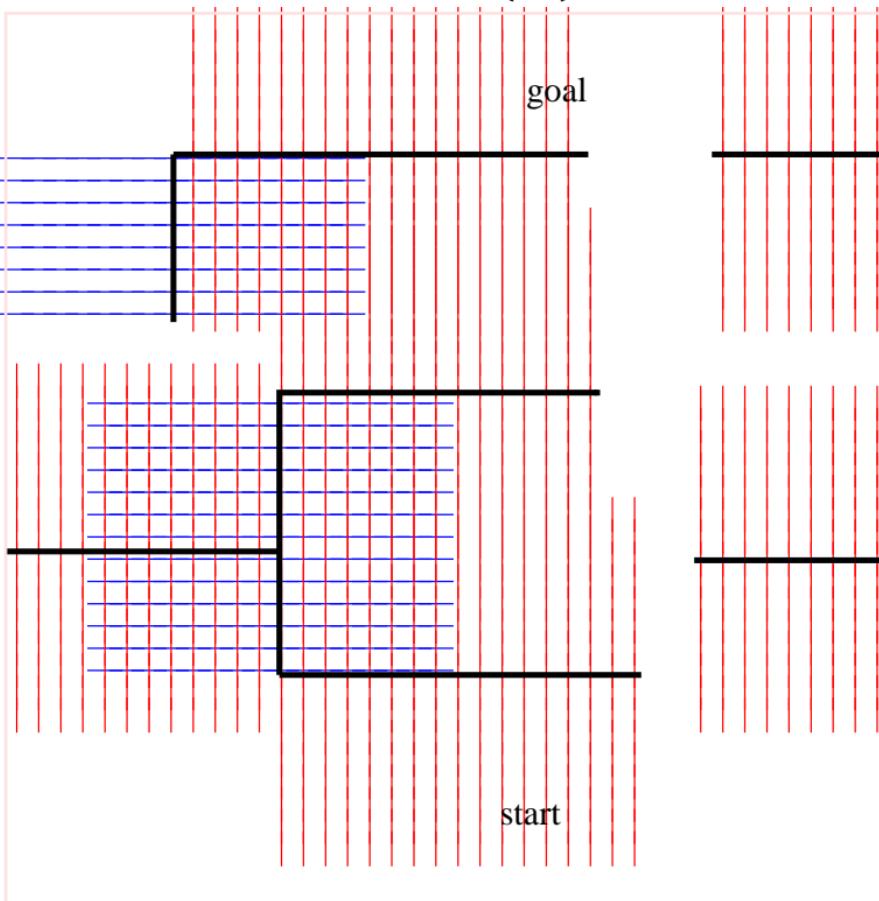


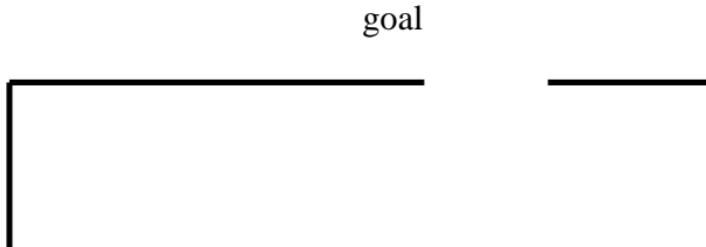
# Forward (A\*)



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

Fisher's Information matrix

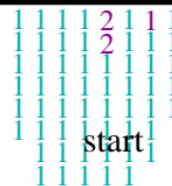
# Forward (A\*)



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

# Forward (A\*)

goal



Created:	110
Popped:	50
Active:	105
Epoch:	0
Open:	60

## Forward ( $A^*$ )

Created:	170
Popped:	100
Active:	161
Epoch:	0
Open:	67

# Forward (A\*)

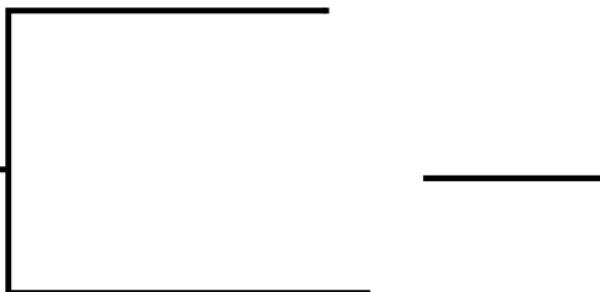
goal



Created: 227  
Popped: 150  
Active: 209  
Epoch: 0  
Open: 71

# Forward (A\*)

goal



Created: 303  
Popped: 200  
Active: 269  
Epoch: 0  
Open: 90

# Forward (A\*)

goal



Created:	366
Popped:	250
Active:	317
Epoch:	0
Open:	89

# Forward (A\*)

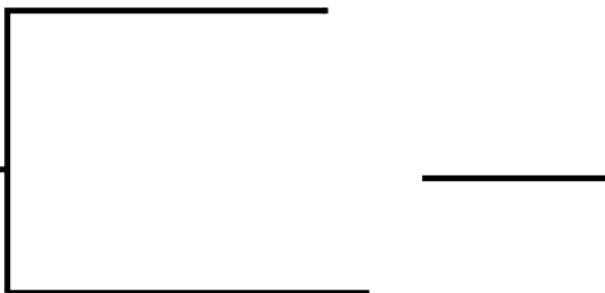
goal

Created:	424
Popped:	300
Active:	363
Epoch:	0
Open:	87



## Forward (A\*)

goal



start

A 10x10 grid of numbers from 1 to 10. The 'start' cell is at (1,1).

## Forward ( $A^*$ )

goal



1543  
start

A 10x10 grid of numbers from 1 to 10. The 'start' cell is at (1,1).

Created:	563
Popped:	400
Active:	482
Epoch:	0
Open:	99

## Forward (A\*)

goal



1 5 4 3  
start

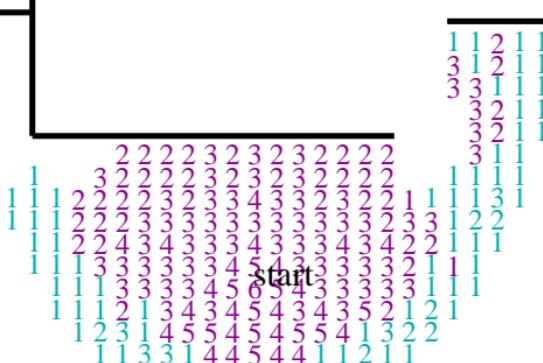
Created: 631  
Popped: 450  
Active: 541  
Epoch: 0  
Open: 109

## Forward (A\*)

goal



start



**Created:** 695  
**Popped:** 500  
**Active:** 593  
**Epoch:** 0  
**Open:** 115

## Forward (A\*)

goal



543  
start

The figure shows a 10x10 grid of numbers from 1 to 10. The numbers are arranged in a repeating pattern of four colors: red, green, blue, and yellow. The pattern repeats every two columns. The grid is labeled "start" at the bottom center.

Created:	744
Popped:	550
Active:	633
Epoch:	0
Open:	105

## Forward ( $A^*$ )

goal



543  
start

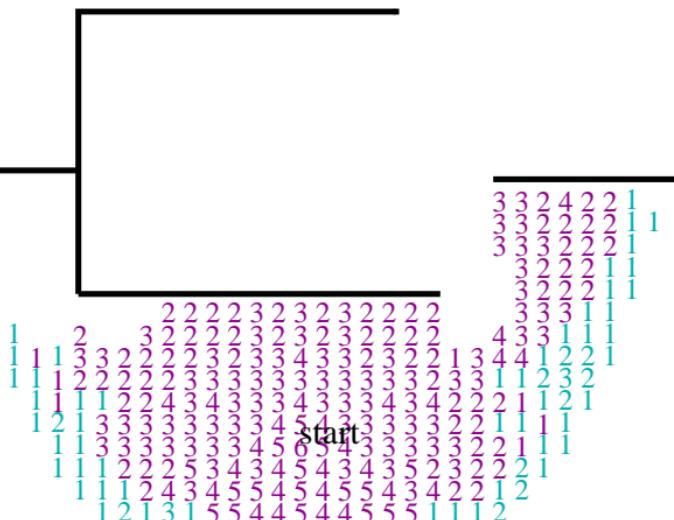
Created:	810
Popped:	600
Active:	682
Epoch:	0
Open:	111

# Forward (A\*)

goal

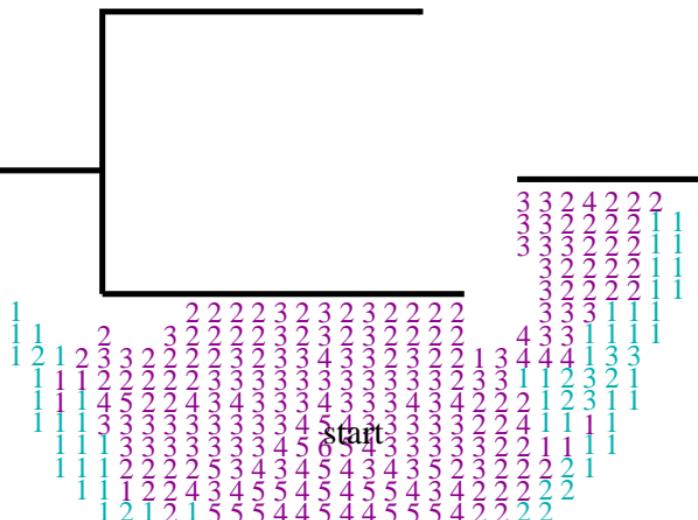


Created: 866  
Popped: 650  
Active: 726  
Epoch: 0  
Open: 105



# Forward (A\*)

goal



Created: 938  
Popped: 700  
Active: 782  
Epoch: 0  
Open: 108

## Forward ( $A^*$ )

goal



543  
start

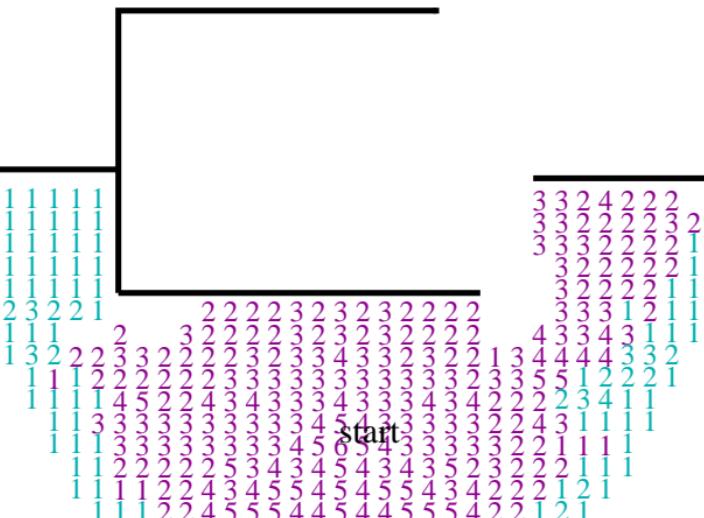
A 10x10 grid of numbers from 1 to 5. The path starts at (1,1), moves right to (1,2), down to (2,2), right to (2,3), down to (3,3), right to (3,4), down to (4,4), right to (4,5), down to (5,5).

Created: **1056**  
Popped: **750**  
Active: **847**  
Epoch: **0**  
Open: **171**

# Forward (A\*)

goal

Created: **1137**  
Popped: **800**  
Active: **884**  
Epoch: **0**  
Open: **193**



# Forward (A\*)

goal



start

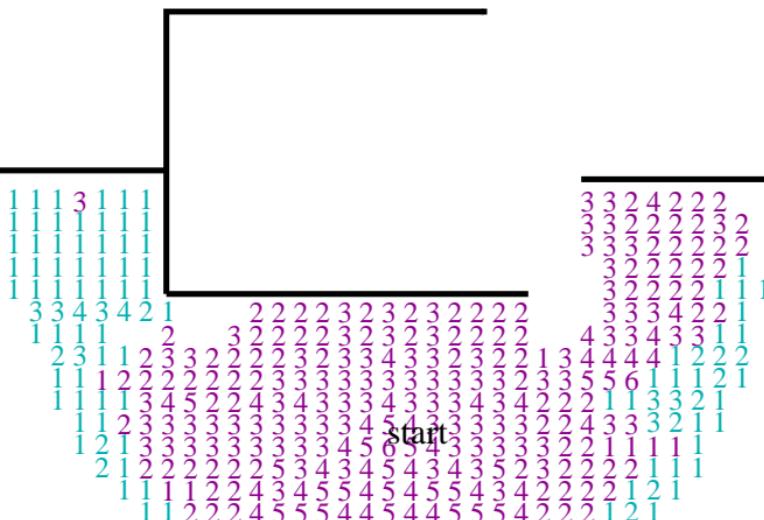


Created: **1216**  
Popped: **850**  
Active: **948**  
Epoch: **0**  
Open: **167**

# Forward (A\*)

goal

Created: **1281**  
Popped: **900**  
Active: **1003**  
Epoch: **0**  
Open: **172**



# Forward (A\*)

goal



start

Created: 1365  
Popped: 950  
Active: 1067  
Epoch: 0  
Open: 192

# Forward (A\*)

goal

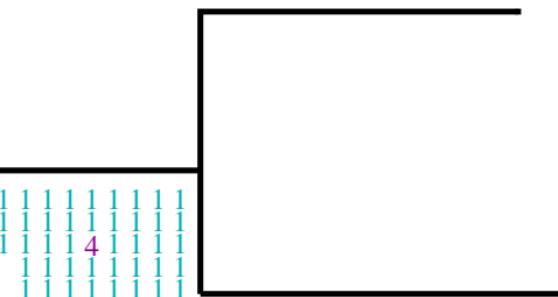


start

Created: **1427**  
Popped: **1000**  
Active: **1117**  
Epoch: **0**  
Open: **199**

# Forward (A\*)

goal



start



Created: **1510**  
Popped: **1050**  
Active: **1183**  
Epoch: **0**  
Open: **213**

# Forward (A\*)

goal



start



Created: **1572**  
Popped: **1100**  
Active: **1237**  
Epoch: **0**  
Open: **220**

# Forward (A\*)

goal



Created: **1638**  
Popped: **1150**  
Active: **1295**  
Epoch: **0**  
Open: **216**

# Forward (A\*)

goal



start



Created: **1701**  
Popped: **1200**  
Active: **1348**  
Epoch: **0**  
Open: **226**

# Forward (A\*)

goal

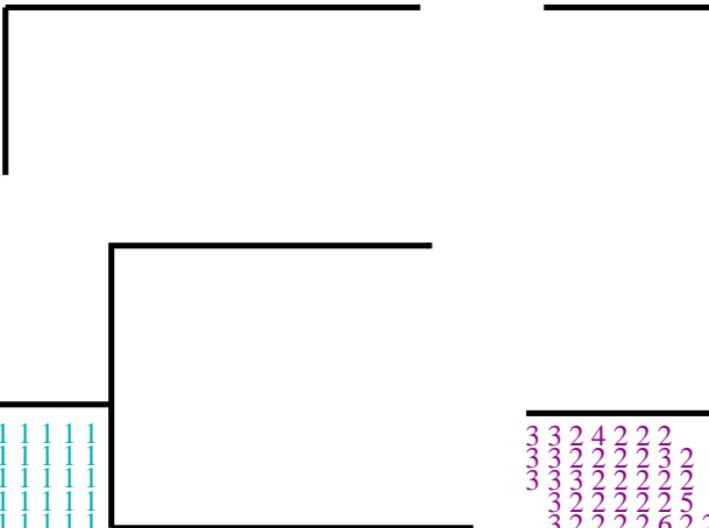


start

Created: **1767**  
Popped: **1250**  
Active: **1407**  
Epoch: **0**  
Open: **228**

# Forward (A\*)

goal

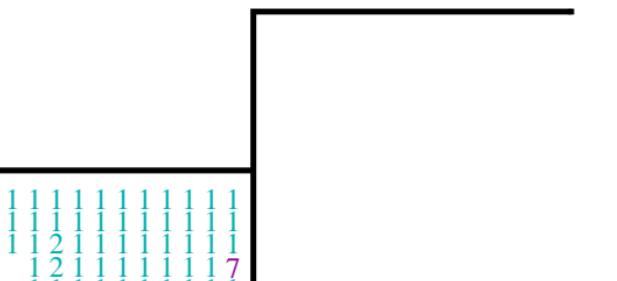


start

Created: 1835  
Popped: 1300  
Active: 1463  
Epoch: 0  
Open: 239

# Forward (A\*)

goal



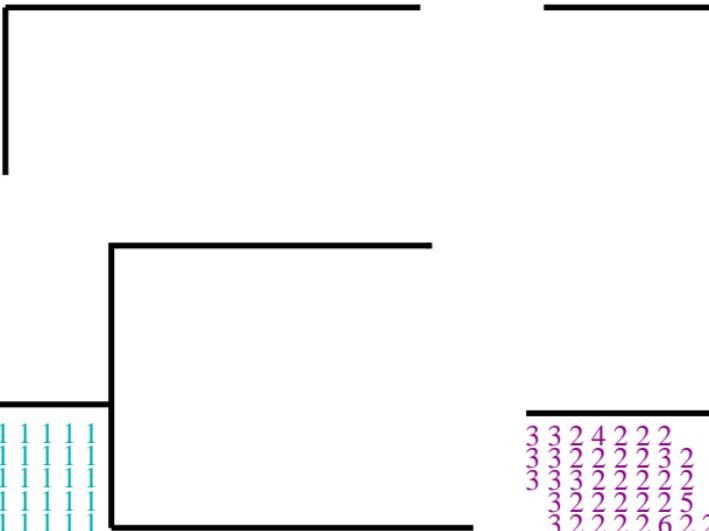
start



Created: 1902  
Popped: 1350  
Active: 1520  
Epoch: 0  
Open: 249

# Forward (A\*)

goal



start

Created: 1956  
Popped: 1400  
Active: 1566  
Epoch: 0  
Open: 243

## Forward ( $A^*$ )

goal

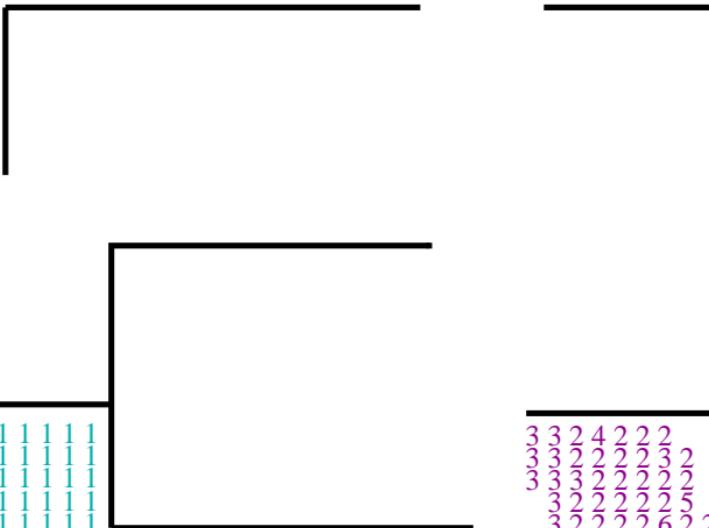


543  
start

Created: **2015**  
Popped: **1450**  
Active: **1618**  
Epoch: **0**  
Open: **248**

