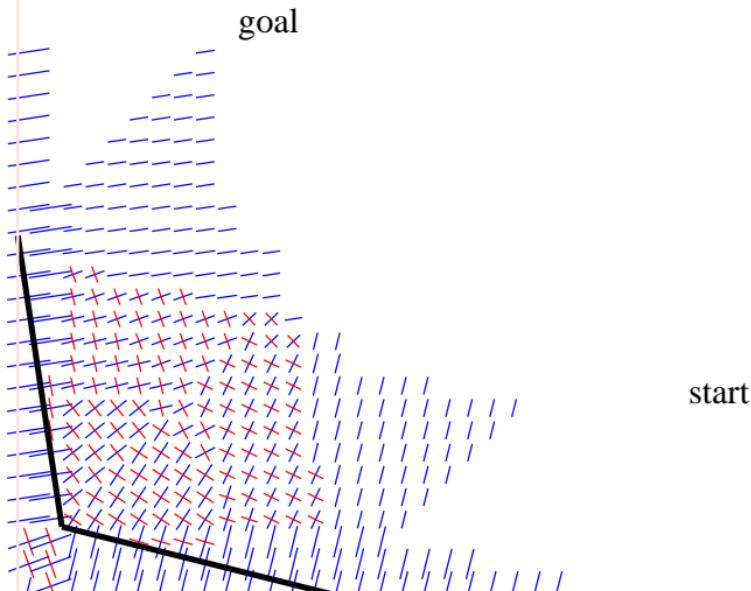


# Backward (wave)



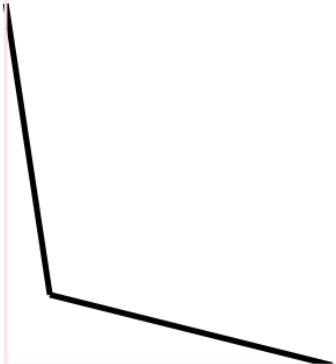
Created:	0
Popped:	0
Active:	0
Epoch:	0
Open:	0

## Backward (wave)

Created:	0
Popped:	0
Active:	0
Epoch:	0
Open:	0

goal

start

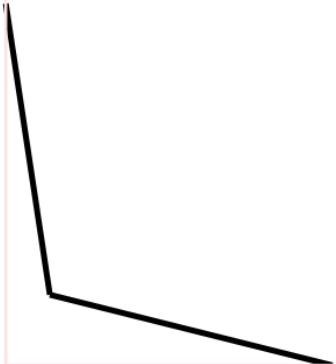


## Backward (wave)

Created:	0
Popped:	0
Active:	1
Epoch:	1
Open:	1

goal

start

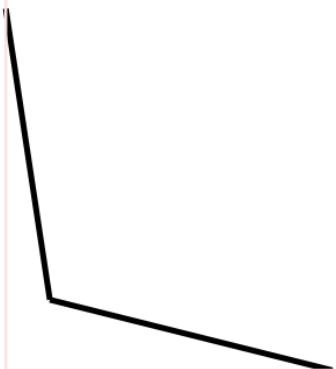


## Backward (wave)

Created:	8
Popped:	1
Active:	9
Epoch:	2
Open:	8

goal

start

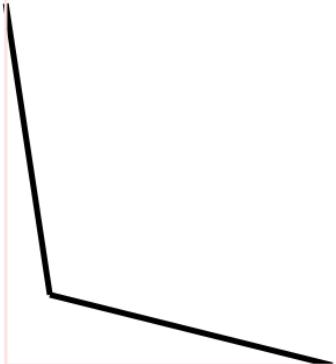


## Backward (wave)

Created:	28
Popped:	9
Active:	25
Epoch:	3
Open:	16

goal

start



## Backward (wave)

1 1 1 1 1 1 1  
1 1 1 1 1 1 1  
1 1 1 1 1 1 1  
2 1 1 1 1 1 1  
1 1 1 1 1 1 1  
1 1 2 1 1 1 1

