## Team 46

# 20161094 20161093

Policy changes occur in iterations :: -

- Iteration 2
- Iteration 3
- Iteration 4
- Iteration 7

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#### Iteration - 1

- 0.1 N = -13.8 E = -9.2 W = -46.0 S = -13.8
- $0.2 \quad N = -9.2 \quad E = -9.2 \quad W = -9.2 \quad S = -9.2$
- 03 N = -9.2 E = -9.2 W = -9.2 S = -9.2
- 10 N = -46.0 E = -12.88 W = -12.88 S = -1.84
- 11 N = -9.2 E = -9.2 W = -9.2 S = -9.2
- 13 N = -9.2 E = -9.2 W = -9.2 S = -9.2
- 2.0 N = -8.28 E = -9.2 W = -1.84 S = -8.28
- 2.1 N = -8.28 E = -10.12 W = -2.76 S = -15.64
- 22 N = -9.2 E = -9.2 W = -9.2 S = -9.2
- $2.3 \quad N = -9.2 \quad E = -4.6 \quad W = -4.6 \quad S = 27.6$
- 3.0 N = -2.76 E = -15.64 W = -8.28 S = -10.12
- 31 N = -9.2 E = -10.12 W = -10.12 S = -16.56
- 32 N = -5.52 E = 27.6 W = -16.56 S = -5.52

### Board

 -46.0
 -9.2
 -9.2
 -9.2

 -1.84
 -9.2
 0.0
 -9.2

 -1.84
 -2.76
 -9.2
 27.6

 -2.76
 -9.2
 27.6
 46.0

## **POLICY**

-46.0	EAST	NORTH	NORTH
SOUTH	NORTH	W	NORTH
WEST	WEST	NORTH	SOUTH
NORTH	NORTH	EAST	46.0

First policy is produced after 0<sup>th</sup> iteration. This will be inaccurate as less information is transferred.

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#### Iteration - 2

```
0.1 N = -22.08 E = -18.4 W = -47.84 S = -22.08
```

$$0.2 \quad N = -18.4 \quad E = -18.4 \quad W = -18.4 \quad S = -18.4$$

03 
$$N = -18.4 E = -18.4 W = -18.4 S = -18.4$$

10 
$$N = -47.472 E = -21.252 W = -18.308 S = -11.408$$

11 
$$N = -18.032 E = -18.078 W = -15.134 S = -15.456$$

- 13 N = -18.4 E = -14.72 W = -14.72 S = 11.04
- 2.0 N = -14.306 E = -15.134 W = -11.086 S = -14.674
- 2.1 N = -17.572 E = -18.86 W = -12.236 S = -21.252
- 2.2 N = -14.398 E = 14.72 W = -12.144 S = 15.042
- $2.3 \quad N = -14.72 \quad E = 16.56 \quad W = -12.88 \quad S = 29.44$
- 3.0 N = -11.914 E = -20.93 W = -14.674 S = -15.962
- 3.1 N = -11.822 E = 10.902 W = -15.962 S = -18.078
- 3.2 N = -13.34 E = 29.44 W = -18.4 S = 16.1

#### Board

-46.0	-18.4	-18.4	-18.4
-11.408	-15.134	0.0	11.04
-11.086	-12.236	15.042	29.44
-11.914	10.902	29.44	46.0

#### **POLICY**

-46.0	EAST	NORTH	NORTH
SOUTH	WEST	W	SOUTH
WEST	WEST	SOUTH	SOUTH
NORTH	EAST	EAST	46.0

Policy considerably changes after this iteration as more information is now circulated. The maximum possible utilities change depending on the changes in the previous iteration and so policy change occurs at many places.

Eg: At (3,1) due to flow of value from goal state to all the other states the preffered action changes from NORTH to EAST which would take us quickly to the goal state.