# Forward (A\*)

goal

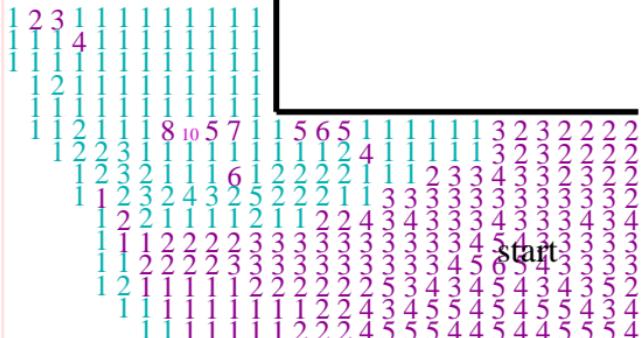


start

Created: 2063  
Popped: 1500  
Active: 1662  
Epoch: 0  
Open: 239

# Forward (A\*)

goal



start



Created: **2121**  
Popped: **1550**  
Active: **1714**  
Epoch: **0**  
Open: **239**

## Forward ( $A^*$ )

goal



543  
start

Created: 2170  
Popped: 1600  
Active: 1759  
Epoch: 0  
Open: 228

# Forward (A\*)

goal

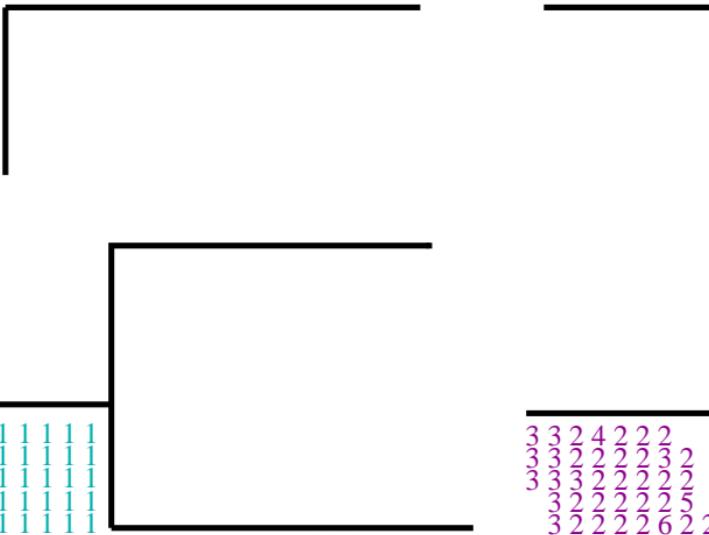


start

Created: **2233**  
Popped: **1650**  
Active: **1813**  
Epoch: **0**  
Open: **228**

# Forward (A\*)

goal

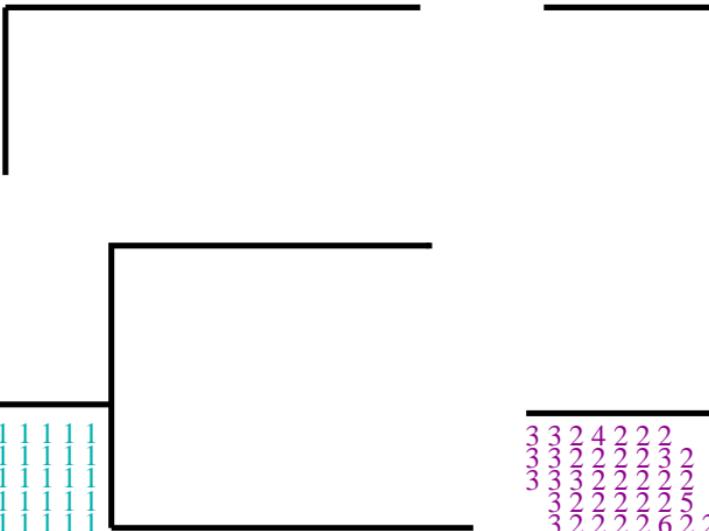


start

Created: **2295**  
Popped: **1700**  
Active: **1872**  
Epoch: **0**  
Open: **236**

# Forward (A\*)

goal



Created: **2351**  
Popped: **1750**  
Active: **1922**  
Epoch: **0**  
Open: **234**

# Forward (A\*)

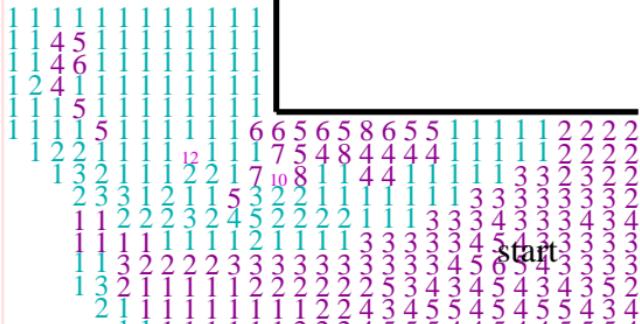
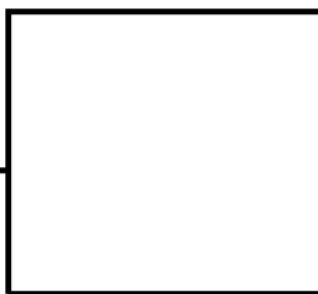
goal



Created: **2400**  
Popped: **1800**  
Active: **1968**  
Epoch: **0**  
Open: **228**

# Forward (A\*)

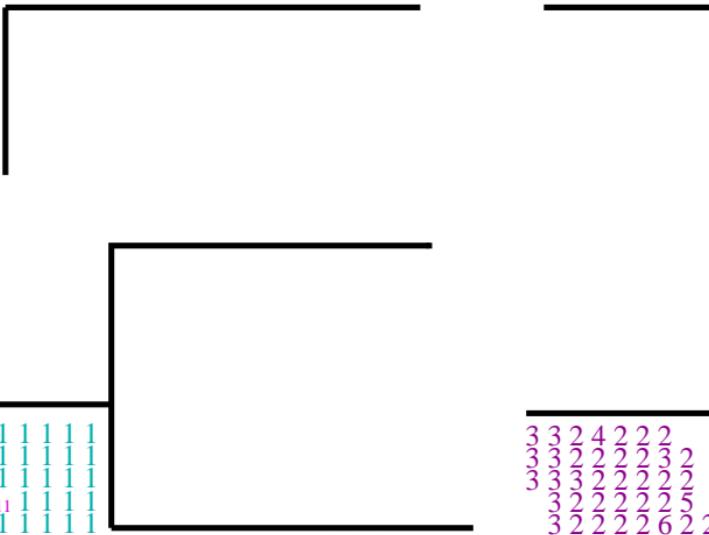
goal



Created: **2451**  
Popped: **1850**  
Active: **2013**  
Epoch: **0**  
Open: **225**

# Forward (A\*)

goal



Created: **2505**  
Popped: **1900**  
Active: **2061**  
Epoch: **0**  
Open: **223**

## Forward ( $A^*$ )

goal

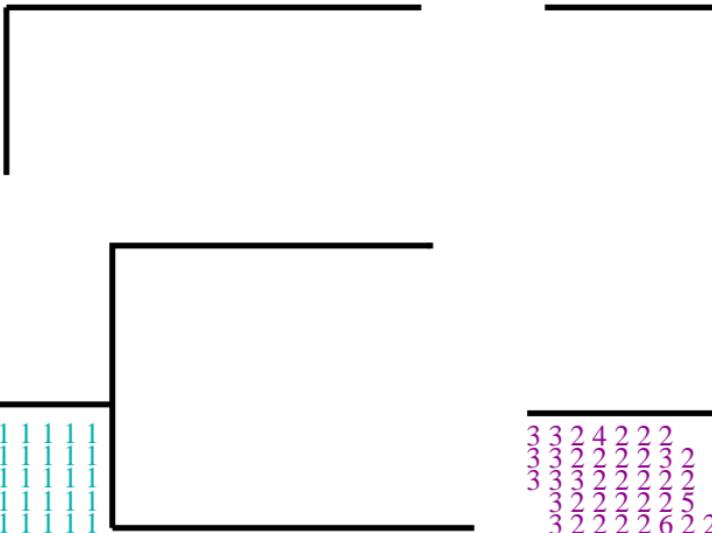


5  
4  
3  
start

Created: 2561  
Popped: 1950  
Active: 2113  
Epoch: 0  
Open: 222

# Forward (A\*)

goal



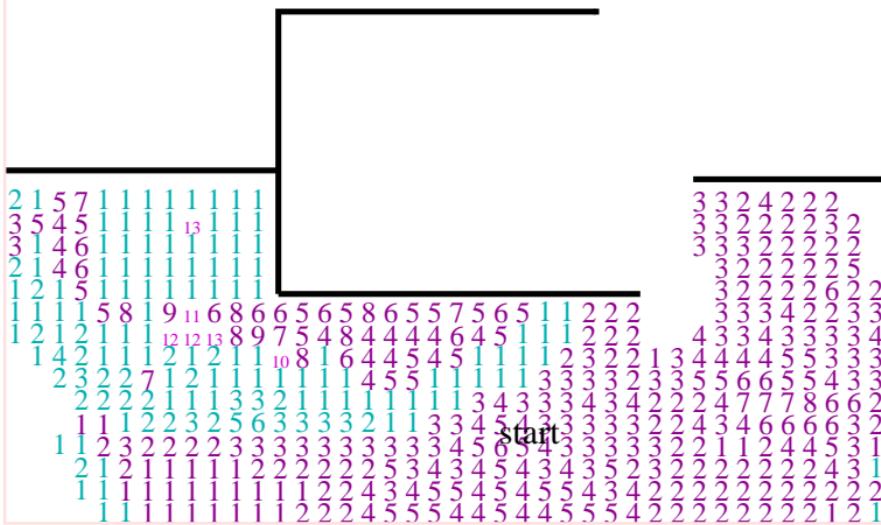
Created: **2621**  
Popped: **2000**  
Active: **2168**  
Epoch: **0**  
Open: **226**

## Forward ( $A^*$ )

goal



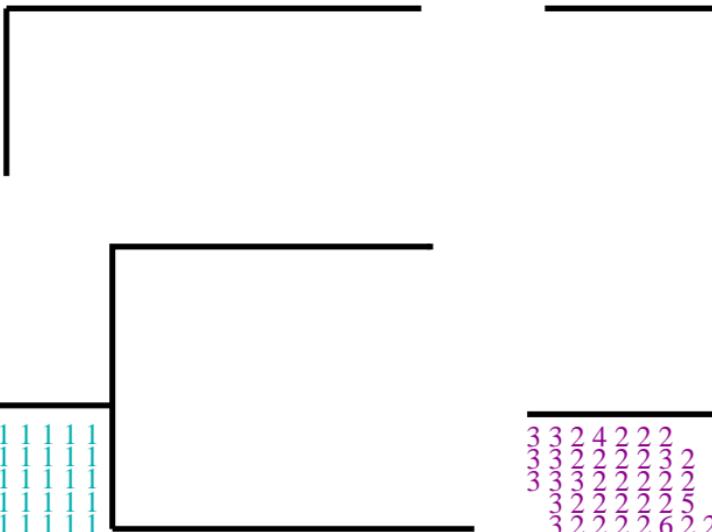
543  
start



Created: **2664**  
Popped: **2050**  
Active: **2209**  
Epoch: **0**  
Open: **214**

# Forward (A\*)

goal



start

Created: **2716**  
Popped: **2100**  
Active: **2256**  
Epoch: **0**  
Open: **214**

# Forward (A\*)

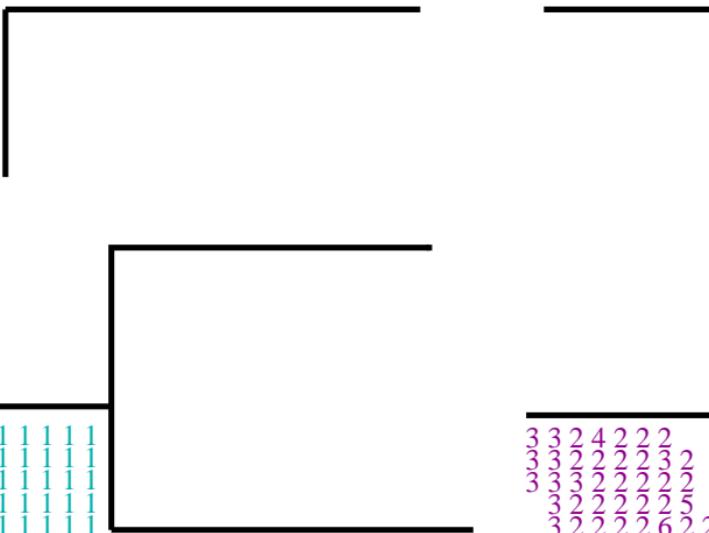
goal



Created: **2776**  
Popped: **2150**  
Active: **2311**  
Epoch: **0**  
Open: **218**

## Forward ( $A^*$ )

goal



5 4 3  
start

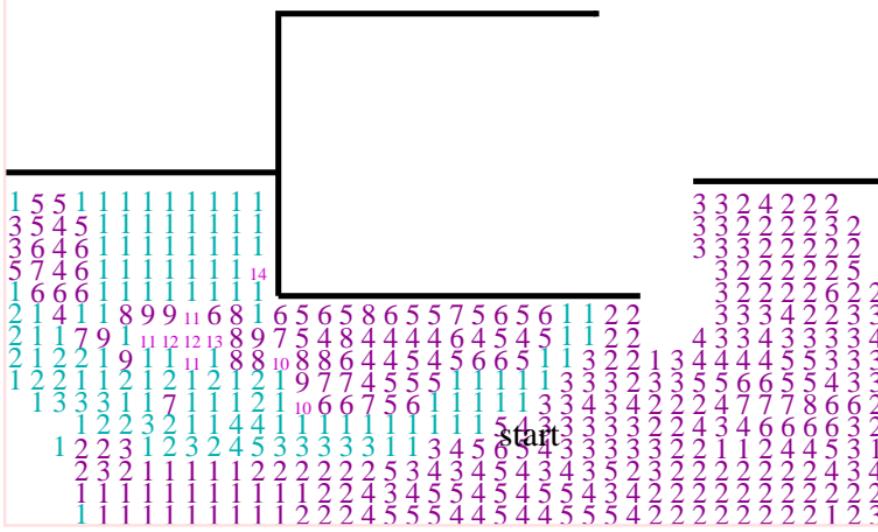
Created: 2825  
Popped: 2200  
Active: 2355  
Epoch: 0  
Open: 211

## Forward ( $A^*$ )

goal



5 4 3  
start



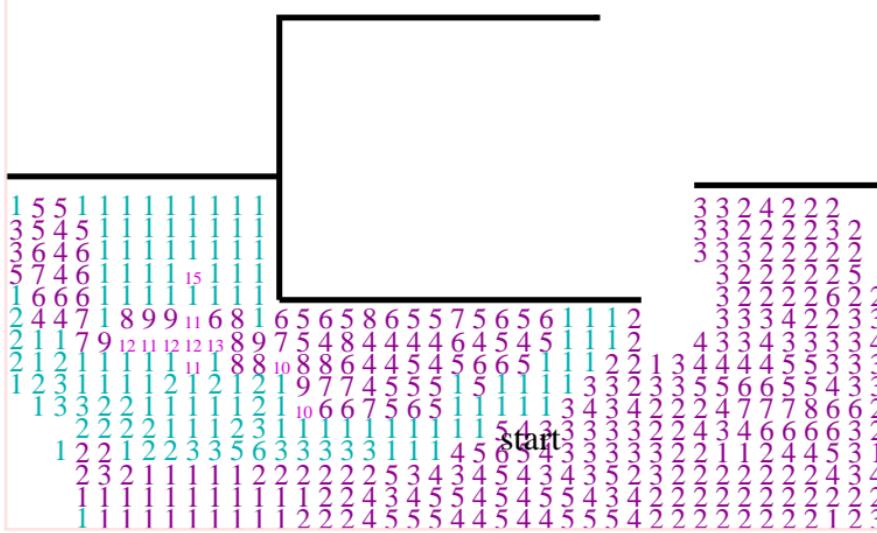
Created: **2874**  
Popped: **2250**  
Active: **2402**  
Epoch: **0**  
Open: **206**

## Forward ( $A^*$ )

goal



5 4 3  
start



**Created:** 2929  
**Popped:** 2300  
**Active:** 2455  
**Epoch:** 0  
**Open:** 205

# Forward (A\*)

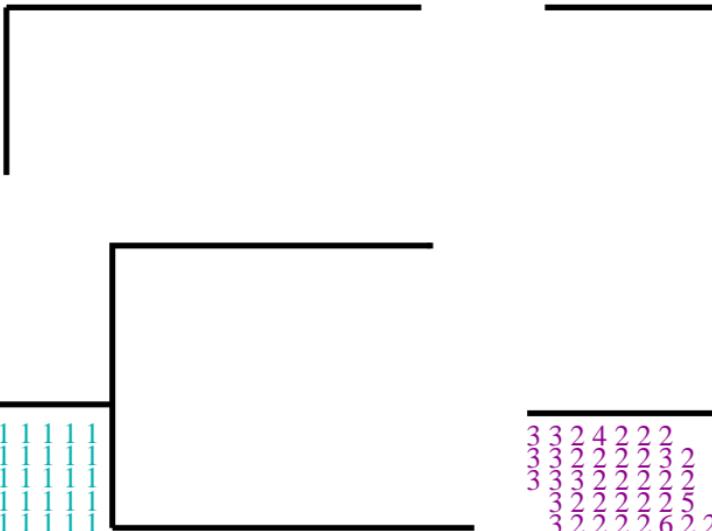
goal



Created: **2979**  
Popped: **2350**  
Active: **2501**  
Epoch: **0**  
Open: **202**

# Forward (A\*)

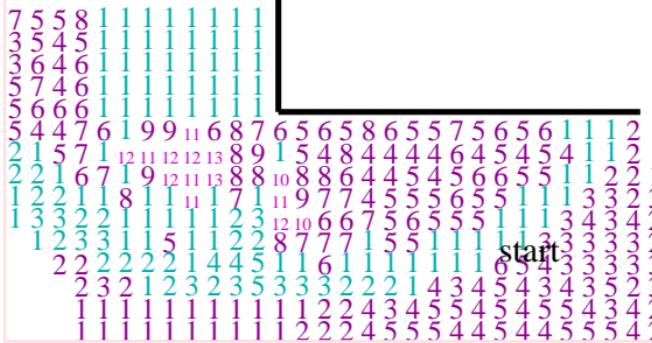
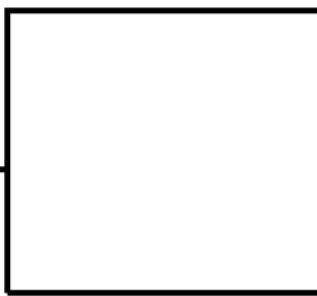
goal