start

Created:	67
Popped:	25
Active:	55
Epoch:	4
Open:	30

## Backward (wave)

1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
2									
2	2	2	2	2	goal	1	1	1	1
2	2	2	2	2	1	1	1	1	1
2	1	1	1	2	1	1	1	1	1
1	1	1	1	2	1	1	1	1	1
1	1	1	1	2	1	1	1	1	1
1	1	1	2	1	1	1	1	1	1

start

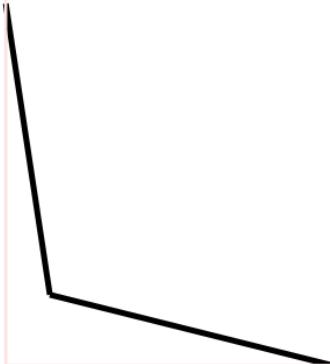
Created:	128
Popped:	55
Active:	97
Epoch:	5
Open:	42

# Backward (wave)

Created:	<b>210</b>
Popped:	<b>97</b>
Active:	<b>154</b>
Epoch:	<b>6</b>
Open:	<b>57</b>

goal

start



# Backward (wave)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  
1 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
3 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
3 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
3 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1  
2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1

start

Created:	316
Popped:	154
Active:	227
Epoch:	7
Open:	73

# Backward (wave)

1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

goal

start

Created:	448
Popped:	227
Active:	319
Epoch:	8
Open:	92

## Backward (wave)

A 10x10 grid of colored squares. The colors follow a repeating pattern of red, green, blue, yellow, and purple. The word "goal" is written in black in the center square of the grid.

start

**Created:** 608  
**Popped:** 319  
**Active:** 431  
**Epoch:** 9  
**Open:** 112

# Backward (wave)

goal

start

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

Created:	800
Popped:	431
Active:	566
Epoch:	10
Open:	136

## Backward (wave)

A 10x10 grid of numbers. The first nine rows contain ten numbers each, while the bottom row contains nine numbers. The numbers are arranged as follows:  
Row 1: 1, 1, 1, 1, 1, 1, 1, 1, 1, 1  
Row 2: 1, 1, 1, 1, 1, 1, 1, 1, 1, 1  
Row 3: 2, 2, 2, 2, 2, 2, 2, 2, 2, 2  
Row 4: 3, 3, 3, 3, 3, 3, 3, 3, 3, 3  
Row 5: 4, 4, 4, 4, 4, 4, 4, 4, 4, 4  
Row 6: 5, 5, 5, 5, 5, 5, 5, 5, 5, 5  
Row 7: 1, 1, 1, 1, 1, 1, 1, 1, 1, 1  
Row 8: 1, 1, 1, 1, 1, 1, 1, 1, 1, 1  
Row 9: 2, 2, 2, 2, 2, 2, 2, 2, 2, 2  
Row 10: 1, 1, 1, 1, 1, 1, 1, 1, 1, 1  
The word "goal" is centered in the bottom row.

start

**Created:** 988  
**Popped:** 567  
**Active:** 705  
**Epoch:** 11  
**Open:** 141

# Backward (wave)

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

goal

start

Created: 1146  
Popped: 708  
Active: 819  
Epoch: 12  
Open: 123

# Backward (wave)



start

Created: **1333**  
Popped: **831**  
Active: **955**  
Epoch: **13**  
Open: **143**

# Backward (wave)



start

Created: **1539**  
Popped: **974**  
Active: **1106**  
Epoch: **14**  
Open: **159**

