

Swift Playgrounds - Apple

Learn to Code 2

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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Arrays

Note: Puzzle worlds within Arrays are mostly shown as blank grids. All blocks are land, height 0, unless otherwise marked. Some column numbers are omitted.

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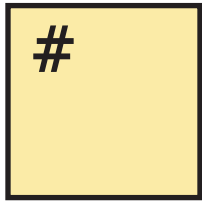
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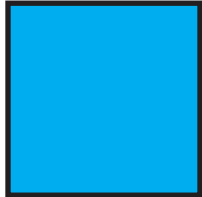
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Swift Playgrounds Learn to Code 2 Key



Land block with height. Numeric indicator omitted.



Unreachable/water block



Start marker with character direction



Start marker with direction (no character)



Gem



Obstacle



Obstacles along gridline creates wall between blocks



Stairs



Open switch



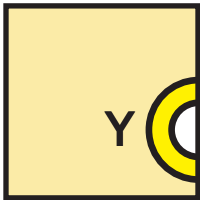
Closed switch

Colors (portals, locks, platforms):

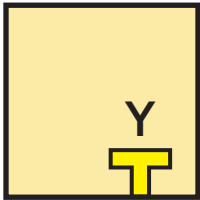
- B Blue
- G Green
- O Orange
- P Pink
- R Red
- V Violet
- Y Yellow



Portal with abbreviated color. Sample color yellow.

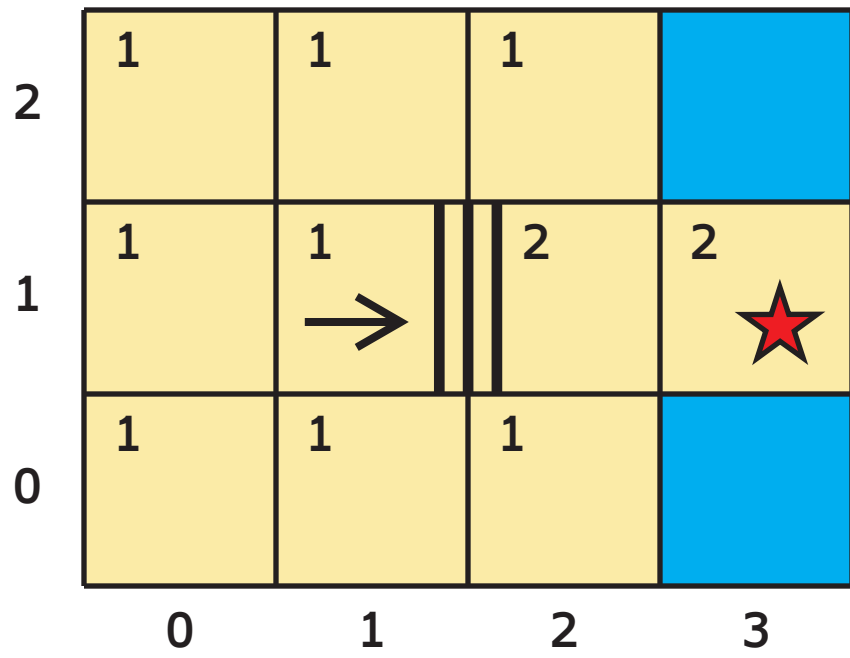


Lock with abbreviated color, oriented on side of block indicating lock's direction. Sample color yellow.

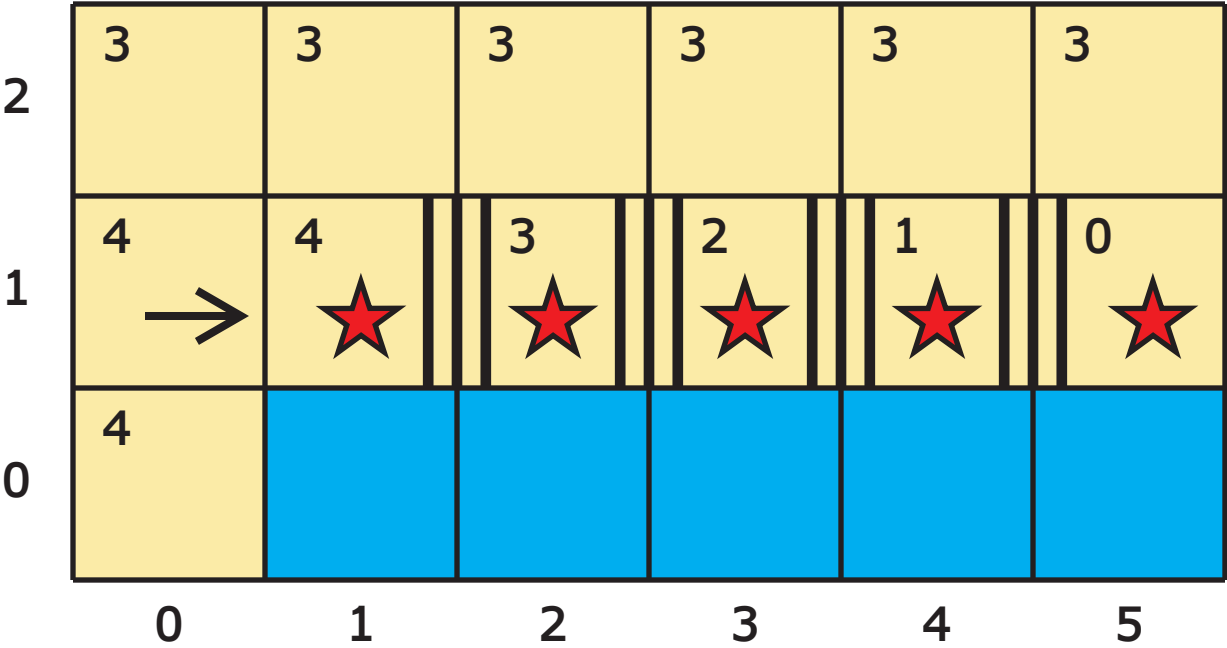


Platform with abbreviated color. Sample color yellow.

