AI Assignment 2

TEAM 28

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Initial Grid:

-28 0 0 0

0 0 0 0

2.8 0 0 0

0 -2.8 0 28

Wall Position: (1,2)

End States: (0, 0) , (3, 3)

Start Position: (3, 0)

Step Cost: -5.75

Iteration 0

-28.000 0.000 0.000 0.000

0.000 0.000 0.000 0.000

2.800 0.000 0.000 0.000

0.000 -2.800 0.000 28.000

- - - -

- - - -

- - - -

- - - -

Policy:
Up
Up
Right
Up
Right
Right
Down
Down
Down

Iteration 1

-28.000 -5.600 -5.600 -5.600

-3.360 -5.936 0.000 -5.600

-0.896 -6.474 -5.600 16.240

-5.690 -9.327 16.240 28.000

- > > >

v v - v

< > > v

< > > -

Policy:
Up
Up
Right
Up
Right
Right
Down
Down
Down

Iteration 2
-28.000 -11.234 -11.200 -11.200

-7.246 -12.097 0.000 6.272

-4.810 -11.591 8.456 19.270

-10.950 2.500 19.270 28.000

- > > >

v v - v

< < > v

^ > > -

Policy:
Right
Right
Right

Iteration 3
-28.000 -16.893 -16.800 -3.382

-11.383 -17.221 0.000 11.070

-8.882 -0.307 12.588 19.986

-5.583 7.235 19.986 28.000

- > > v

v v - v

< > > v

> > > -

Policy:
Right
Right
Right

Iteration 4
-28.000 -22.451 -11.666 1.751

-15.566 -9.124 0.000 12.603

-5.161 4.282 13.646 20.163

-0.886 8.740 20.163 28.000

- > > v

v v - v

> > > v

> > > -

Policy:

Right

Right

Right

Iteration 5

-28.000 -16.866 -6.532 4.004

-12.198 -4.307 0.000 13.051

-0.683 5.760 13.911 20.207

1.235 9.181 20.207 28.000

- v > v

v v - v

> > > v

> > > -

Policy:

Right

Right

Right

Iteration 6

-28.000 -12.499 -3.703 4.871

-7.797 -2.202 0.000 13.176

1.152 6.227 13.978 20.219

1.983 9.307 20.219 28.000

- v > v

v v - v

> > > v

> > > -

Policy:
Right
Right
Right

Iteration 7

-28.000 -10.033 -2.444 5.184

-5.678 -1.406 0.000 13.210

1.812 6.372 13.994 20.221

2.225 9.343 20.221 28.000

- > > v

v v - v

> > > v

> > > -

Policy:
Right
Right
Right

Iteration 8
-28.000 -8.699 -1.942 5.292

-4.859 -1.129 0.000 13.219

2.034 6.417 13.999 20.222

2.300 9.353 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:

Right

Right

Right

Iteration 9

-28.000 -8.136 -1.755 5.329

-4.571 -1.036 0.000 13.221

2.106 6.431 14.000 20.222

2.323 9.356 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:

Right

Right

Right

Iteration 10

-28.000 -7.921 -1.688 5.341

-4.476 -1.007 0.000 13.222

2.129 6.435 14.000 20.222

2.330 9.357 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:
Right
Right
Right

Iteration 11

-28.000 -7.843 -1.665 5.345

-4.445 -0.997 0.000 13.222

2.136 6.436 14.000 20.222

2.332 9.357 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:
Right
Right
Right

Iteration 12
-28.000 -7.816 -1.657 5.347

-4.435 -0.995 0.000 13.222

2.138 6.436 14.000 20.222

2.333 9.357 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:
Right
Right
Right

Iteration 13
-28.000 -7.806 -1.654 5.347

-4.432 -0.994 0.000 13.222

2.139 6.436 14.000 20.222

2.333 9.357 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:
Right

Right

Right

Iteration 14

-28.000 -7.803 -1.653 5.347

-4.431 -0.993 0.000 13.222

2.139 6.436 14.000 20.222

2.333 9.357 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:

Right

Right

Right

Iteration 15

-28.000 -7.802 -1.653 5.347

-4.431 -0.993 0.000 13.222

2.139 6.436 14.000 20.222

2.333 9.357 20.222 28.000

- > > v

v v - v

> > > v

> > > -

Policy:
Right
Right
Right

Final Output:
-28.000 -7.802 -1.653 5.347

-4.431 -0.993 0.000 13.222

2.139 6.436 14.000 20.222

2.333 9.357 20.222 28.000

The last change was observed in the 8th iteration.

Expected Reward: 2.333