Created: **3033**  
Popped: **2400**  
Active: **2552**  
Epoch: **0**  
Open: **203**

# Forward (A\*)

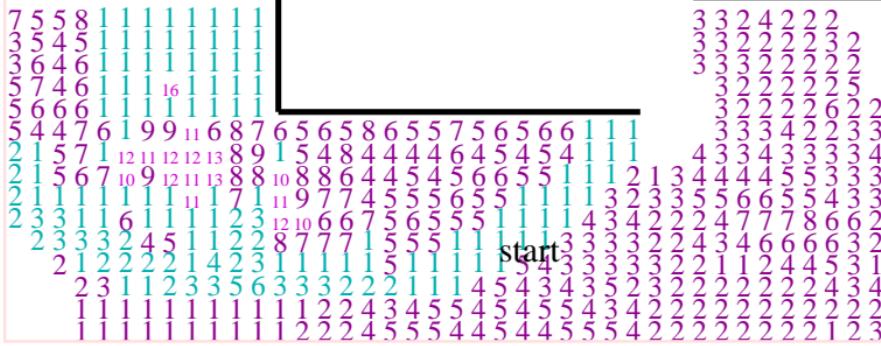
goal



Created: **3090**  
Popped: **2450**  
Active: **2602**  
Epoch: **0**  
Open: **205**

# Forward (A\*)

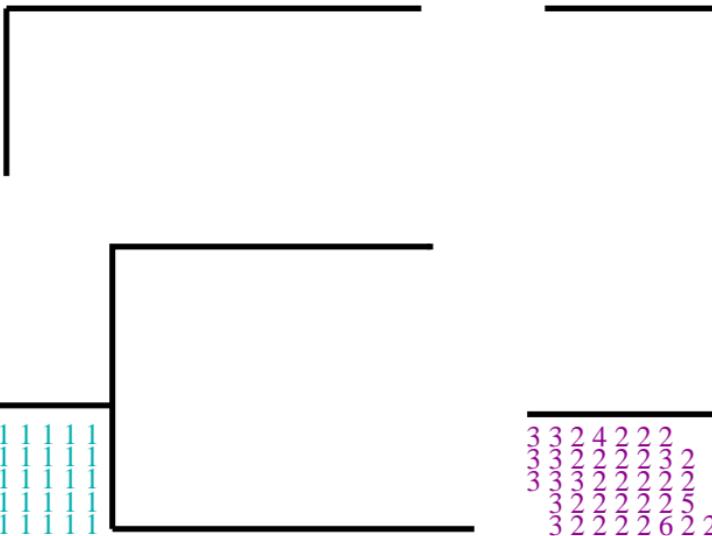
goal



Created: **3151**  
Popped: **2500**  
Active: **2657**  
Epoch: **0**  
Open: **211**

# Forward (A\*)

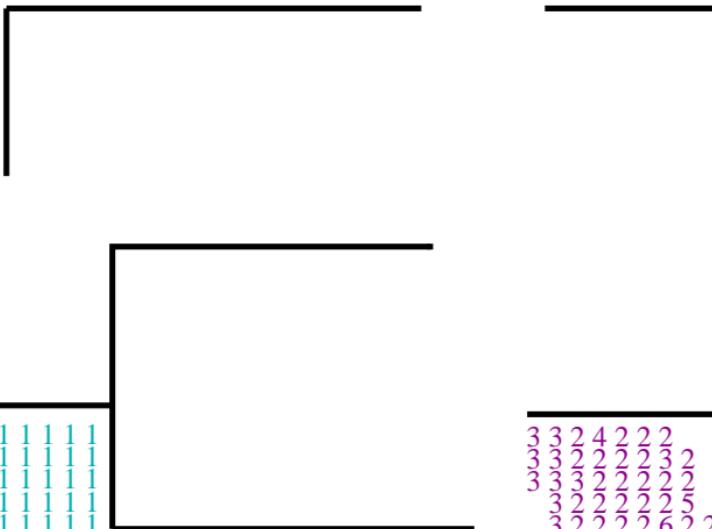
goal



Created: **3209**  
Popped: **2550**  
Active: **2708**  
Epoch: **0**  
Open: **215**

## Forward ( $A^*$ )

goal

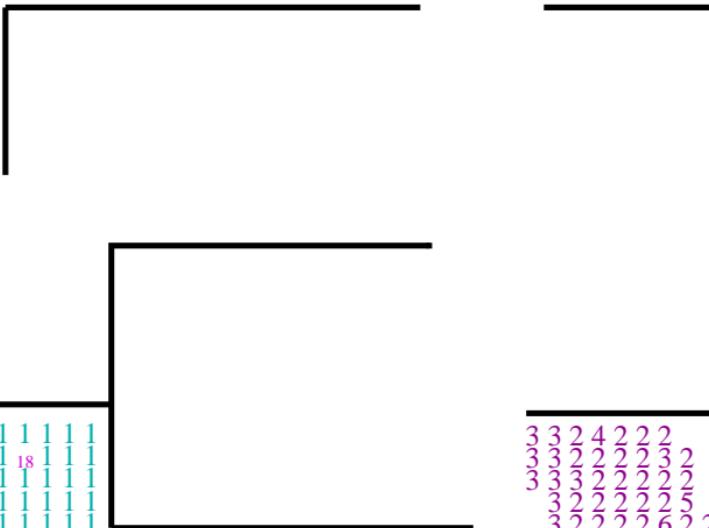


start

Created: **3261**  
Popped: **2600**  
Active: **2757**  
Epoch: **0**  
Open: **216**

# Forward (A\*)

goal



# Forward (A\*)

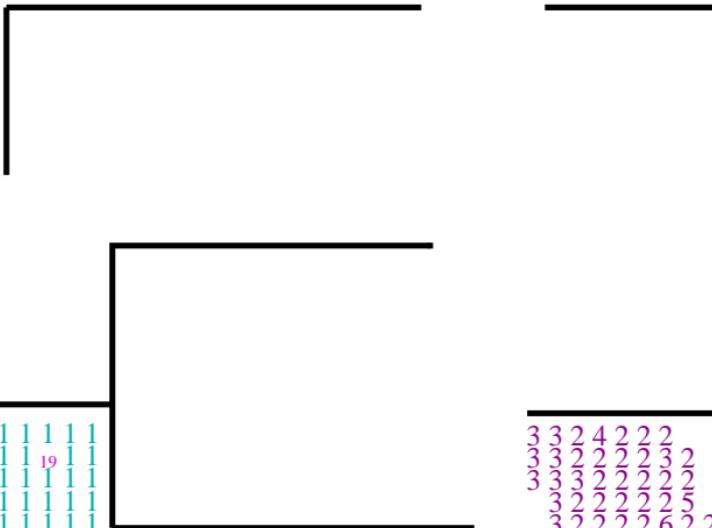
goal



Created: **3382**  
Popped: **2700**  
Active: **2868**  
Epoch: **0**  
Open: **223**

# Forward (A\*)

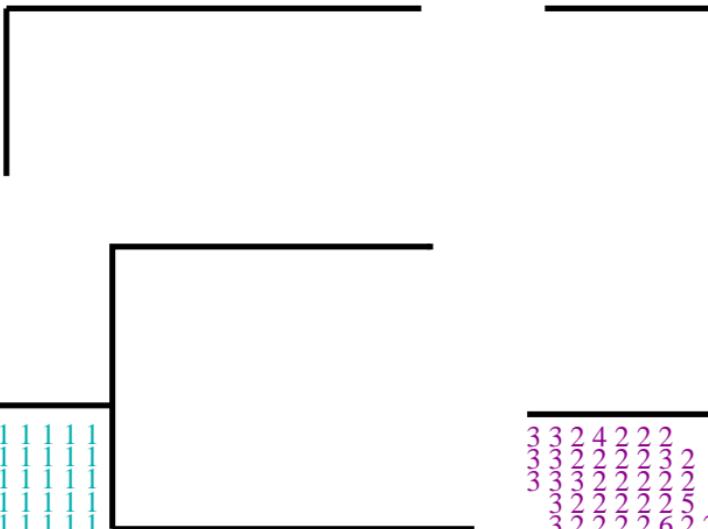
goal



Created: **3430**  
Popped: **2750**  
Active: **2914**  
Epoch: **0**  
Open: **216**

# Forward (A\*)

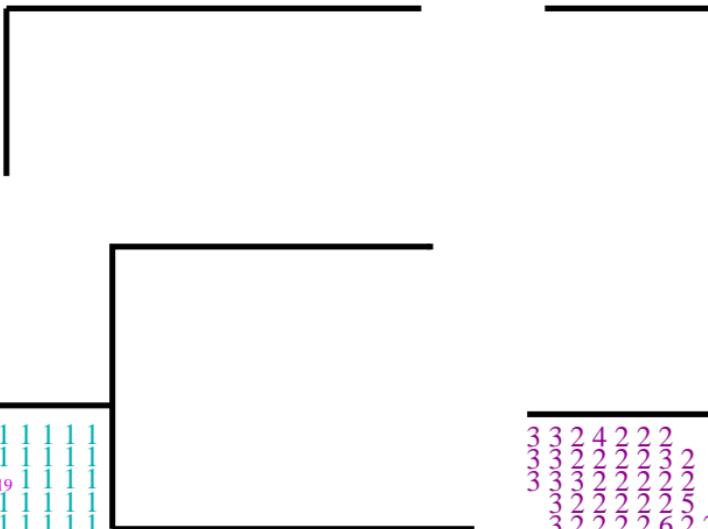
goal



Created: **3500**  
Popped: **2800**  
Active: **2977**  
Epoch: **0**  
Open: **232**

# Forward (A\*)

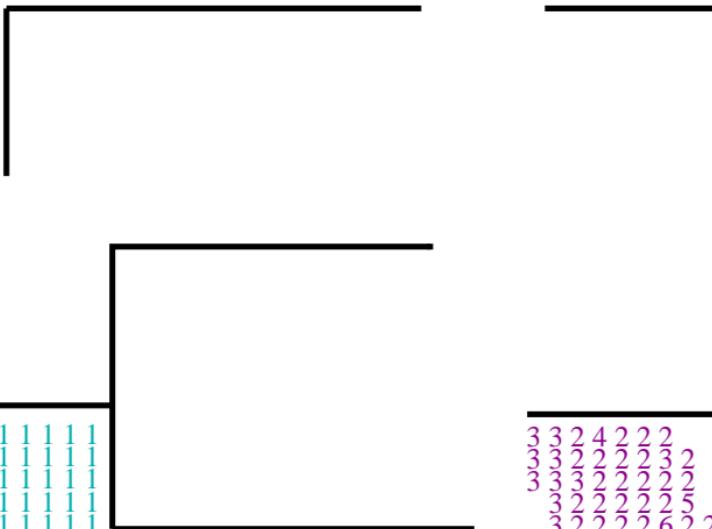
goal



Created: **3562**  
Popped: **2850**  
Active: **3032**  
Epoch: **0**  
Open: **240**

# Forward (A\*)

goal



start

Created: **3616**  
Popped: **2900**  
Active: **3080**  
Epoch: **0**  
Open: **237**

# Forward (A\*)

goal

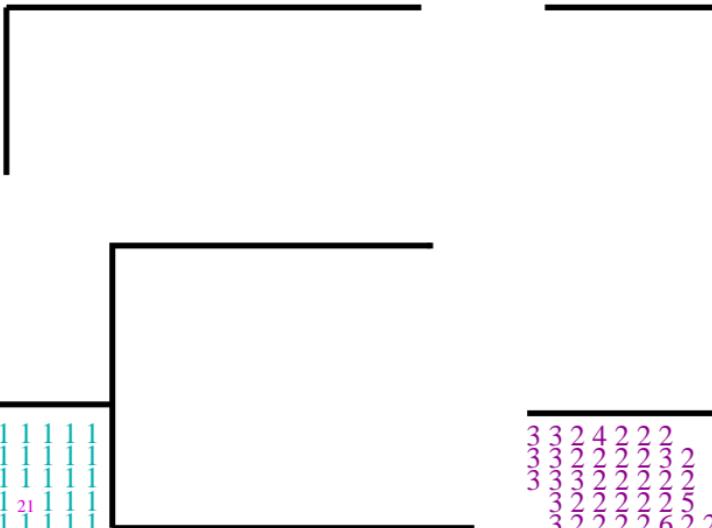


start

Created: **3681**  
Popped: **2950**  
Active: **3142**  
Epoch: **0**  
Open: **248**

# Forward (A\*)

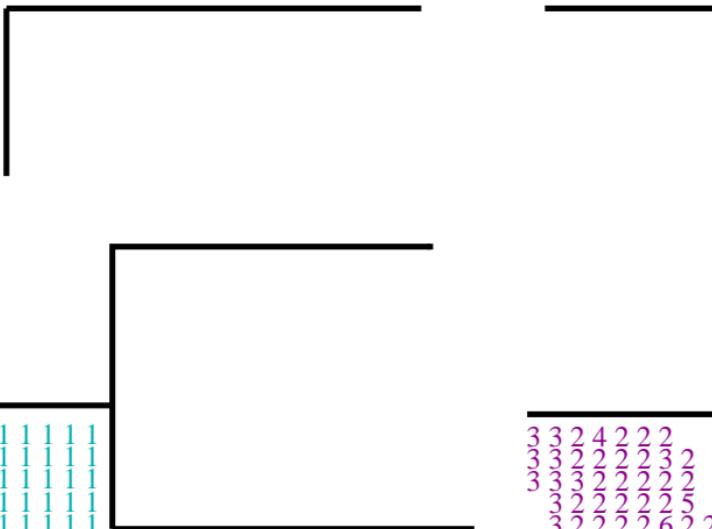
goal



Created: **3730**  
Popped: **3000**  
Active: **3189**  
Epoch: **0**  
Open: **244**

# Forward (A\*)

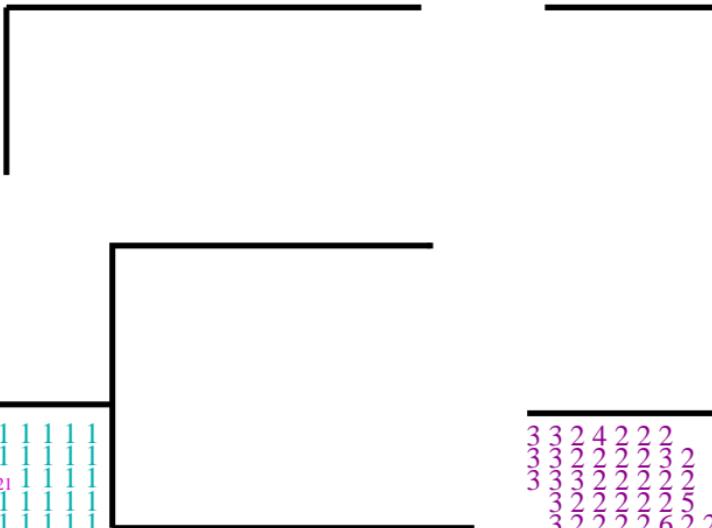
goal



Created: **3773**  
Popped: **3050**  
Active: **3231**  
Epoch: **0**  
Open: **232**

# Forward (A\*)

goal



Created: **3816**  
Popped: **3100**  
Active: **3271**  
Epoch: **0**  
Open: **221**

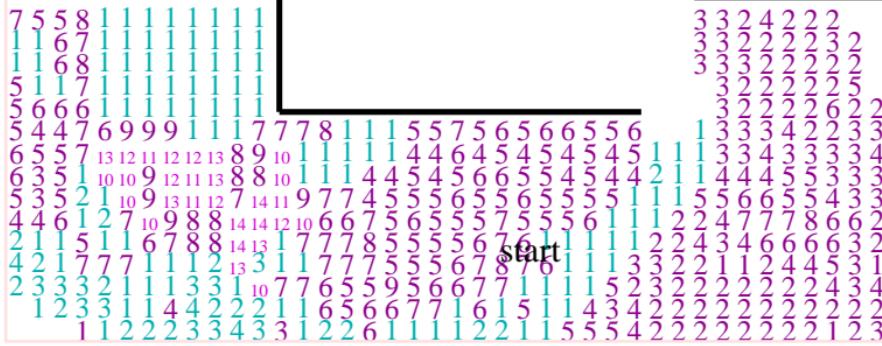
start

## Forward ( $A^*$ )

goal



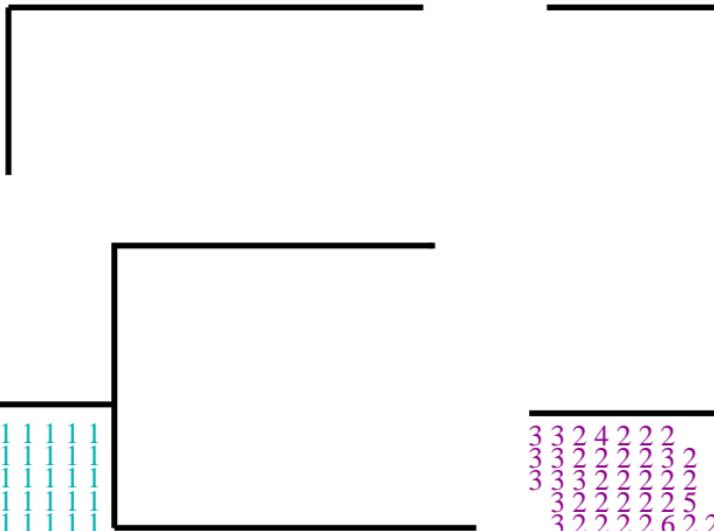
start



Created: 3871  
Popped: 3150  
Active: 3321  
Epoch: 0  
Open: 220

# Forward (A\*)

goal

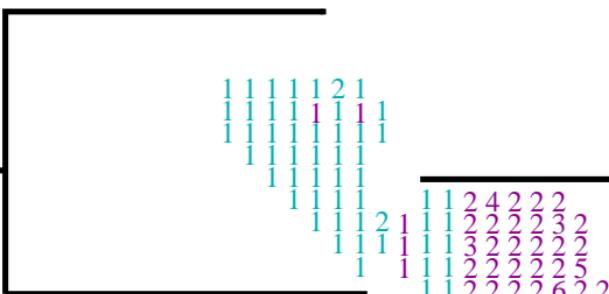


Created: **3920**  
Popped: **3200**  
Active: **3362**  
Epoch: **0**  
Open: **214**

# Forward (A\*)

goal

Created: **4044**  
Popped: **3250**  
Active: **3471**  
Epoch: **0**  
Open: **283**