Keeping Track

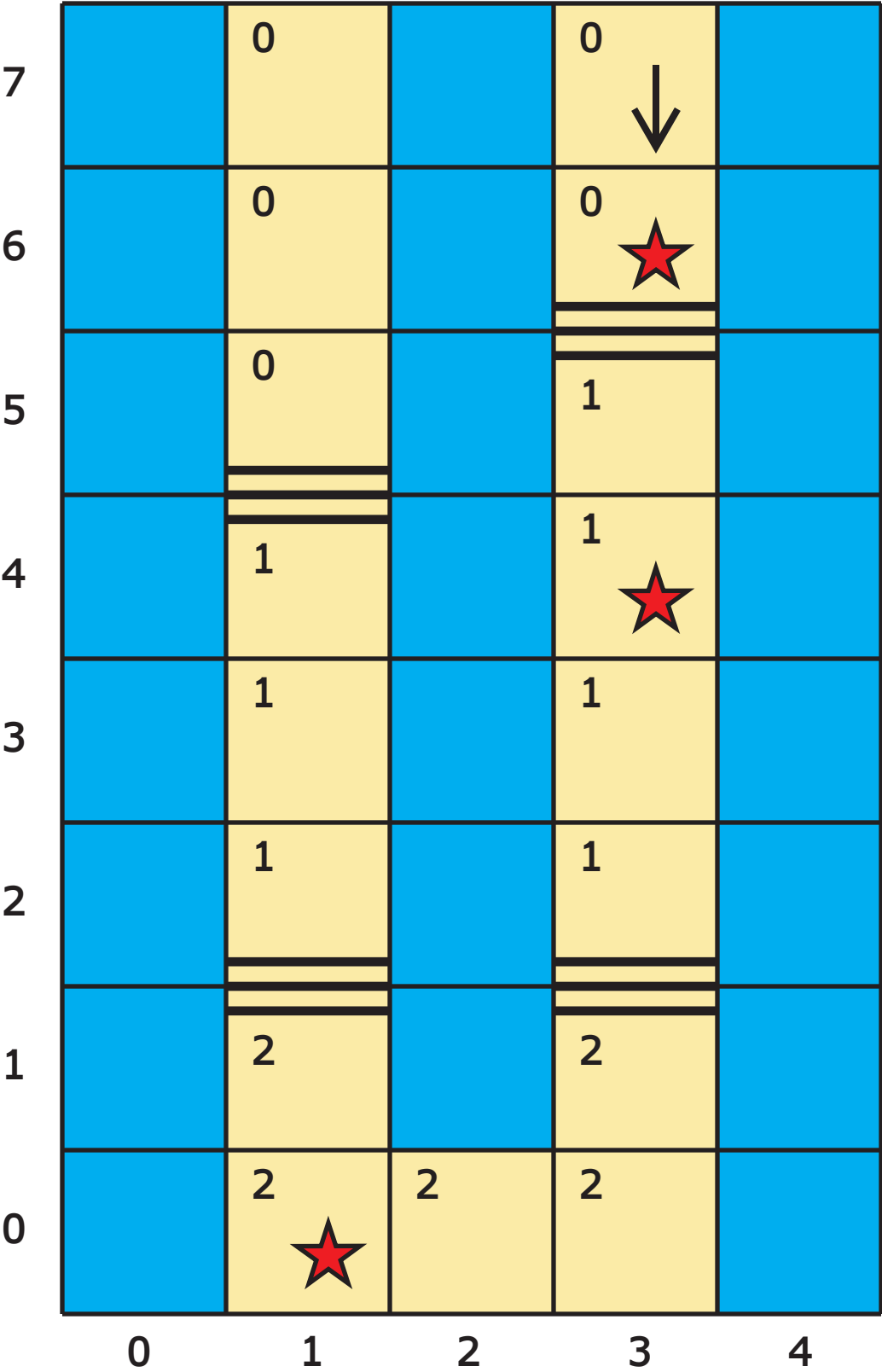


Bump Up the Value



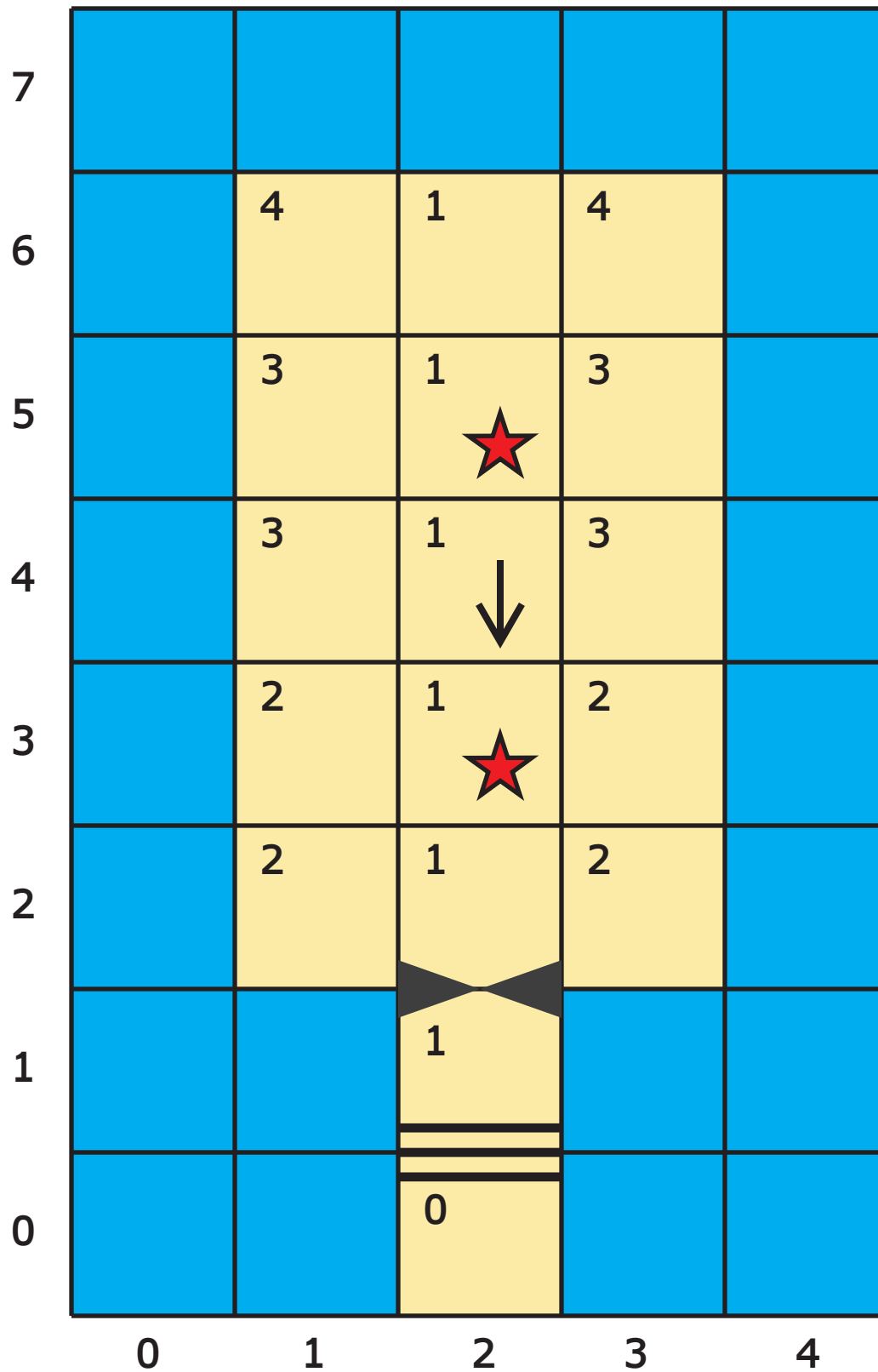
Incrementing the Value

Dynamic Layout



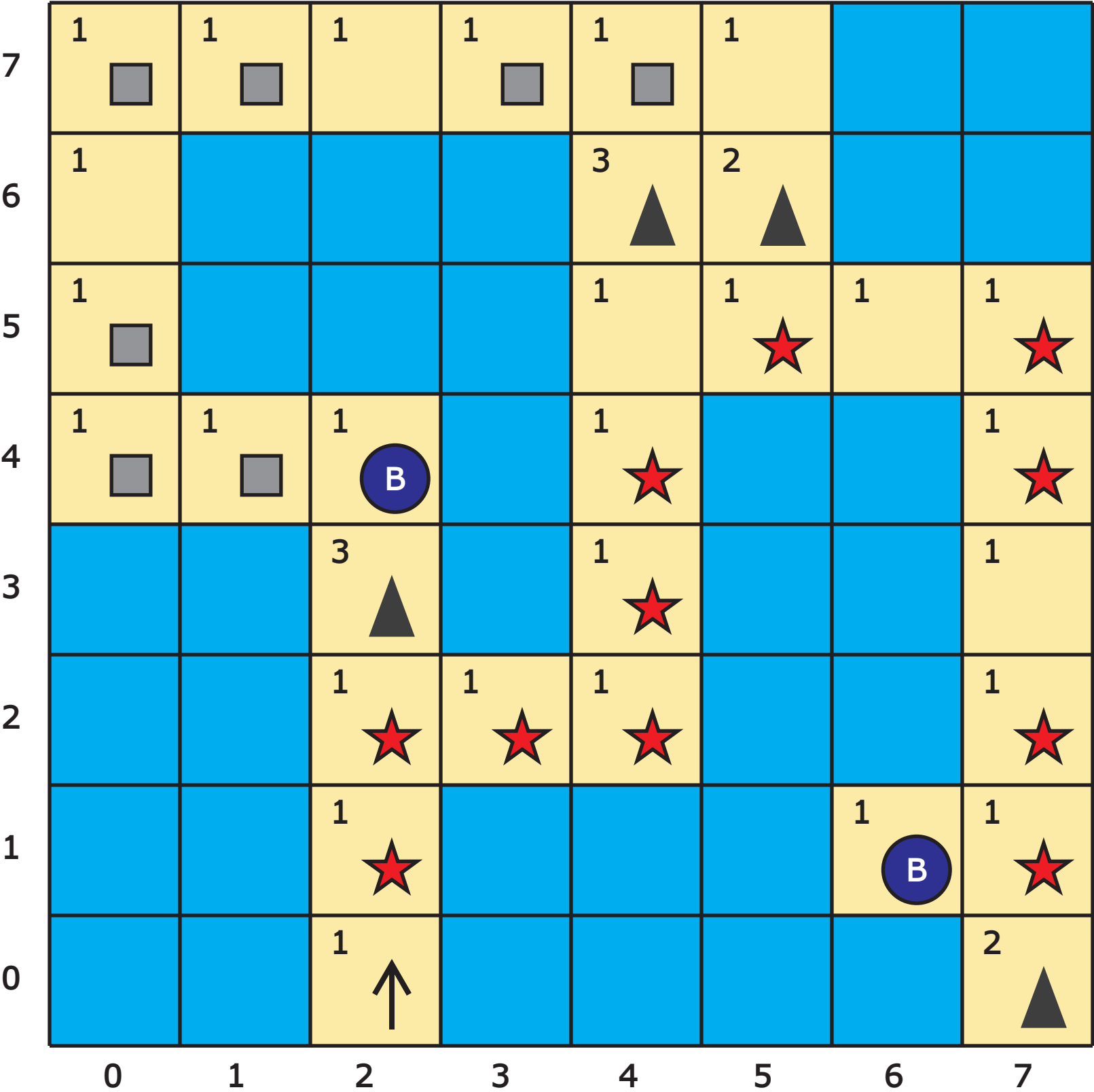
Seeking Seven Gems

Dynamic Layout



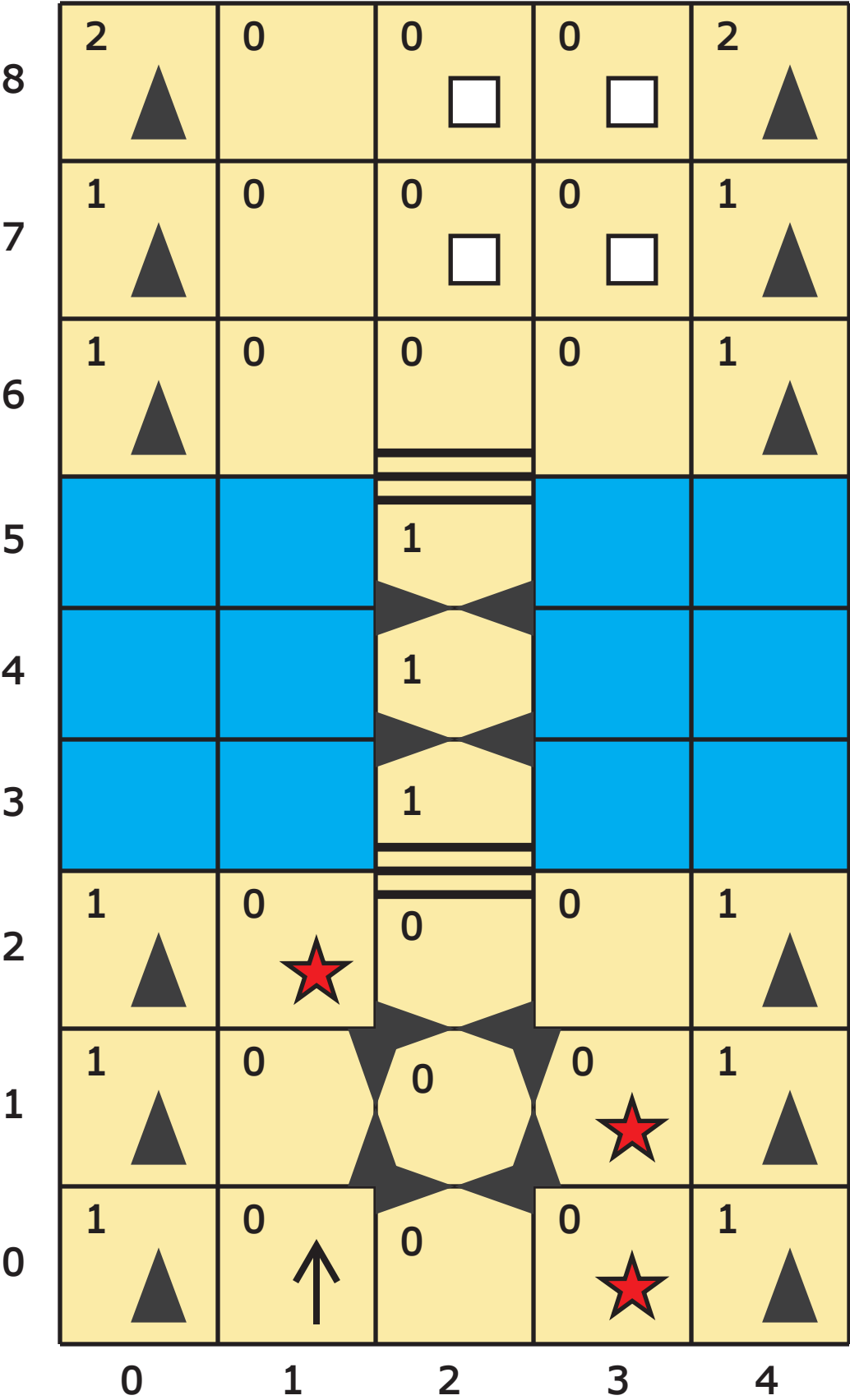
Three Gems, Four Switches

Dynamic Layout



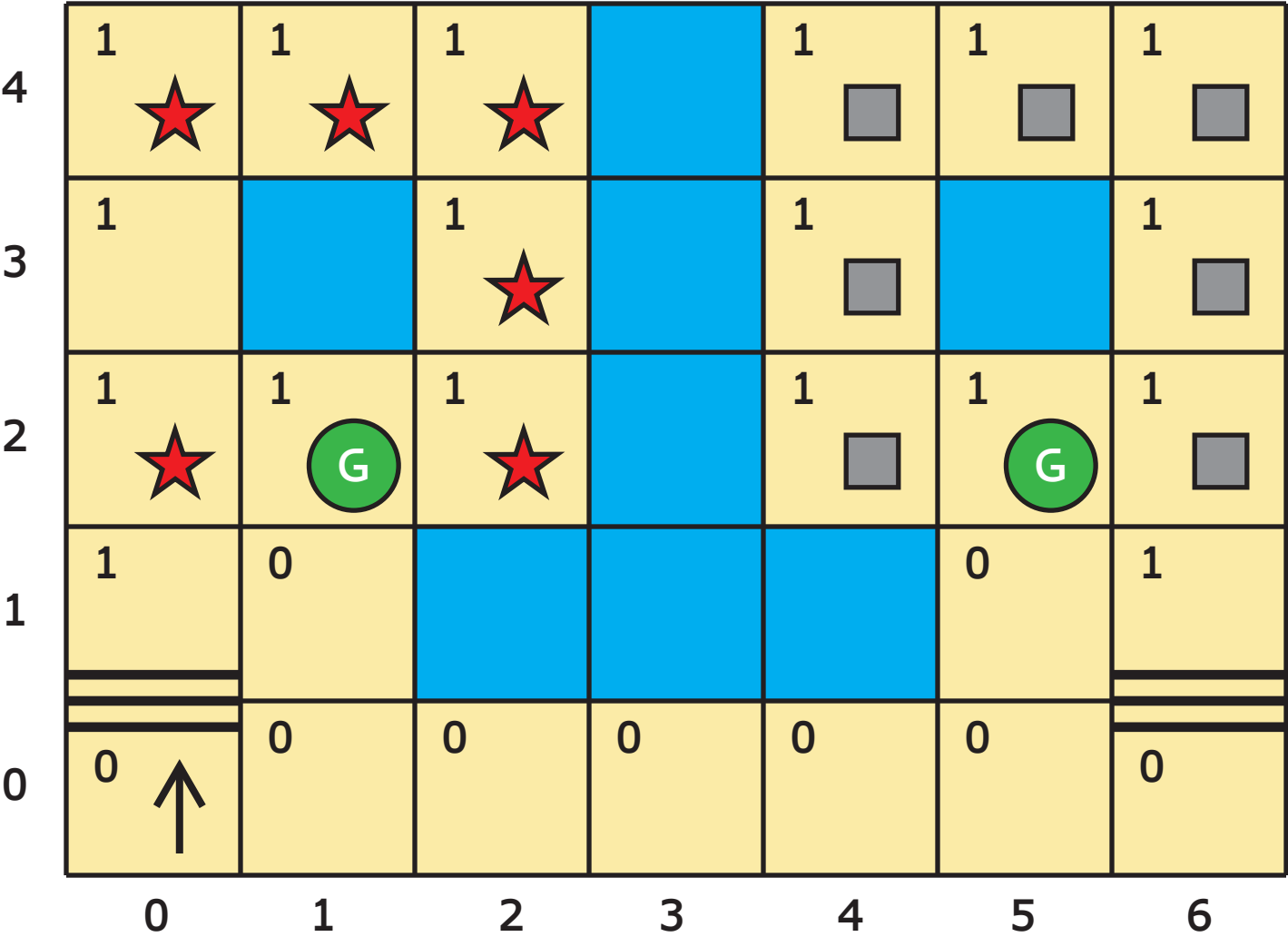