## Backward (wave)

start

Created: 1733  
Popped: 1133  
Active: 1246  
Epoch: 15  
Open: 150

## Backward (wave)

start

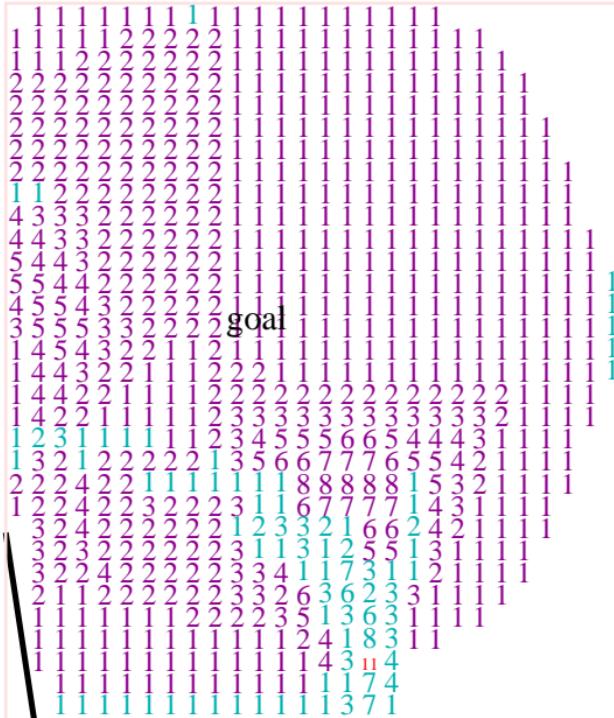
Created: **1909**  
Popped: **1283**  
Active: **1365**  
Epoch: **16**  
Open: **131**

## Backward (wave)

start

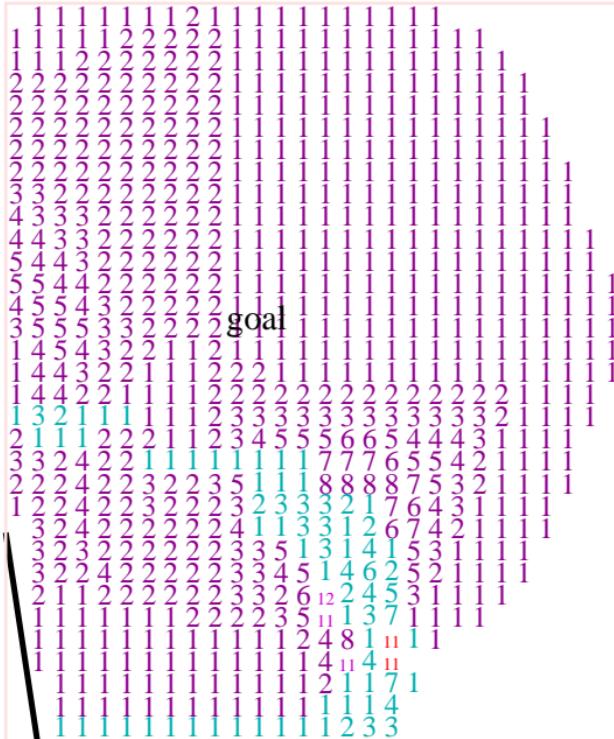
Created: **2101**  
Popped: **1414**  
Active: **1501**  
Epoch: **17**  
Open: **145**

# Backward (wave)



Created: **2320**  
Popped: **1559**  
Active: **1653**  
Epoch: **18**  
Open: **163**

# Backward (wave)



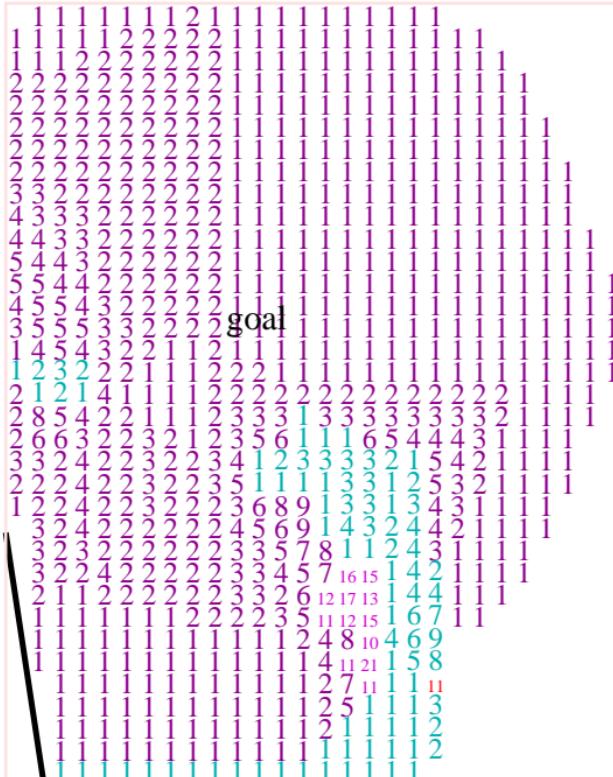
Created: **2559**  
Popped: **1722**  
Active: **1794**  
Epoch: **19**  
Open: **159**