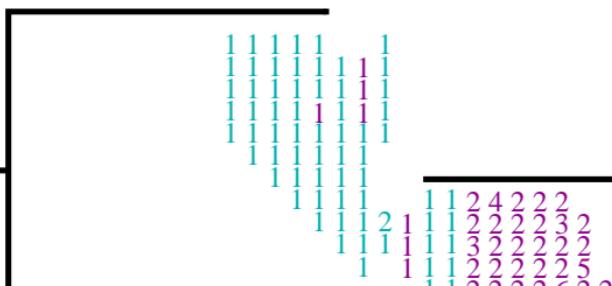


start

7	5	5	8	1	1	1	1	1	1	1	1	1	1	1	1
1	7	6	7	1	1	1	1	1	1	1	1	1	1	1	1
1	1	6	8	1	1	1	1	1	1	1	1	1	1	1	1
1	1	6	7	1	1	1	1	1	1	1	1	1	1	1	1
5	6	6	6	1	1	1	1	1	1	1	1	1	1	1	1
5	4	4	7	6	9	9	9	1	1	7	7	7	8	1	10
6	5	5	7	13	12	11	12	12	13	8	9	10	7	6	1
6	3	5	1	10	10	9	12	11	13	8	8	10	1	1	1
5	3	5	2	1	10	9	13	11	12	7	14	11	9	7	7
4	4	6	1	2	7	10	9	8	14	13	12	10	6	6	7
2	6	6	5	1	6	6	7	8	8	14	13	1	7	7	8
4	2	1	7	1	1	1	1	9	1	13	2	1	1	7	7
3	4	3	2	1	6	1	1	3	2	1	2	1	1	5	2
2	2	3	2	2	4	1	4	2	2	1	5	1	6	6	1
1	2	2	2	3	3	3	2	2	1	1	6	6	1	8	8

## Forward ( $A^*$ )

goal

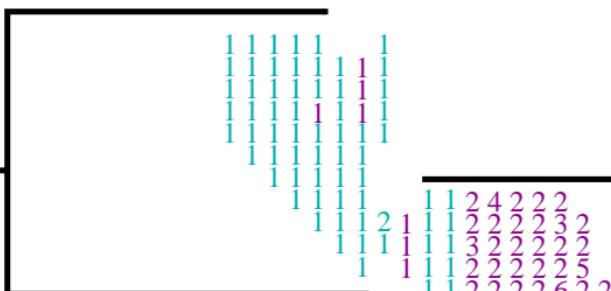


767

Created: **4112**  
Popped: **3300**  
Active: **3529**  
Epoch: **0**  
Open: **299**

## Forward ( $A^*$ )

goal

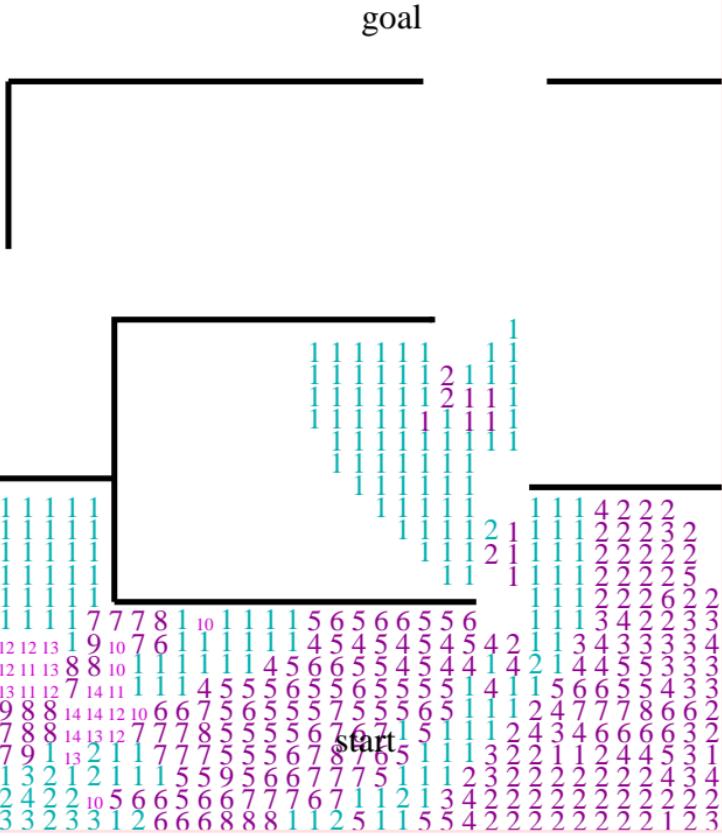


767

Created: **4175**  
Popped: **3350**  
Active: **3590**  
Epoch: **0**  
Open: **310**

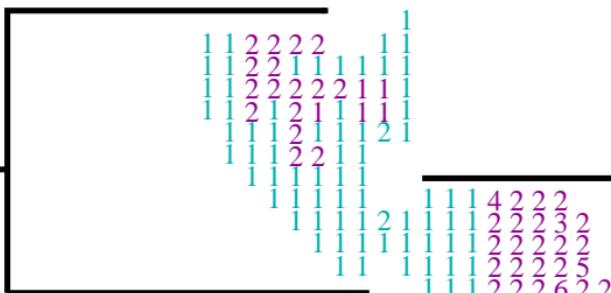
## Forward ( $A^*$ )

Created: **4252**  
Popped: **3400**  
Active: **3651**  
Epoch: **0**  
Open: **310**



## Forward ( $A^*$ )

goal

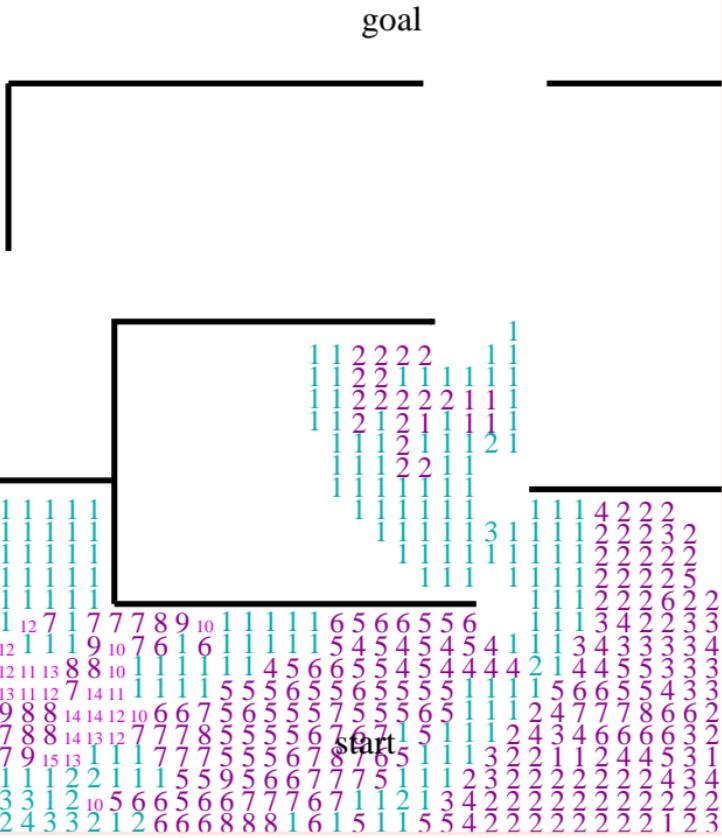


767

Created: 4294  
Popped: 3450  
Active: 3692  
Epoch: 0  
Open: 302

## Forward ( $A^*$ )

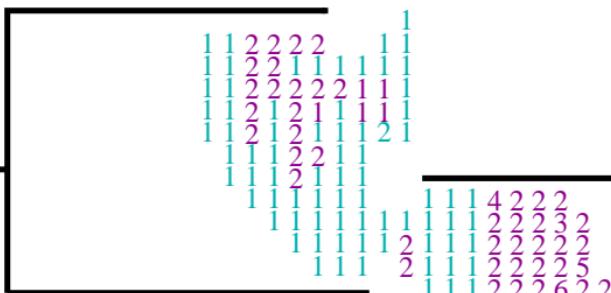
**Created:** 4349  
**Popped:** 3500  
**Active:** 3739  
**Epoch:** 0  
**Open:** 303



## Forward ( $A^*$ )

Created: **4394**  
Popped: **3550**  
Active: **3778**  
Epoch: **0**  
Open: **292**

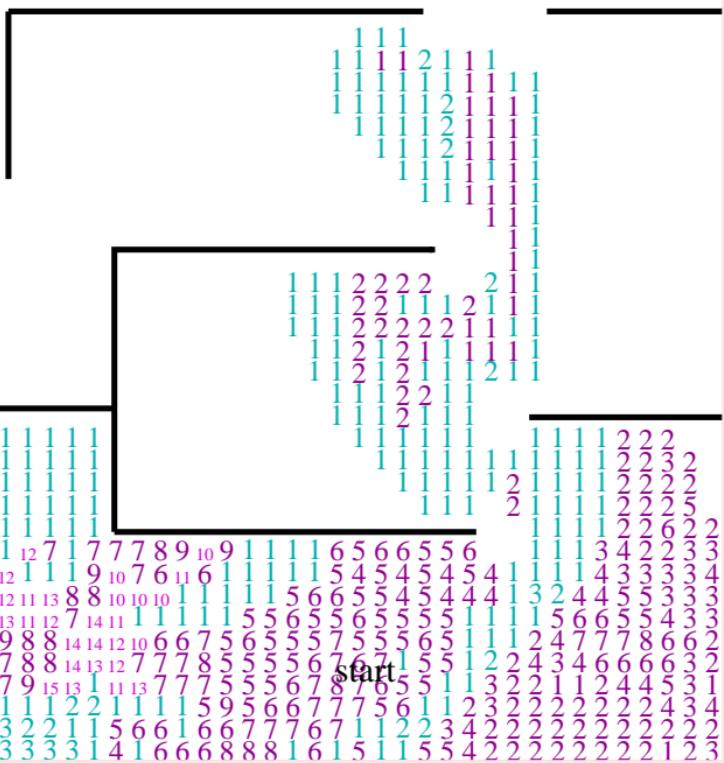
goal



start

# Forward (A\*)

goal

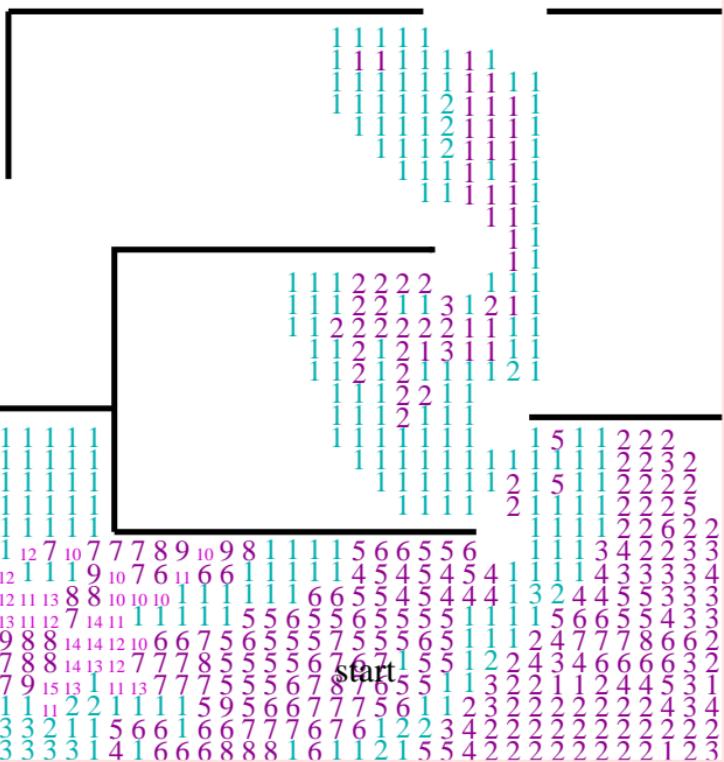


Created: **4514**  
Popped: **3600**  
Active: **3888**  
Epoch: **0**  
Open: **352**

# Forward (A\*)

goal

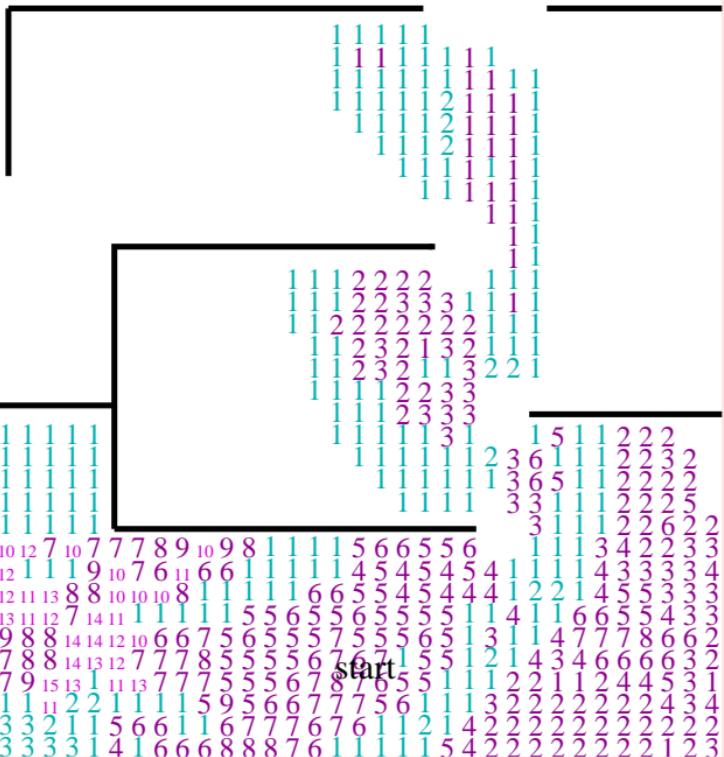
Created: **4574**  
Popped: **3650**  
Active: **3939**  
Epoch: **0**  
Open: **359**



# Forward (A\*)

goal

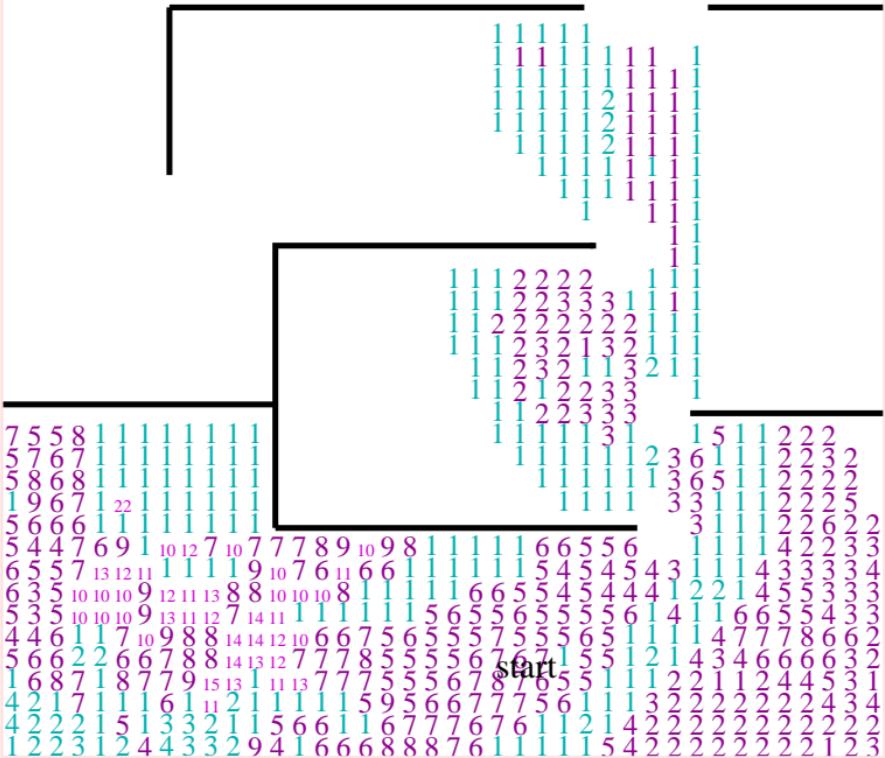
Created: **4622**  
Popped: **3700**  
Active: **3981**  
Epoch: **0**  
Open: **348**



# Forward (A\*)

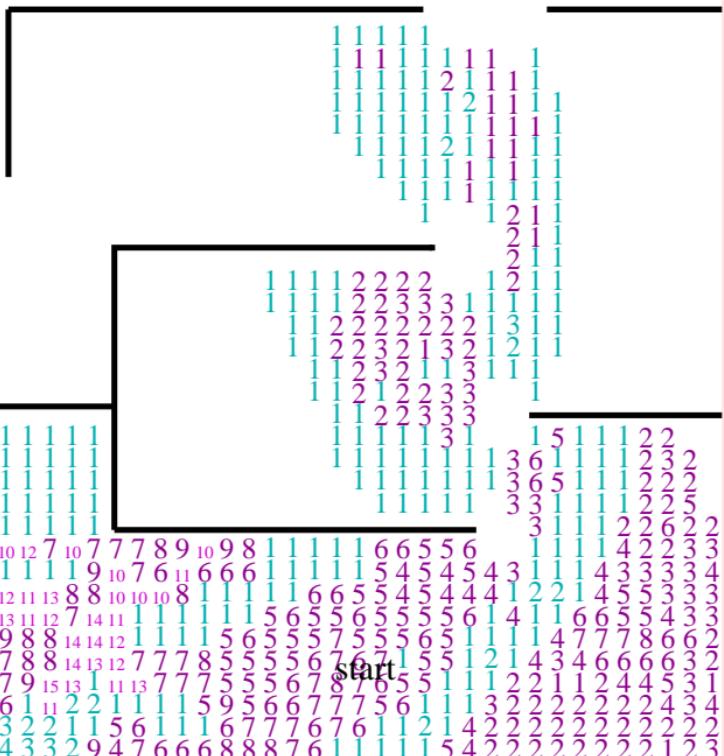
goal

Created: 4686  
Popped: 3750  
Active: 4031  
Epoch: 0  
Open: 357



# Forward (A\*)

goal

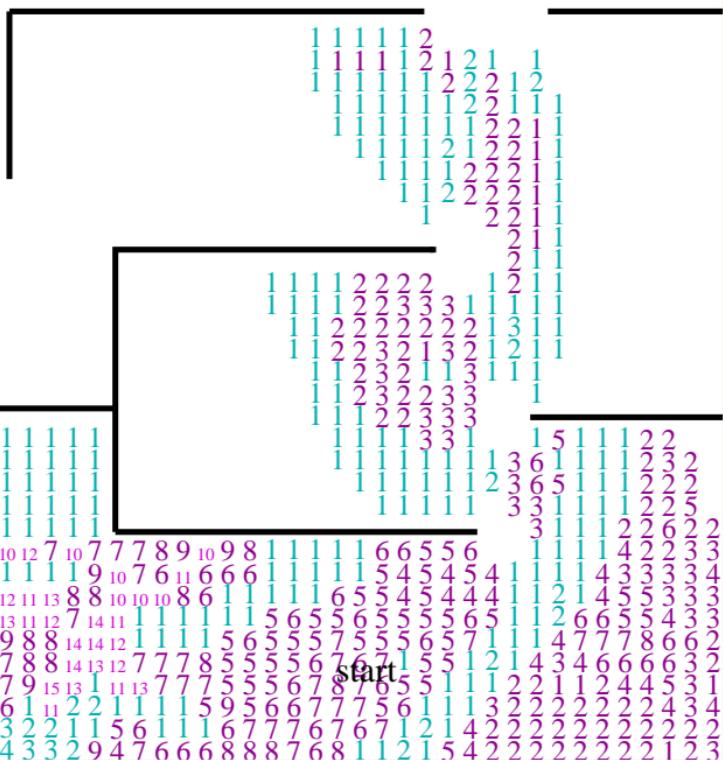


Created: **4779**  
Popped: **3800**  
Active: **4111**  
Epoch: **0**  
Open: **390**