Checking for Equal Values

Dynamic Layout



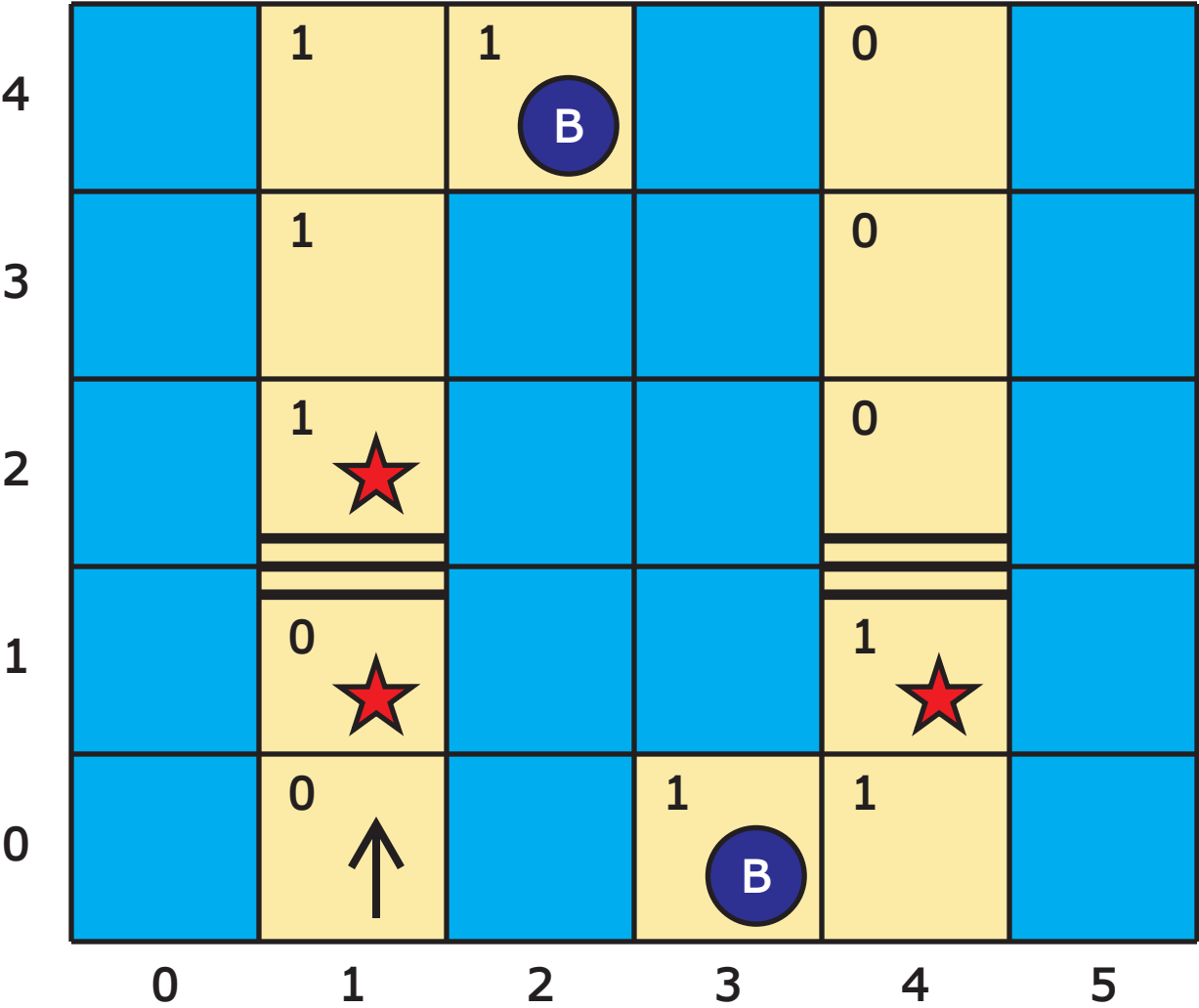
Round Up the Switches

Dynamic Layout

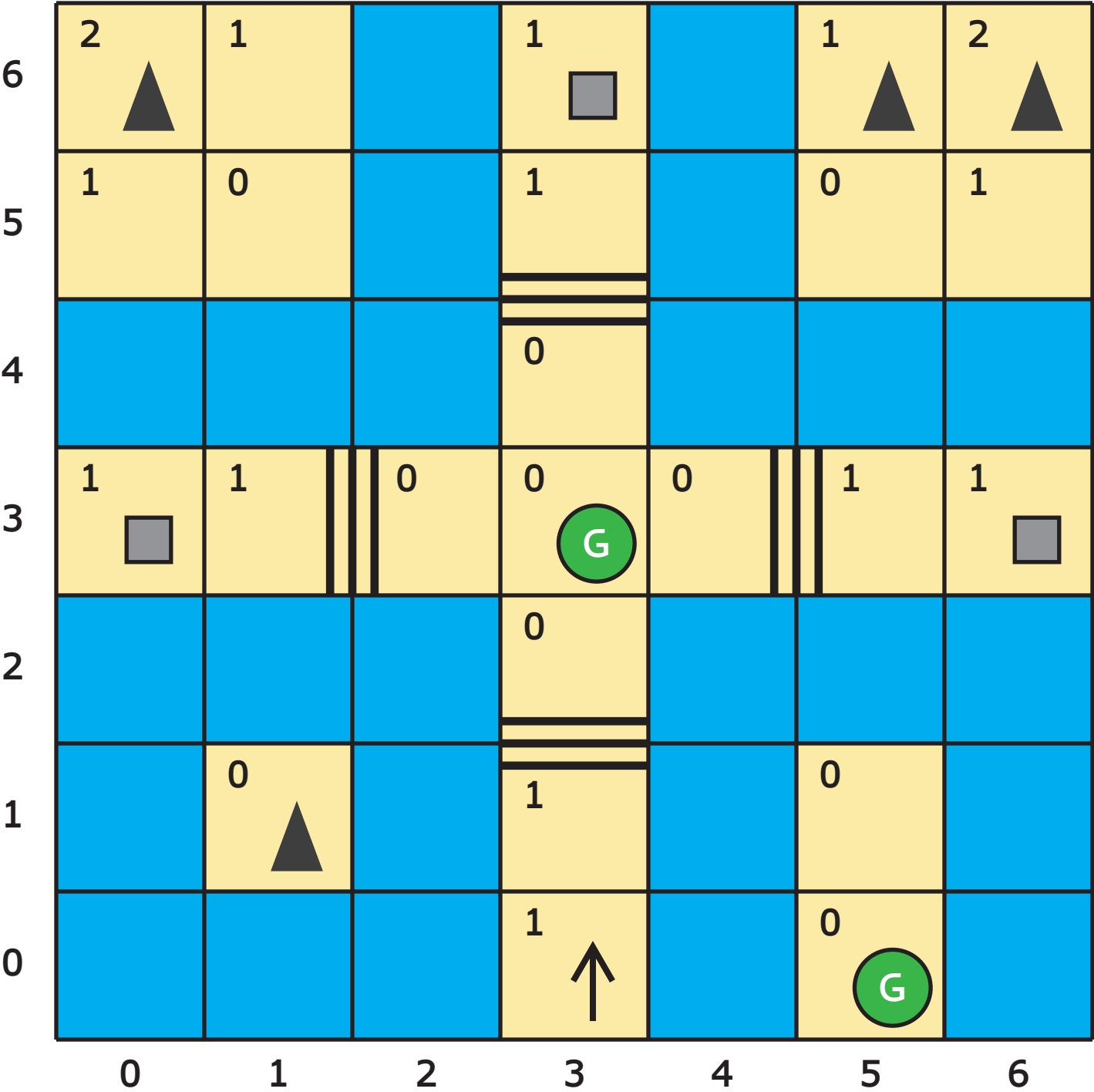


Collect the Total

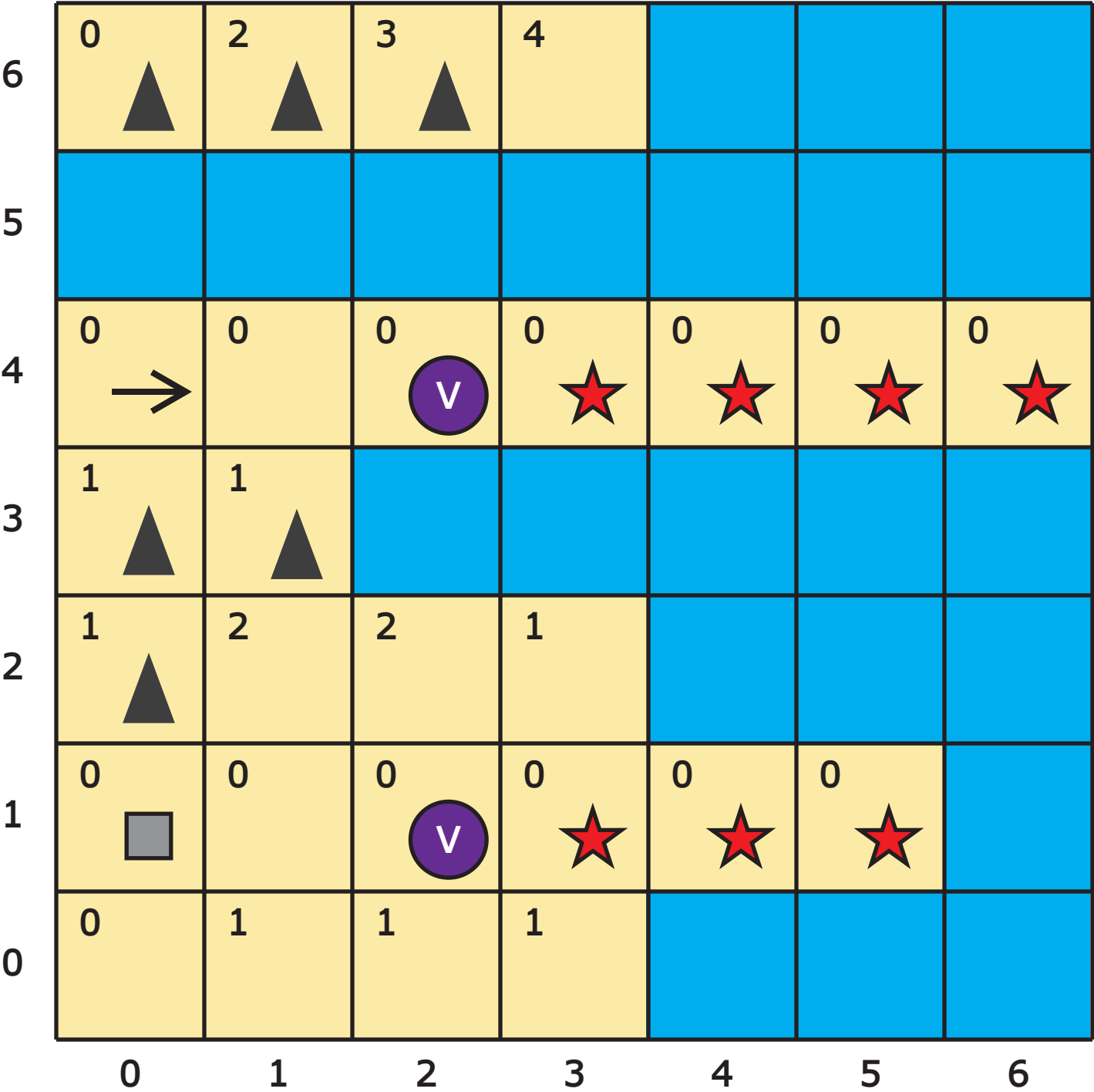
Dynamic Layout



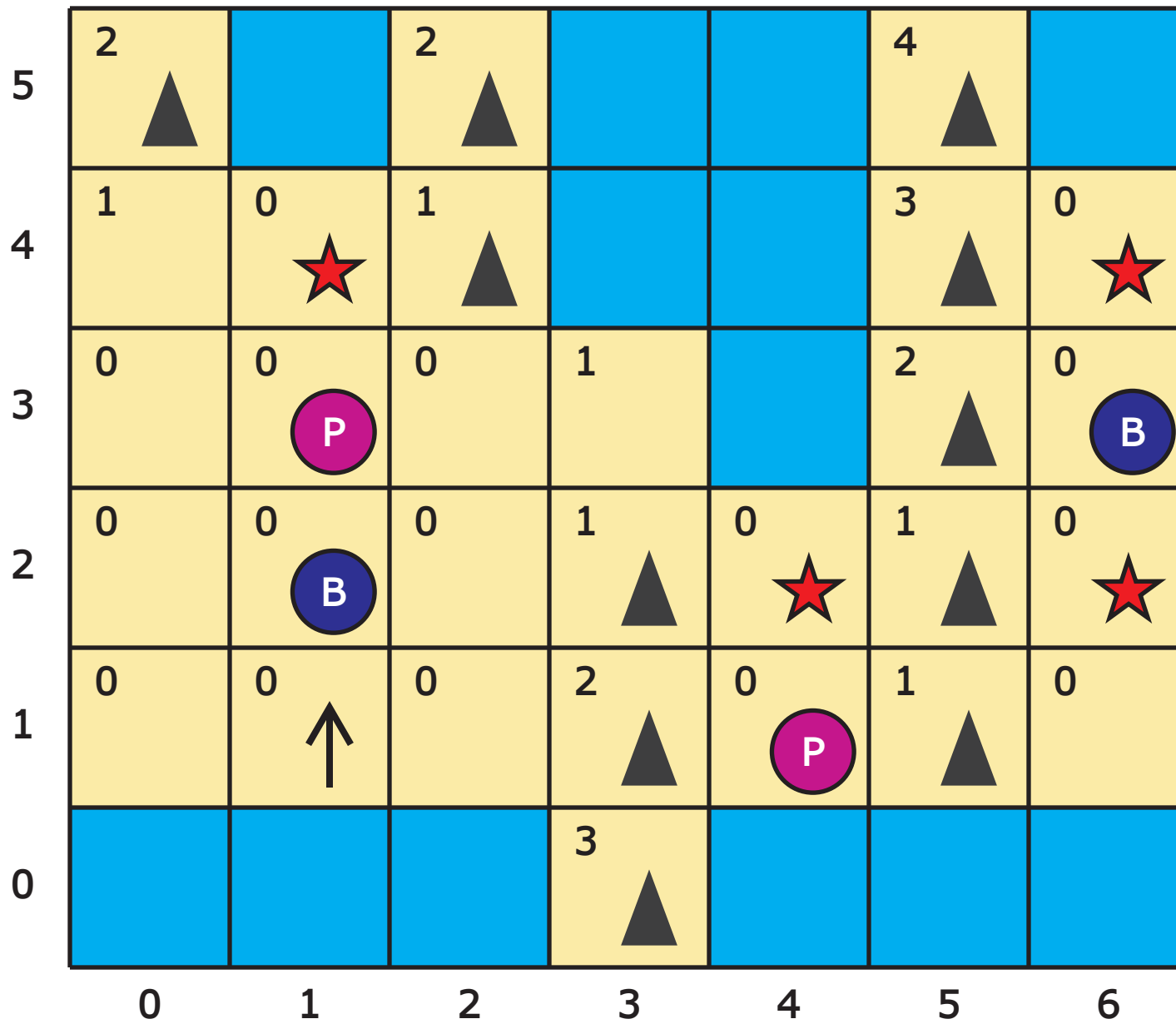
Deactivating a Portal



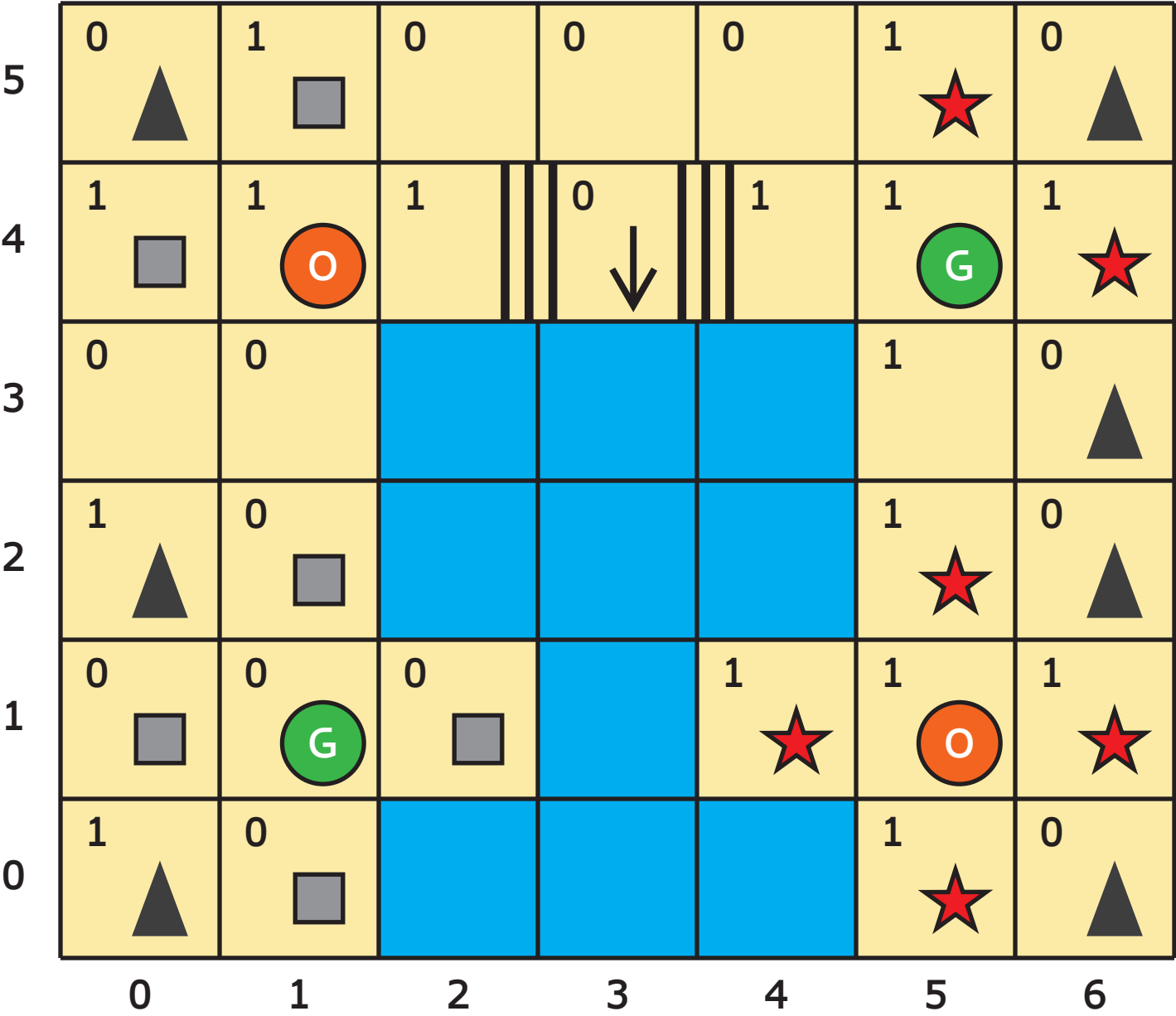
Portal On and Off



Setting the Right Portal

