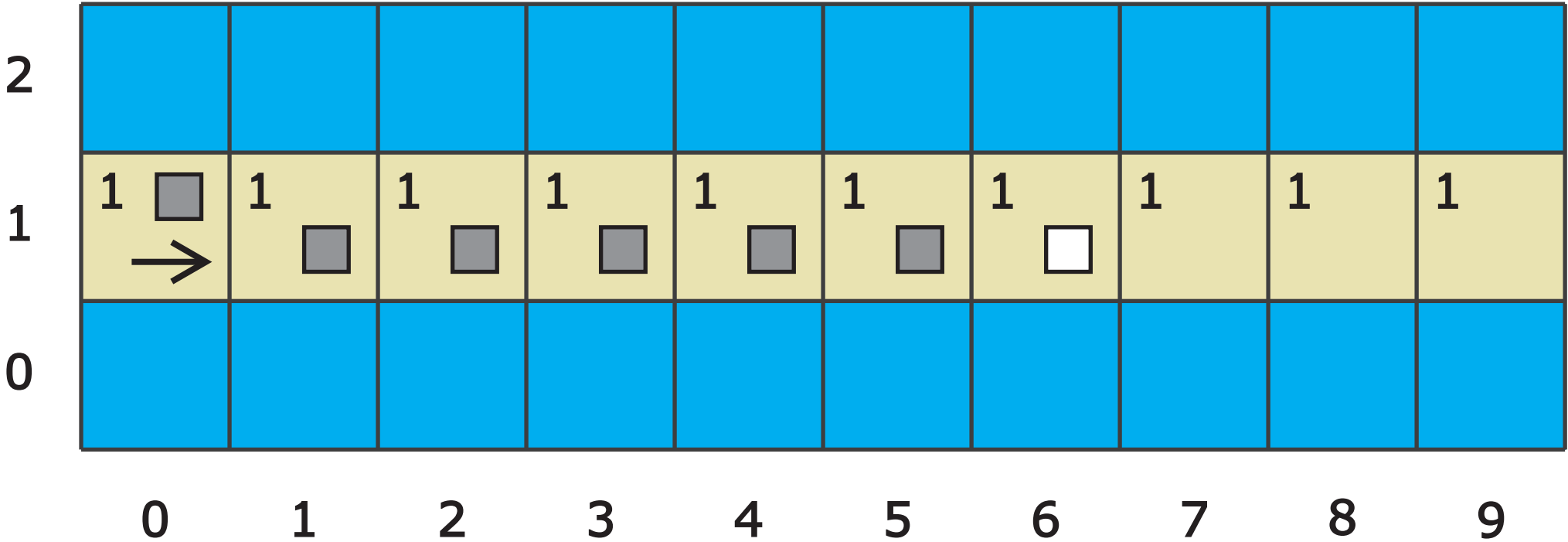


Logical Labyrinth



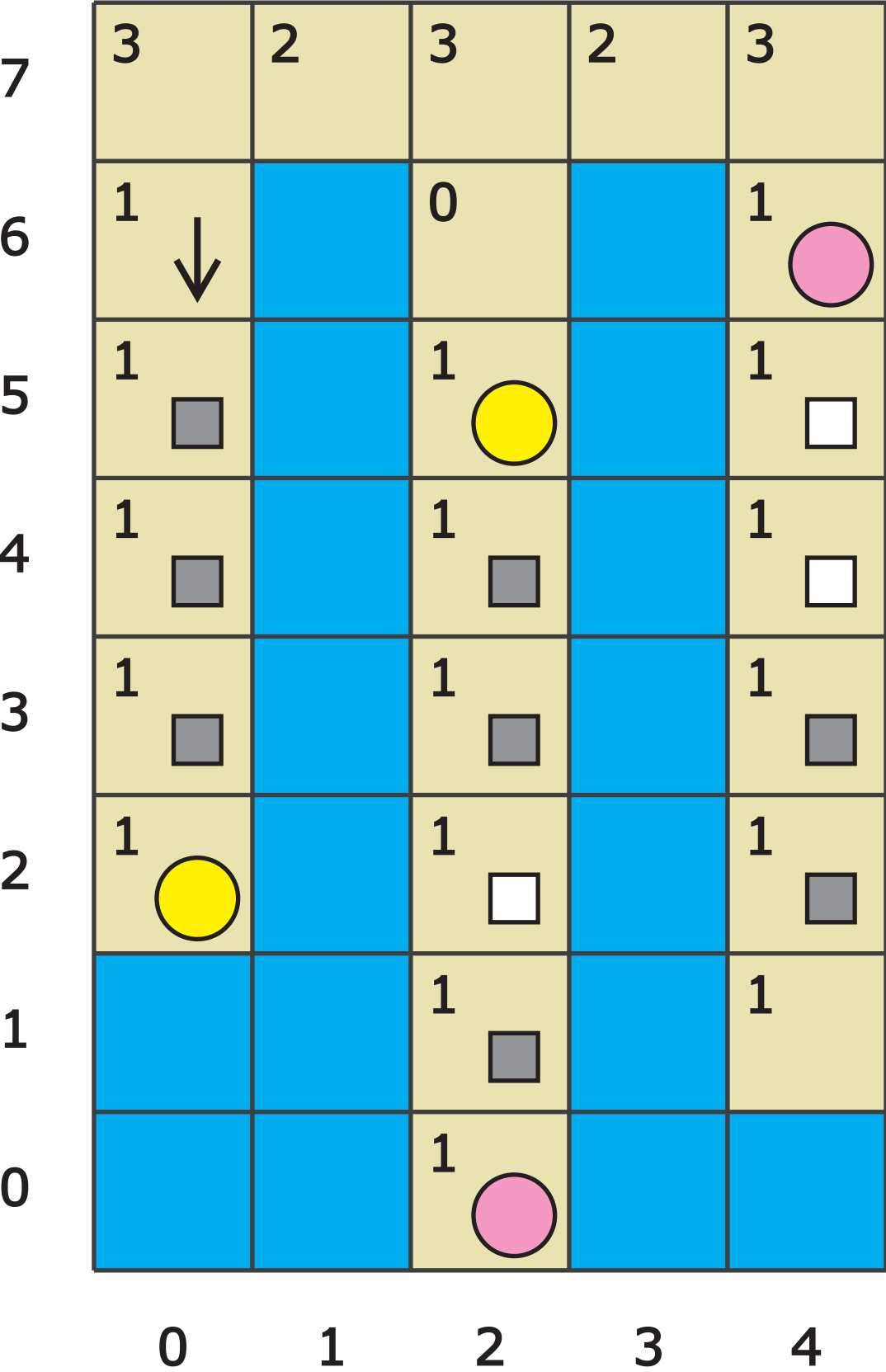
Running Code While...