## Forward ( $A^*$ )

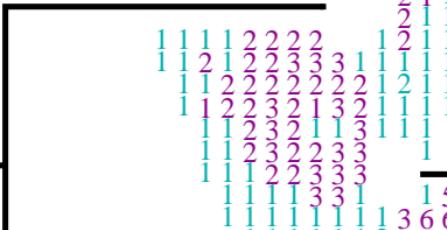
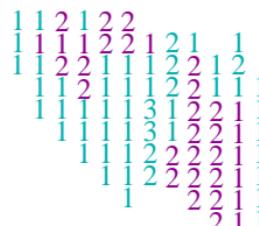
Created: **4837**  
Popped: **3850**  
Active: **4155**  
Epoch: **0**  
Open: **391**

goal



# Forward (A\*)

goal



7	5	5	8	1	1	1	1	1	1
5	7	6	7	1	1	1	1	1	1
5	8	6	8	1	1	1	1	1	1
7	9	6	7	1	1	1	1	1	1
5	6	6	1	1	1	1	1	1	1
5	4	4	7	1	9	1	10	12	7
6	5	5	7	13	12	1	1	9	9
6	3	5	10	10	10	9	12	11	13
5	3	5	10	10	10	9	13	11	12
4	4	6	1	10	7	10	9	8	14
5	6	6	3	2	6	7	8	14	13
7	6	8	1	1	8	7	7	9	15
3	1	1	1	1	1	6	6	11	13
5	2	2	1	5	5	1	2	2	2
2	2	2	3	1	1	4	3	3	2
9	4	7	6	6	6	8	8	8	7
6	6	6	8	8	8	7	6	8	1
1	2	1	2	1	2	1	5	4	2
3	4	3	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	1
2	1	2	2	2	2	2	2	2	3

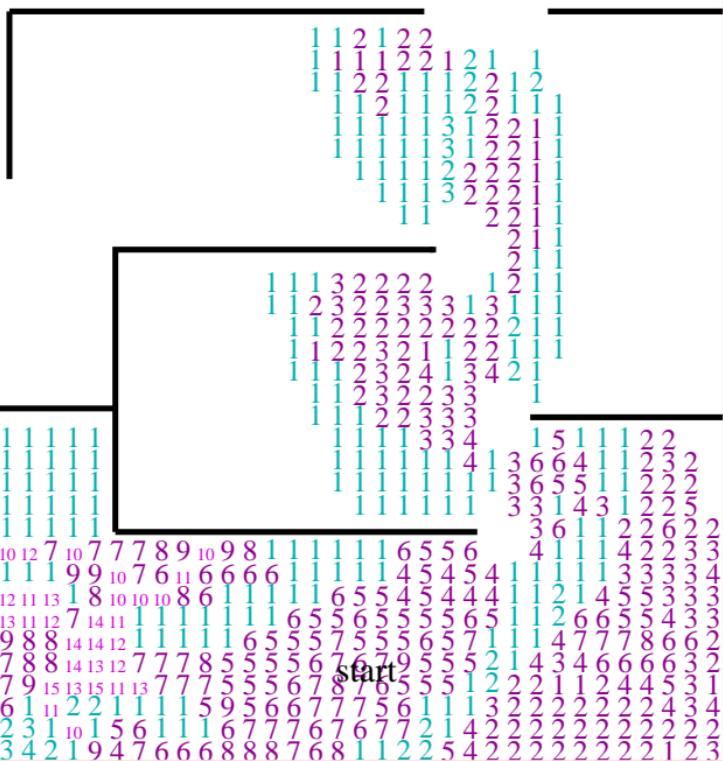
start

Created: **4880**  
Popped: **3900**  
Active: **4194**  
Epoch: **0**  
Open: **379**

## Forward ( $A^*$ )

Created: **4942**  
Popped: **3950**  
Active: **4238**  
Epoch: **0**  
Open: **384**

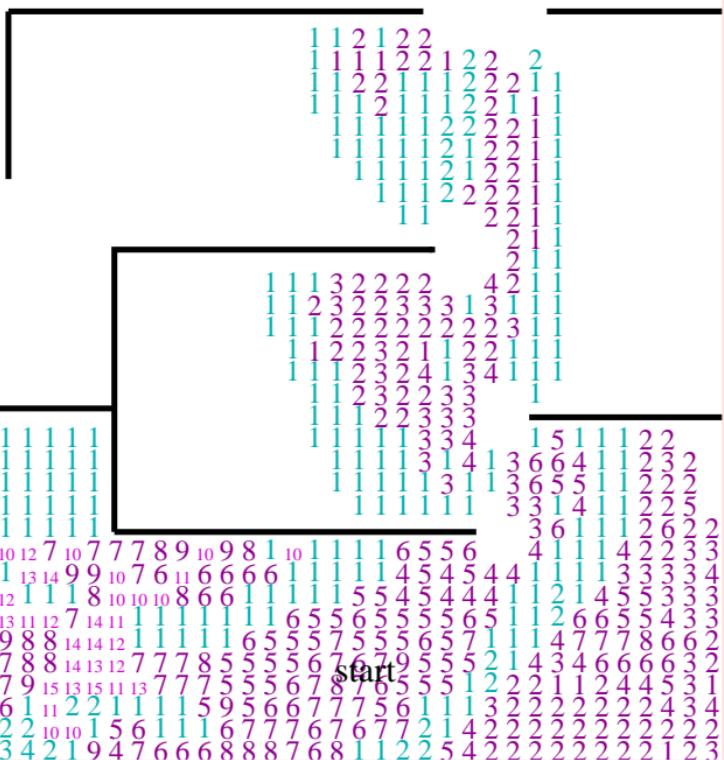
goal



# Forward (A\*)

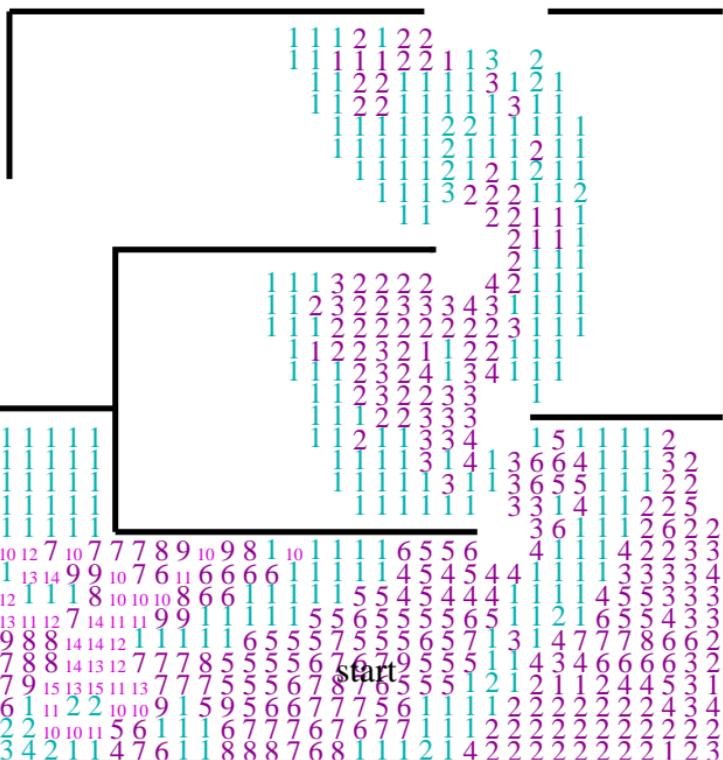
goal

Created: **4996**  
Popped: **4000**  
Active: **4278**  
Epoch: **0**  
Open: **376**



## Forward ( $A^*$ )

goal

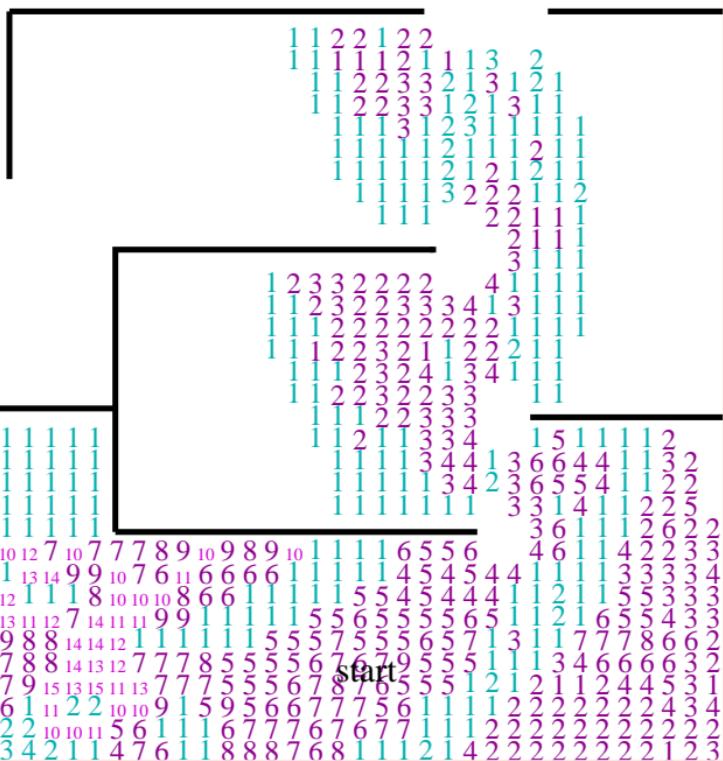


Created: **5072**  
Popped: **4050**  
Active: **4349**  
Epoch: **0**  
Open: **397**

## Forward ( $A^*$ )

Created: **5137**  
Popped: **4100**  
Active: **4400**  
Epoch: **0**  
Open: **401**

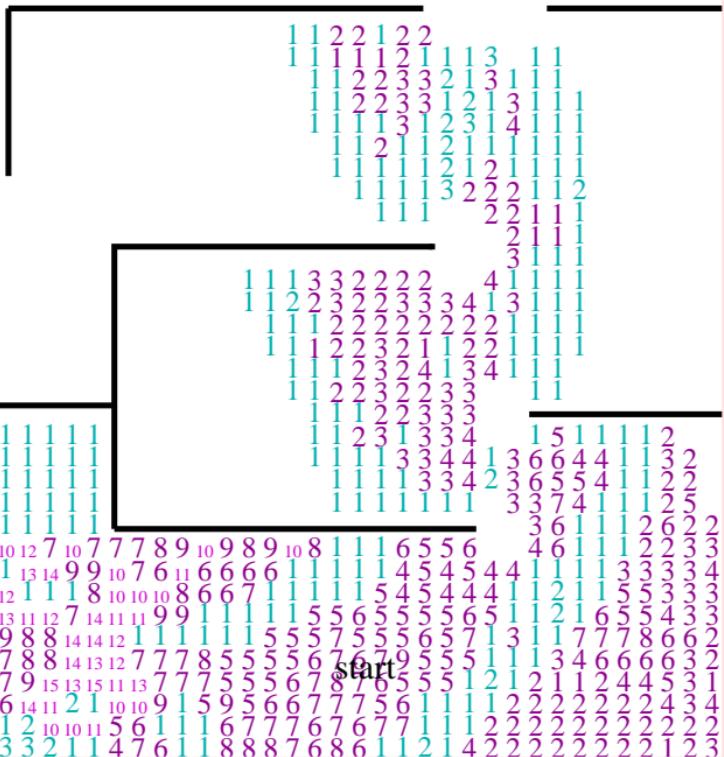
goal



# Forward (A\*)

goal

Created: **5202**  
Popped: **4150**  
Active: **4449**  
Epoch: **0**  
Open: **406**



## Forward ( $A^*$ )

goal

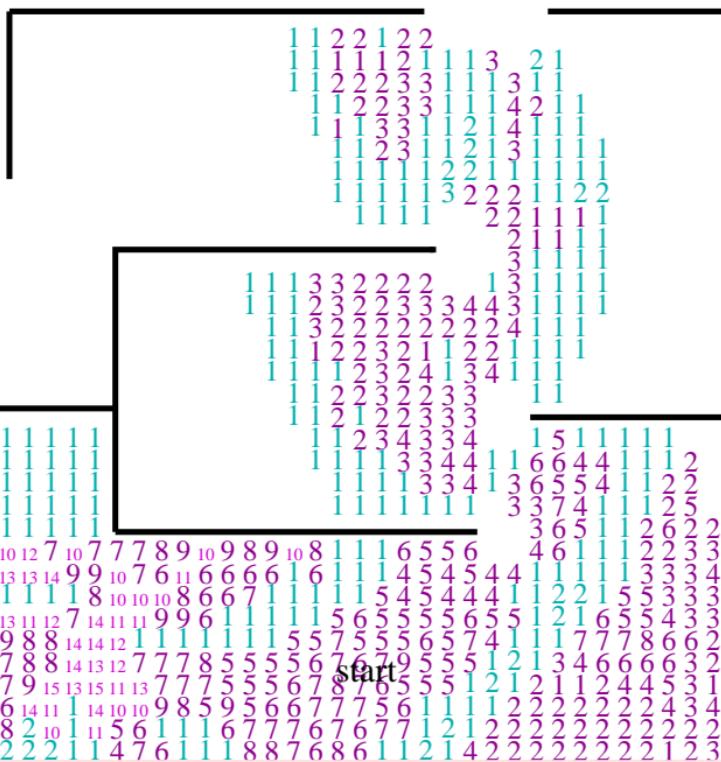
1	1	2	1	2	2	1	4	3	2	1
1	1	1	1	2	2	3	3	1	4	1
1	1	2	2	3	3	3	1	1	4	2
1	1	2	2	3	3	3	1	2	1	1
1	1	1	1	2	1	3	1	1	2	1
1	1	1	1	1	2	1	2	1	1	1
1	1	1	1	1	1	2	2	1	1	2
1	1	1	1	1	1	3	2	2	2	1

Created: **5262**  
Popped: **4200**  
Active: **4494**  
Epoch: **0**  
Open: **411**

## Forward ( $A^*$ )

Created: 5320  
Popped: 4250  
Active: 4544  
Epoch: 0  
Open: 408

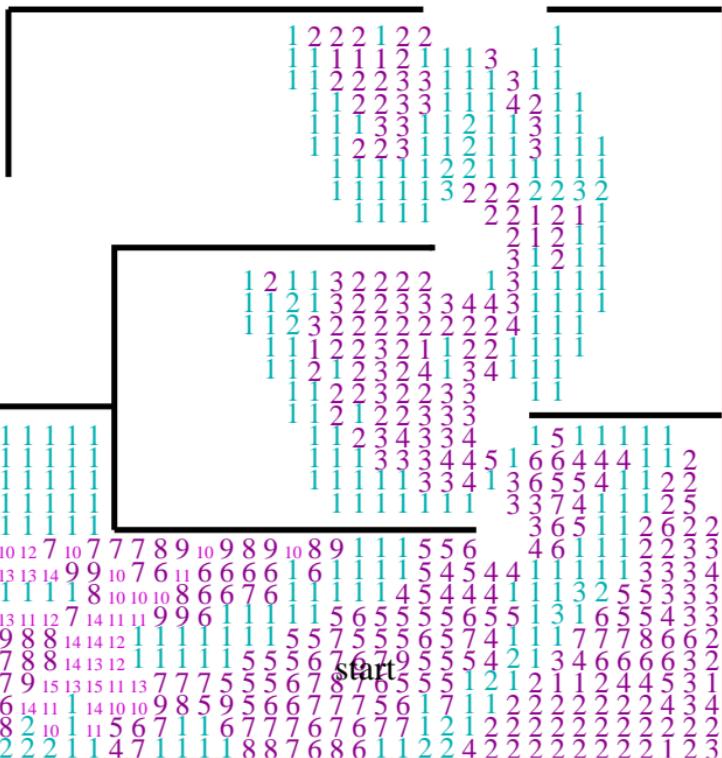
goal



# Forward (A\*)

goal

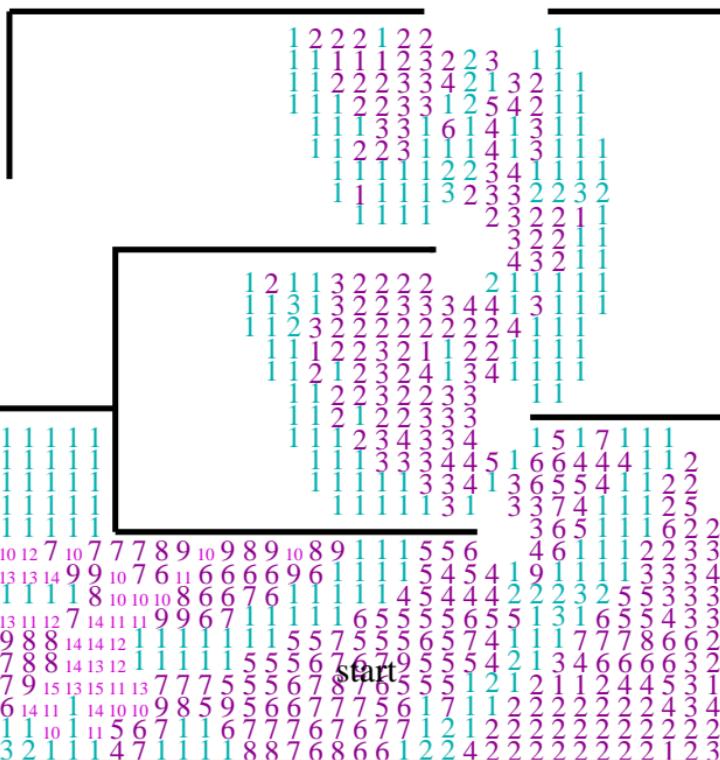
Created: **5391**  
Popped: **4300**  
Active: **4605**  
Epoch: **0**  
Open: **424**