# Backward (wave)

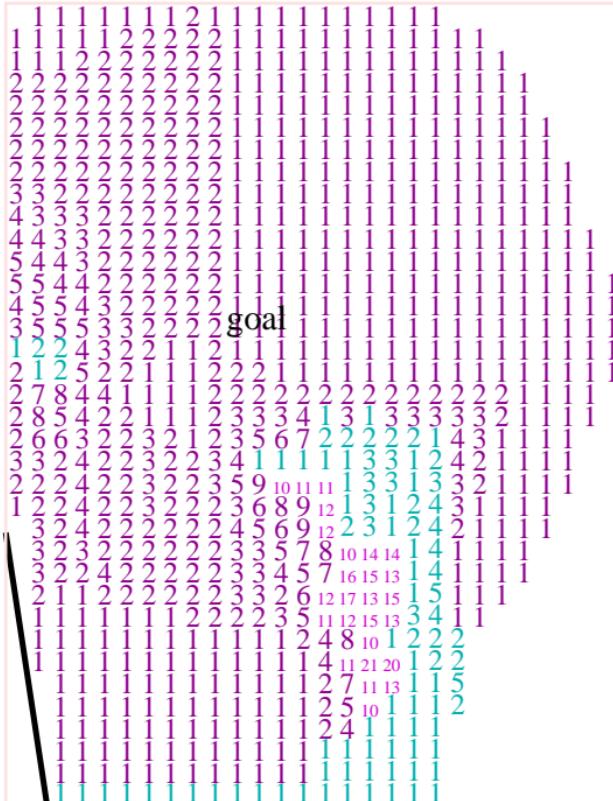


Created: **2800**  
Popped: **1881**  
Active: **1954**  
Epoch: **20**  
Open: **181**

# Backward (wave)



# Backward (wave)

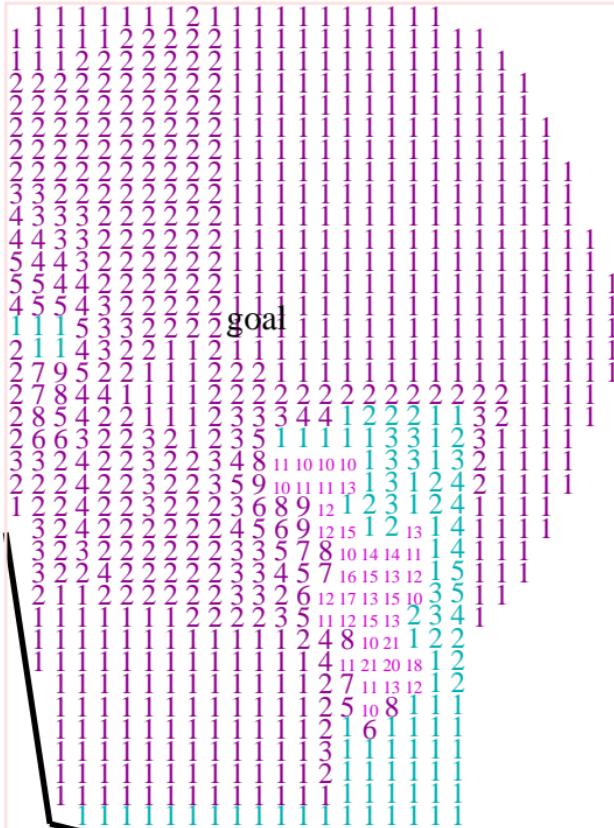


Created: **3241**  
Popped: **2254**  
Active: **2257**  
Epoch: **22**  
Open: **150**