Dynamic Layout

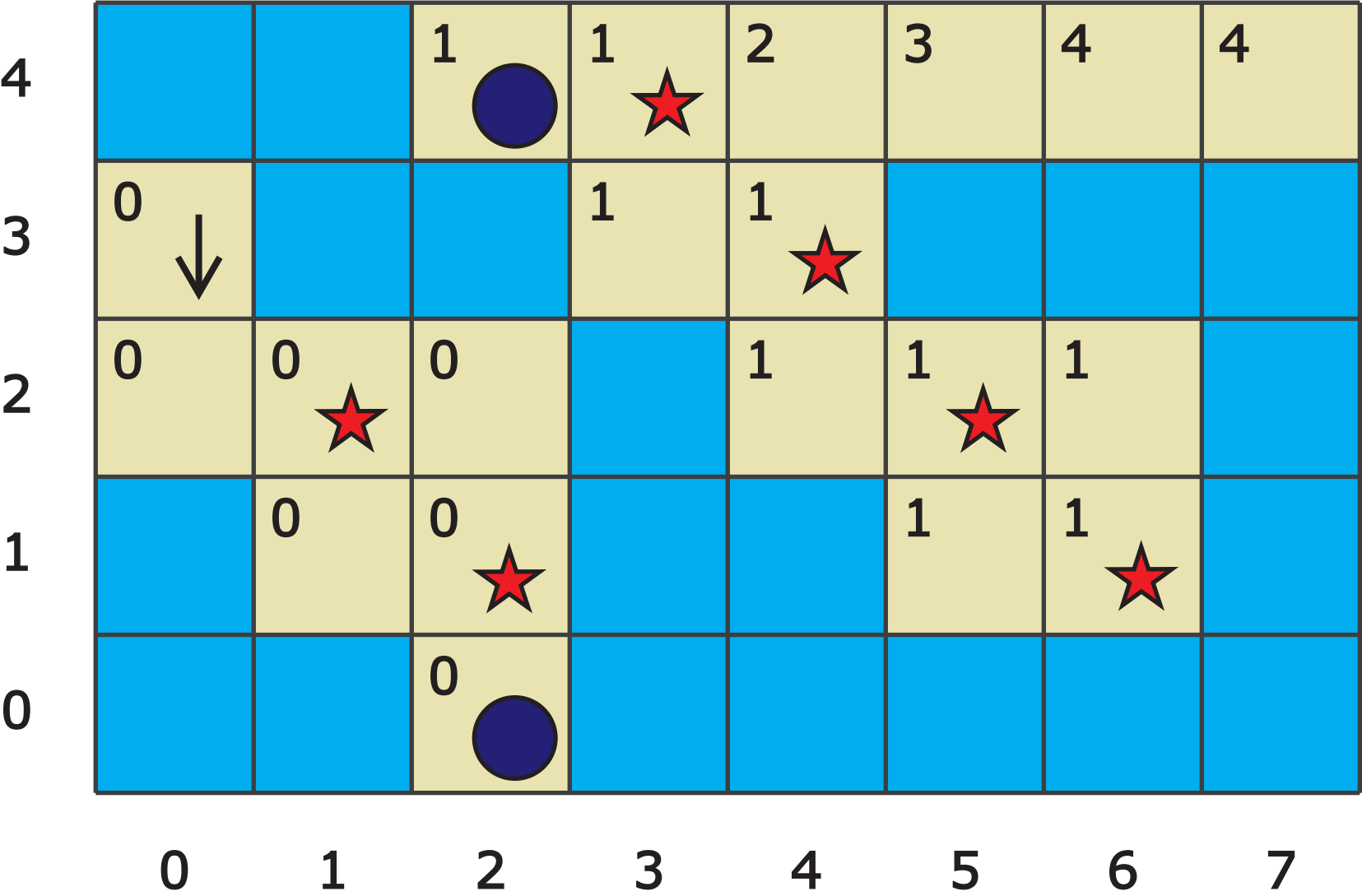


Creating Smarter While Loops

Dynamic Layout

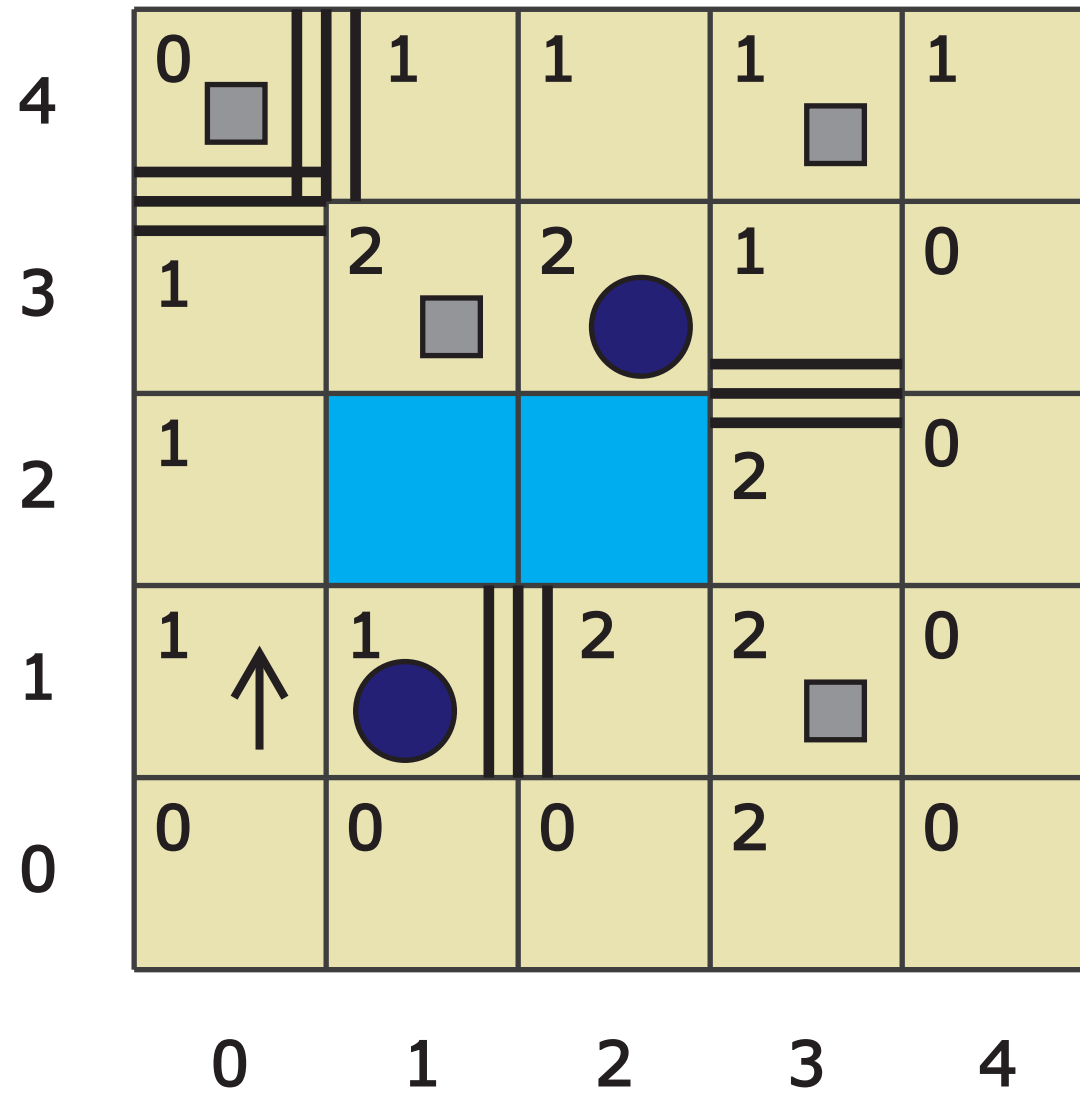