# Forward (A\*)

goal

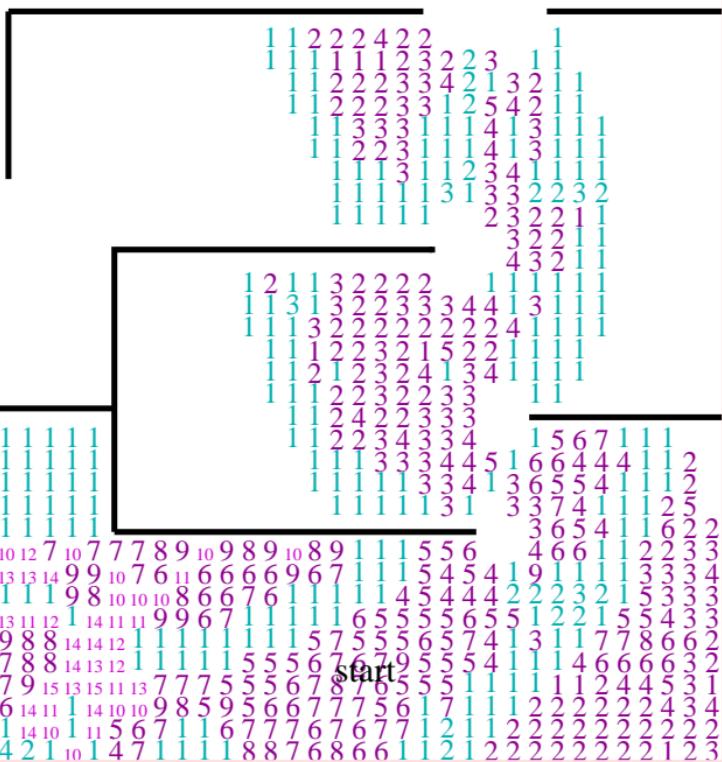
Created: **5451**  
Popped: **4350**  
Active: **4649**  
Epoch: **0**  
Open: **415**



# Forward (A\*)

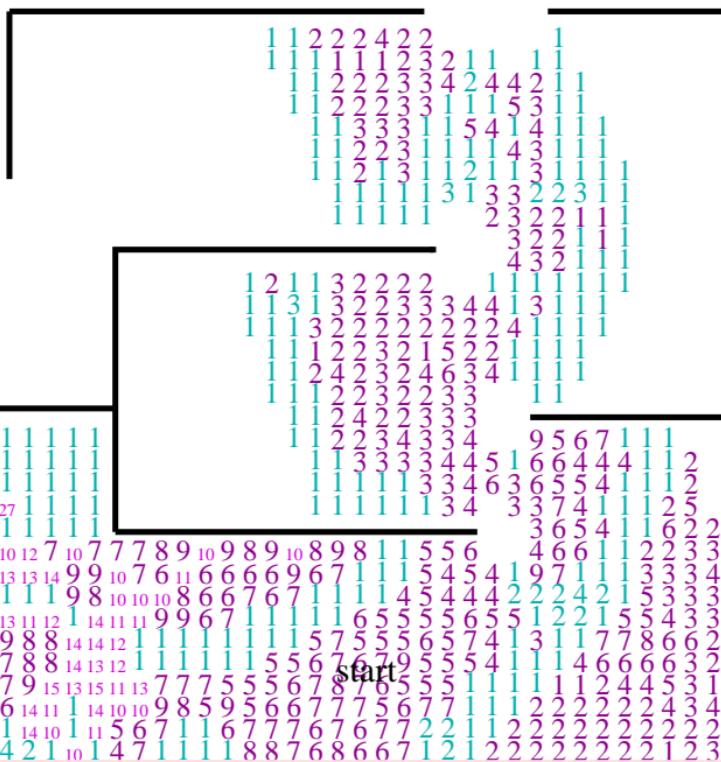
goal

Created: **5510**  
Popped: **4400**  
Active: **4695**  
Epoch: **0**  
Open: **419**



# Forward (A\*)

goal



## Forward ( $A^*$ )

goal

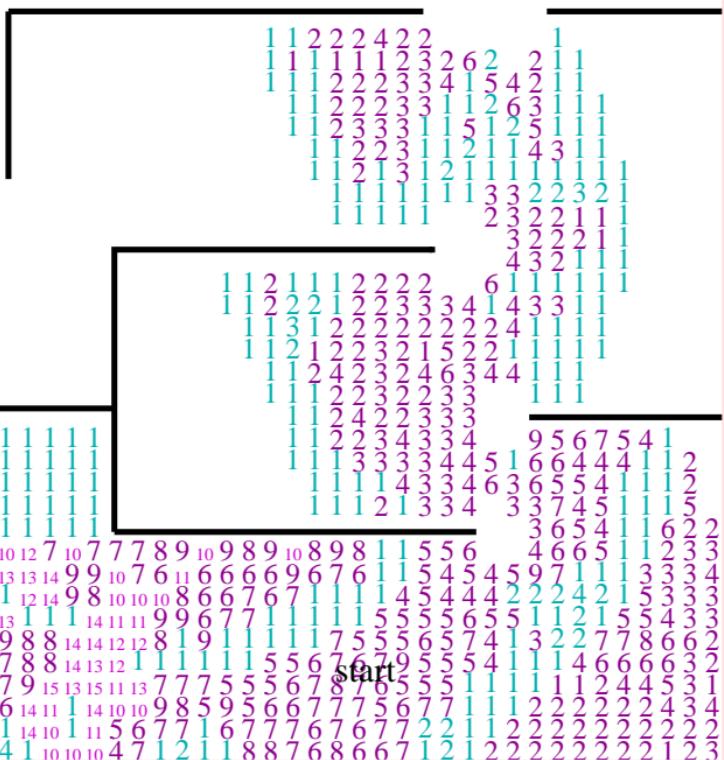


Created: **5625**  
Popped: **4500**  
Active: **4789**  
Epoch: **0**  
Open: **415**

# Forward (A\*)

goal

Created: **5681**  
Popped: **4550**  
Active: **4838**  
Epoch: **0**  
Open: **401**



## Forward ( $A^*$ )

goal

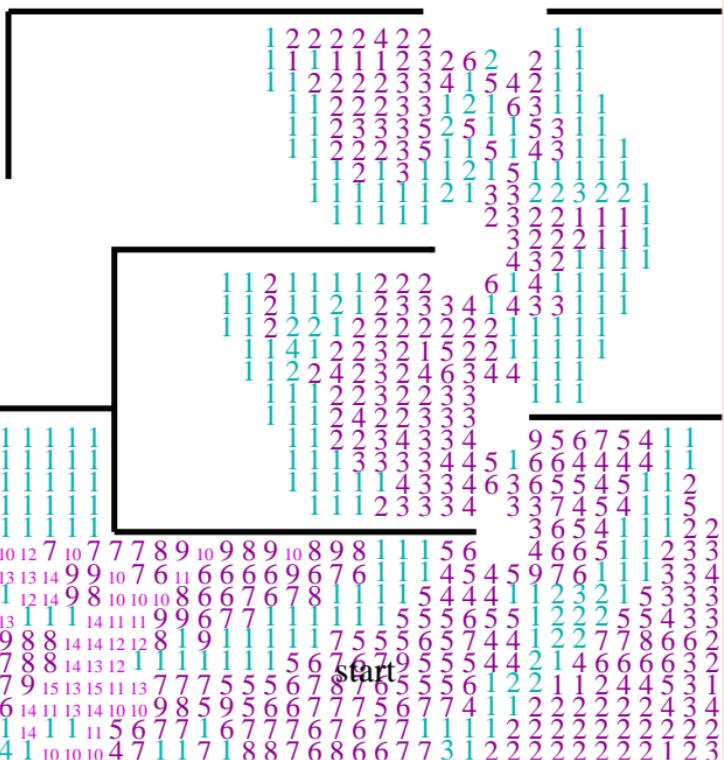


Created: **5745**  
Popped: **4600**  
Active: **4881**  
Epoch: **0**  
Open: **400**

# Forward (A\*)

goal

Created: **5813**  
Popped: **4650**  
Active: **4941**  
Epoch: **0**  
Open: **406**



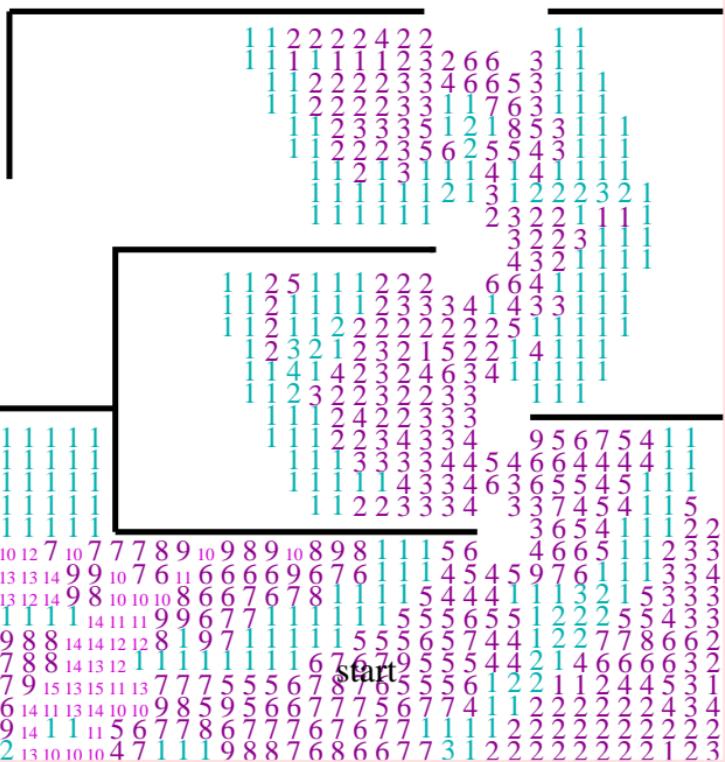
# Forward (A\*)

goal



# Forward (A\*)

goal

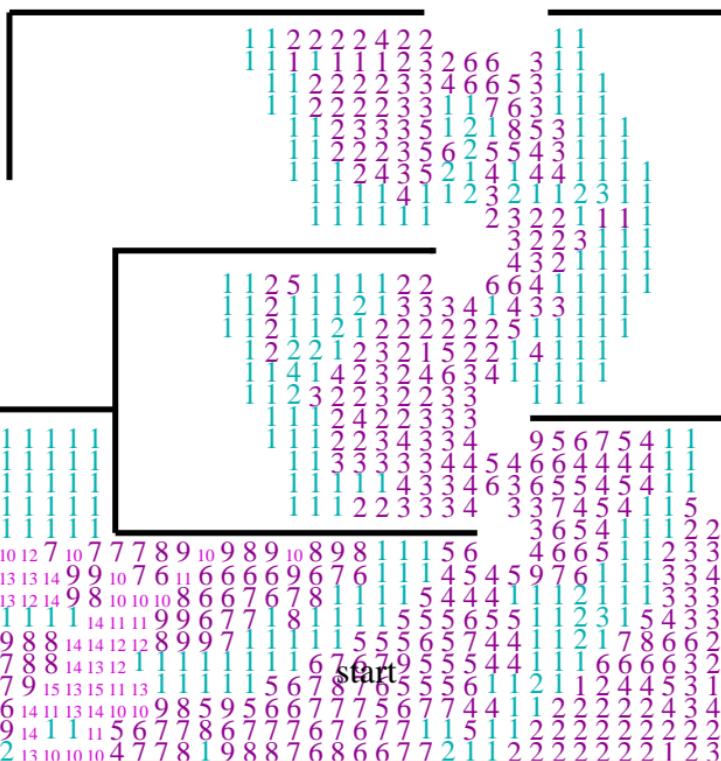


Created: **5938**  
Popped: **4750**  
Active: **5039**  
Epoch: **0**  
Open: **412**

## Forward ( $A^*$ )

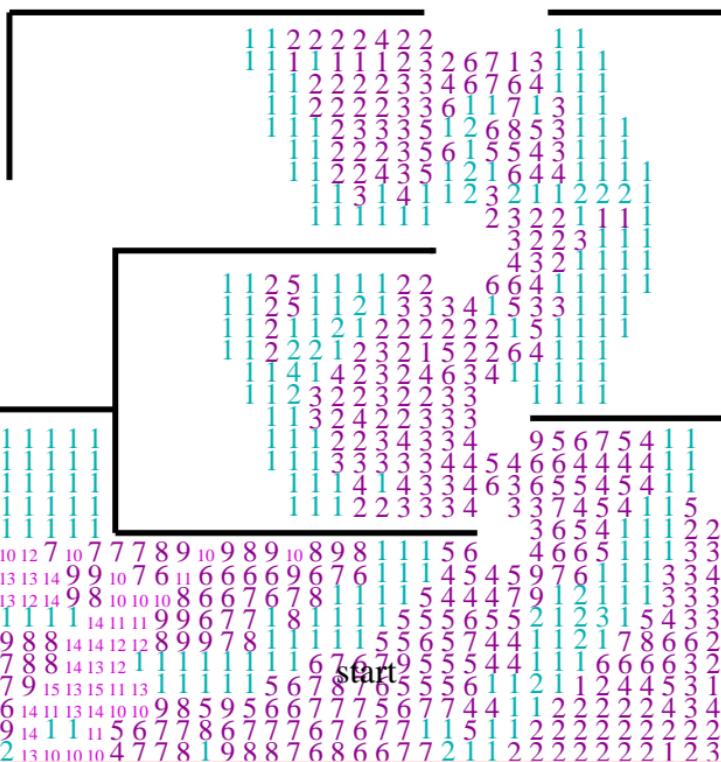
Created: 5999  
Popped: 4800  
Active: 5090  
Epoch: 0  
Open: 416

goal



## Forward ( $A^*$ )

goal



Created: **6056**  
Popped: **4850**  
Active: **5136**  
Epoch: **0**  
Open: **409**

## Forward ( $A^*$ )

**Created:** 6139  
**Popped:** 4900  
**Active:** 5197  
**Epoch:** 0  
**Open:** 428

goal

# Forward (A\*)

goal

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

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

start

5	1	1	1	1	7	9	11	10	12	7	10	7	7	7	8	9	10	9	8	9	8	1	1	5	6	4	1	1	2	2				
6	1	5	1	1	3	12	12	13	13	14	9	9	10	7	6	11	6	6	6	6	9	6	7	6	7	1	1	4	5	4	5	9	7	6
6	3	5	10	10	10	10	13	12	14	9	8	10	10	10	8	6	6	7	6	7	8	1	7	1	1	5	4	4	4	7	9	8	1	
5	3	5	10	10	10	10	13	12	14	9	8	14	11	11	9	9	6	7	7	8	1	7	1	1	5	5	5	5	2	2	2	4	1	
4	4	6	9	10	7	9	8	1	14	12	12	8	9	9	7	8	1	1	1	1	5	5	6	5	7	4	4	4	2	3	2	7	8	
5	6	6	8	10	6	7	8	8	14	13	12	1	1	1	1	1	1	1	1	1	7	6	2	9	5	5	5	4	4	1	1	6		
7	6	8	11	8	7	7	9	15	13	15	11	13	1	1	1	1	1	1	1	1	6	7	6	5	5	5	6	6	1	2	1			
7	5	6	2	1	7	6	6	14	11	13	14	10	10	9	8	5	9	5	6	6	7	7	7	5	6	7	7	4	4	1	1	2	2	
7	5	5	2	1	6	1	9	14	11	11	5	6	7	7	8	6	7	7	7	6	7	7	8	1	5	1	1	2	2	2	2	2	2	
2	1	1	1	1	1	1	2	13	10	10	4	7	8	1	9	8	8	7	6	8	6	6	7	1	3	2	1	2	2	2	2	2	1	2

Created: **6190**  
Popped: **4950**  
Active: **5241**  
Epoch: **0**  
Open: **412**

# Forward (A\*)

goal

1	2	2	2	2	2	4	2	2		1	1	1	1	1	1
1	1	4	1	1	1	2	3	3	2	6	7	1	4	1	1
1	2	2	2	2	2	3	3	4	6	6	7	6	4	3	1
1	2	2	2	2	3	3	3	6	7	8	7	1	3	1	1
1	1	2	2	3	3	3	5	8	2	6	8	5	3	1	1
1	1	1	2	2	3	5	6	1	5	5	4	3	3	1	1
1	1	2	2	4	3	5	1	1	3	1	1	1	2	3	3
1	1	1	3	4	4	5	1	1	3	1	1	1	2	2	1
1	1	1	1	3	1				2	3	2	2	3	2	2
1	1	1	1	1	3				3	2	2	4	1	1	1
1	1	1	1	1	1				4	3	2	4	1	1	1
1	1	1	2	5	1	6	1	2	2	2	6	6	4	1	4
1	1	1	2	5	1	1	2	3	3	3	4	7	5	3	3
1	1	2	5	1	1	2	1	2	2	2	2	1	6	5	4
1	1	1	2	1	1	2	1	3	2	1	5	2	2	6	4
1	1	1	2	2	2	1	2	3	2	4	6	3	4	1	1
1	1	1	1	4	1	1	2	2	2	3	3	1	1	1	1
1	1	1	1	1	3	2	4	2	2	3	3	3	1	1	1
1	1	1	1	1	1	3	1	2	2	3	3	3	4	1	1
7	5	5	8	1	1	1	1	1	1	1	1	1	1	1	1
5	7	6	7	1	1	1	1	1	1	1	1	1	1	1	1
5	8	6	8	1	1	1	1	1	1	1	1	1	1	1	1
7	9	6	7	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
5	1	1	1	1	7	9	11	10	12	7	10	7	7	7	8
6	1	1	1	1	13	12	12	13	13	14	9	9	10	7	6
6	3	1	10	10	10	10	13	12	14	9	8	10	10	10	8
5	3	5	10	10	10	10	11	13	12	8	14	11	11	9	9
4	4	6	9	10	7	10	9	1	1	14	12	12	8	9	9
5	6	8	10	6	6	7	8	14	13	12	1	1	1	1	1
7	6	8	10	11	8	7	7	9	15	13	15	11	13	1	1
7	5	6	1	7	6	6	14	11	13	14	10	10	9	8	5
7	5	5	2	1	6	1	9	14	11	11	5	6	7	7	7
2	1	1	1	1	1	2	13	10	10	4	7	8	1	9	8

start

Created: **6240**  
Popped: **5000**  
Active: **5287**  
Epoch: **0**  
Open: **407**

## Forward ( $A^*$ )

goal

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

Created: 6315  
Popped: 5050  
Active: 5333  
Epoch: 0  
Open: 420

# Forward (A\*)

goal

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

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

start

5	1	6	1	7	9	11	10	12	7	10	7	7	7	8	9	10	9	8	9	10	1	1	1	6	
6	1	1	1	1	13	12	12	13	13	14	9	9	10	7	6	11	6	6	6	6	9	6	7	6	7
6	3	1	10	10	10	10	13	12	14	9	8	10	10	10	8	6	6	7	6	7	1	1	5	4	5
5	3	5	10	10	10	10	1	1	13	8	14	11	11	9	9	6	7	7	1	8	7	7	1	1	1
4	4	6	9	10	7	10	9	1	1	14	12	12	12	8	9	9	7	8	7	1	1	1	5	6	5
5	6	8	10	6	6	7	8	8	14	13	12	12	12	1	1	9	10	7	1	1	1	6	7	6	5
7	6	8	10	11	8	7	7	9	15	13	15	11	13	1	1	1	1	7	8	7	6	5	5	6	6
7	5	6	1	11	7	6	6	14	11	13	14	10	10	9	8	5	9	5	6	6	7	7	5	6	7
7	5	5	2	2	6	7	9	14	11	11	5	6	7	7	8	6	7	7	6	7	7	8	1	5	3
2	1	1	1	1	1	1	1	13	13	13	10	10	4	7	8	1	9	8	8	7	6	8	6	6	7