start

goal

# Backward (wave)

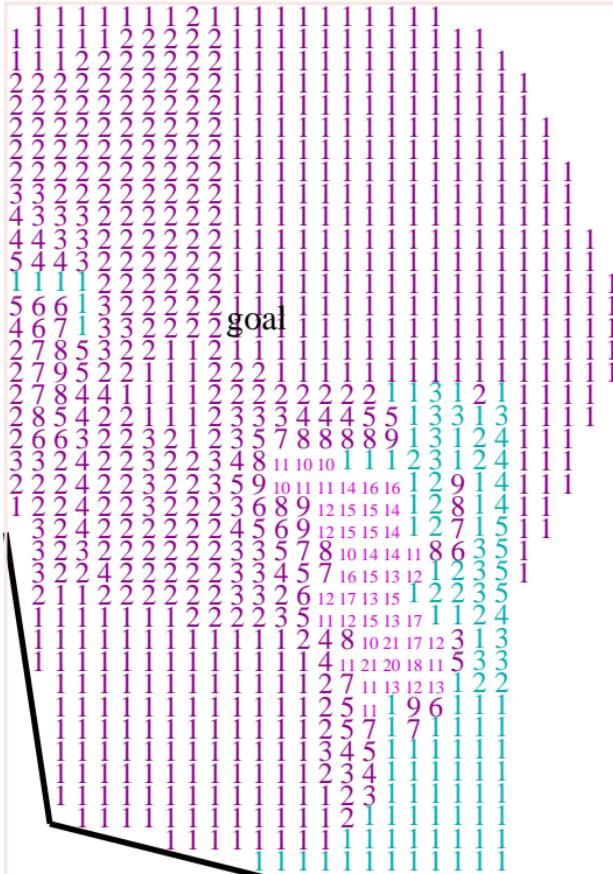


## Backward (wave)

start

Created: 3676  
Popped: 2558  
Active: 2559  
Epoch: 24  
Open: 172

# Backward (wave)



### Backward (wave)

Created: **4187**  
Popped: **2914**  
Active: **2918**  
Epoch: **26**  
Open: **195**

### Backward (wave)

Created: **4454**  
Popped: **3109**  
Active: **3118**  
Epoch: **27**  
Open: **208**

### Backward (wave)

Created: 4743  
Popped: 3317  
Active: 3338  
Epoch: 28  
Open: 227

## Backward (wave)

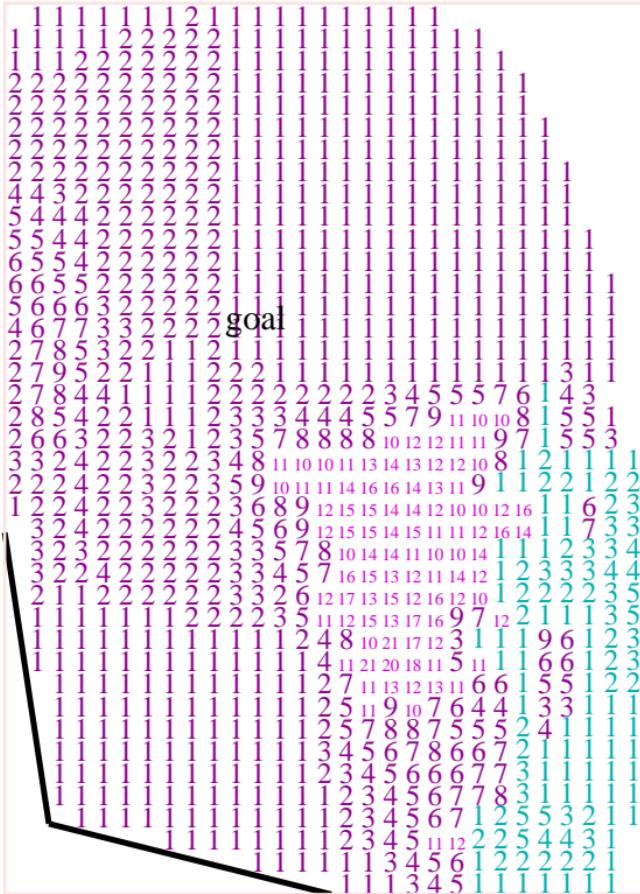
Created: 5043  
Popped: 3544  
Active: 3570  
Epoch: 29  
Open: 239