Choosing the Correct Tool

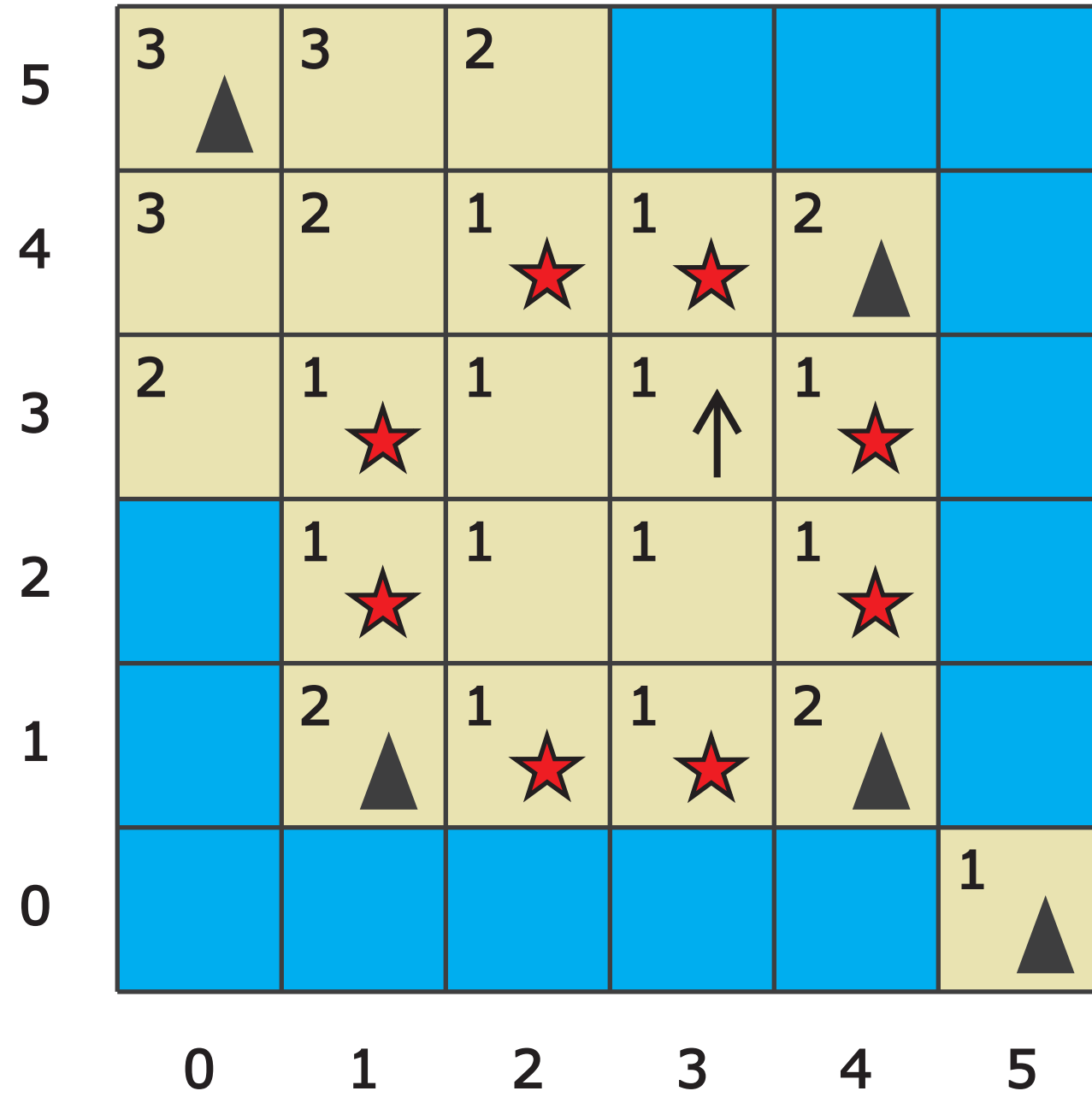


Four by Four

Dynamic Layout

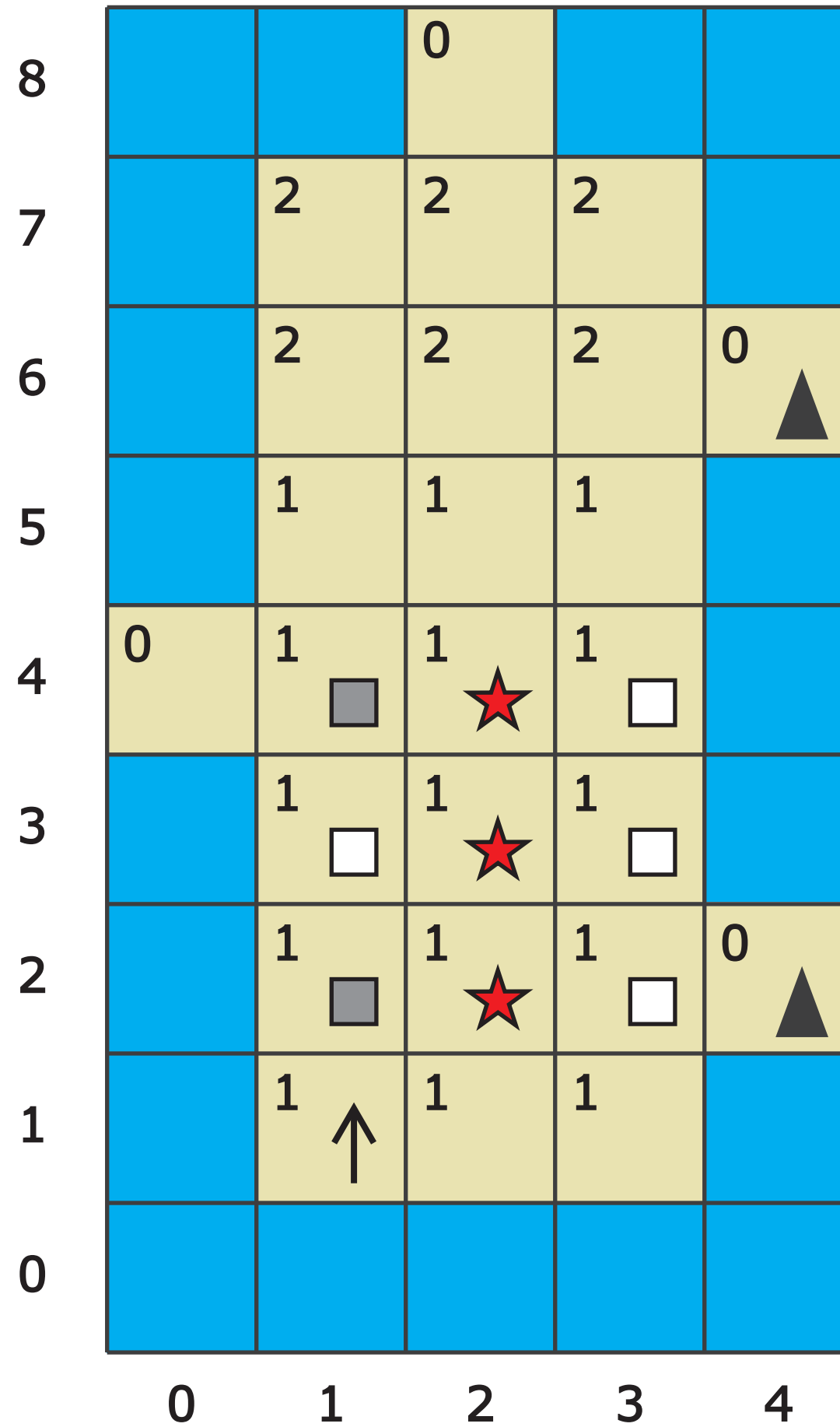


