به نام خدا

دانشگاه تهران

پردیس دانشکده های فنی

دانشکده مهندسی برق و کامپیوتر

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تمرین شماره‌ی 6

بخش کتبی

**مدرسین:**

دکتر فدائی

دکتر یعقوب‌زاده

**نگارش:**

فاطمه محمدی 810199489

**بخش کتبی**

[MDP 3](#_Toc169567544)

[سوال اول 3](#_Toc169567545)

[1) 3](#_Toc169567546)

[2) 6](#_Toc169567547)

[3) 6](#_Toc169567548)

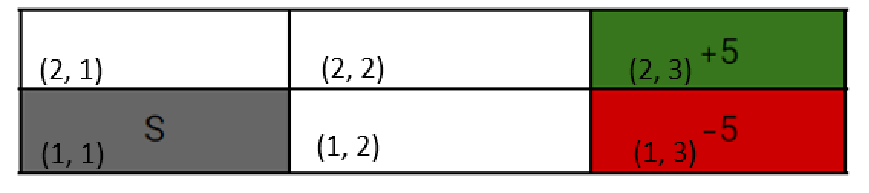
[4) امتیازی 6](#_Toc169567549)

[DQN 7](#_Toc169567550)

[سوال اول 7](#_Toc169567551)

# MDP

## سوال اول



Transaction Function:

### 

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S | (1, 1) | (1, 2) | (1, 3) | (2, 1) | (2, 2) | (2, 3) |
|  | **0** | **0** | **5** | **0** | **0** | **-5** |
|  |  |  | **5** |  |  | **-5** |
|  |  |  | **5** |  |  | **-5** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0 |
|  | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | - | 0 |
|  | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | 0 |
|  | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0 |
|  | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | - | 0 |
|  | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | 0 |
|  | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*-5) =-0.45 | - | 0.1\*(0 + 0.9\*0) = 0 | -0.45 |
|  | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*-5) =-0.36 | 0.1\*(0 + 0.9\*0) = 0 | - | -3.6 |
|  | - | 0.1\*(0 + 0.9\*-5) =-0.45 | 0.1\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | -0.45 |
|  | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*5) = 0.45 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.45 |
|  |  | 0.8\*(0 + 0.9\*5) = 3.6 | 0.1\*(0 + 0.9\*0) = 0 | - | 3.6 |
|  | - | 0.1\*(0 + 0.9\*5) = 0.45 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | 0.45 |
|  | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S | (1, 1) | (1, 2) | (1, 3) | (2, 1) | (2, 2) | (2, 3) |
|  | **0** | **0** | **5** | **0** | **0** | **-5** |
|  | **0** | **0** | **5** | **0** | **3.6** | **-5** |
|  |  |  | **5** |  |  | **-5** |

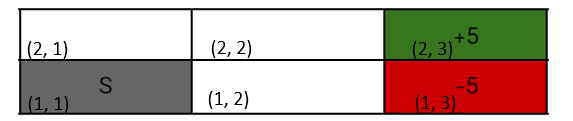
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0 |
|  | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | - | 0 |
|  | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | 0 |
|  | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*3.6) = 0.324 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.324 |
|  | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*3.6) = 2.592 | 0.1\*(0 + 0.9\*0) = 0 | - | 2.592 |
|  | - | 0.1\*(0 + 0.9\*3.6) = 0.324 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | 0.324 |
|  | 0.1\*(0 + 0.9\*0) = 0 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*3.6) = 2.592 | 0.1\*(0 + 0.9\*-5) =  -0.45 | - | 0.1\*(0 + 0.9\*0) = 0 | 2.142 |
|  | 0.1\*(0 + 0.9\*3.6) = 0.324 | 0.8\*(0 + 0.9\*-5) =  -3.6 | 0.1\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | -3.276 |
|  | - | 0.1\*(0 + 0.9\*-5) =  -0.45 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | -0.45 |
|  | 0.1\*(0 + 0.9\*3.6) = 0.324 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.324 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | SUM |
|  | 0.8\*(0 + 0.9\*3.6) = 2.592 | 0.1\*(0 + 0.9\*-5) =  0.45 | - | 0.1\*(0 + 0.9\*0) = 0 | 3.042 |
|  | 0.1\*(0 + 0.9\*3.6) = 0.324 | 0.8\*(0 + 0.9\*-5) =  3.6 | 0.1\*(0 + 0.9\*0) = 0 | - | 3.924 |
|  | - | 0.1\*(0 + 0.9\*-5) =  0.45 | 0.8\*(0 + 0.9\*0) = 0 | 0.1\*(0 + 0.9\*0) = 0 | 0.45 |
|  | 0.1\*(0 + 0.9\*3.6) = 0.324 | - | 0.1\*(0 + 0.9\*0) = 0 | 0.8\*(0 + 0.9\*0) = 0 | 0.324 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S | (1, 1) | (1, 2) | (1, 3) | (2, 1) | (2, 2) | (2, 3) |
|  | **0** | **0** | **5** | **0** | **0** | **-5** |
|  | **0** | **0** | **5** | **0** | **3.6** | **-5** |
|  | **0** | **2.142** | **5** | **2.592** | **3.924** | **-5** |





### 

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| S | (1, 1) | (1, 2) | (1, 3) | (2, 1) | (2, 2) | | (2, 3) |
|  |  |  | **-** |  | |  | **-** |

### 

### امتیازی

# DQN

## سوال اول