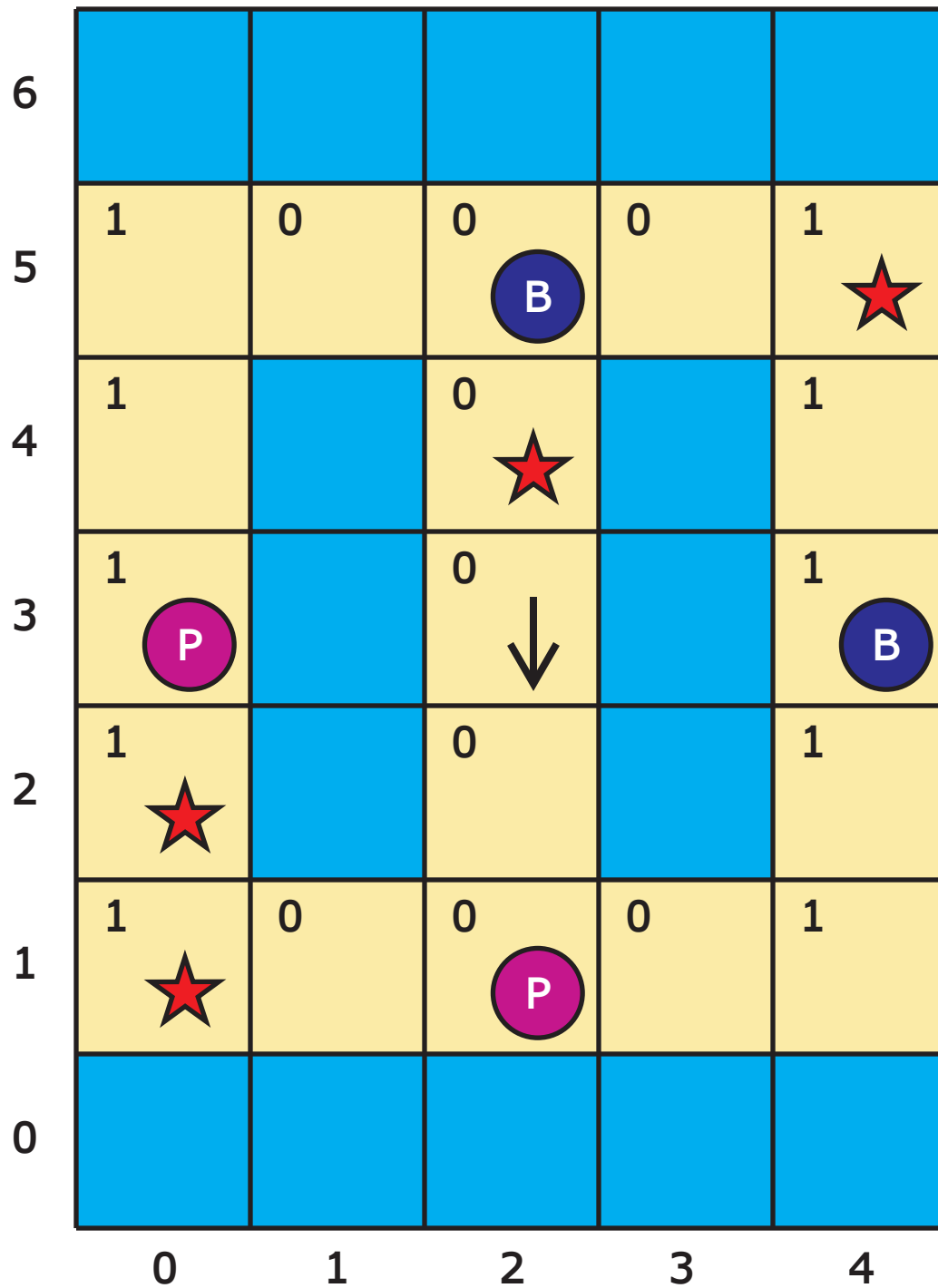


Corners of the World

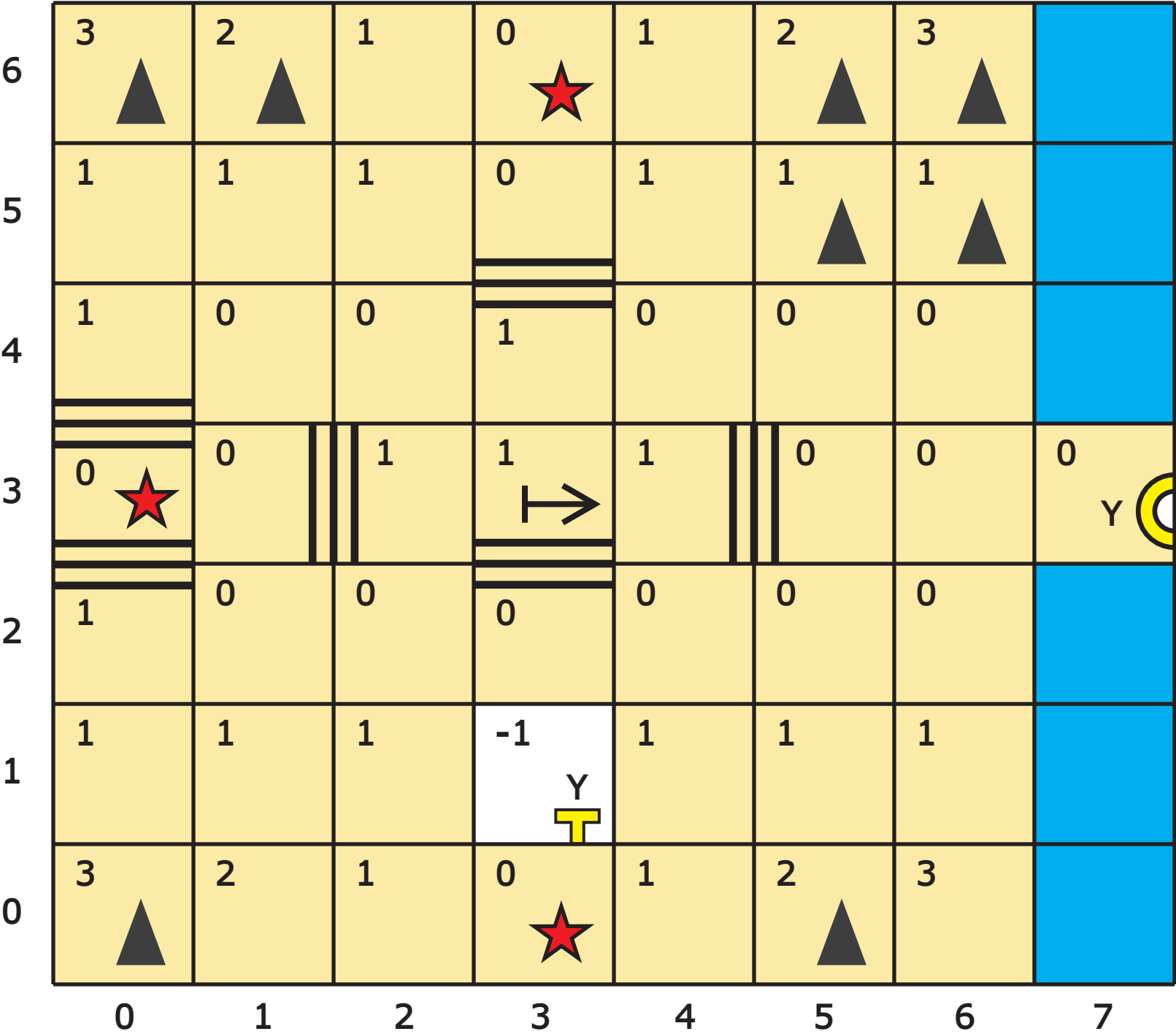


Random Gems Everywhere

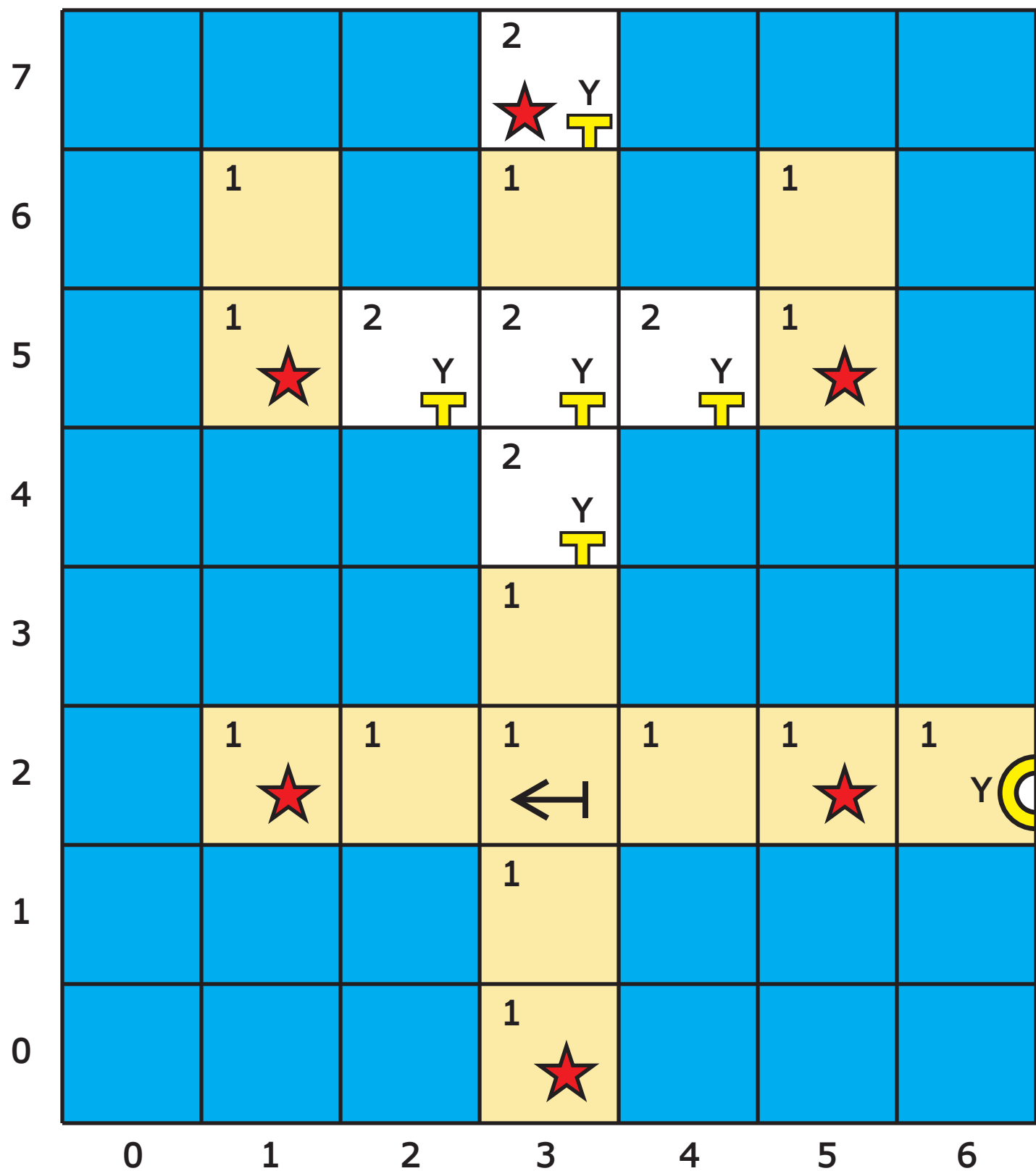
Dynamic Layout



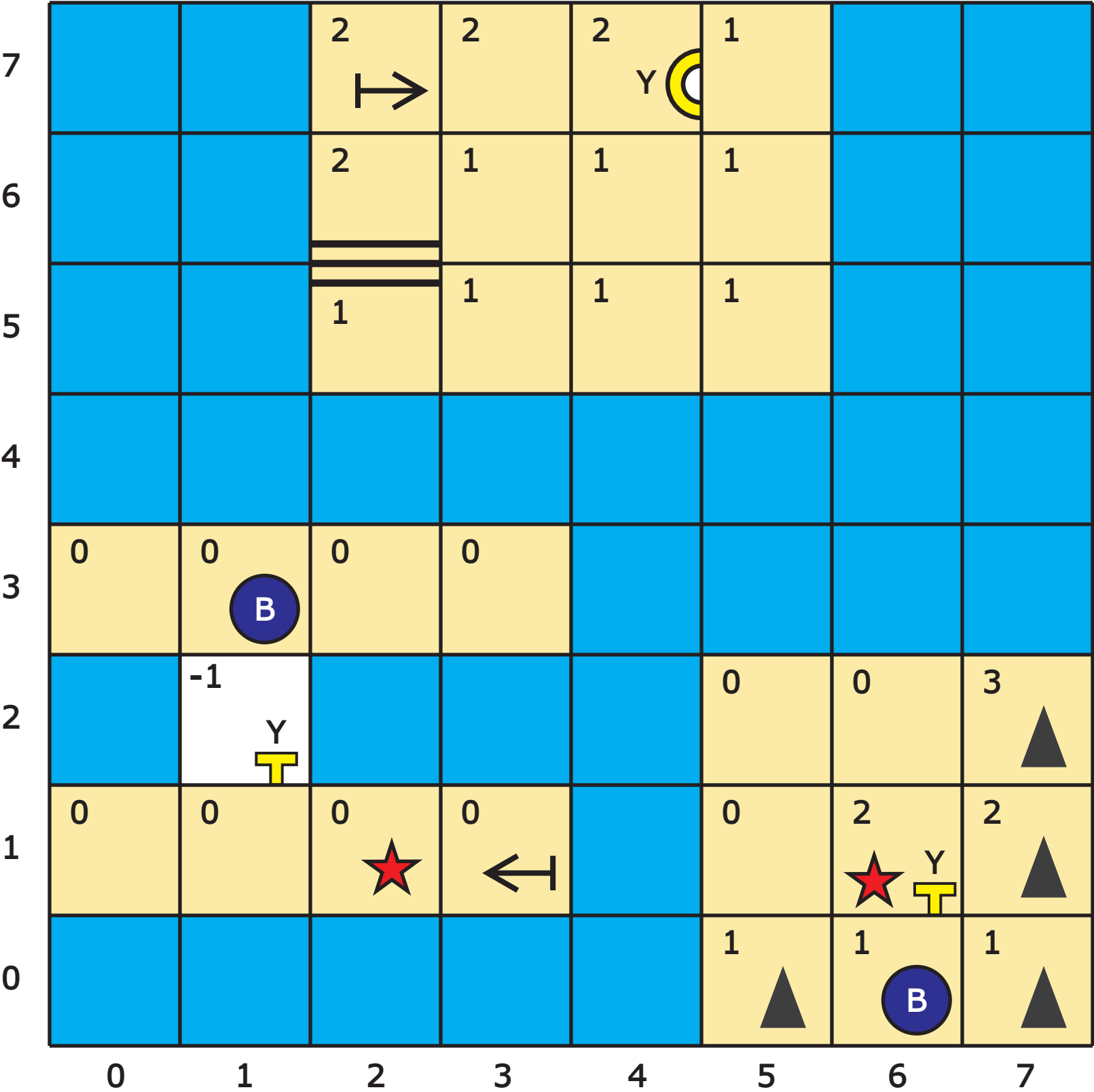
Initializing Your Expert



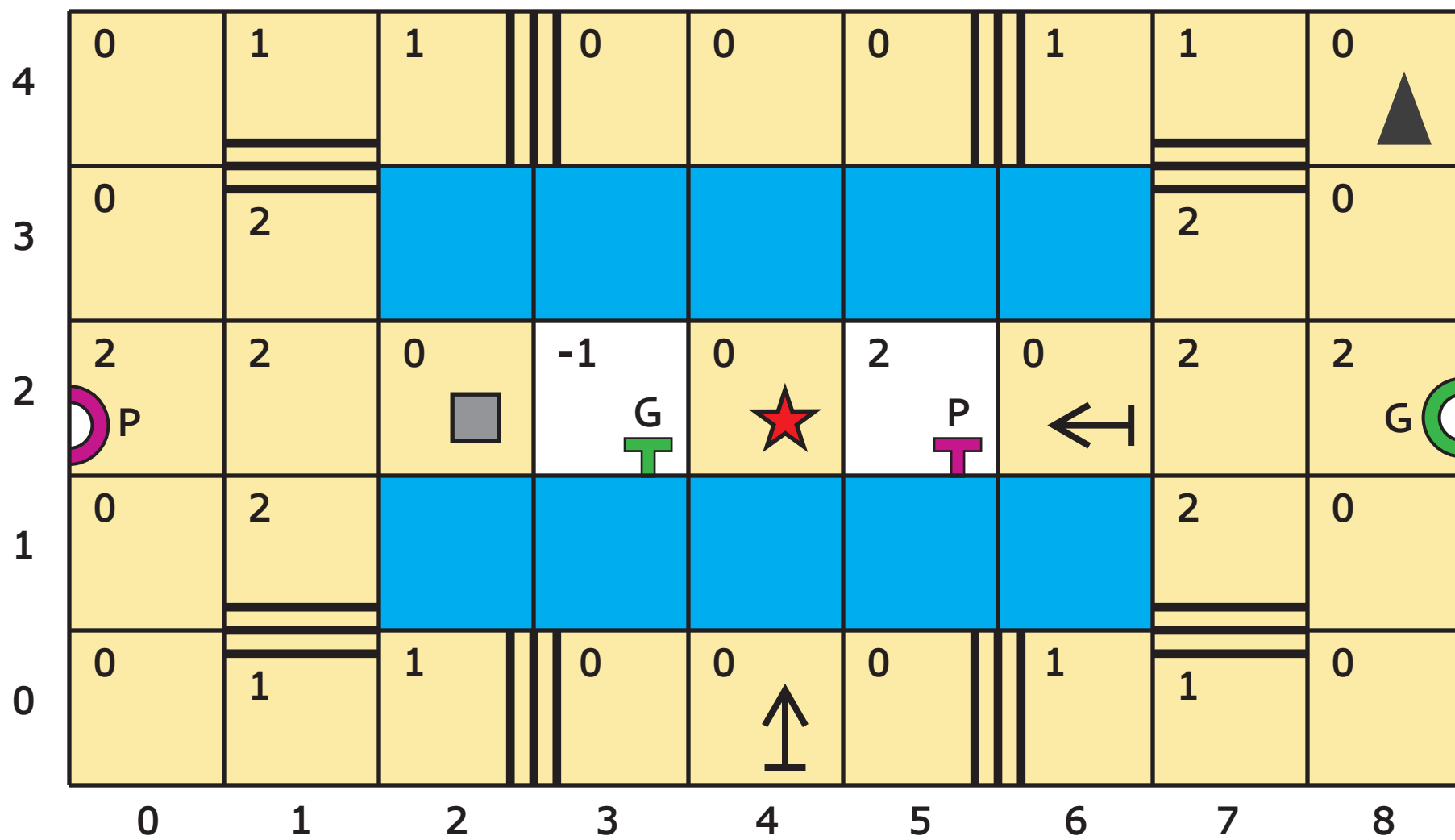
Train Your Expert



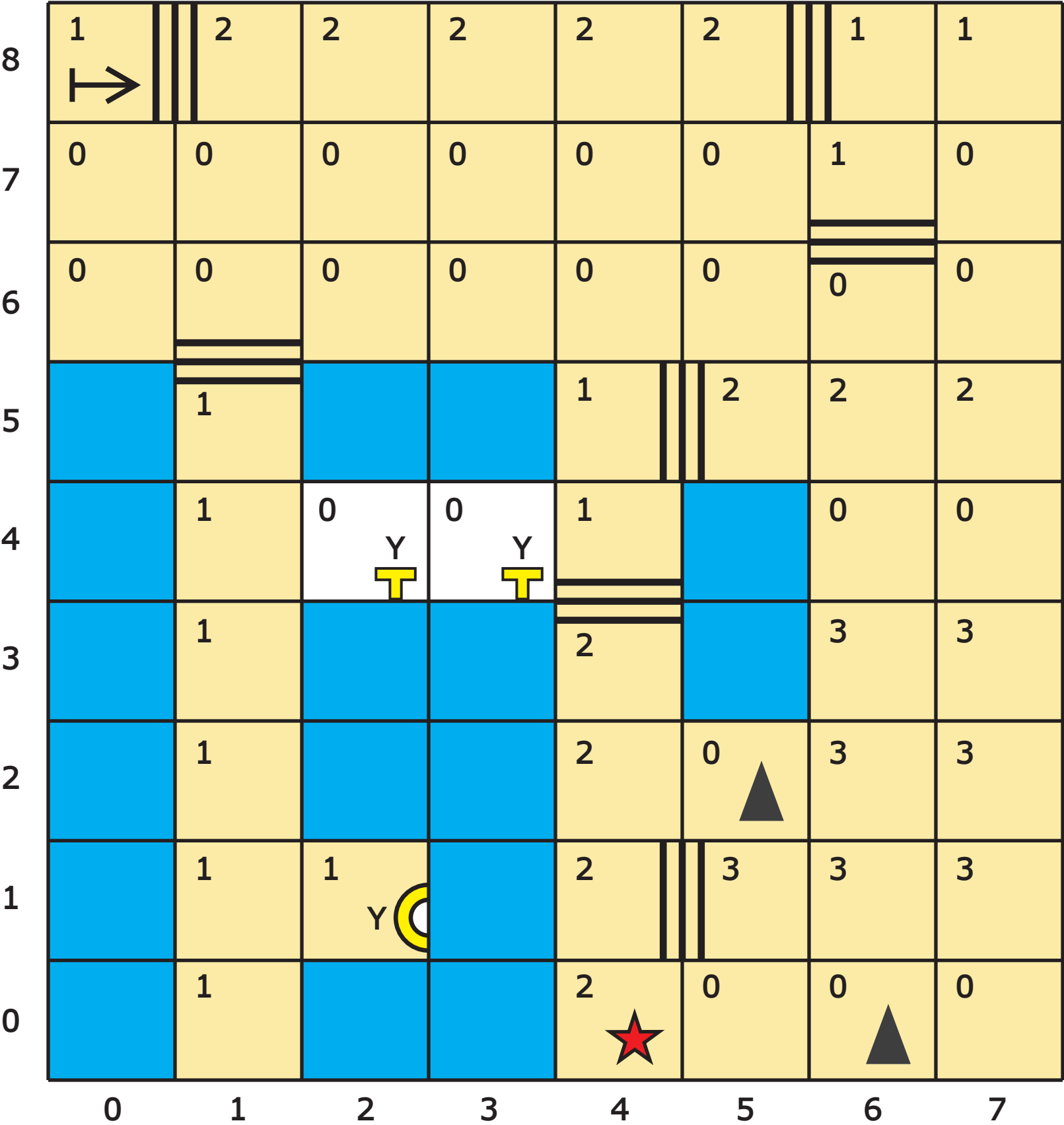