Turned Around

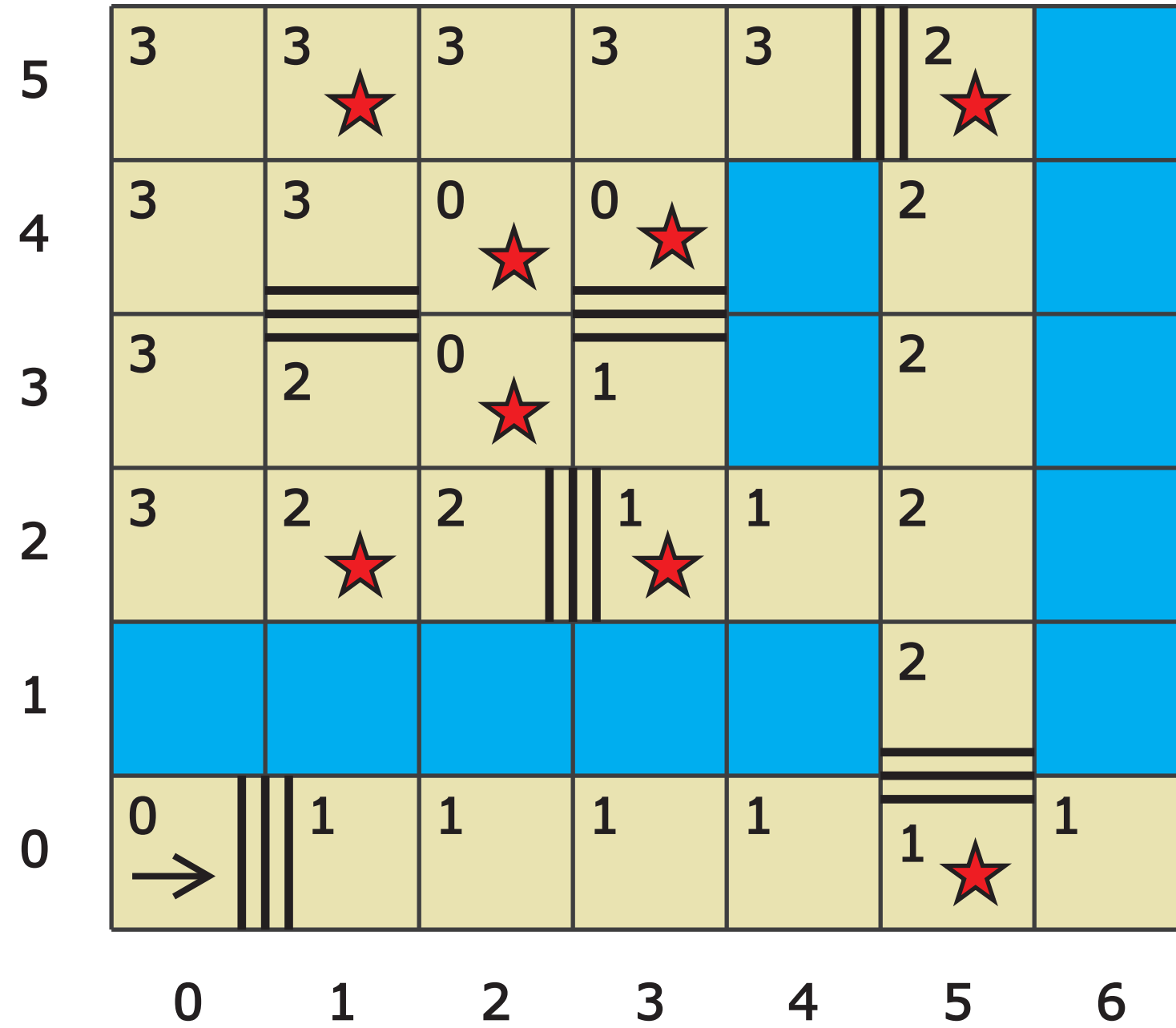


Land of Bounty

Dynamic Layout

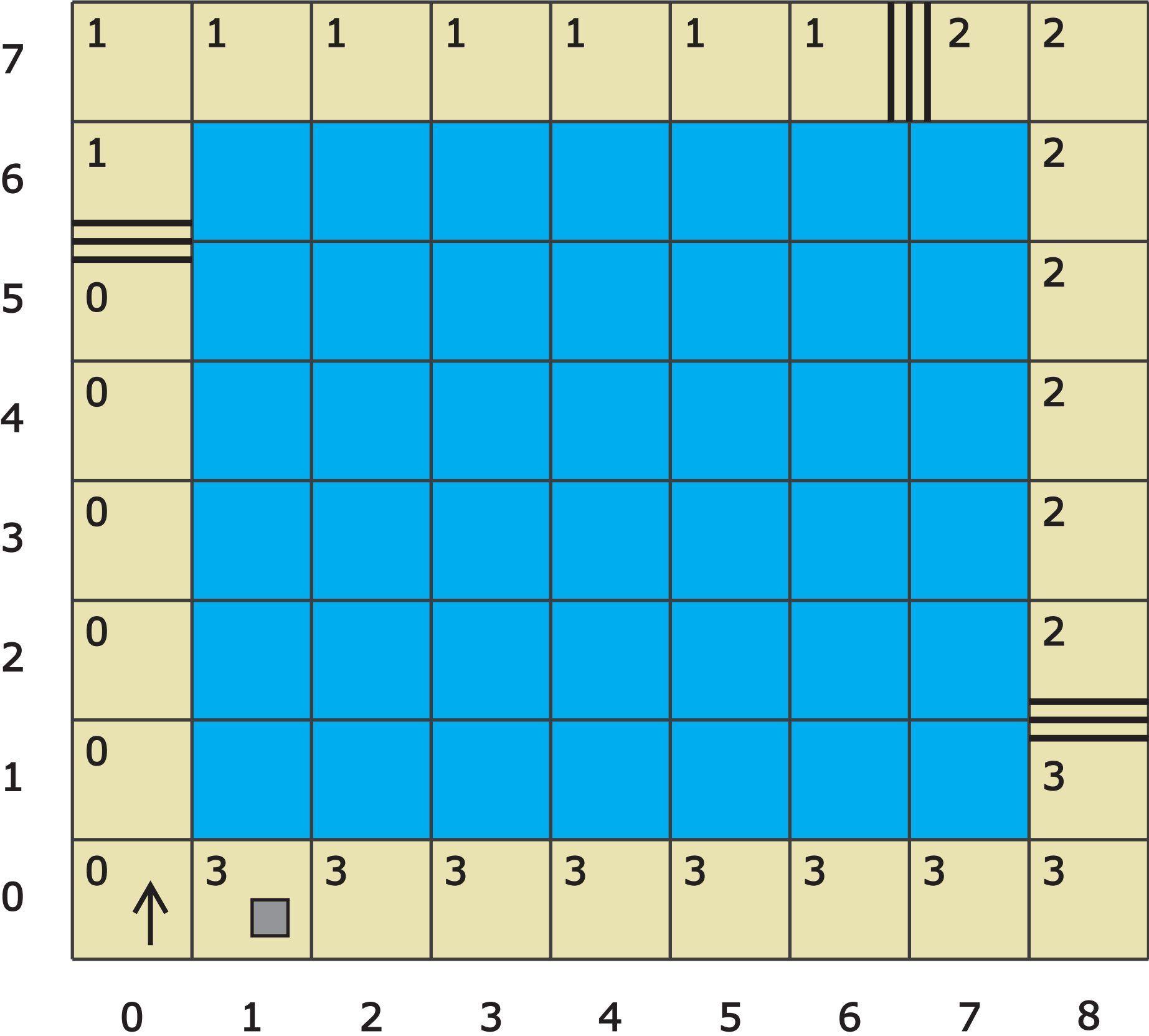


