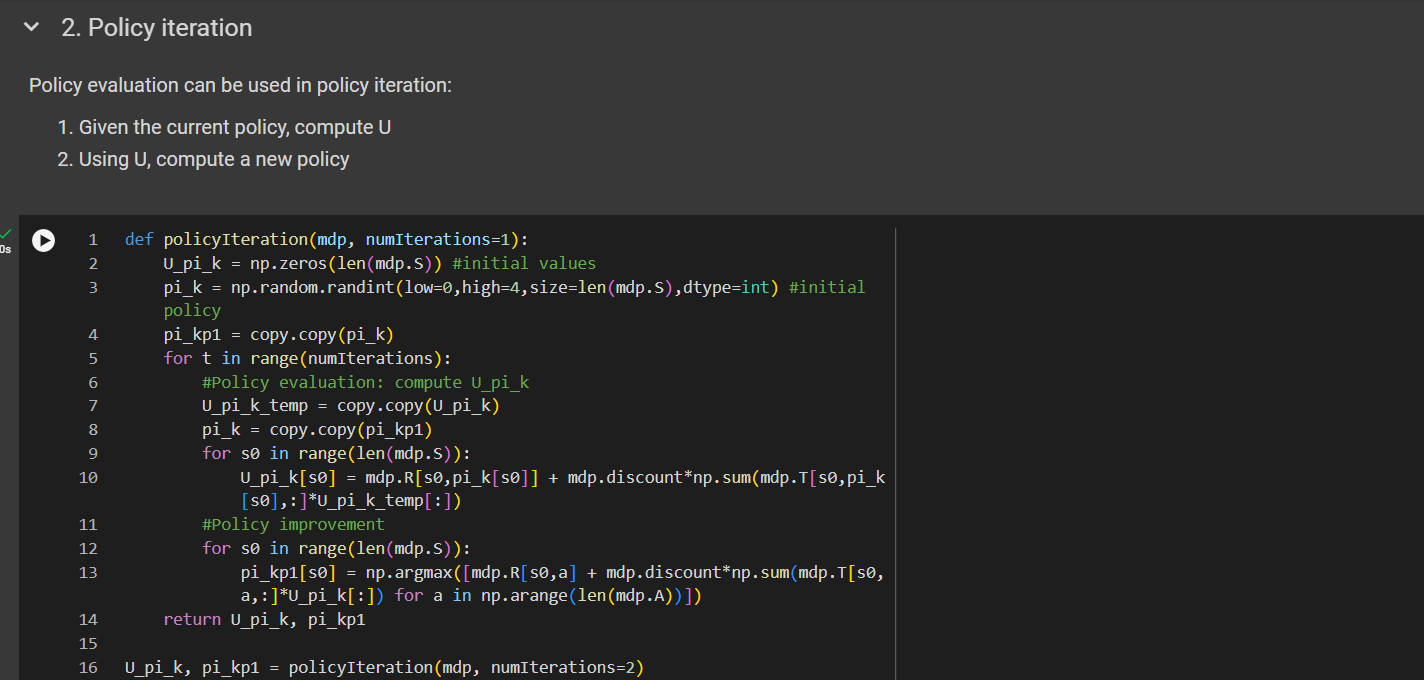