#### Iteration - 3

```
0.1 N = -30.36 E = -27.2734 W = -49.3534 S = -27.7472
```

- 02 N = -27.6 E = -27.6 W = -27.6 S = -27.6
- 03 N = -27.6 E = -24.656 W = -24.656 S = -4.048
- 10 N = -48.6542 E = -26.5558 W = -23.575 S = -17.043
- 11 N = -26.5742 E = -24.3708 W = -21.39 S = -21.643
- 13 N = -21.712 E = 0.736 W = 0.736 S = 16.56
- 2.0 N = -20.1986 E = -21.321 W = -16.721 S = -20.6034
- 2.1 N = -20.4516 E = 1.9504 W = -15.272 S = -3.3028
- 2 2 N = 4.554 E = 18.8002 W = -14.5406 S = 16.0724
- $2.3 \quad N = 4.0802 \quad E = 20.056 \quad W = 8.5376 \quad S = 32.0482$
- 3.0 N = -14.95 E = -5.9984 W = -20.5712 S = -19.2924
- 3.1 N = -17.2362 E = 13.7586 W = -19.3246 S = -2.4058
- $3.2 \quad N = 8.0638 \quad E = 32.0482 \quad W = 0.2898 \quad S = 19.5822$

#### Board

-46.0	-27.2734	-27.6	-4.048
-17.043	-21.39	0.0	16.56
-16.721	1.9504	18.8002	32.0482
-5.9984	13.7586	32.0482	46.0

#### **POLICY**

-46.0	EAST	NORTH	SOUTH
SOUTH	WEST	W	SOUTH
WEST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

Policy changes are still considerable.

Eg: At (3,0) due to flow of value from goal state to all the other states the preffered action changes from NORTH to EAST which would take us quickly to the goal state.

#### Iteration - 4

- 0.1 N = -38.37872 E = -36.14634 W = -50.86634 S = -33.672
- $0.2 \quad N = -34.41214 \quad E = -17.9584 \quad W = -36.53872 \quad S = -34.41214$
- $0.3 \quad N = -15.6032 \quad E = -11.1872 \quad W = -30.0288 \quad S = 0.8832$
- 10 N = -49.8433 E = -32.1241 W = -28.6465 S = -22.7401
- 11 N = -34.86202 E = -28.8443 W = -25.3667 S = -11.48298
- 13 N = -9.1264 E = 6.84802 W = 6.84802 S = 19.75056
- 2.0 N = -23.85146 E = -9.94382 W = -21.20094 S = -15.01578
- 21 N = -25.64408 E = 4.61702 W = -20.11994 S = -1.2052
- 2.2 N = 9.24002 E = 21.5234 W = -2.55484 S = 19.83842
- $2.3 \quad N = 9.13284 \quad E = 22.69456 \quad W = 12.09616 \quad S = 32.68484$
- 3.0 N = -18.58078 E = -3.68506 W = -15.81066 S = -13.6827
- $3.1 \quad N = -5.0347 \quad E = 17.54946 \quad W = -12.88782 \quad S = 0.73186$
- $3.2 \quad N = 11.35602 \quad E = 32.68484 \quad W = 3.21172 \quad S = 21.95442$

#### Board

-33.672	-17.9584	0.8832
-11.48298	0.0	19.75056
4.61702	21.5234	32.68484
17.54946	32.68484	46.0
	-11.48298 4.61702	-11.48298 0.0 4.61702 21.5234

#### **POLICY**

-46.0	SOUTH	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

Policy changes are still significant.

Eg: At (0, 2) due to flow of value from goal state to all the other states the preffered action changes from NORTH to EAST which would take us to the goal state.

#### Iteration - 5

- 0.1 N = -42.53344 E = -28.082218 W = -50.515498 S = -24.782224
- 0.2 N = -26.8456 E = -12.08512 W = -39.72928 S = -26.8456
- 03 N = -10.20096 E = -6.430064 W = -21.503344 S = 4.892928
- 10 N = -49.422308 E = -23.520766 W = -32.526462 S = -16.897364
- 11 N = -39.559908 E = -21.291882 W = -30.297578 S = -8.928692
- 13 N = -4.543328 E = 9.957252 W = 9.957252 S = 20.897984
- 2.0 N = -27.46476 E = -8.1489 W = -16.117572 S = -12.220728
- 2.1 N = -16.768426 E = 8.165368 W = -13.328408 S = 2.777526
- 2 2 N = 11.748906 E = 22.368696 W = -0.08556 S = 20.678058
- 23 N = 12.021272 E = 23.522928 W = 14.593776 S = 33.020824
- 3.0 N = -12.548616 E = 0.25668 W = -13.050936 S = -11.221608
- 3.1 N = -2.606406 E = 18.70452 W = -10.3914 S = 4.059546
- 3.2 N = 13.913666 E = 33.020824 W = 6.580392 S = 22.842818