Nesting Loops



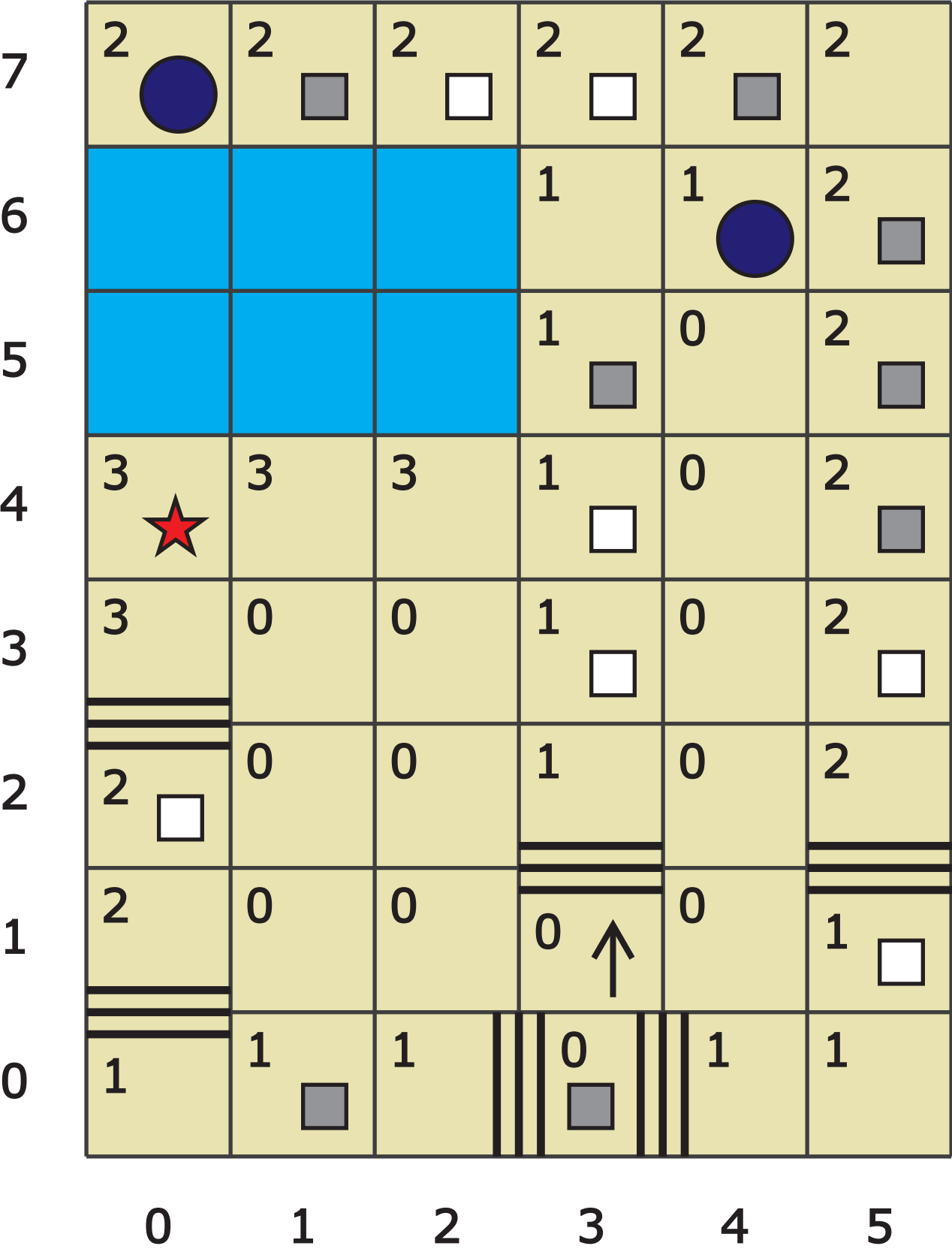
Random Rectangles

Dynamic Layout



You're Always Right

Dynamic Layout