Using Instances of Different Types



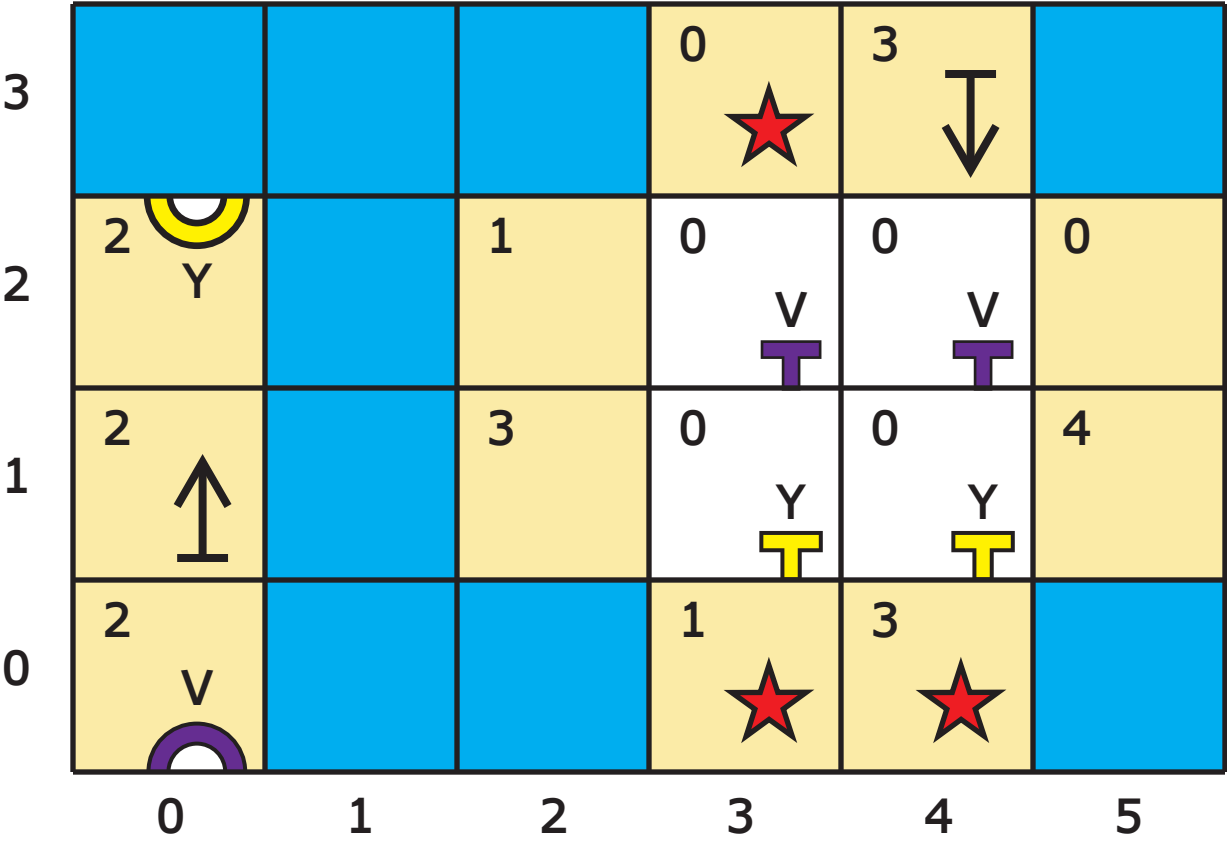
It Takes Two



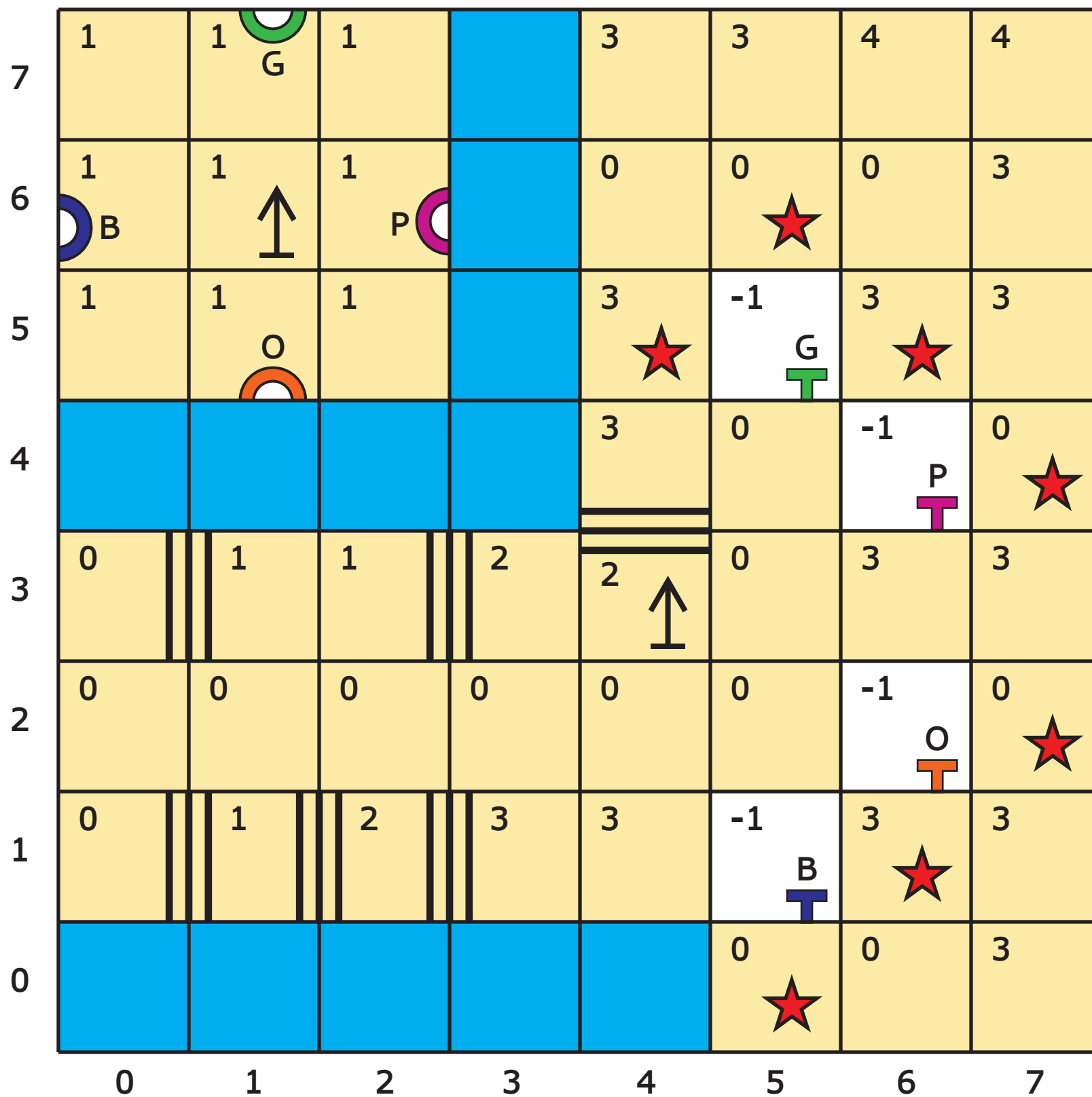
Moving Further Forward



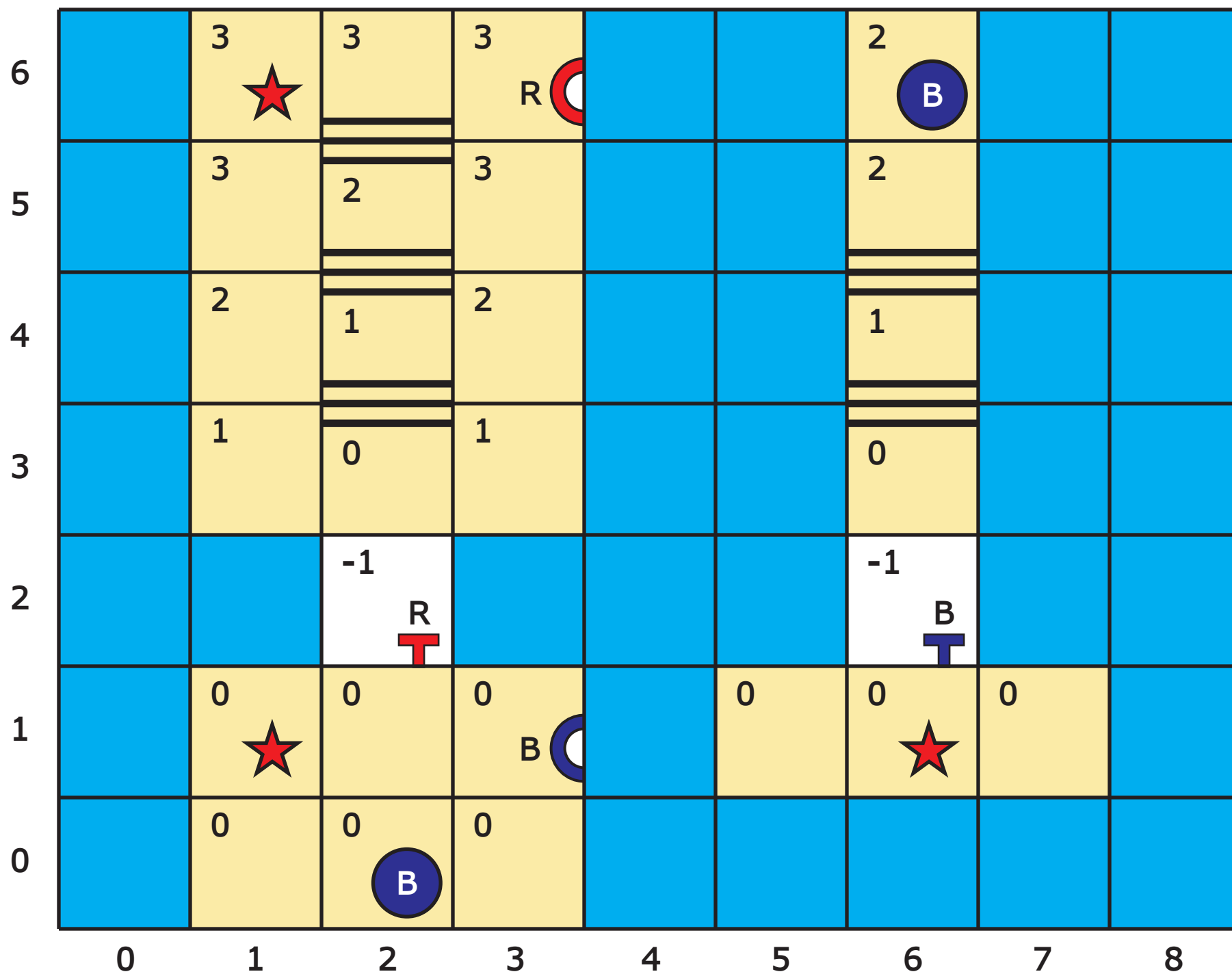
Generalizing a Function



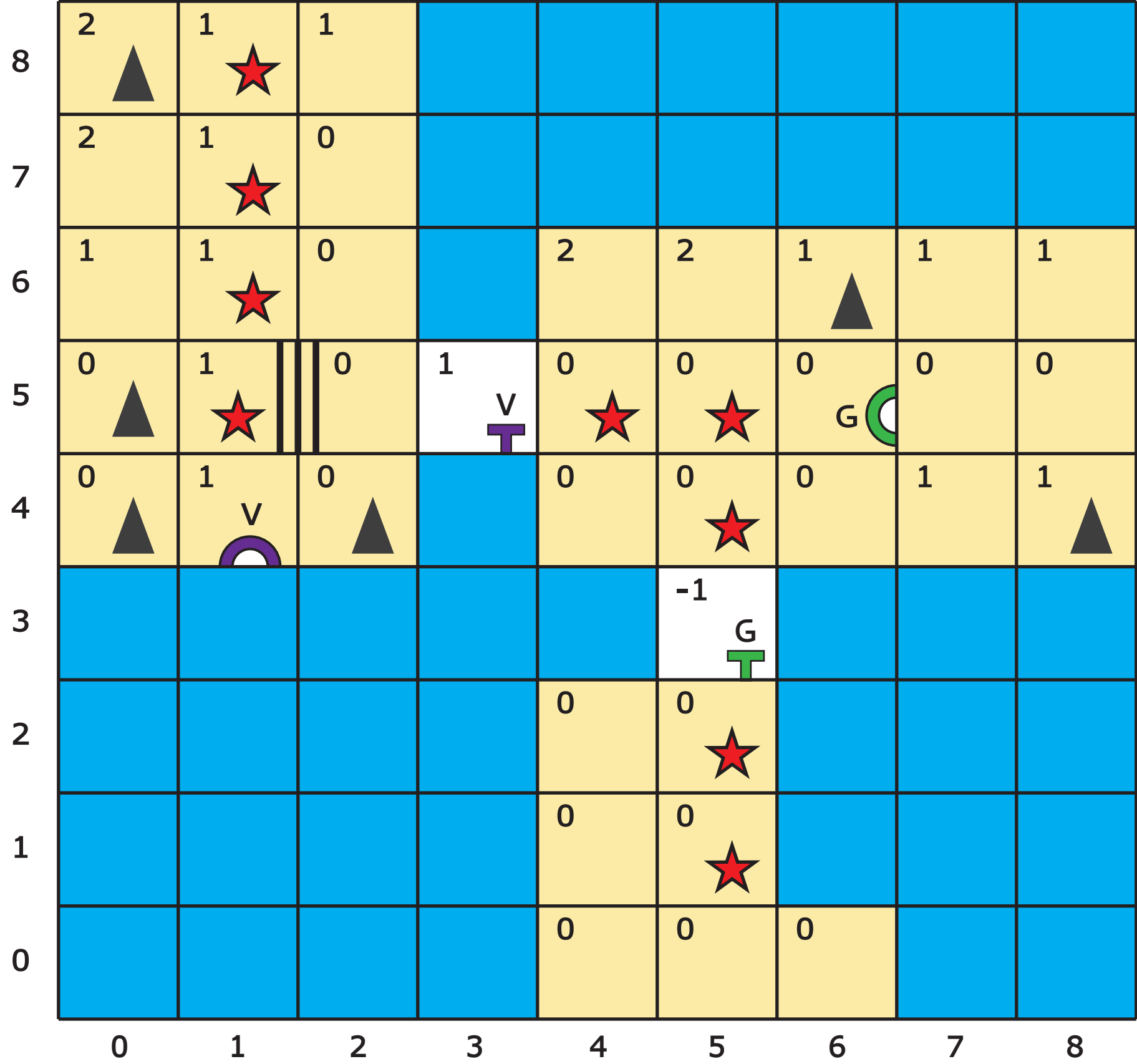
Crank Up and Down



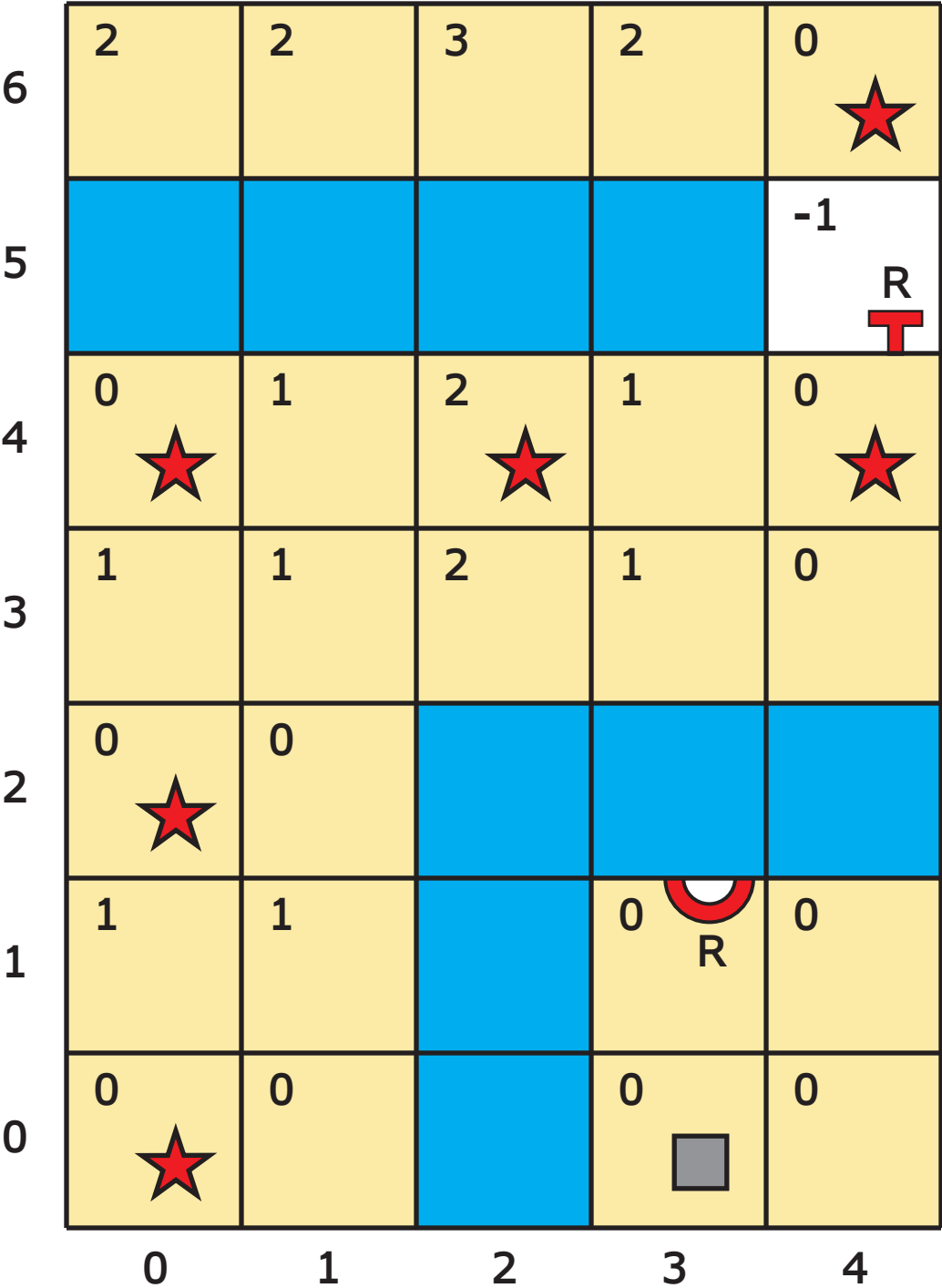
Placing at a Specific Location



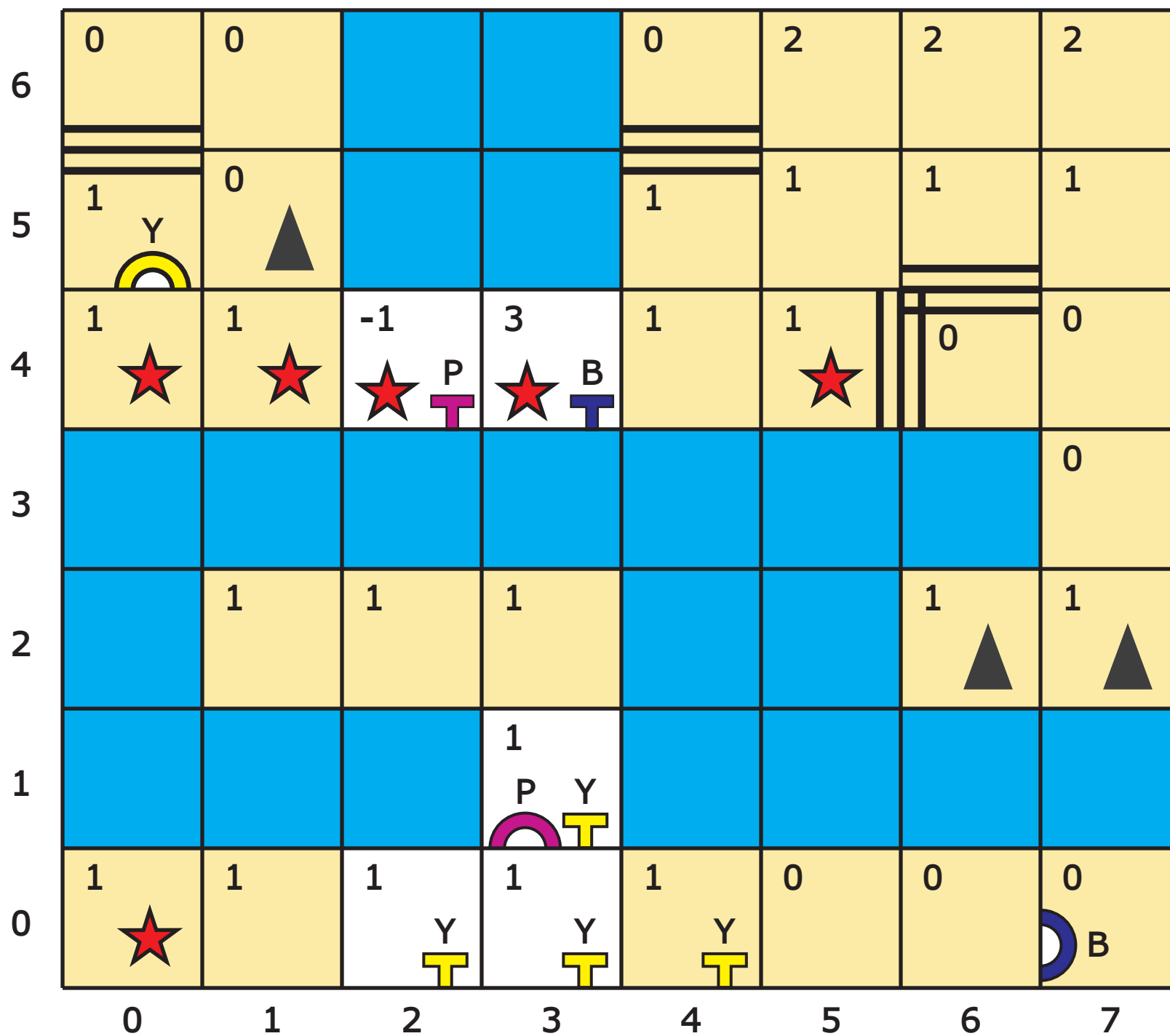