#### Board

-46.0	-24.782224	-12.08512	4.892928
-16.897364	-8.928692	0.0	20.897984
-8.1489	8.165368	22.368696	33.020824
0.25668	18.70452	33.020824	46.0

#### **POLICY**

-46.0	SOUTH	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

#### Iteration - 6

- 01 N = -34.8342912 E = -22.2391876 W = -49.3710916 S = -22.1514656
- $0.2 \quad N = -20.8570256 \quad E = -7.7026816 \quad W = -31.4428032 \quad S = -20.8570256$
- 03 N = -6.0048768 E = -2.7065664 W = -16.2890048 S = 6.799168
- 10 N = -48.5826056 E = -21.2978436 W = -27.6727812 S = -14.6217256
- 11 N = -31.6083848 E = -18.0046392 W = -24.3795768 S = -5.2503112
- 13 N = -1.1060608 E = 11.3097624 W = 11.3097624 S = 21.396256
- 2.0 N = -22.2562444 E = -4.331774 W = -13.7031884 S = -8.5330092
- 2.1 N = -14.460974 E = 9.2125396 W = -11.5215372 S = 3.9655956
- 2 2 N = 12.813576 E = 22.7556112 W = 2.8712464 S = 21.3352784 2 3 N = 13.0573392 E = 23.9064576 W = 15.3847552 S = 33.138952
- 3.0 N = -10.603 E = 1.754394 W = -9.323878 S = -7.558536
- $3.1 \quad N = 0.6600448 \quad E = 19.443648 \quad W = -6.7676672 \quad S = 5.4113664$
- 3.2 N = 14.7054088 E = 33.138952 W = 7.622568 S = 23.2271112

#### Board

-46.0	-22.1514656	-7.7026816	6.799168
-14.6217256	-5.2503112	0.0	21.396256
-4.331774	9.2125396	22.7556112	33.138952
1.754394	19.443648	33.138952	46.0

#### **POLICY**

-46.0	SOUTH	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

#### Iteration - 7

```
0.1 N = -32.29144064 E = -18.10232296 W = -48.74017768 S = -18.77051712
```

- $0.2 \quad N = -16.89737504 \quad E = -5.30120192 \quad W = -28.4617088 \quad S = -16.89737504$
- 03 N = -3.85101696 E = -0.9411232 W = -12.54260288 S = 7.82665344
- 10 N = -47.98720368 E = -17.97342636 W = -25.47055788 S = -10.97262288
- 11 N = -28.90837616 E = -14.69414156 W = -22.19127308 S = -3.817172
- 13 N = 0.5185856 E = 11.9108168 W = 11.9108168 S = 21.5904128
- 2.0 N = -19.94930392 E = -3.11670148 W = -10.27215236 S = -6.84840824
- 2.1 N = -11.09786524 E = 9.96382264 W = -8.02608552 S = 4.97730212
- 2 2 N = 13.23963812 E = 22.90061792 W = 3.759488 S = 21.54631076
- 23 N = 13.50646112 E = 24.0507872 W = 15.74411456 S = 33.18945632
- 3.0 N = -7.325615 E = 2.8771804 W = -7.5942228 S = -6.1366806
- 3 1 N = 1.65936628 E = 19.71678036 W = -5.39086604 S = 6.164253
- $3.2 \quad N = 15.08885376 \quad E = 33.18945632 \quad W = 8.26437472 \quad S = 23.3955264$

#### Board

-46.0 -18.10232296 -5.30120192 7.82665344

-10.97262288 -3.817172 0.0 21.5904128

-3.11670148 9.96382264 22.90061792 33.18945632 2.8771804 19.71678036 33.18945632 46.0

#### **POLICY**

-46.0	EAST	EAST		SOUTH
SOUT	H	SOUTH	W	SOUTH
<b>EAST</b>		EAST	EAST	SOUTH
<b>EAST</b>		EAST	<b>EAST</b>	46.0

Policy changes at (0,1) from SOUTH to EAST because it reduces the probability of going to the bad end state to zero and moreover provides a higher utility state towards the right of current state.