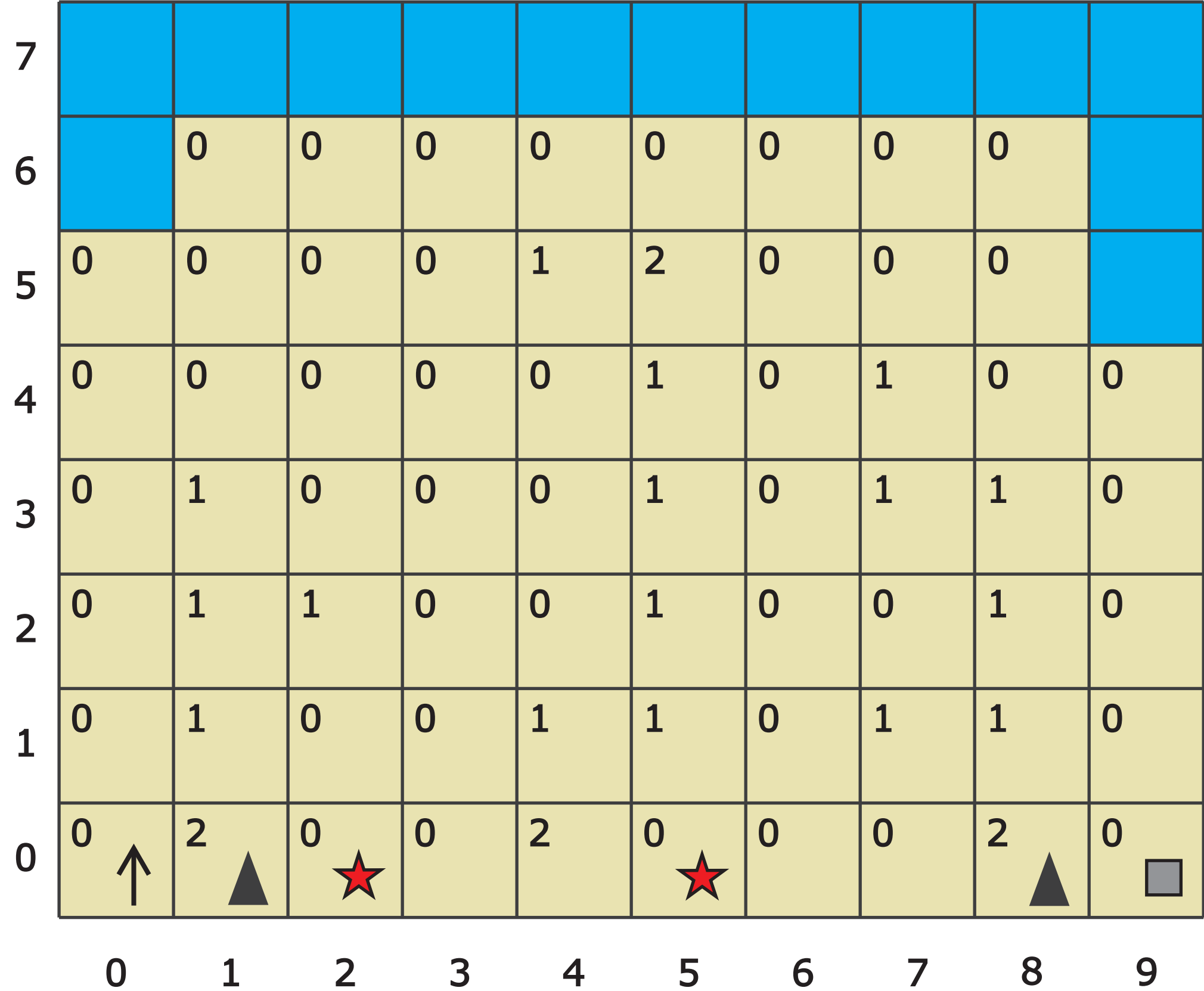
The Right-Hand Rule

Dynamic Layout

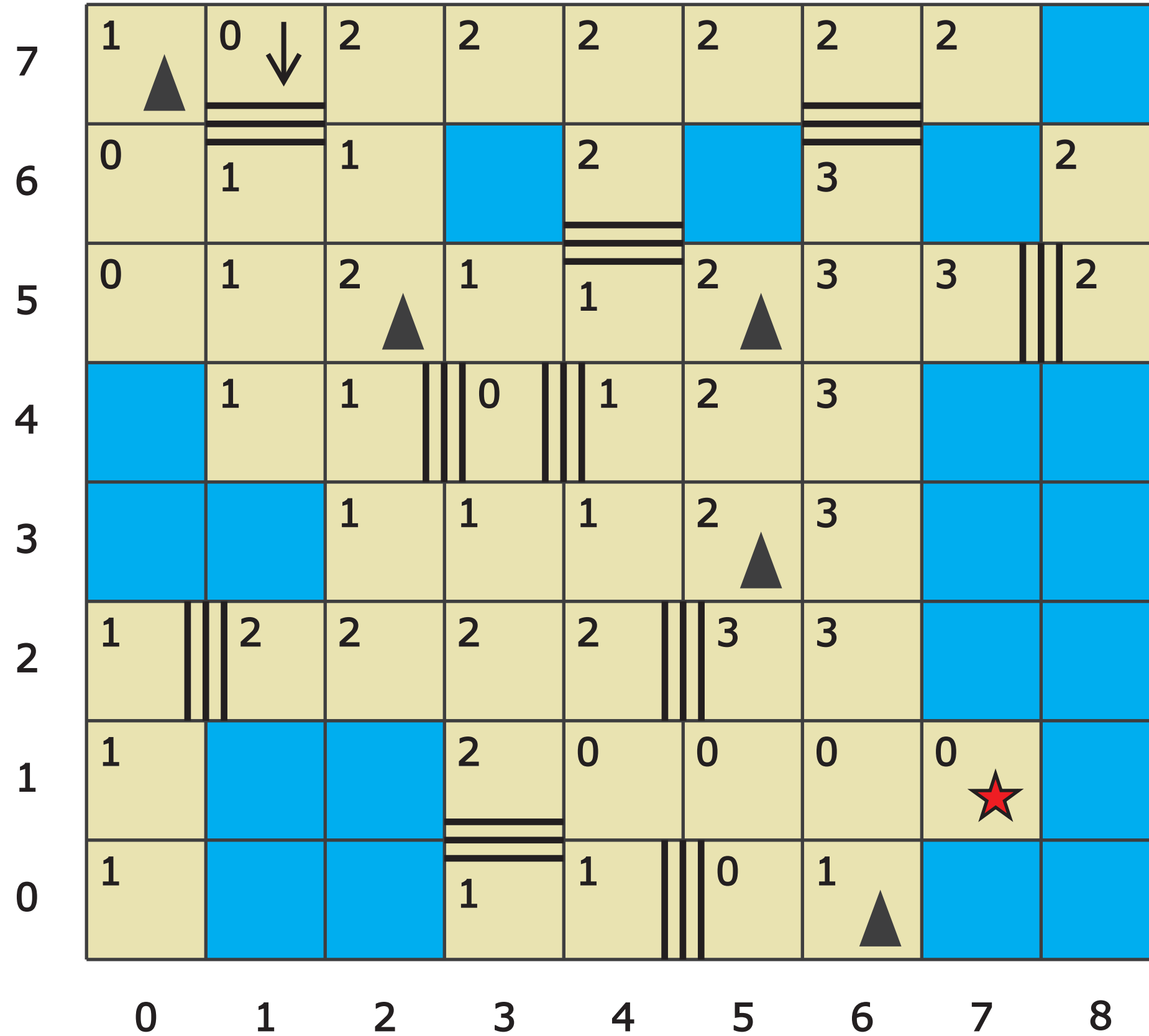
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5	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	
1	0	0	0	0	0	0	0	0	0	
0	0 ↑	1	0 ★	1	0 ★	1	1	0 ★	1 ■	
	0	1	2	3	4	5	6	7	8	9

