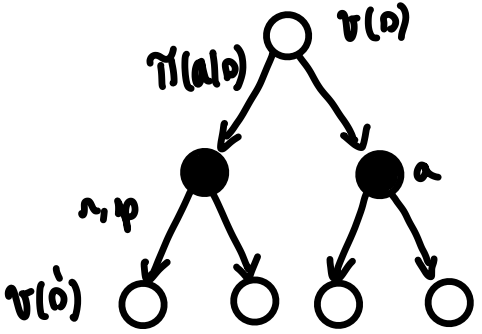
K = 1

0,0 (1)	-1 (2)	-1 (3)	-1 (4)
-1 (5)	-1 (6)	-1 (7)	-1 (8)
-1 (9)	-1 (10)	-1 (11)	-1 (12)
-1 (13)	-1 (14)	-1 (15)	0,0 (16)

* Possible actions ↑↓←→
* Reward -1 for all
* terminal state are 1 and 16
* $\pi(a|s) = 0,25 \ \forall s$
* $\gamma = 1$ to be simple



$$v_2(6) = \sum_a \pi(a|6) \sum_{s'} p(s'|s,a)\left[r + \gamma v_1(s')\right]$$

$\gamma = 1$; $r = -1$; $v_1(s') = -1 \ \forall s' \in S$, $0 \ \forall s' \in S^+$

$\pi(a|6) = 0,25 \ \forall a$

$$v_2(6) = 0,25 \times \begin{cases} p(2|6,u) \times -2 + \\ p(10|6,d) \times -2 + \\ p(5|6,l) \times -2 + \\ p(7|6,r) \times -2 + \end{cases}$$

$$\boxed{v_2(6) = -2}$$

K = 2

0,0 (1)	-1 (2)	-1 (3)	-1 (4)
-1 (5)	-1 (6)	-1 (7)	-1 (8)
-1 (9)	-1 (10)	-1 (11)	-1 (12)
-1 (13)	-1 (14)	-1 (15)	0,0 (16)