### Iteration - 8

- 0.1 N = -28.81197856 E = -15.632911032 W = -48.191949496 S = -17.383857792
- $0.2 \quad N = -14.468528488 \quad E = -3.998917632 \quad W = -24.742098752 \quad S = -14.468528488$
- 03 N = -2.686132096 E = 0.00302937600001 W = -10.499254912 S = 8.324875392
- 10 N = -47.478979488 E = -16.705407748 W = -22.429768452 S = -9.492340672
- 11 N = -25.160837856 E = -13.067587632 W = -18.791948336 S = -2.707921376
- 13 N = 1.379405312 E = 12.173941216 W = 12.173941216 S = 21.669647616
- 2.0 N = -16.833386188 E = -2.038486136 W = -8.822905432 S = -5.753543564
- 2.1 N = -9.815345956 E = 10.250455172 W = -6.883400348 S = 5.331815932
- $2.2 \quad N = 13.435822232 \quad E = 22.96057248 \quad W = 4.380065536 \quad S = 21.666892952$
- 2.3 N = 13.681337664 E = 24.110606336 W = 15.879535616 S = 33.209007424
- 3.0 N = -6.213965108 E = 3.32947218 W = -6.462207788 S = -5.098859604
- $3.1 \quad N = 2.377721784 \quad E = 19.859625356 \quad W = -4.39019538 \quad S = 6.50008796$
- 3.2 N = 15.232172372 E = 33.209007424 W = 8.502431712 S = 23.463243092

#### Board

- -46.0 -15.632911032 -3.998917632 8.324875392
- -9.492340672 -2.707921376 0.0 21.669647616
- -2.038486136 10.250455172 22.96057248 33.209007424
- 3.32947218 19.85962535633.20900742446.0

#### POLICY

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

#### Iteration - 9

- 0.1 N = -26.7062205888 E = -14.2332173464 W = -47.8340832408 S = -16.366228864
- $0.2 \quad N = -13.1299376696 \quad E = -3.3398832128 \quad W = -22.506112352 \quad S = -13.1299376696$
- $0.3 \quad N = -2.1075039104 \quad E = 0.4593526144 \quad W = -9.3996818048 \quad S = 8.5683138688$
- $10 \quad N = -47.2200262048 \quad E = -15.7101857144 \quad W = -21.1377211512 \quad S = -8.3708151136$
- 11 N = -22.9263550304 E = -11.9045826868 W = -17.3321181236 S = -2.2196620672
- 13 N = 1.7938298368 E = 12.2891063744 W = 12.2891063744 S = 21.7011354624
- 2.0 N = -15.512675634 E = -1.6159227116 W = -7.767075758 S = -5.2552253524
- $2.1 \quad N = -8.8141284664 \quad E = 10.423628382 \quad W = -5.8956185108 \quad S = 5.5599089192$
- 2 2 N = 13.5144042436 E = 22.9841639296 W = 4.617322128 S = 21.7131521988
- 23 N = 13.7526760832 E = 24.1341707008 W = 15.9354227456 S = 33.2169579904
- 3.0 N = -5.2918791552 E = 3.5967988892 W = -5.9473236516 S = -4.6775125024
- $3.1 \quad N = 2.654212098 \quad E = 19.918213992 \quad W = -3.9854142032 \quad S = 6.6615482452$
- 3.2 N = 15.2944205196 E = 33.2169579904 W = 8.6246582752 S = 23.4931684748

## Board

-46.0	-14.2332173464	-3.3398832128	8.5683138688
-8.3708151136	-2.2196620672	0.0	21.7011354624
-1.6159227116	10.423628382	22.9841639296	33.2169579904
3.5967988892	19.918213992	33.2169579904	46.0