Rivers to Cross



Placing Two Characters

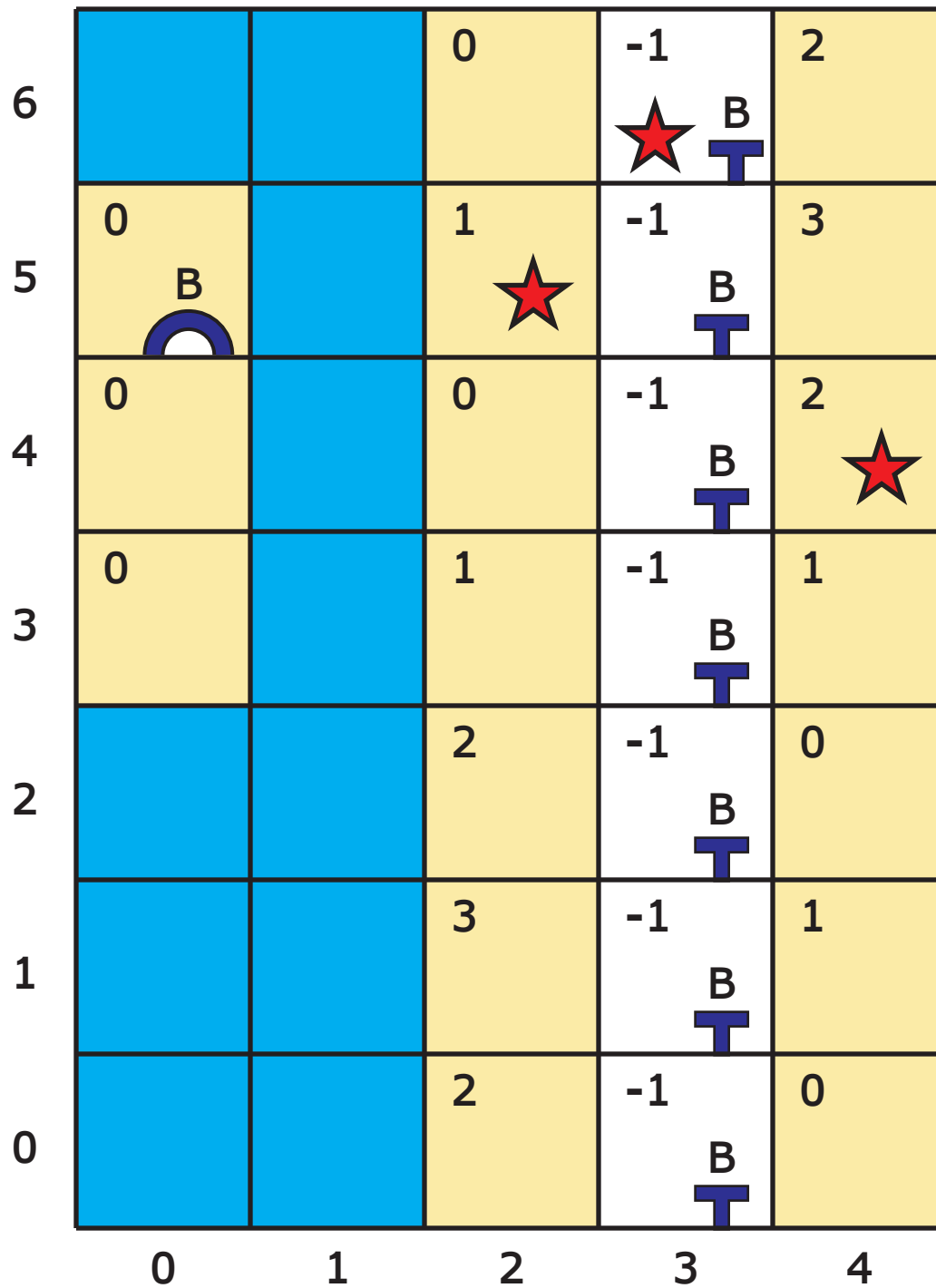


Two Experts

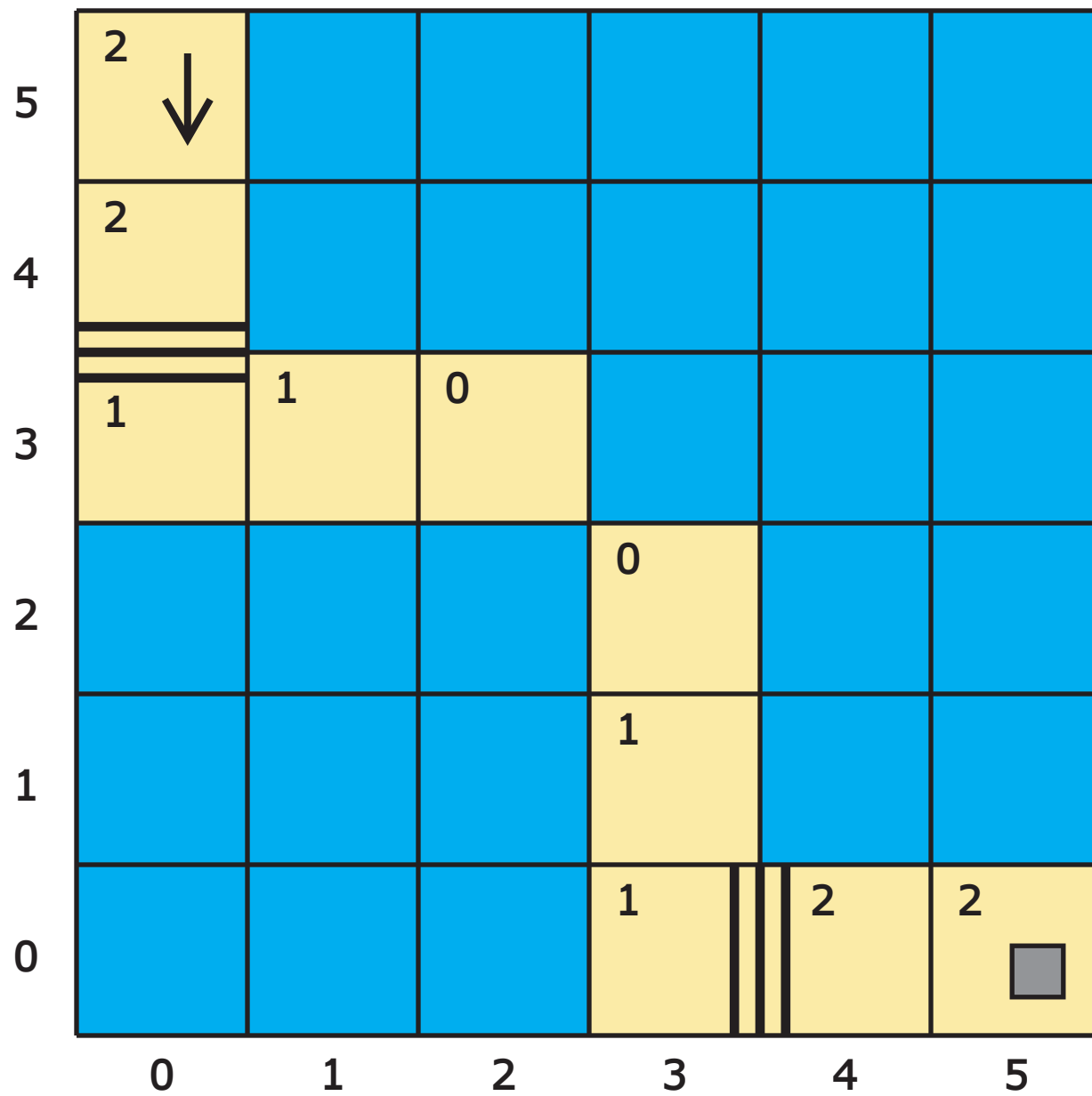


Twin Peaks

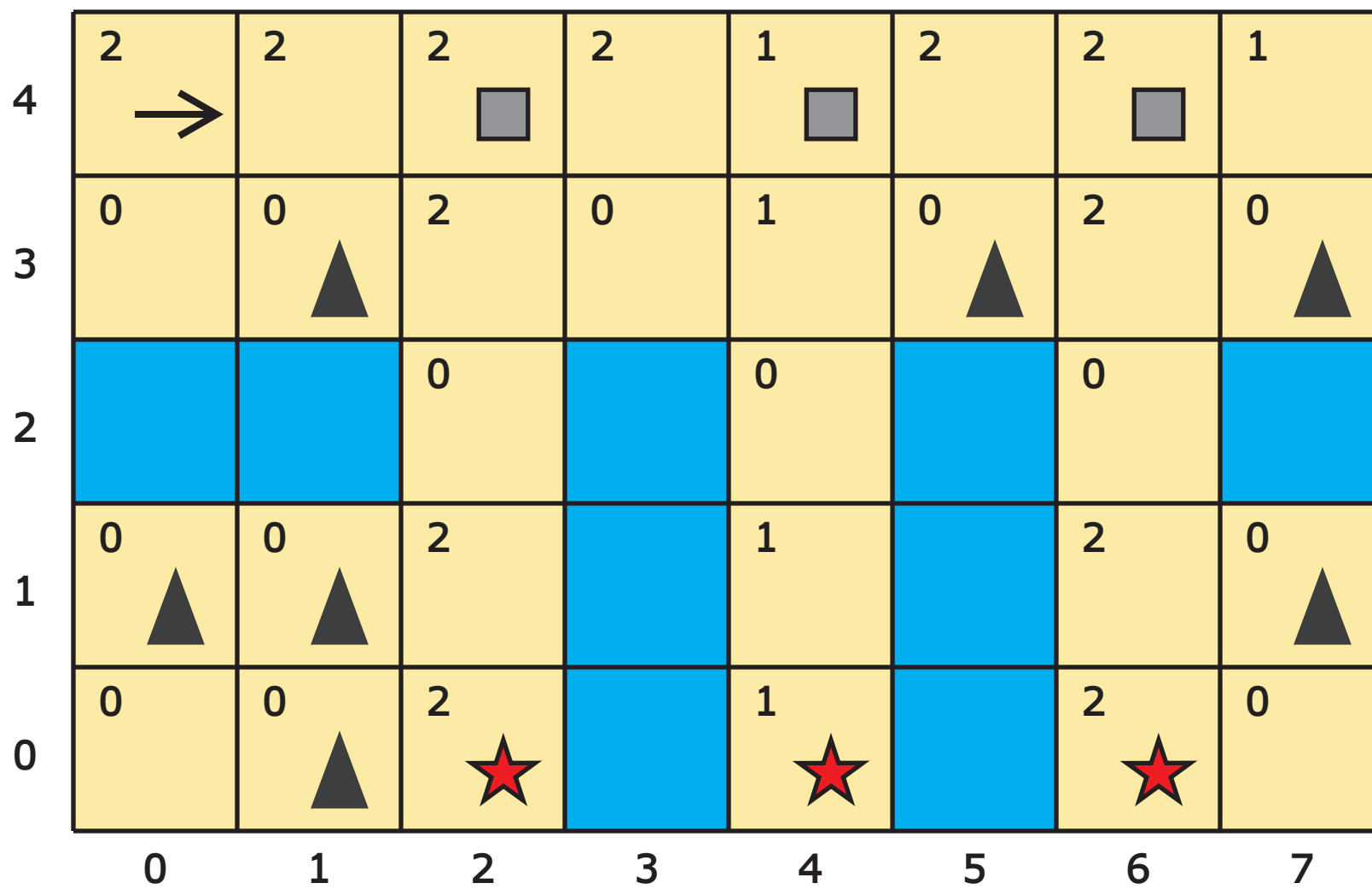
Dynamic Layout



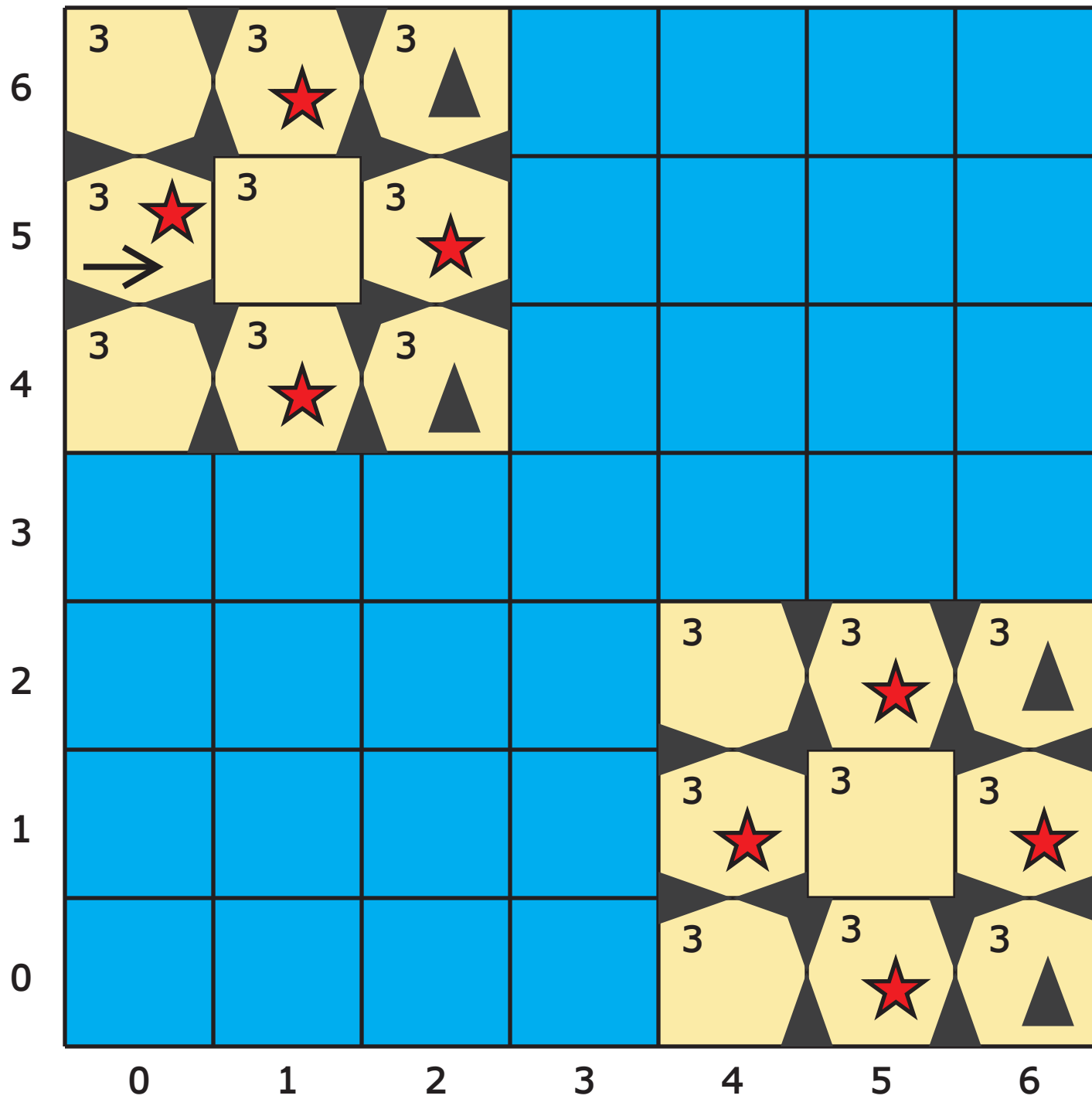
Uniting Worlds



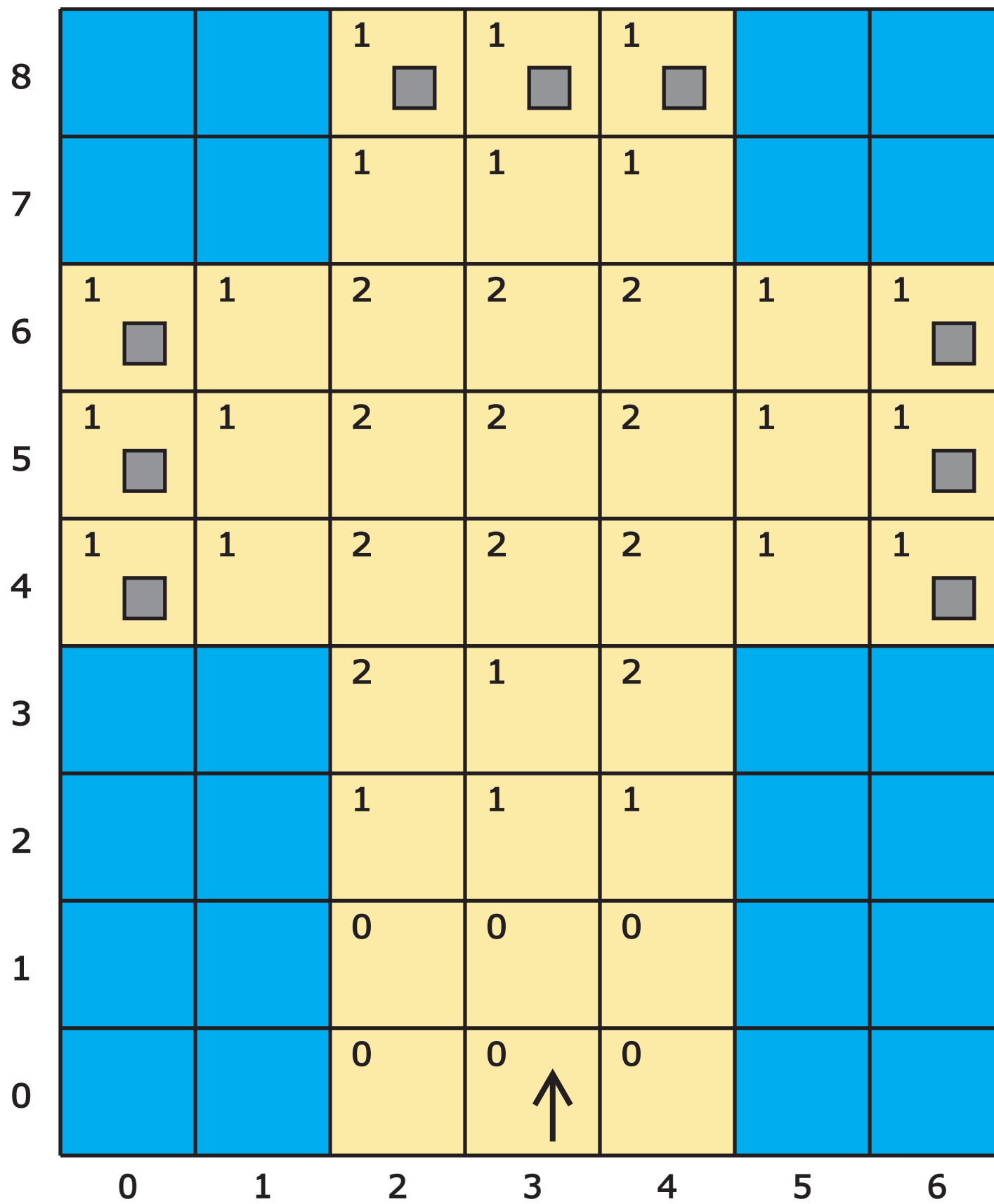
Connect and Solve



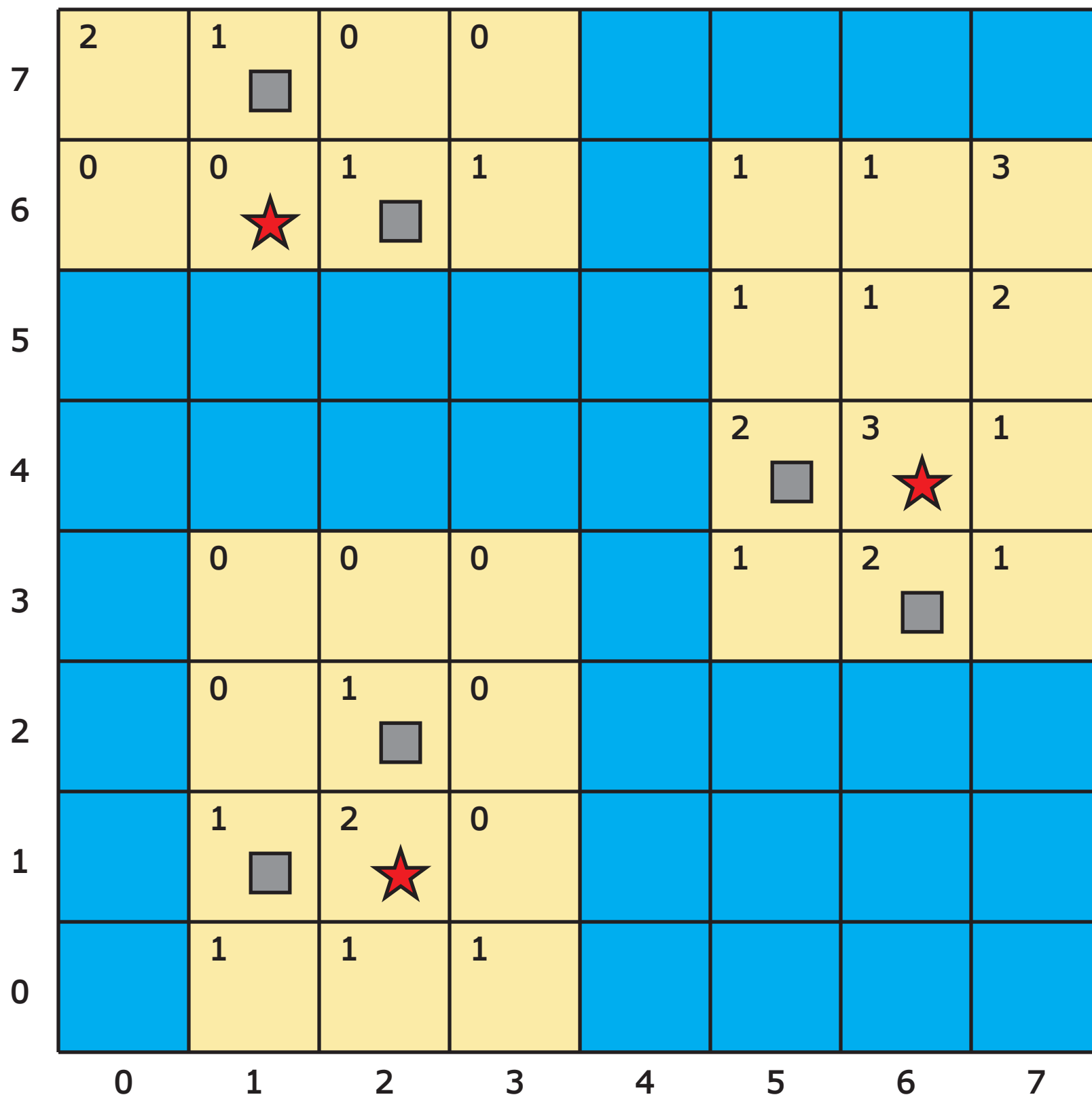