Created: **6370**  
Popped: **5100**  
Active: **5377**  
Epoch: **0**  
Open: **406**

## Forward ( $A^*$ )

goal

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

1178

Created: **6425**  
Popped: **5150**  
Active: **5422**  
Epoch: **0**  
Open: **403**

## Forward ( $A^*$ )

goal

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

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

start

Created: **6482**  
Popped: **5200**  
Active: **5460**  
Epoch: **0**  
Open: **398**

## Forward ( $A^*$ )

goal

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

start

Created: **6543**  
Popped: **5250**  
Active: **5512**  
Epoch: **0**  
Open: **392**

## Forward ( $A^*$ )

goal

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

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

Created: 6600  
Popped: 5300  
Active: 5563  
Epoch: 0  
Open: 388

## Forward ( $A^*$ )

goal

1	1	2	2	2	2	2	4	2	2	3	2	1	1	1	1
1	1	2	1	4	1	1	1	2	3	6	7	1	4	4	4
1	1	2	2	2	2	2	2	3	3	7	7	3	3	3	3
1	1	2	2	2	2	2	3	3	3	6	8	6	8	5	4
1	1	2	2	2	2	2	3	3	3	7	6	7	5	5	4
1	1	2	2	2	2	2	3	3	3	7	7	5	6	4	4
1	1	2	2	2	2	2	4	3	5	8	5	1	2	3	2
1	1	2	3	3	4	4	5	5	5	2	3	3	2	3	2
1	1	2	3	3	4	4	5	5	5	3	3	2	3	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	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
10	12	7	10	7	7	7	8	9	10	9	8	9	10	9	1
13	13	14	9	9	10	7	6	11	6	6	6	9	7	6	1
13	12	14	9	8	10	10	10	8	6	6	7	6	7	7	1
14	12	13	8	14	11	11	9	9	6	7	7	9	8	7	1
1	1	1	1	14	12	12	8	9	9	7	8	7	7	7	1
7	8	8	14	13	12	10	10	9	10	7	1	1	1	9	5
7	9	15	13	15	11	13	9	1	1	1	1	1	1	1	1
6	14	11	13	14	10	10	9	1	1	1	1	1	1	1	1
9	14	11	11	11	5	6	7	7	8	6	7	7	6	7	7
13	1	1	10	10	4	7	7	8	9	8	8	7	6	8	6

Created: 6666  
Popped: 5350  
Active: 5611  
Epoch: 0  
Open: 385

## Forward ( $A^*$ )

goal

Created: **6723**  
Popped: **5400**  
Active: **5659**  
Epoch: **0**  
Open: **376**

## Forward ( $A^*$ )

goal

Created: **6795**  
Popped: **5450**  
Active: **5712**  
Epoch: **0**  
Open: **393**

## Forward ( $A^*$ )

goal

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

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

**Created:** 6847  
**Popped:** 5500  
**Active:** 5755  
**Epoch:** 0  
**Open:** 379

## Forward ( $A^*$ )

goal

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

**Created:** 6910  
**Popped:** 5550  
**Active:** 5803  
**Epoch:** 0  
**Open:** 380

## Forward ( $A^*$ )

goal

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

Created: **6975**  
Popped: **5600**  
Active: **5853**  
Epoch: **0**  
Open: **375**

## Forward ( $A^*$ )

goal

7	5	5	8	1	1	1	1	33	1	1	1	2	1	0	1	1	4	3	3	5	9	5	6	7	5	4	5	2	1									
7	6	7	1	1	1	1	1	1	1	1	1	1	1	2	2	1	3	3	3	4	4	5	4	6	6	4	4	5	5	2								
5	8	6	8	1	1	1	1	1	1	1	1	1	1	1	2	2	1	4	8	4	3	3	4	6	3	6	5	4	5	4	4	1						
7	9	6	7	1	1	1	1	1	1	1	1	1	1	1	2	2	1	4	2	2	3	3	4	3	3	7	4	5	4	4	7	1						
7	8	7	7	1	1	1	1	1	1	1	1	1	1	1	2	1	4	2	2	3	3	4	3	3	6	5	4	5	5	9	1							
5	7	6	9	7	9	11	10	12	7	10	7	7	8	9	10	9	8	9	10	8	9	8	10	9	8	1	1	4	6	6	5	8	5	1				
6	1	1	9	13	12	12	13	13	14	9	9	10	7	6	11	6	6	6	9	6	7	6	7	6	7	1	1	5	9	7	6	8	6	1				
6	1	1	10	10	10	13	13	14	9	8	10	10	8	6	6	7	6	7	8	10	7	7	6	11	1	1	4	7	9	8	9	7	1	1				
5	3	5	10	10	10	10	14	12	13	8	14	11	11	9	9	6	7	7	9	8	7	7	6	11	1	1	6	5	5	9	10	11	2	2	3			
4	4	6	9	10	7	1	9	9	15	14	12	12	8	9	9	7	8	7	7	7	9	1	1	1	1	5	7	4	4	4	1	3	1	2	2			
5	6	8	10	6	6	7	1	8	1	13	12	10	10	9	10	7	8	1	7	8	1	7	8	1	1	1	5	5	5	4	4	6	5	1	3	2		
7	6	8	10	11	8	7	7	9	15	13	15	11	13	9	9	9	7	7	7	7	1	1	1	1	5	5	5	6	4	4	5	2	1	1	4			
7	5	6	10	11	7	6	14	11	13	14	10	10	9	9	11	1	1	1	1	1	7	5	6	7	7	4	4	3	4	2	1	2	2	4	3	4		
7	5	9	1	6	7	9	14	11	11	11	5	6	7	7	8	6	7	7	7	6	7	7	8	7	5	3	3	2	2	2	2	2	2	2	1			
6	5	6	2	2	6	7	13	1	11	10	10	4	7	7	8	8	9	8	8	7	6	8	6	6	7	9	10	1	3	1	1	2	2	2	2	2	2	3

Created: **7035**  
Popped: **5650**  
Active: **5905**  
Epoch: **0**  
Open: **376**

## Forward ( $A^*$ )

goal

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

**Created:** 7111  
**Popped:** 5700  
**Active:** 5964  
**Epoch:** 0  
**Open:** 393

## Forward ( $A^*$ )

goal

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

9 1 1  
start

Created: **7171**  
Popped: **5750**  
Active: **6012**  
Epoch: **0**  
Open: **389**

## Forward ( $A^*$ )

goal

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

Created: **7229**  
Popped: **5800**  
Active: **6060**  
Epoch: **0**  
Open: **388**

## Forward ( $A^*$ )

goal

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

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

Created: **7293**  
Popped: **5850**  
Active: **6111**  
Epoch: **0**  
Open: **381**

## Forward ( $A^*$ )

goal

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

**Created:** 7350  
**Popped:** 5900  
**Active:** 6164  
**Epoch:** 0  
**Open:** 384

## Forward ( $A^*$ )

goal

Created: **7410**  
Popped: **5950**  
Active: **6210**  
Epoch: **0**  
Open: **381**

## Forward ( $A^*$ )

goal

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

Start

Created: **7474**  
Popped: **6000**  
Active: **6263**  
Epoch: **0**  
Open: **385**

## Forward ( $A^*$ )

goal

Created: **7537**  
Popped: **6050**  
Active: **6313**  
Epoch: **0**  
Open: **388**

## Forward ( $A^*$ )

goal

Created: **7590**  
Popped: **6100**  
Active: **6360**  
Epoch: **0**  
Open: **384**

## Forward ( $A^*$ )

goal

Created: **7651**  
Popped: **6150**  
Active: **6410**  
Epoch: **0**  
Open: **379**

## Forward ( $A^*$ )

goal

**Created:** 7750  
**Popped:** 6200  
**Active:** 6495  
**Epoch:** 0  
**Open:** 417

## Forward ( $A^*$ )

goal

Created: **7847**  
Popped: **6250**  
Active: **6572**  
Epoch: **0**  
Open: **449**

## Forward ( $A^*$ )

goal

Created: **7914**  
Popped: **6300**  
Active: **6626**  
Epoch: **0**  
Open: **455**

## Forward ( $A^*$ )

goal

**Created:** **7964**  
**Popped:** **6350**  
**Active:** **6671**  
**Epoch:** **0**  
**Open:** **447**

## Forward ( $A^*$ )

goal

start

**Created:** 8080  
**Popped:** 6400  
**Active:** 6750  
**Epoch:** 0  
**Open:** 505

## Forward ( $A^*$ )

goal

1	1	2	2	2	2	2	2	1	1	1	1	2	1	2	1	2	3	2	3	2	2	2	1	1
1	2	2	1	2	1	4	2	3	3	4	2	2	8	2	1	4	3	2	3	2	2	2	1	1
1	2	2	2	2	2	2	2	2	1	1	1	1	2	8	2	6	4	3	2	2	2	2	1	1
1	1	3	2	2	2	2	2	2	1	1	1	1	1	2	8	5	3	4	3	2	2	2	1	1
1	1	1	2	2	2	3	2	2	2	1	1	1	1	1	2	9	5	3	3	3	3	3	1	1
1	1	1	2	2	2	3	2	2	2	1	1	1	1	1	2	9	4	4	4	4	4	4	2	3
1	1	1	2	2	2	3	3	2	2	2	1	1	1	1	1	2	7	5	8	6	5	8	2	3
1	1	1	1	2	2	4	3	3	3	2	3	1	1	1	1	2	2	2	2	3	4	3	2	1
1	1	1	1	1	2	4	2	3	3	2	3	1	1	1	1	1	2	4	3	2	4	2	2	1
1	1	1	1	1	1	2	5	7	6	6	8	6	6	7	1	1	2	1	6	5	4	4	2	1
1	1	1	1	1	1	2	5	5	6	6	6	7	1	1	1	1	2	1	5	4	3	4	2	1
1	1	1	1	1	1	2	5	6	5	5	6	1	1	1	1	1	2	1	6	5	4	3	3	1
1	1	1	1	1	1	2	6	3	4	6	5	4	1	2	1	2	1	2	6	4	5	3	3	1
1	1	1	1	1	1	2	6	5	7	5	6	1	1	2	3	4	6	5	4	3	3	4	3	1
1	1	1	1	1	1	3	7	6	5	6	1	1	1	3	7	6	5	6	4	3	3	2	1	1
1	1	1	1	1	1	3	6	1	1	1	2	1	1	2	1	3	6	1	5	4	3	3	2	1
1	1	1	1	1	1	2	10	1	8	8	2	1	1	3	4	1	2	1	6	5	4	4	4	2
1	1	1	1	1	1	9	1	1	1	2	2	1	1	4	4	5	4	6	6	4	4	4	4	5
1	1	1	1	1	1	1	11	1	10	3	2	3	3	4	6	3	6	5	5	4	5	4	4	4
1	1	1	1	1	1	1	2	2	1	3	2	1	3	3	4	3	3	7	5	4	5	4	4	7
10	12	7	10	7	7	7	8	9	10	9	8	9	10	8	9	8	10	9	8	9	9	6	5	6
13	13	14	9	9	9	10	7	6	11	6	6	6	9	6	7	6	7	6	7	1	1	9	7	6
13	12	14	9	8	10	10	10	8	6	6	7	6	7	8	10	7	7	6	8	6	1	9	8	9
14	12	13	8	14	11	11	9	9	6	7	7	9	8	7	7	11	9	7	7	1	1	5	9	10
10	9	9	15	14	12	12	8	9	9	7	8	7	7	7	9	9	7	7	1	1	4	4	4	10
7	9	8	15	13	12	10	10	9	10	7	8	9	7	8	9	8	10	1	1	5	4	4	6	5
7	9	15	13	15	11	13	9	9	9	7	7	7	8	9	10	9	10	1	1	5	6	6	4	5
6	14	11	13	14	10	10	9	10	7	11	8	8	9	9	11	7	7	4	3	4	4	4	4	4
9	14	11	11	11	5	6	7	7	8	1	7	8	7	2	1	1	7	8	5	3	3	3	3	2
13	14	11	10	10	4	7	7	8	2	2	2	2	1	6	6	7	9	10	7	3	3	3	3	1

**Created:** 8138  
**Popped:** 6450  
**Active:** 6801  
**Epoch:** 0  
**Open:** 507

## Forward ( $A^*$ )

goal

The figure shows a 10x10 grid of numbers from 1 to 100. The numbers are arranged in a specific pattern: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

A black box highlights a 3x3 subgrid in the center of the grid. The word "start" is written vertically along the right edge of the grid.

Created: **8209**  
Popped: **6500**  
Active: **6863**  
Epoch: **0**  
Open: **506**

## Forward ( $A^*$ )

goal

Created: **8261**  
Popped: **6550**  
Active: **6910**  
Epoch: **0**  
Open: **484**

## Forward ( $A^*$ )

goal

The figure shows a 10x10 grid of numbers. A path is highlighted in red, starting at 'start' (row 1, col 5) and ending at 'end' (row 10, col 1). The path follows a specific sequence of numbers: 5, 4, 3, 2, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20.

Created: **8331**  
Popped: **6600**  
Active: **6964**  
Epoch: **0**  
Open: **496**

# Forward (A\*)

goal

1	1	1	1	1	1	1	1	1	1	1	1	1	4	1	1	6	2	2	2	2	2	2	1	1
1	1	2	3	2	1	1	1	2	2	1	3	3	3	4	7	6	2	1	2	4	3	2	2	2
1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	10	4	11	2	5	3	4	2
1	1	3	1	2	3	2	1	1	1	1	1	1	1	1	1	1	12	5	8	2	5	3	3	3
1	1	2	3	2	3	2	1	2	1	1	1	1	1	1	1	1	12	4	11	2	5	3	3	3
1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	7	2	4	4	5	4	4
1	1	1	3	3	3	3	1	2	1	2	1	2	1	2	1	2	1	6	2	5	5	8	7	1
1	1	1	2	2	2	4	2	1	1	2	2	3	1	4	2	2	2	2	4	3	4	3	1	1

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

7	5	5	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	7	6	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	8	6	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	9	6	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	8	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	8	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	7	6	9	7	9	7	9	7	9	7	9	7	9	7	9	7	9	8	9	7	8	9	7	8	
5	7	6	9	7	9	7	9	7	9	7	9	7	9	7	9	7	9	8	9	7	8	9	7	8	
5	6	6	8	10	6	7	7	9	8	9	7	8	9	7	8	9	7	8	1	1	4	4	4	4	
5	6	6	8	10	6	7	7	9	8	9	7	8	9	7	8	9	7	8	1	1	5	4	6	5	
5	6	6	8	10	6	7	7	9	8	9	7	8	9	7	8	9	7	8	1	1	5	4	6	5	
7	6	8	10	11	8	7	7	9	15	13	15	11	13	9	9	7	7	8	9	10	5	6	4	5	2
7	5	6	10	11	7	6	6	14	11	13	14	10	10	9	10	7	11	7	8	8	9	9	1	1	1
7	5	5	9	6	7	9	14	11	11	11	11	11	11	5	6	7	7	8	1	1	1	1	2	2	2
6	5	6	9	6	7	13	14	11	10	10	4	7	8	2	2	2	2	2	1	1	1	2	2	1	2

start

Created: **8421**  
 Popped: **6650**  
 Active: **7038**  
 Epoch: **0**  
 Open: **526**

## Forward ( $A^*$ )

goal

start

Created: **8478**  
Popped: **6700**  
Active: **7090**  
Epoch: **0**  
Open: **530**

## Forward ( $A^*$ )

goal

Created: **8538**  
Popped: **6750**  
Active: **7141**  
Epoch: **0**  
Open: **534**

## Forward ( $A^*$ )

goal

Created: **8604**  
Popped: **6800**  
Active: **7190**  
Epoch: **0**  
Open: **541**

# Forward (A\*)

goal

1	1	1	1	1	1	1	1	1	4	4	7	5	6	3	4	2	3	2	2	2	1	1			
1	2	3	4	1	1	2	5	3	3	3	4	7	6	1	3	2	4	3	2	2	2	2	1		
1	2	1	1	1	1	1	1	5	5	6	1	1	1	2	1	3	2	2	2	2	2	2	1		
1	2	1	1	2	1	1	2	1	5	1	6	1	1	3	3	1	1	3	4	2	2	2	1		
1	2	3	2	1	3	2	1	1	6	6	6	1	1	4	3	1	1	3	3	3	3	3	1		
1	1	3	1	2	3	2	1	2	1	1	1	1	1	1	3	2	1	1	3	3	3	3	1		
1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	3	2	1	1	4	5	4	4	4	1	
1	1	1	3	3	3	3	3	1	1	1	1	1	1	1	6	1	1	5	8	6	5	8	7	1	
1	1	1	2	2	2	4	1	1	1	2	2	4	3	1	1	1	1	2	3	2	3	2	3	1	
															3	2	2	1	2	4	3	4	3	1	1
1	1	1	1	1	1	1	1	2	5	7	6	6	8	6	4	1	2	1	3	2	4	4	2	2	
1	1	1	1	1	1	1	1	2	5	5	6	6	7	1	2	6	2	5	3	3	3	2	4	2	
1	1	1	1	1	1	1	1	2	5	6	5	6	7	6	1	2	1	1	6	5	4	3	4	2	
1	1	1	1	1	1	1	1	2	6	3	4	6	5	4	1	2	1	1	6	4	5	3	3	1	
1	1	1	1	1	1	1	1	2	6	5	7	5	6	6	1	1	1	4	6	5	4	3	3	1	
1	1	1	1	1	1	1	1	3	7	6	6	5	6	5	1	2	1	4	3	4	3	2	3	1	
									3	6	9	1	1	5	1	2	3								
7	5	5	8	1	1	1	1	1	1	1	1	1	1	1	2	10	13	8	8	1	2	1	4	9	
5	7	6	7	1	1	1	1	1	1	1	1	1	1	1	1	9	1	1	1	3	2	1	4	5	4
5	8	6	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	5	4	4	4	2
7	9	6	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	8	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	7	6	9	7	9	11	10	12	7	10	7	7	7	8	9	10	9	8	9	8	9	8	9	7	10
6	7	7	9	11	10	12	13	14	7	10	7	7	7	8	9	10	7	7	6	7	6	7	6	6	6
6	7	7	9	11	10	12	13	14	9	8	10	10	10	8	6	6	7	6	7	6	7	6	6	6	6
7	5	7	10	10	10	10	13	12	4	9	8	10	10	10	8	6	6	7	6	7	6	7	6	6	6
1	2	6	10	10	10	10	14	12	8	14	11	11	9	9	6	7	7	9	8	7	7	7	7	7	1
4	1	1	9	10	7	11	10	9	9	15	14	12	12	8	9	9	7	8	7	7	9	7	7	7	2
5	6	6	8	10	6	7	7	9	8	15	13	12	10	10	9	10	7	8	9	7	8	9	7	7	2
7	6	8	10	11	8	7	7	9	15	13	15	11	13	9	9	9	7	7	8	9	9	8	7	7	2
7	5	6	10	11	7	6	6	14	11	13	14	10	10	9	10	7	11	7	8	8	9	9	9	1	2
7	5	5	9	6	7	9	14	11	11	11	11	5	6	7	7	10	8	8	10	9	7	9	7	1	2
6	5	6	9	6	7	13	14	11	10	10	4	7	8	1	1	1	1	7	2	2	1	7	9	10	7