#### **POLICY**

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

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#### Iteration - 10

- 01 N = -25.5205621984 E = -13.5171945116 W = -47.6452879414 S = -15.909717975
- $0.2 \quad N = -12.438396918 \quad E = -3.01332554752 \quad W = -21.2545505197 \quad S = -12.438396918$
- 03 N = -1.82250583936 E = 0.68159602816 W = -8.84496163712 S = 8.68375143552
- 10 N = -47.0590477181 E = -15.2773219249 W = -20.198244362 S = -7.87178588736
- 11 N = -21.6456215952 E = -11.3566885502 W = -16.2776109873 S = -1.92014501248
- 13 N = 1.99487818752 E = 12.3394355558 W = 12.3394355558 S = 21.7137934848
- $2.0 \quad N = -14.5558815238 \quad E = -1.33849891684 \quad W = -7.29013979172 \quad S = -4.9817903216$
- 2.1 N = -8.37890553196 E = 10.4971863362 W = -5.5028829768 S = 5.6513953154
- 2.2 N = 13.5513897809 E = 22.9936785843 W = 4.7590148976 S = 21.7376250296
- $2.3 \quad N = 13.7810205619 \quad E = 24.1436799386 \quad W = 15.9574446899 \quad S = 33.220112192$
- $3.0 \ N = -4.92123688116 \ E = 3.71265881136 \ W = -5.66447327088 \ S = -4.43105960052$
- $3.1 \quad N = 2.82027839356 \quad E = 19.9477506297 \quad W = -3.74837665124 \quad S = 6.73594688156$
- $3.2 \quad N = 15.3191525429 \quad E = 33.220112192 \quad W = 8.6746833856 \quad S = 23.5053877915$

#### Board

-46.0	-13.5171945116	-3.01332554752	8.68375143552
-7.87178588736	-1.92014501248	0.0	21.7137934848
-1.33849891684	10.4971863362	22.9936785843	33.220112192
3.71265881136	19.9477506297	33.220112192	46.0

#### **POLICY**

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

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#### Iteration - 11

- $0.1 \quad N = -24.915088164 \quad E = -13.1543943904 \quad W = -47.5437339524 \quad S = -15.6374485647$
- $0.2 \quad N = -12.0940047456 \quad E = -2.85566396109 \quad W = -20.6164207188 \quad S = -12.0940047456$
- $0.3 \quad N = -1.68595626278 \quad E = 0.786755640448 \quad W = -8.57090594598 \quad S = 8.73807737664$
- $10 \quad N = -46.97919309 \quad E = -15.0099659017 \quad W = -19.7712786016 \quad S = -7.56999222346$
- 11 N = -20.9929486993 E = -11.0381168275 W = -15.7994295274 S = -1.78144402106
- 13 N = 2.08975984538 E = 12.3614211506 W = 12.3614211506 S = 21.7188484506
- $2.0 \quad N = -14.121559968 \quad E = -1.21816363867 \quad W = -7.00671184107 \quad S = -4.85400420898$
- $2.1 \quad N = -8.11059804324 \quad E = 10.5377034292 \quad W = -5.24803857175 \quad S = 5.70371847052$
- $2.2 \quad N = 13.5666727203 \quad E = 22.9974688312 \quad W = 4.81912814656 \quad S = 21.7478196064$
- $2.3 \quad N = 13.7924138655 \quad E = 24.1474691021 \quad W = 15.9663222159 \quad S = 33.2213790776$
- 3.0 N = -4.68475818936 E = 3.77561649323 W = -5.53245696146 S = -4.3238320068
- $3.1 \quad N = 2.89102616926 \quad E = 19.9605834502 \quad W = -3.64537925432 \quad S = 6.77147760411$
- $3.2 \quad N = 15.3297179304 \quad E = 33.2213790776 \quad W = 8.69957958141 \quad S = 23.5108648166$

#### Board

-46.0	-13.1543943904	-2.85566396109	8.73807737664
-7.56999222346	-1.78144402106	0.0	21.7188484506
-1.21816363867	10.5377034292	22.9974688312	33.2213790776
3 77561649323	19 9605834502	33 2213790776	46.0