# Backward (wave)

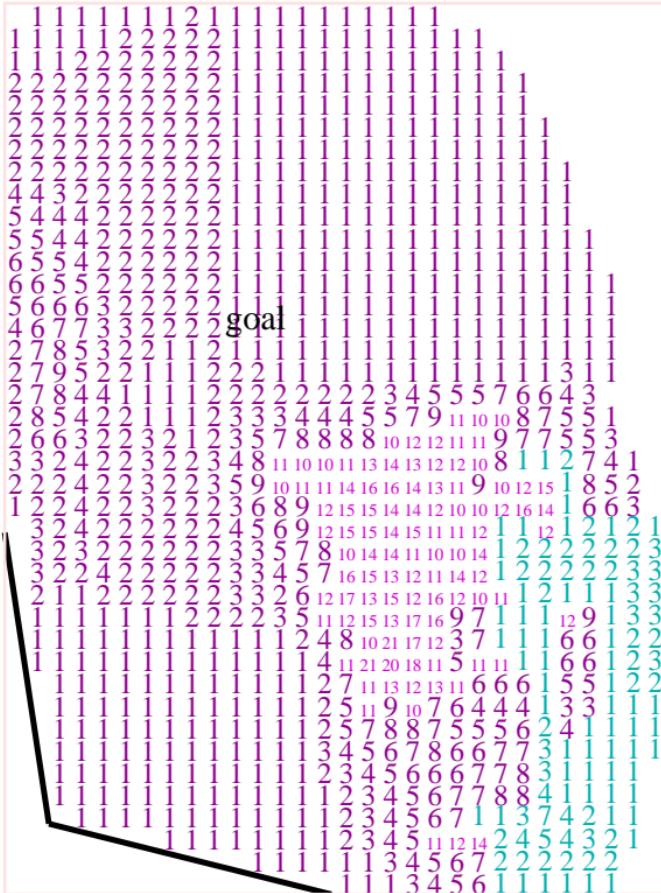


Created: **5338**  
Popped: **3783**  
Active: **3799**  
Epoch: **30**  
Open: **236**

# Backward (wave)



# Backward (wave)



### Backward (wave)

Created: **6016**  
Popped: **4420**  
Active: **4338**  
Epoch: **33**  
Open: **148**

### Backward (wave)

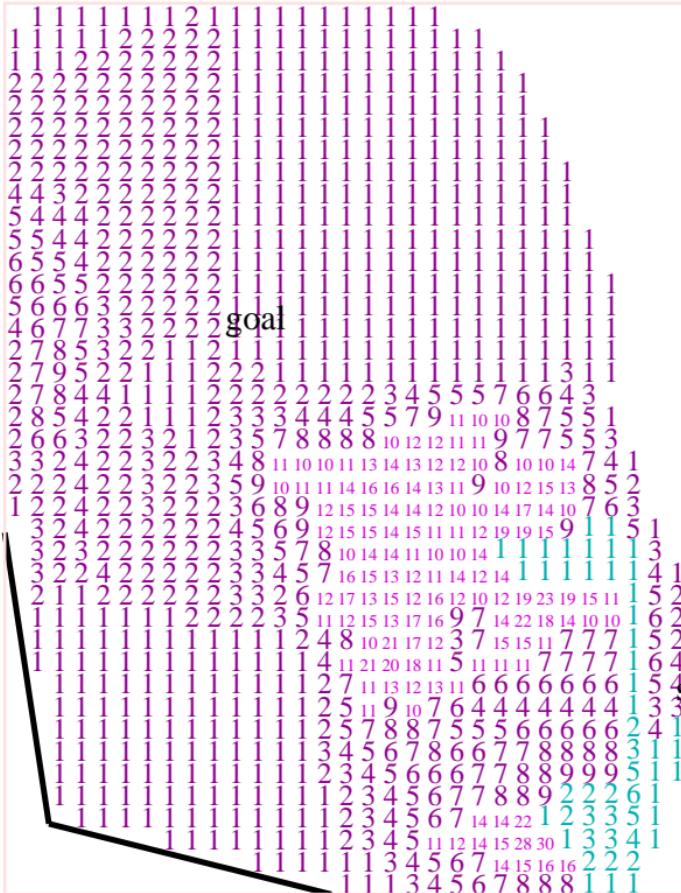
Created: **6160**  
Popped: **4568**  
Active: **4454**  
Epoch: **34**  
Open: **116**