Making Your Own Portals



Reach for the Stairs

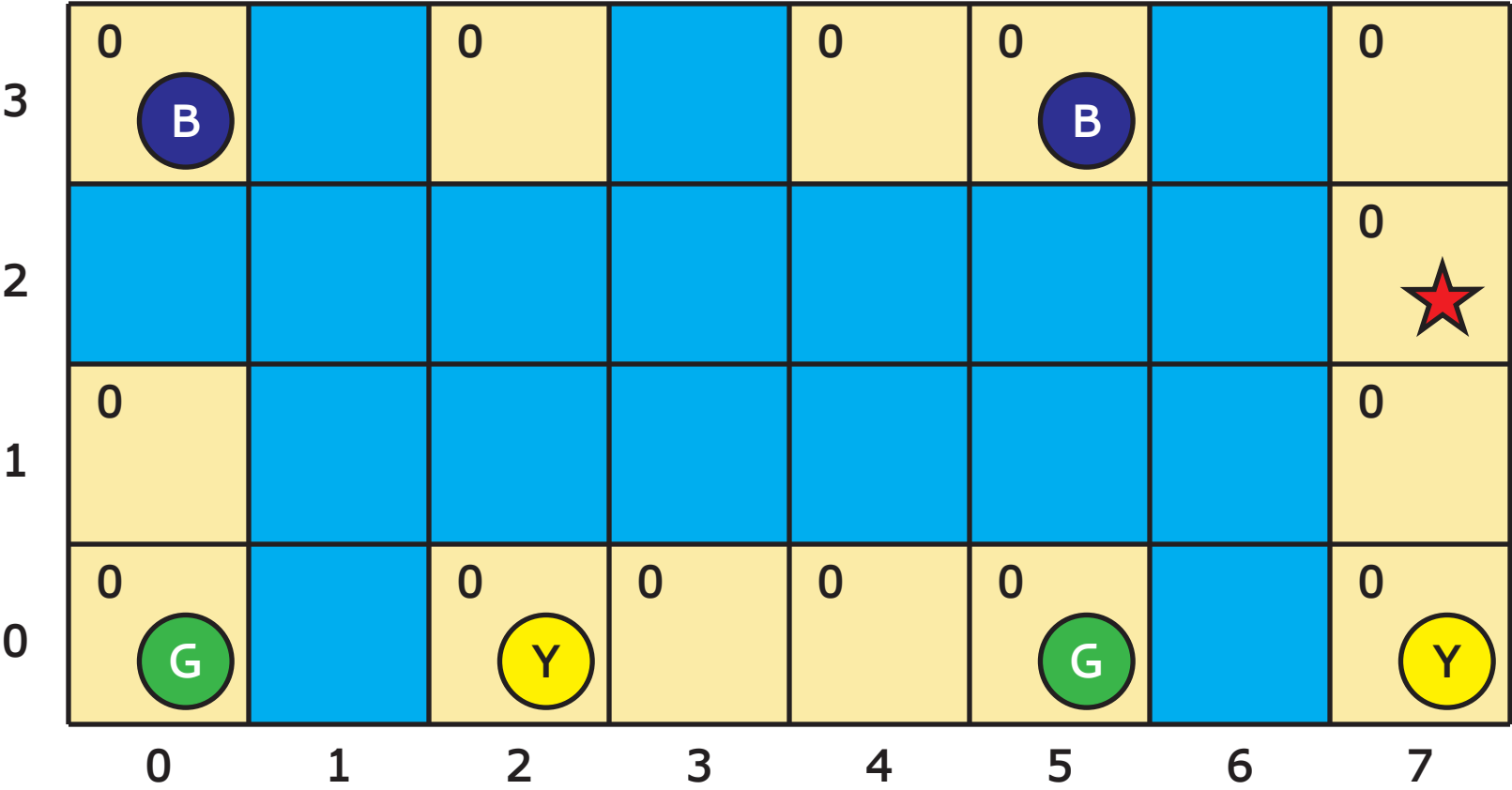


Floating Islands



Build a Loop

Dynamic Layout



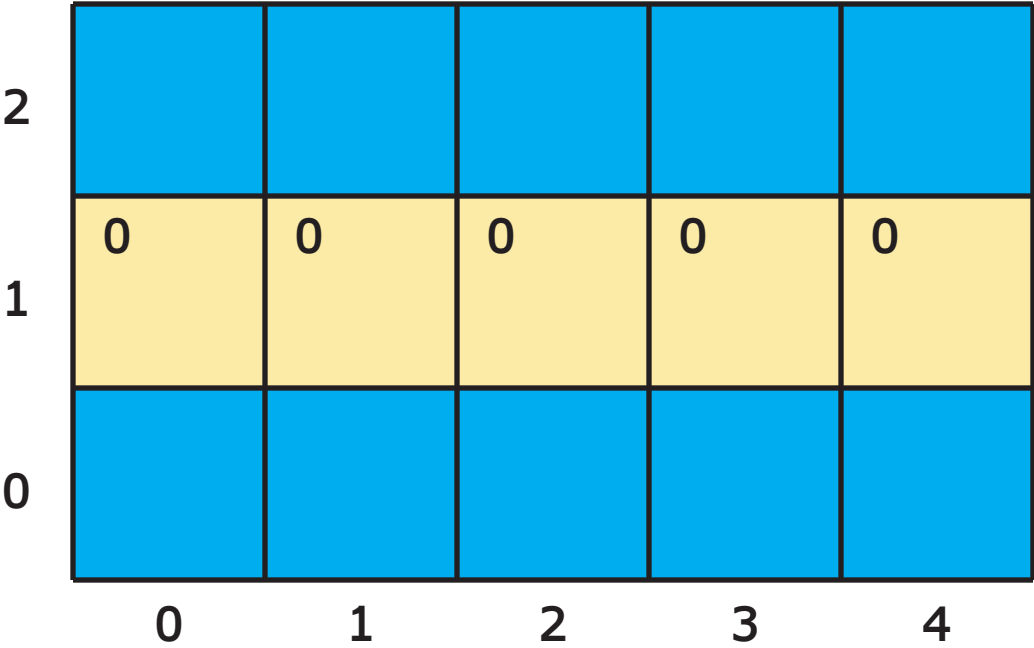
A Puzzle of Your Own

6	0	0	0		1	2	2	2
5	1	1	1		1	2	2	2
4	1	1	1		1	1	1	
3	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	
1	1	0	0	0	0	0	0	
0	1	0	0	0	0			
	0	1	2	3	4	5	6	7