#### POLICY

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

#### Iteration - 12

- 0.1 N = -24.6090819084 E = -12.97811501 W = -47.4935838411 S = -15.510721613
- $0.2 \quad N = -11.9261628702 \quad E = -2.78067089091 \quad W = -20.2946483046 \quad S = -11.9261628702$
- 03 N = -1.62129675713 E = 0.836154484032 W = -8.43883858615 S = 8.763320102
- 10 N = -46.9351436245 E = -14.8869715807 W = -19.5178101426 S = -7.42967453539
- 11 N = -20.6586591368 E = -10.886824313 W = -15.5176628749 S = -1.70498088111
- 13 N = 2.13423159142 E = 12.3710244059 W = 12.3710244059 S = 21.7208729522
- $2.0 \quad N = -13.8640397997 \quad E = -1.14927482968 \quad W = -6.87396848396 \quad S = -4.78755282637$
- $2.1 \quad N = -7.98722469759 \quad E = 10.5558890079 \quad W = -5.13661696802 \quad S = 5.72639727941$
- $2.2 \quad N = 13.5738833157 \quad E = 22.998988053 \quad W = 4.85204753423 \quad S = 21.7530115128$
- 23 N = 13.7969635513 E = 24.1489881072 W = 15.96985991 S = 33.2218847909
- 3.0 N = -4.5809109166 E = 3.80421204561 W = -5.46376151996 S = -4.26588681108
- $3.1 \quad N = 2.92986230043 \quad E = 19.96693195 \quad W = -3.58967811748 \quad S = 6.78816631724$
- 3 2 N = 15.33403341 E = 33.2218847909 W = 8.71035155104 S = 23.5131616071

#### Board

-46.0	-12.97811501	-2.78067089091	8.763320102
-7.42967453539	-1.70498088111	0.0	21.7208729522
-1.14927482968	10.5558890079	22.998988053	33.2218847909
3.80421204561	19.96693195	33.2218847909	46.0

#### POLICY

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

## Iteration - 13

- 0 1 N = -24.4605590971 E = -12.8928463018 W = -47.4683095891 S = -15.442051794 0 2 N = -11.8460162035 E = -2.74547809658 W = -20.1386261862 S = -11.8460162035
- $0.3 \quad N = -1.59107899729 \quad E = 0.859075387025 \quad W = -8.3761174073 \quad S = 8.77496328288$
- $10 \quad N = -46.9134655416 \quad E = -14.8189121879 \quad W = -19.3986671113 \quad S = -7.35288540539$
- 11 N = -20.4959575497 E = -10.8062073051 W = -15.3859622285 S = -1.66875433533
- 13 N = 2.15483067205 E = 12.3752188511 W = 12.3752188511 S = 21.7216824232
- $2.0 \quad N = -13.7430782105 \quad E = -1.11783504266 \quad W = -6.80196611272 \quad S = -4.75596894569$
- $2.1 \quad N = -7.91901338255 \quad E = 10.5653855493 \quad W = -5.07322475685 \quad S = 5.73851688237$
- 2 2 N = 13.5769678223 E = 22.9995951171 W = 4.86679849071 S = 21.7552852126
- 23 N = 13.7987856462 E = 24.1495951279 W = 15.9712777376 S = 33.2220872844
- 3.0 N = -4.52230546418 E = 3.81903928163 W = -5.43113664192 S = -4.23951596395
- 3.1 N = 2.94732088997 E = 19.9697899285 W = -3.56434826772 S = 6.79615524368
- 3 2 N = 15.3358836374 E = 33.2220872844 W = 8.71563284442 S = 23.5142010277

## Board

-46.0	-12.8928463018	-2.74547809658	8.77496328288
-7.35288540539	-1.66875433533	0.0	21.7216824232
-1.11783504266	10.5653855493	22.9995951171	33.2220872844
3.81903928163	19.9697899285	33.2220872844	46.0

