Homework 4

Theoretical part

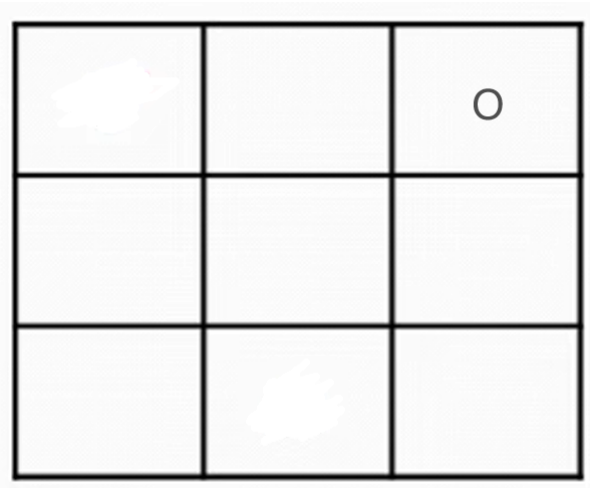
-- Course: *Intelligent Robotics – Professor: Qi Hao*

Question

Calculate the **MDP (Markov Decision Process)** for the following two cases.

For each case, calculate twice by using **value iteration** and **policy iteration** respectively.

1. The robot can take four actions: up, down, left, and right. And the probability of taking each action is equal. The reward for each step the robot takes is -1. In the figure below, **O** represents the goal position where the reward for walking there is 0.



2. The robot can take four actions: up, down, left, and right. And the probability of taking each action is equal. The reward for each step the robot takes is -0.1. In the figure below, **O** represents the goal position where the reward for walking there is 0, and **B** represents the obstacle with the reward for walking there is -1.