# Backward (wave)



Created: **6285**  
Popped: **4684**  
Active: **4552**  
Epoch: **35**  
Open: **98**

# Backward (wave)



### Backward (wave)

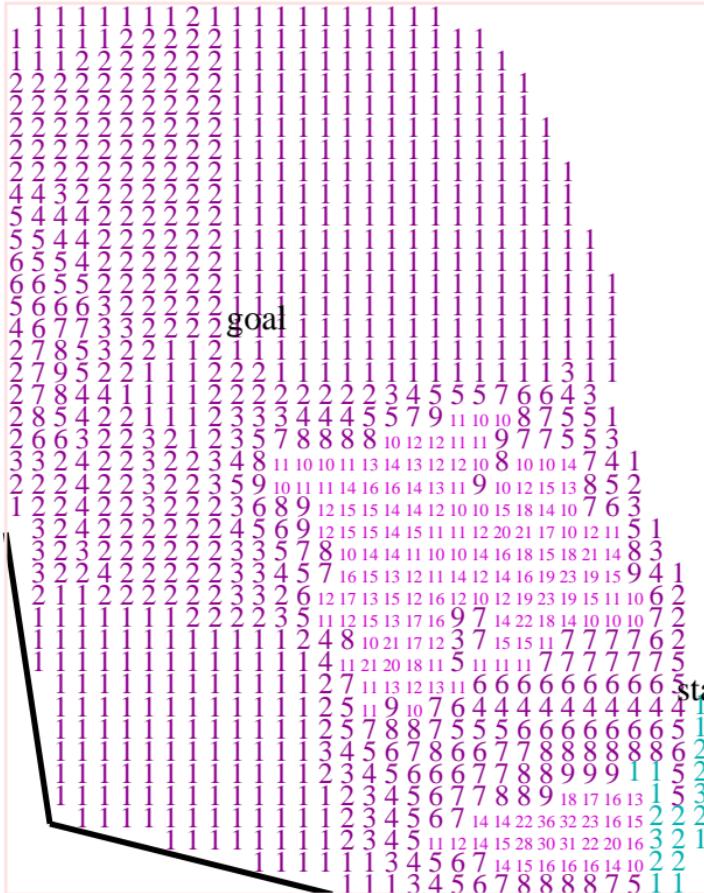
Created: **6486**  
Popped: **4867**  
Active: **4709**  
Epoch: **37**  
Open: **72**

# Backward (wave)



Created: **6551**  
Popped: **4939**  
Active: **4760**  
Epoch: **38**  
Open: **51**

# Backward (wave)



### Backward (wave)

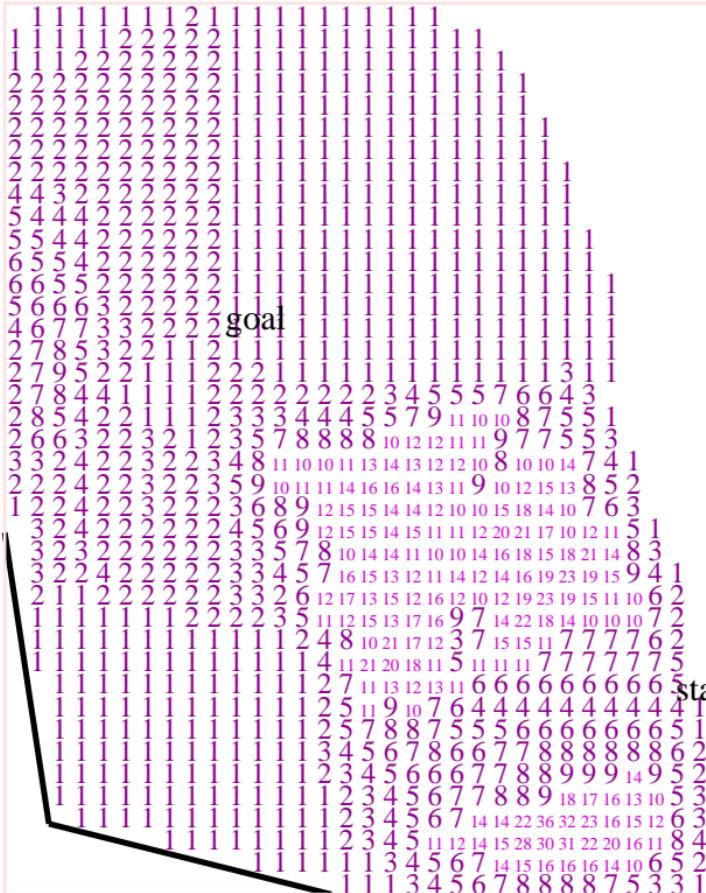
Created: **6604**  
Popped: **5020**  
Active: **4800**  
Epoch: **40**  
Open: **10**