#### **POLICY**

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

#### Iteration - 14

- 01 N = -24.3888248511 E = -12.852542541 W = -47.4561600637 S = -15.4095512779
- $0.2 \quad N = -11.8081707792 \quad E = -2.72912499301 \quad W = -20.0633726608 \quad S = -11.8081707792$
- $0.3 \quad N = -1.57708085506 \quad E = 0.869635196911 \quad W = -8.34671790666 \quad S = 8.78029445715$
- $10 \quad N = -46.9021639741 \quad E = -14.7867869725 \quad W = -19.3340918286 \quad S = -7.3164320082$
- 11 N = -20.4164410155 E = -10.7677495435 W = -15.3150543996 S = -1.64985553464
- 13 N = 2.16430711094 E = 12.3770509952 W = 12.3770509952 S = 21.7220063121
- $2.0 \quad N = -13.6775532737 \quad E = -1.10107617295 \quad W = -6.7676526465 \quad S = -4.74001352404$
- $2.1 \quad N = -7.88682746082 \quad E = 10.569779653 \quad W = -5.04416447481 \quad S = 5.74400795025$
- 2 2 N = 13.578423377 E = 22.9998380677 W = 4.87447667958 S = 21.7564171109
- $2.3 \quad N = 13.7995141787 \quad E = 24.1498380698 \quad W = 15.971844336 \quad S = 33.2221682401$
- $3.0 \ N = -4.49538511311 \ E = 3.8259523667 \ W = -5.4146481508 \ S = -4.22588565369$
- $3.1 \quad N = 2.95642109603 \quad E = 19.9711873753 \quad W = -3.55125102692 \quad S = 6.7999445994$
- $3.2 \quad N = 15.3366550865 \quad E = 33.2221682401 \quad W = 8.71800018295 \quad S = 23.5146488204$

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-46.0	-12.852542541	-2.72912499301	8.78029445715
-7.3164320082	-1.64985553464	0.0	21.7220063121
-1.10107617295	10.569779653	22.9998380677	33.2221682401
3.8259523667	19.9711873753	33.2221682401	46.0

#### **POLICY**

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

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## Iteration - 15

- 0.1 N = -24.3549465321 E = -12.833539802 W = -47.4502398076 S = -15.392796927
- $0.2 \quad N = -11.7905248028 \quad E = -2.72158943288 \quad W = -20.0278590314 \quad S = -11.7905248028$
- $0.3 \quad N = -1.57064748786 \quad E = 0.874465642651 \quad W = -8.33306991748 \quad S = 8.78272199613$
- 10 N = -46.8966287543 E = -14.769992045 W = -19.3032532239 S = -7.29748969264
- 11 N = -20.3786627871 E = -10.7481607165 W = -15.2814218954 S = -1.64080503189
- 13 N = 2.16863682815 E = 12.3778513194 W = 12.3778513194 S = 21.7221358545
- $2.0 \quad N = -13.6462752586 \quad E = -1.09322424175 \quad W = -6.74990890251 \quad S = -4.73236775864$
- $2.1 \quad N = -7.87000823824 \quad E = 10.5720036382 \quad W = -5.02872775429 \quad S = 5.7468260897$
- $2.2 \quad N = 13.5790652434 \quad E = 22.9999352229 \quad W = 4.87802435318 \quad S = 21.7569293814$
- $2.3 \quad N = 13.7998056805 \quad E = 24.1499352233 \quad W = 15.9720710853 \quad S = 33.2222006308$
- $3.0 \quad N = -4.48114696416 \quad E = 3.82943751961 \quad W = -5.40675048727 \quad S = -4.21952413244$
- $3.1 \quad N = 2.96063578308 \quad E = 19.9718312949 \quad W = -3.54514140381 \quad S = 6.80176196092$
- 3 2 N = 15.3369891917 E = 33.2222006308 W = 8.71915053101 S = 23.5148533296

#### Board

-46.0	-12.833539802	-2.72158943288	8.78272199613
-7.29748969264	-1.64080503189	0.0	21.7221358545
-1.09322424175	10.5720036382	22.9999352229	33.2222006308
3.82943751961	19.9718312949	33.2222006308	46.0

#### **POLICY**

-46.0	EAST	EAST	SOUTH
SOUTH	SOUTH	W	SOUTH
EAST	EAST	EAST	SOUTH
EAST	EAST	EAST	46.0

No policy changes after this iteration.

# **Final Policy -->**

 $[3, 0] \longrightarrow [3, 1] \longrightarrow [3, 2] \longrightarrow [3, 3]$ 

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## Final Board -->

-46.0-12.833539802-2.721589432888.78272199613-7.29748969264-1.640805031890.021.7221358545-1.0932242417510.572003638222.999935222933.22220063083.8294375196119.971831294933.222200630846.0

After certain number of iterations policy changes reduced considerably, as the flow of information from one state to another stops affecting the magnitude of original value by a large amount.