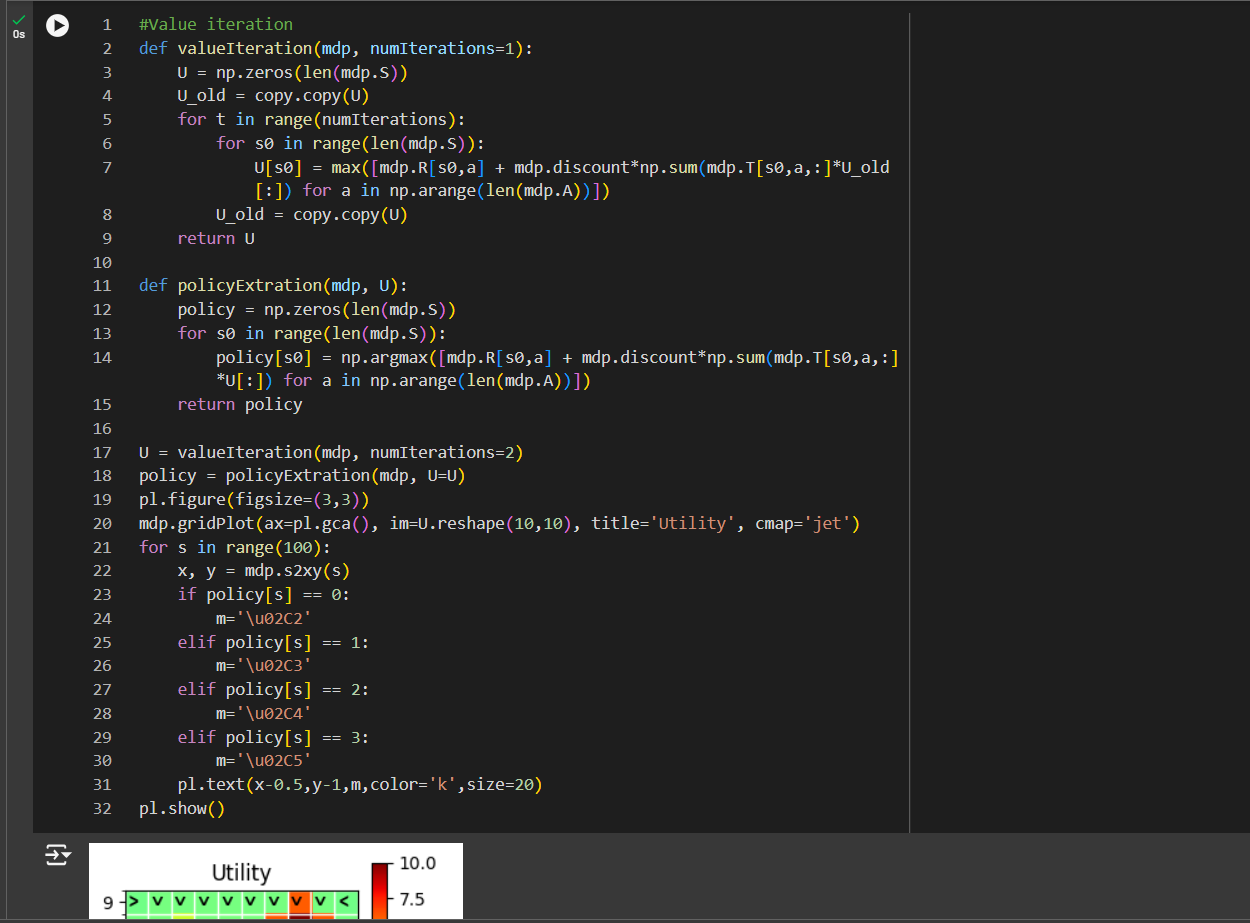
# DL Lab 08