Adjusting Your Algorithm

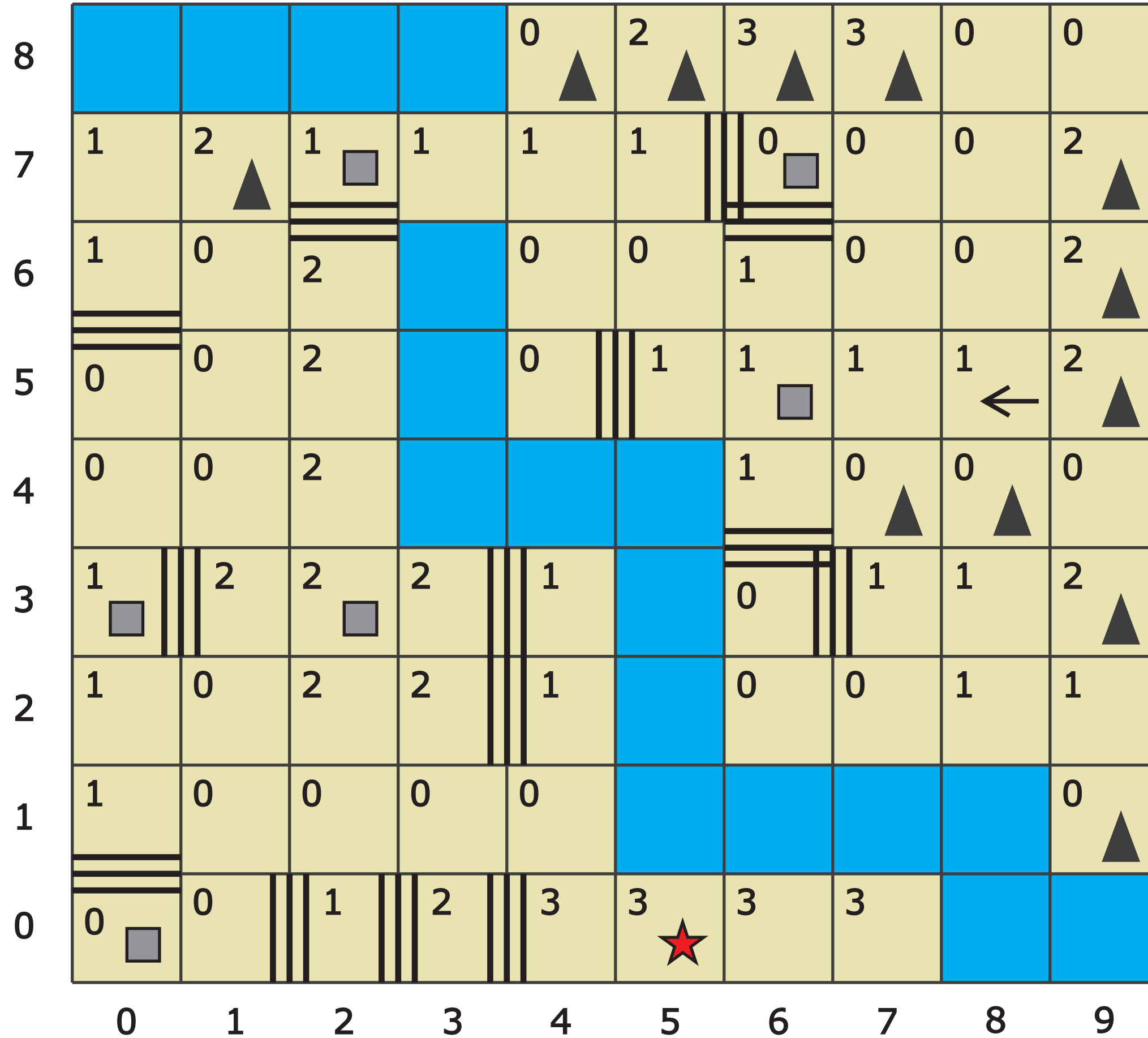
Dynamic Layout



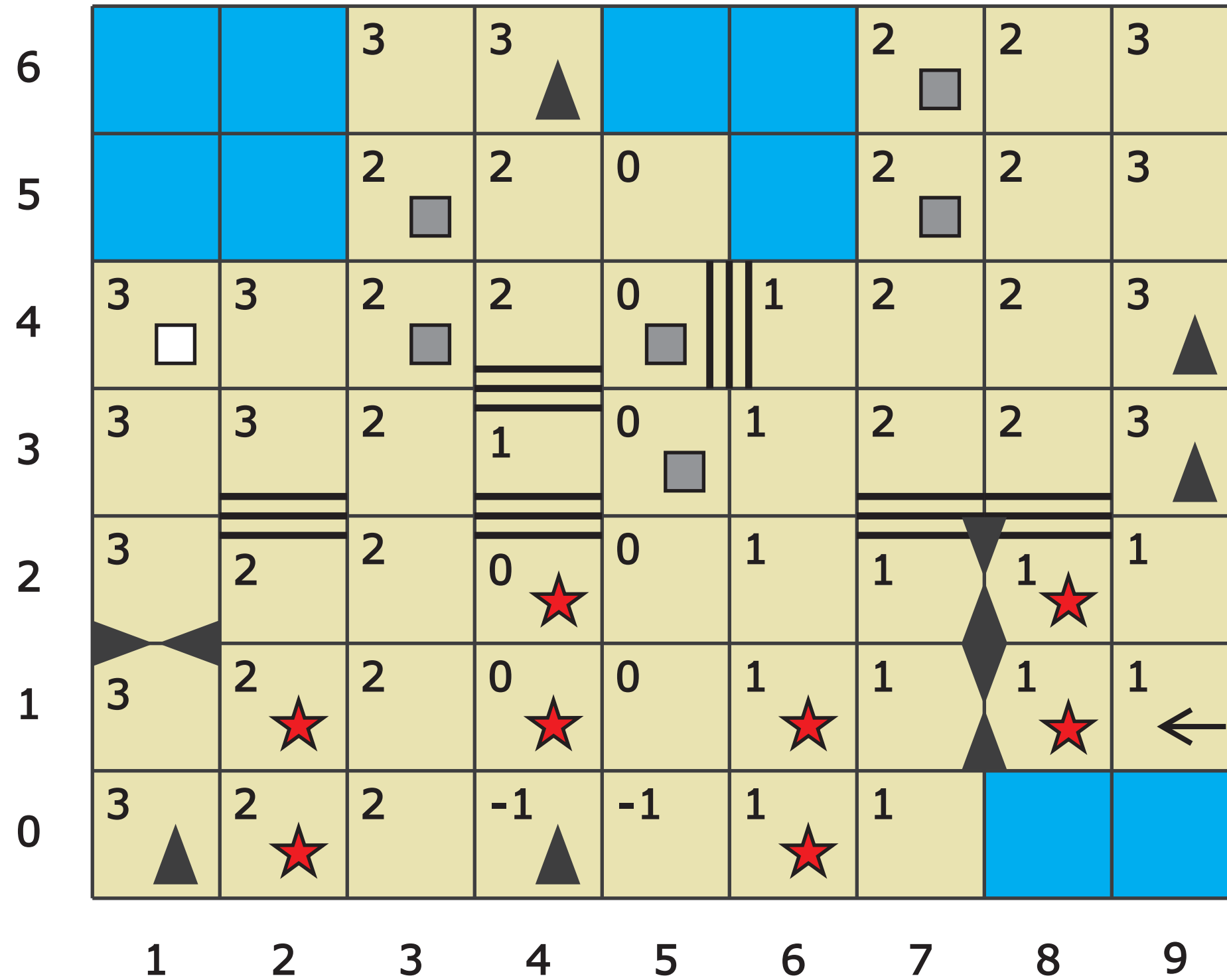
Conquering a Maze



Which Way to Turn?



Roll Right, Roll Left



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