

<인공지능 과제 HW5>

프로그램 결과값만 캡처해서 올립니다.

```
Initial Q table is
```

col=0	1	2	3	4	5
row: 0	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
row: 1	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
row: 2	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
row: 3	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
row: 4	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
row: 5	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00
	0.00,	0.00,	0.00,	0.00,	0.00

```
Learning starts.
```

episode= 0	epsilon= 0.4
episode= 5000	epsilon= 0.36924653855465434
episode= 10000	epsilon= 0.3408575155864846
episode= 15000	epsilon= 0.3146511444266214
episode= 20000	epsilon= 0.2904596148294764
episode= 25000	epsilon= 0.26812801841425576
episode= 30000	epsilon= 0.24751335672245633
episode= 35000	epsilon= 0.22848362553952595
episode= 40000	epsilon= 0.21091696961721942
episode= 45000	epsilon= 0.19470090238398868

Learning is finished. the Q table is:

col=0	1	2	3	4	5
row: 0					
0.00,	0.00,	0.00,	0.00,	0.00,	0.00
0.00,	0.00,	0.00,	0.00,	0.00,	0.00
0.00,	0.00,	0.00,	0.00,	0.00,	0.00
0.00,	0.00,	0.00,	0.00,	0.00,	0.00
row: 1					
0.00,	-9.00,	-9.00,	-9.00,	-9.00,	0.00
0.00,	5.31,	5.90,	5.31,	-9.00,	0.00
0.00,	5.31,	-9.00,	6.56,	-9.00,	0.00
0.00,	-9.00,	4.78,	5.31,	5.90,	0.00
row: 2					
0.00,	4.78,	0.00,	5.90,	0.00,	0.00
0.00,	-9.00,	0.00,	-9.00,	0.00,	0.00
0.00,	5.90,	0.00,	7.29,	0.00,	0.00
0.00,	-9.00,	0.00,	-9.00,	0.00,	0.00
row: 3					
0.00,	5.31,	-9.00,	6.56,	0.00,	0.00
0.00,	6.56,	7.29,	-9.00,	0.00,	0.00
0.00,	-9.00,	7.29,	8.10,	0.00,	0.00
0.00,	-9.00,	5.90,	6.56,	0.00,	0.00
row: 4					
0.00,	0.00,	6.56,	7.29,	0.00,	0.00
0.00,	0.00,	8.10,	9.00,	0.00,	0.00
0.00,	0.00,	-9.00,	-9.00,	0.00,	0.00
0.00,	0.00,	-9.00,	7.29,	0.00,	0.00
row: 5					
0.00,	0.00,	0.00,	0.00,	0.00,	0.00
0.00,	0.00,	0.00,	0.00,	0.00,	0.00
0.00,	0.00,	0.00,	0.00,	0.00,	0.00
0.00,	0.00,	0.00,	0.00,	0.00,	0.00

· 코드 + 텍스트



Test starts.



Episode: 0 start state: (1 , 1)

The move is: right that leads to state (1 , 2)

The move is: right that leads to state (1 , 3)

The move is: down that leads to state (2 , 3)

The move is: down that leads to state (3 , 3)

The move is: down that leads to state (4 , 3)

The move is: right that leads to state (4 , 4)

Episode has ended. Total reward received in episode = 9

Episode: 1 start state: (1 , 1)

The move is: down that leads to state (2 , 1)

The move is: down that leads to state (3 , 1)

The move is: right that leads to state (3 , 2)

The move is: down that leads to state (4 , 2)

The move is: right that leads to state (4 , 3)

The move is: right that leads to state (4 , 4)

Episode has ended. Total reward received in episode = 9

Episode: 2 start state: (1 , 1)
The move is: right that leads to state (1 , 2)
The move is: right that leads to state (1 , 3)
The move is: down that leads to state (2 , 3)
The move is: down that leads to state (3 , 3)
The move is: down that leads to state (4 , 3)
The move is: right that leads to state (4 , 4)
Episode has ended. Total reward received in episode = 9

Episode: 3 start state: (1 , 1)
The move is: right that leads to state (1 , 2)
The move is: right that leads to state (1 , 3)
The move is: down that leads to state (2 , 3)
The move is: down that leads to state (3 , 3)
The move is: down that leads to state (4 , 3)
The move is: right that leads to state (4 , 4)
Episode has ended. Total reward received in episode = 9

Episode: 4 start state: (1 , 1)
The move is: down that leads to state (2 , 1)
The move is: down that leads to state (3 , 1)
The move is: right that leads to state (3 , 2)
The move is: right that leads to state (3 , 3)
The move is: down that leads to state (4 , 3)
The move is: right that leads to state (4 , 4)
Episode has ended. Total reward received in episode = 9
Program ends!!!