### Backward (wave)

A large grid of numbers from 1 to 9, representing a 9x9 board. The grid is mostly composed of the number 1. A path is drawn through the grid, starting at the word "goal" located at approximately [340, 300] and ending at the word "start" located at approximately [980, 980]. The path follows a winding, zig-zagging route through the grid cells.

Created: 6610  
Popped: 5030  
Active: 4804  
Epoch: 41  
Open: 4

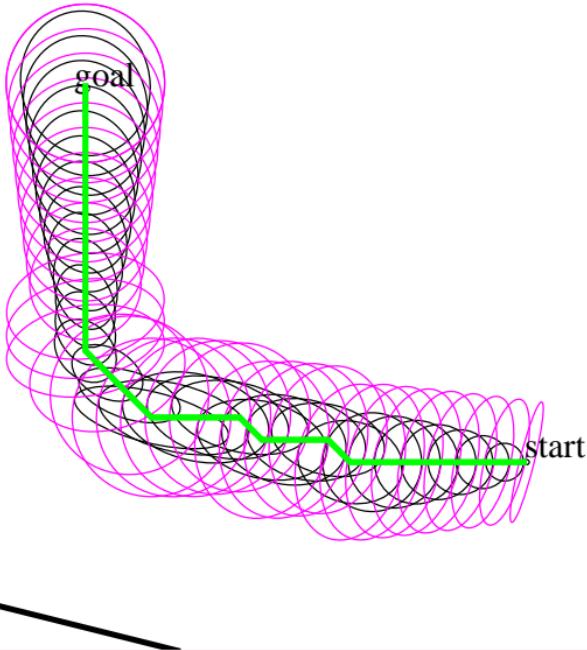
# Backward (wave)



Created: **6610**  
Popped: **5034**  
Active: **4804**  
Epoch: **42**  
Open: **0**

# Backward (wave)

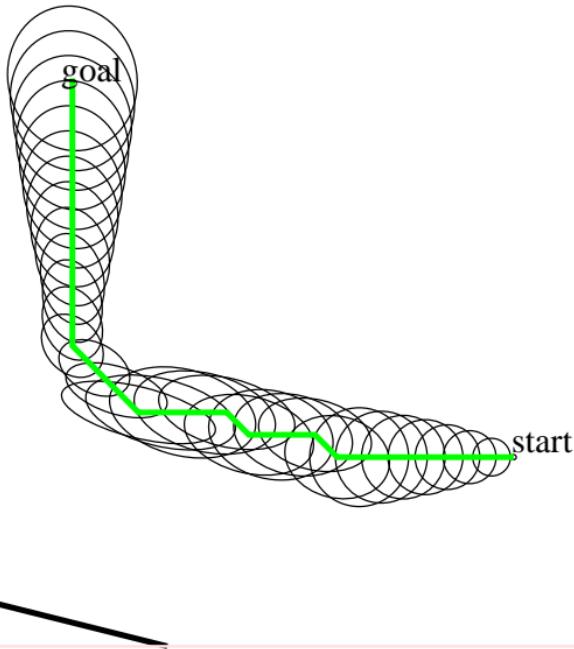
Created: **6610**  
Popped: **5034**  
Active: **4804**  
Epoch: **42**  
Open: **0**



Solution with covariance bounds.

# Backward (wave)

Created: **6610**  
Popped: **5034**  
Active: **4804**  
Epoch: **42**  
Open: **0**



Solution 1 of 1 (time: 8.5)