

## Lab – MDPs

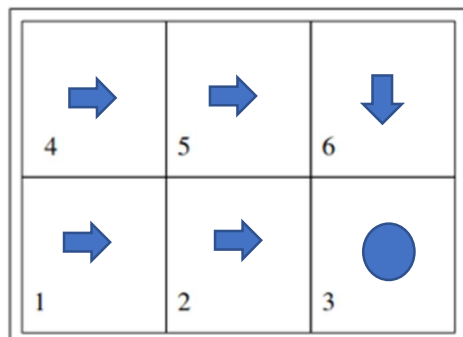
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### Exercise 01

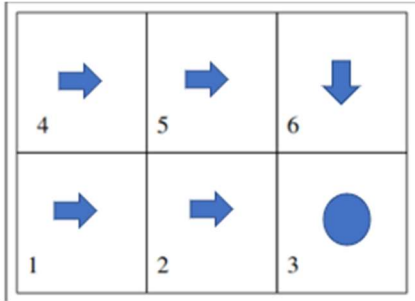
State	Expected utility for taking each action					Best Action	Expected Utility for Best Action	Updated Utility
	North	East	South	West	Nothing			
1	0	0	0	0	0	Any	0	-0.1
2	0	0	0	0	0	Any	0	-0.1
3	0	0	0	0	0	Any	0	1
4	0	0	0	0	0	Any	0	-0.1
5	0	0	0	0	0	Any	0	-0.1
6	0	0	0	0	0	Any	0	-0.05
1	-0.1	-0.1	-0.1	-0.1	-0.1	Any	-0.1	-0.1999
2	-0.045	0.89	-0.045	-0.1	-0.1	East	0.89	0.78911
3	—	—	—	—	—	—	—	1
4	-0.1	-0.1	-0.1	-0.1	-0.1	Any	-0.1	-0.1999
5	-0.0975	-0.055	-0.0975	-0.1	-0.1	East	-0.055	-0.15494
6	-0.0525	0.0025	0.8925	-0.0425	-0.05	South	0.8925	0.84160
1	-0.15044	0.6902	-0.15044	-0.1999	-0.1999	East	0.6902	0.58951
2	-0.0994	0.9317	0.7502	-0.1482	0.7891	East	0.9317	0.83077
3	—	—	—	—	—	—	—	1
4	-0.1976	-0.1594	-0.1976	-0.1999	-0.1999	East	-0.1594	-0.25928
5	-0.1073	0.7891	0.7422	-0.1482	-0.1549	East	0.7891	0.68836
6	0.7917	0.8495	0.9343	-0.0473	0.8416	South	0.9343	0.88339

### Exercise 02



### Exercise 03

a. Policy at the end



b. The policy converges at 3<sup>rd</sup> iteration.

c. The utilities converge at 13<sup>th</sup> iteration.