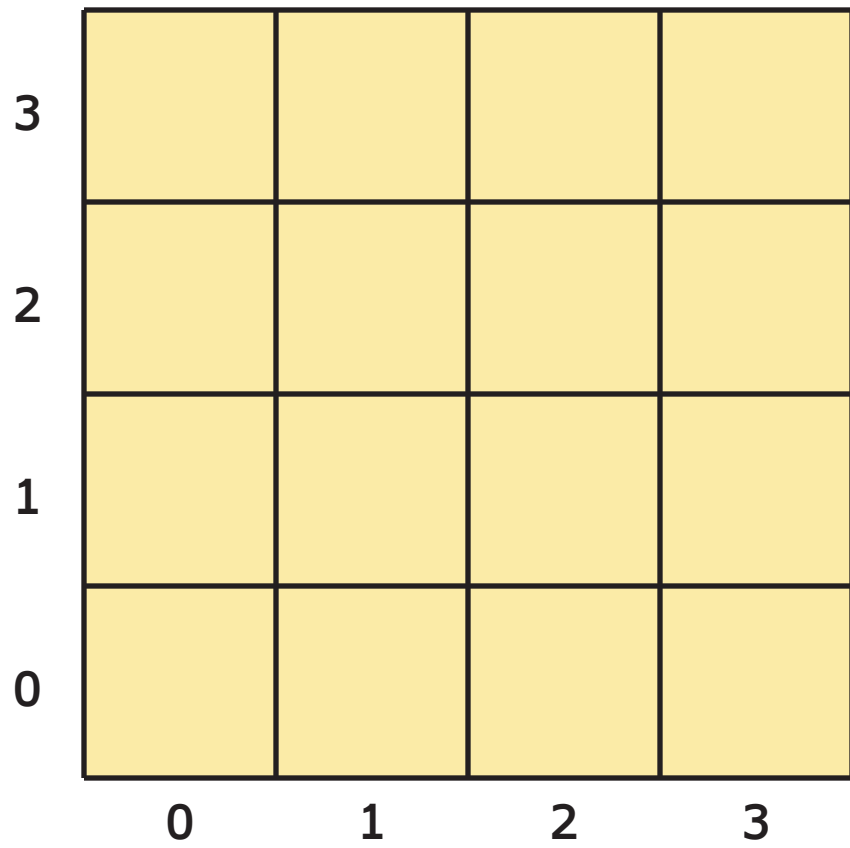
Storing Information

5	0
4	0
3	0
2	0
1	0
0	0
	0

Iteration Exploration



Stacking Blocks



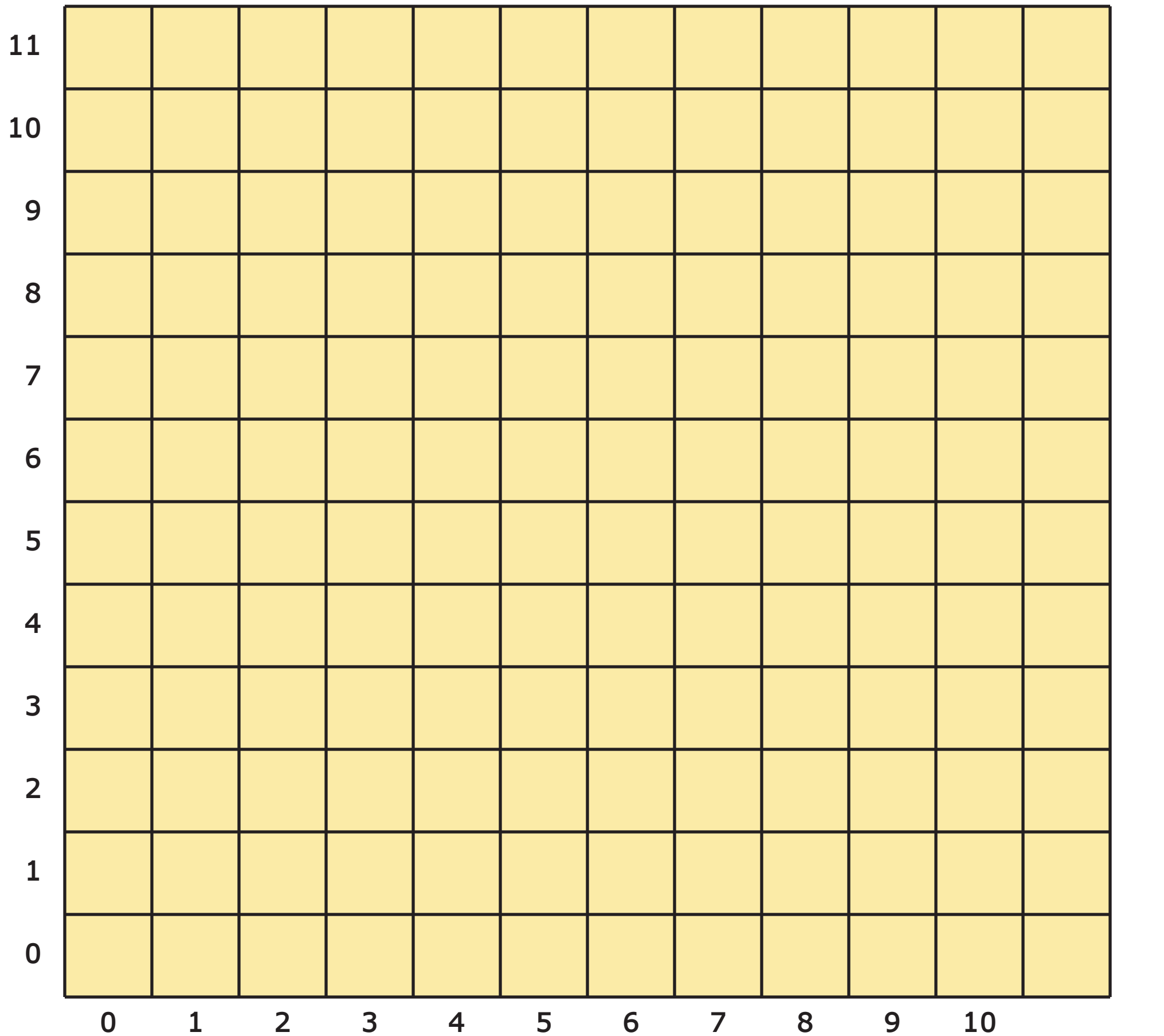
Getting in Order

3			
2			
1			
0			
	0	1	2

Appending to an Array

7								
6								
5								
4								
3								
2								
1								
0								
	0	1	2	3	4	5	6	7

Island Builder

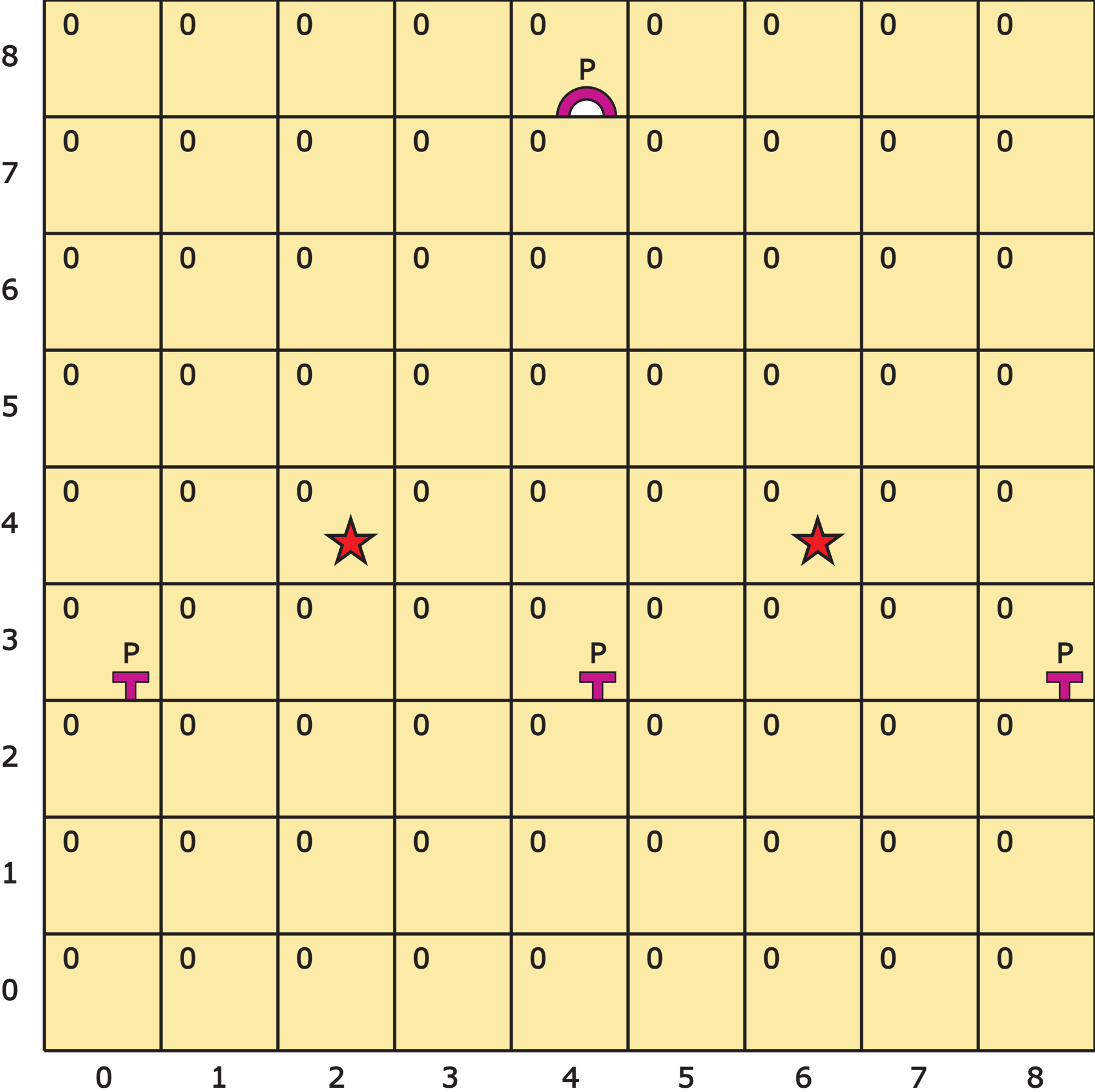


Appending Removed Values

4										
3										
2										
1										
0										
	0	1	2	3	4	5	6	7	8	9

										4
										3
										2
										1
										0
10	11	12	13	14	15	16	17	18	19	

Fixing Index Out of Range Errors



Generate a Landscape

8

7

6

5

4

3

2

1

0

0

1

2

3

4

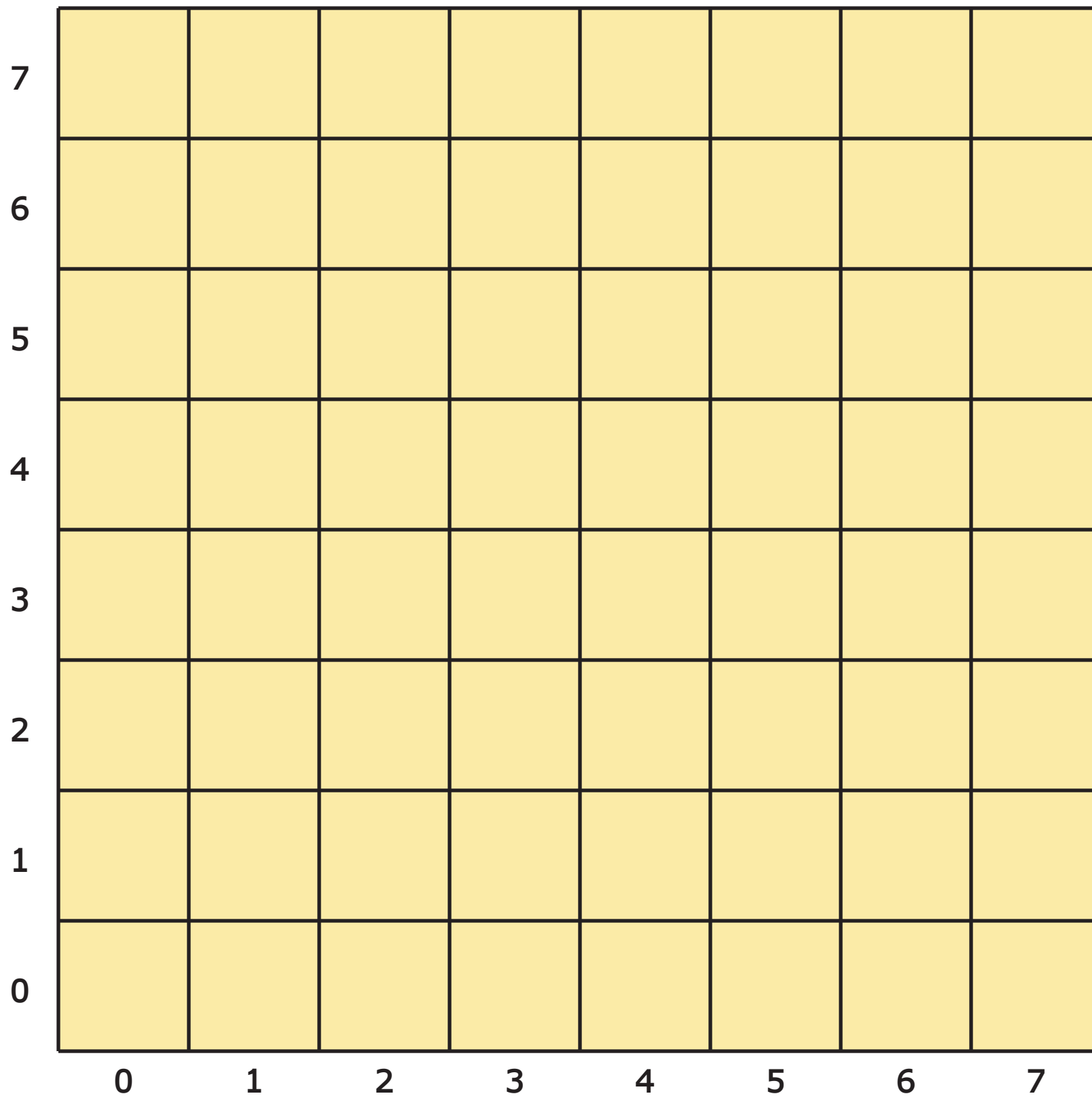
5

6

7

8

Randomized Lands



Another Way to Create an Array

6							
5							
4							
3							
2							
1							
0							
	0	1	2	3	4	5	6

The Art of the Array

9
8
7
6
5
4
3
2
1
0

0123456789

World Creation

11

10

9

8

7

6

5

4

3

2

1

0

0

1

2

3

4

5

6

7

8

9

10

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