Created: **8679**  
Popped: **6850**  
Active: **7243**  
Epoch: **0**  
Open: **557**

## Forward ( $A^*$ )

goal

A 15x15 grid puzzle with various numbers and a 'start' marker. The grid contains the following numbers:

- Top row: 1, 2, 1, 1, 1, 1, 2, 2, 2, 4, 4, 7, 5, 6
- Second row: 1, 2, 3, 1, 1, 1, 2, 1, 3, 3, 3, 4, 7, 6
- Third row: 1, 2, 1, 1, 2, 1, 2, 1, 5, 5, 6, 1
- Fourth row: 1, 2, 1, 1, 2, 1, 2, 1, 5, 1, 6, 1
- Fifth row: 1, 2, 3, 2, 1, 3, 2, 2, 1, 6, 6, 1
- Sixth row: 1, 1, 3, 1, 2, 3, 2, 1, 1, 1, 1, 1, 1
- Seventh row: 1, 1, 2, 2, 2, 2, 1, 2, 1, 1, 1, 1, 1
- Eighth row: 1, 1, 1, 3, 3, 3, 3, 1, 1, 1, 1, 1, 2
- Ninth row: 1, 1, 1, 2, 2, 2, 2, 1, 1, 1, 1, 1, 1
- Tenth row: 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1
- Eleventh row: 1, 1, 1, 1, 1, 1, 1, 2, 5, 7, 6, 6, 8, 6, 4
- Twelfth row: 1, 1, 1, 1, 1, 1, 2, 5, 5, 6, 6, 6, 7, 1, 2
- Thirteenth row: 1, 1, 1, 1, 1, 2, 5, 6, 5, 5, 6, 7, 6, 1
- Fourteenth row: 1, 1, 1, 1, 1, 2, 6, 3, 4, 6, 5, 4, 5
- Fifteenth row: 1, 1, 1, 1, 1, 2, 6, 5, 7, 5, 6, 6, 1
- Sixteenth row: 1, 1, 1, 1, 1, 3, 7, 6, 6, 5, 6, 5, 1
- Seventeenth row: 1, 1, 1, 1, 1, 3, 6, 9, 1, 10, 1, 5, 1, 2, 1
- Eighteenth row: 1, 1, 1, 1, 1, 2, 10, 13, 8, 8, 1, 1, 5, 1, 4
- Nineteenth row: 1, 1, 1, 1, 1, 9, 1, 1, 1, 1, 3, 2, 1, 4, 5, 4
- Twenty-first row: 1, 1, 1, 1, 1, 1, 10, 1, 10, 11, 2, 3, 2, 3, 4, 6, 3
- Twenty-second row: 1, 1, 1, 1, 1, 1, 8, 1, 2, 3, 2, 1, 3, 4

A 'start' marker is located at the bottom center of the grid.

Created: **8746**  
Popped: **6900**  
Active: **7291**  
Epoch: **0**  
Open: **558**

## Forward ( $A^*$ )

goal

Created: **8799**  
Popped: **6950**  
Active: **7339**  
Epoch: **0**  
Open: **555**

## Forward ( $A^*$ )

goal

1	2	1	1	1	1	2	2	2	4	4	7	5	6	1	3	2	3	2	2	2	1
1	2	3	1	1	2	1	3	3	3	4	7	5	6	1	3	2	2	2	2	2	2
1	2	1	1	1	1	2	1	5	5	5	6	1	1	1	5	10	2	3	2	2	2
1	2	3	2	1	3	1	2	1	6	6	6	1	1	1	2	6	10	2	3	2	2
1	1	3	1	2	3	2	1	1	5	1	1	1	1	12	1	4	7	3	3	3	1
1	1	1	2	2	2	1	2	1	1	1	1	1	1	14	3	2	4	5	4	4	4
1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	2	1	7	8	6	5	8
1	1	1	2	2	2	1	2	1	1	1	1	1	1	1	2	3	1	5	2	3	1
1	1	1	1	2	2	2	1	2	1	1	1	1	1	1	3	2	1	2	4	3	4
1	1	1	1	1	2	5	7	6	6	8	6	6	4	3	1	1	1	5	4	4	2
1	1	1	1	1	1	2	5	5	6	6	7	1	1	1	2	6	5	3	3	4	2
1	1	1	1	1	1	2	6	3	4	6	5	4	5	2	1	2	6	4	5	3	1
1	1	1	1	1	1	2	6	5	7	5	6	6	1	1	2	1	6	5	4	3	3
1	1	1	1	1	1	3	7	6	5	6	5	5	1	1	1	1	4	3	4	3	2
1	1	1	1	1	1	3	6	9	1	1	5	1	2	2	1	1	1	1	6	7	5
1	1	1	1	1	1	2	10	13	8	8	1	2	1	1	1	1	1	1	6	5	4
1	1	1	1	1	1	9	1	1	1	1	3	2	2	1	6	5	1	4	4	4	5
1	1	1	1	1	1	10	1	10	11	1	4	2	3	1	7	4	1	5	4	5	4
1	1	1	1	1	1	1	8	1	1	3	3	1	3	1	4	4	1	4	5	4	7
8	9	10	9	8	9	10	8	9	8	10	9	8	8	9	1	1	1	1	6	7	5
6	11	6	6	6	6	9	6	7	6	7	6	7	6	7	6	6	1	7	6	8	6
10	8	6	6	7	6	7	8	10	7	7	6	8	6	6	1	2	1	8	9	7	10
9	9	6	7	7	9	8	7	7	9	7	7	7	7	7	1	2	1	9	10	11	12
8	9	9	7	8	7	7	7	9	9	7	7	7	8	1	1	1	4	4	10	13	12
10	9	10	9	8	7	8	9	8	9	8	10	12	1	1	1	1	4	4	1	1	1
3	9	9	9	7	7	7	8	9	10	8	1	1	1	1	6	6	4	5	2	1	1
9	10	9	7	7	7	8	9	9	9	1	1	1	1	1	7	4	3	4	4	4	4
7	7	7	8	8	10	9	7	9	7	1	8	7	5	3	3	3	3	3	2	1	2
7	8	1	1	1	1	7	1	2	1	7	9	10	7	3	3	3	3	1	2	1	2

Created: 8870  
Popped: 7000  
Active: 7403  
Epoch: 0  
Open: 558

## Forward ( $A^*$ )

goal

1	2	1	1	1	1	2	2	4	4	7	5	6	1	3	4	1	3	2	3	2	2	2	1	1					
1	2	3	1	1	1	1	1	1	3	3	3	4	7	6	11	3	4	1	3	2	2	2	2	2	1	1			
1	2	1	1	1	1	2	1	1	1	5	5	6	1	11	1	3	2	2	2	2	2	2	2	2	1	1			
1	2	1	1	2	1	1	1	1	5	5	6	1	1	12	1	4	2	1	1	3	3	3	3	3	3	1	1		
1	2	3	2	1	3	1	2	1	6	6	6	1	1	14	3	1	8	1	5	4	4	4	4	4	4	3	1		
1	1	3	1	2	3	2	1	1	5	1	1	1	1	1	12	1	7	1	8	6	5	8	7	1	1	3			
1	1	1	2	2	2	2	1	2	1	1	1	1	1	1	1	3	2	1	2	4	4	2	2	2	2	3			
1	1	1	3	3	3	3	3	2	1	1	1	1	1	1	1	3	2	1	2	4	4	2	2	2	2	3			
1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1	3	3	2	4	2	2	2	3			
1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	2	6	4	5	3	3	3	4	1	1		
1	1	1	1	1	1	2	5	7	6	6	8	6	6	4	3	1	1	1	2	6	4	5	3	3	4	1	1		
1	1	1	1	1	1	2	5	5	6	6	7	1	1	1	1	2	1	3	3	2	4	2	2	2	2	3			
1	1	1	1	1	1	2	5	6	5	5	6	7	6	1	1	1	2	6	4	5	3	3	3	4	1	1			
1	1	1	1	1	1	2	6	3	4	6	5	4	5	2	1	1	2	6	4	5	3	3	3	4	1	1			
1	1	1	1	1	1	2	6	5	7	5	6	6	1	1	1	2	1	6	5	4	3	3	4	3	1	1			
1	1	1	1	1	1	3	7	6	6	5	5	5	1	1	1	1	2	2	4	3	3	2	3	2	1	1			
1	1	1	1	1	1	3	6	9	8	10	13	8	8	1	1	2	2	1	1	2	2	1	1	2	2	3			
1	1	1	1	1	1	2	10	13	8	8	1	1	1	1	1	3	2	3	1	6	5	4	3	2	1	1			
1	1	1	1	1	1	9	1	1	1	1	3	2	3	1	1	1	2	1	6	5	4	3	2	1	1	1			
1	1	1	1	1	1	10	1	10	11	1	3	2	1	1	1	3	2	1	7	4	1	5	4	4	4	2			
1	1	1	1	1	1	7	1	1	1	3	3	2	3	1	1	1	2	1	4	3	2	1	5	4	4	2			
1	1	1	1	1	1	38	8	10	7	7	8	9	10	8	9	8	10	9	8	9	1	6	7	5	4	2			
10	12	7	10	7	7	8	9	10	9	8	9	10	8	9	8	10	9	8	9	1	1	4	4	4	4	5	2		
13	13	14	9	9	10	7	6	11	6	6	6	9	6	7	6	7	6	7	6	6	1	7	6	8	6	6	6	8	
13	12	14	9	8	10	10	8	6	6	7	6	7	8	10	7	7	6	8	6	6	2	1	8	9	7	10	8	6	5
14	12	13	8	14	11	11	9	9	6	7	7	9	8	7	11	9	7	7	8	2	1	9	10	11	12	11	7	1	1
10	9	9	15	14	12	8	9	9	7	8	7	7	7	9	9	7	7	8	1	1	4	4	10	13	12	11	7	1	1
7	9	8	15	13	12	10	9	10	7	8	9	7	8	9	10	12	7	1	1	4	4	6	5	8	1	2	1	2	1
7	9	15	13	15	11	13	9	9	9	7	7	7	8	9	10	8	7	1	6	6	4	5	2	1	1	1	2	1	
6	14	11	13	14	10	10	9	7	11	7	8	8	9	9	9	7	1	7	4	4	3	4	4	4	4	4	1	1	
9	14	11	11	11	15	5	6	7	7	10	8	8	10	9	7	9	7	12	8	7	5	3	3	3	3	3	1	1	2
13	14	11	10	10	4	7	7	8	11	11	11	7	12	1	7	9	7	3	3	3	3	1	1	2	2	2	2	3	

Created: **8926**  
Popped: **7050**  
Active: **7453**  
Epoch: **0**  
Open: **557**

# Forward (A\*)

goal

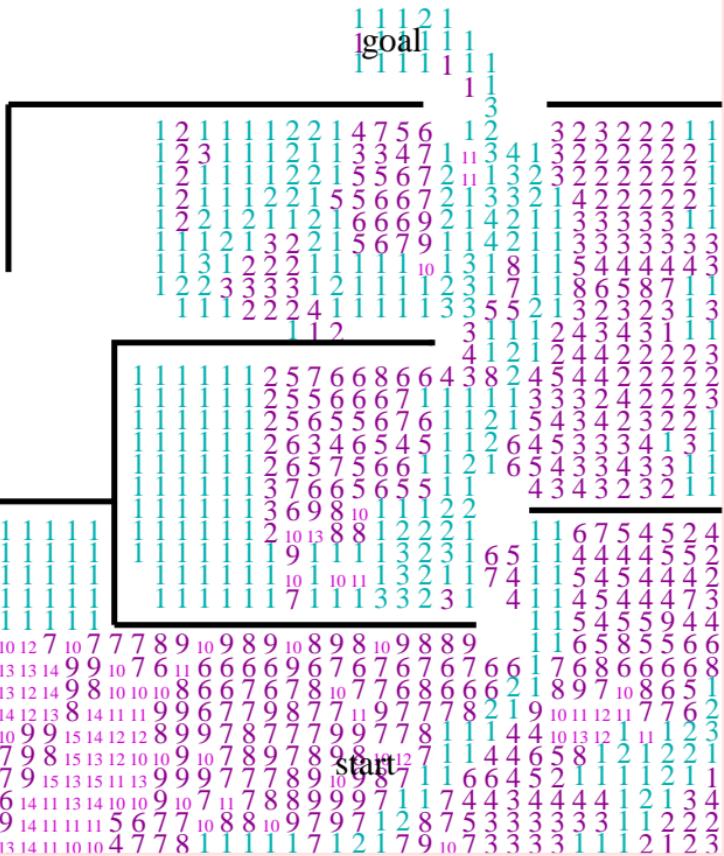
1	2	1	1	1	1	2	2	1	4	7	5	6		3	1	2	3	2	2	2	1	1		
1	2	3	1	1	1	2	1	1	3	3	4	7	1	11	3	1	3	2	2	2	2	1		
1	2	1	1	1	1	2	2	1	5	5	6	7	2	11	1	3	2	2	2	2	2	1		
1	2	2	1	2	1	1	2	1	5	6	6	7	2	1	3	3	2	1	4	2	2	1		
1	1	1	2	1	3	2	2	1	5	6	7	9	2	1	4	2	1	3	3	3	3	3		
1	1	3	1	2	3	2	2	1	1	1	1	10	1	3	1	8	1	1	5	4	4	4	3	
1	2	2	3	3	1	2	1	1	1	1	1	1	2	3	1	7	1	1	8	6	5	8	7	
1	1	1	2	2	4	1	1	1	1	1	3	3	5	5	2	1	3	2	3	2	3	1	3	
									1	1	2	1	3	1	1	2	4	3	4	3	1			
1	1	1	1	1	1	2	5	7	6	6	8	6	6	4	3	8	2	4	5	4	4	2	3	
1	1	1	1	1	1	2	5	5	6	6	7	1	1	1	1	1	1	3	3	3	2	4	2	
1	1	1	1	1	1	2	5	6	5	6	7	6	1	1	1	2	1	1	5	4	3	4	2	
1	1	1	1	1	1	2	6	3	4	6	5	4	5	1	1	2	6	4	5	3	3	3	1	
1	1	1	1	1	1	2	6	5	7	5	6	6	1	1	2	1	6	5	4	3	3	4	3	
1	1	1	1	1	1	3	7	6	6	5	6	5	5	1	1	1	4	3	4	3	2	3	1	
1	1	1	1	1	1	3	6	9	8	10	1	1	2	2	1	1	1	6	7	5	4	5	2	
1	1	1	1	1	1	2	10	13	8	8	1	2	2	2	1	6	5	1	4	4	4	4	2	
1	1	1	1	1	1	2	9	1	1	1	3	2	3	1	6	5	1	5	4	5	4	4	2	
1	1	1	1	1	1	10	1	10	11	1	3	2	1	1	7	4	1	1	4	5	4	4	7	
1	1	1	1	1	1	11	7	11	1	3	3	2	3	1	4	1	1	4	5	5	9	4	4	
1	1	1	6	9	7	9	11	10	12	7	10	7	7	8	10	7	6	6	6	5	5	6	6	
1	1	7	7	9	11	12	12	13	13	14	9	8	10	10	8	6	6	7	6	7	6	6	8	
1	1	5	7	10	10	10	10	13	12	14	9	8	10	10	8	6	6	7	6	7	6	6	8	
1	1	6	10	10	10	10	14	12	13	8	14	11	11	9	9	6	7	7	9	8	7	2	1	
1	1	1	9	10	7	11	10	9	15	13	14	12	12	8	9	9	7	8	7	9	7	11	7	
1	1	5	6	6	8	10	6	7	7	9	8	15	13	12	10	10	9	10	8	9	7	11	11	
1	1	6	8	10	6	7	7	9	8	15	13	12	10	10	9	10	7	8	9	7	11	11	12	
1	1	7	6	8	10	11	8	7	9	15	13	15	11	13	9	9	7	7	8	9	7	11	11	
1	1	5	6	10	11	7	6	6	14	11	13	14	10	10	9	10	7	11	7	8	9	7	11	
1	1	5	5	9	9	6	7	9	14	11	11	11	11	5	6	7	7	10	8	8	10	9	7	9
1	1	6	5	9	6	7	9	13	14	11	10	10	4	7	8	11	11	17	12	1	7	9	10	7

start

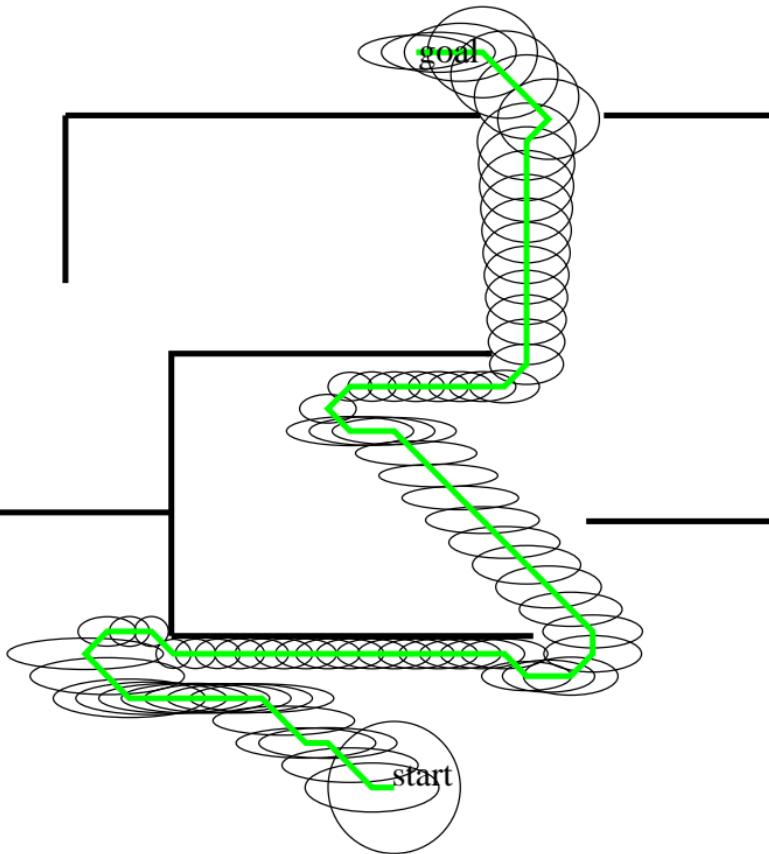
Created: **9012**  
 Popped: **7100**  
 Active: **7510**  
 Epoch: **0**  
 Open: **586**

## Forward ( $A^*$ )

Created: 9037  
Popped: 7107  
Active: 7535  
Epoch: 0  
Open: 604



# Forward (A\*)



Created: 9037  
Popped: 7107  
Active: 7535  
Epoch: 0  
Open: 604

Solution 1 of 1 (time: 21.7)