## Question 1: Markov Decision Process and Q-Learning

1. Policy Evaluation

## Question 2: Model-Based vs Model-Free Reinforcement Learning

A screen shot of a computer program

Description automatically generated

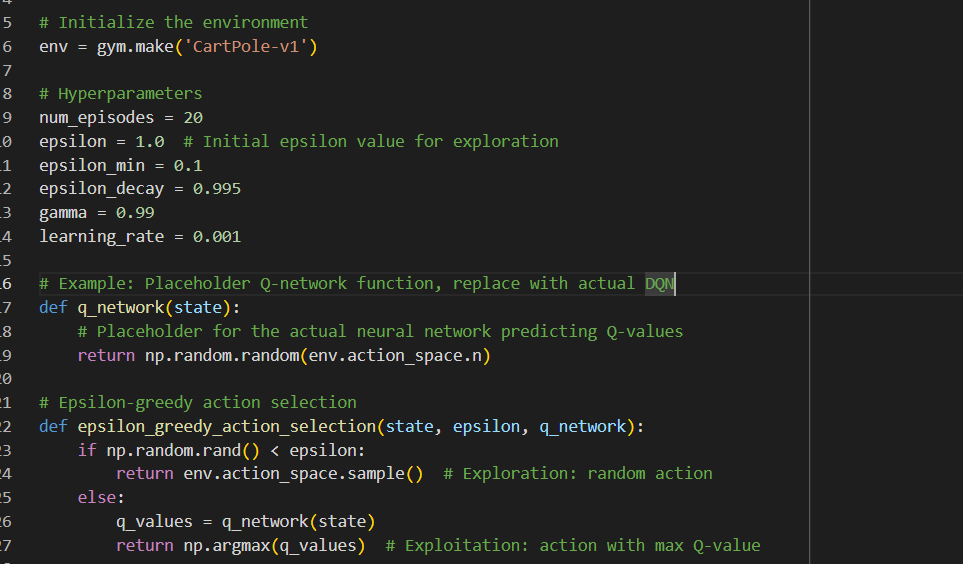
### **Difference Between Model Based and Model Free Algorithms**

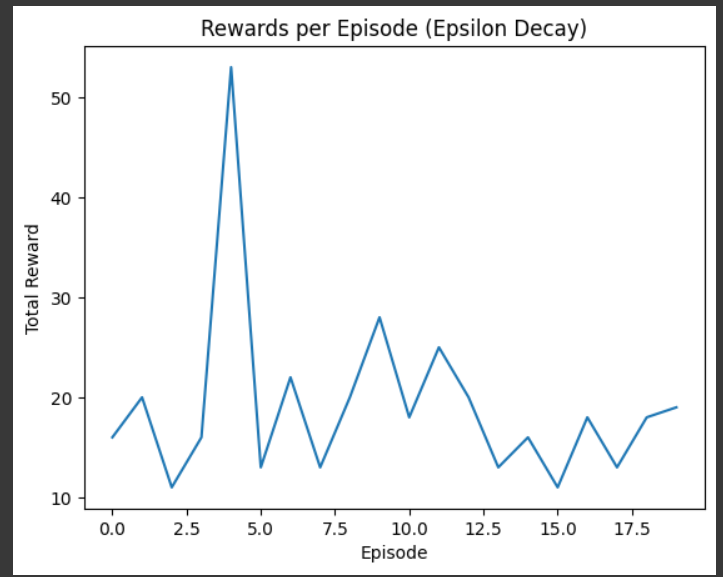
|  |  |
| --- | --- |
| Model Based Algorithms | Model Free Algorithms |
| Learns a model of the surroundings explicitly | Learns via firsthand encounter with the environment rather than from a model of it. |
| Usually converges more quickly when the model is precise. | Slows convergence, particularly in intricate settings. |
| Makes use of the acquired model to plan and simulate activities, enabling foresight | Without prior planning, gains knowledge through direct trial & error. |
| Because it can plan by simulating multiple probable outcomes, it is more sample-efficient. | Less sample-efficient and more dependent on environmental interactions for improvement |

## Question 3: Introduction to Deep Q-Learning (DQN)

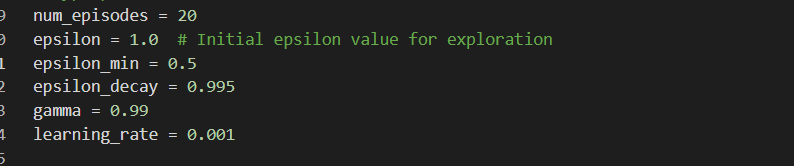
A screenshot of a computer program

Description automatically generated

 For Epsilon Val: 0.1



For Epsilon Value 0.5



A graph of a chart

Description automatically generated with medium confidence

Foe Epsilon Value 0.9

A screen shot of a computer

Description automatically generated

A graph of a line

Description automatically generated

# IT21280474\_Gridworld.ipynb Changes

A screen shot of a computer code

Description automatically generatedA screen shot of a computer program

Description automatically generated