

## Exercise 5

### Task 1 - Random Walk

### Task 2 - Sarsa and Q-learning on the FrozenLake

a)

see Figure 1 & Figure 2 & Figure 3.

→	↑	←	↑
←	←	←	←
↓	↓	←	←
←	↓	↑	←

Table 1: Sarsa policy

b)

see Figure 4 & Figure 5 & Figure 6.

↓	↓	↓	↓
↓	←	↓	←
→	←	↓	←
←	→	↓	←

Table 2: Q-Learning policy

c)

No exploration is done, so the best neighbor is always chosen.

d)

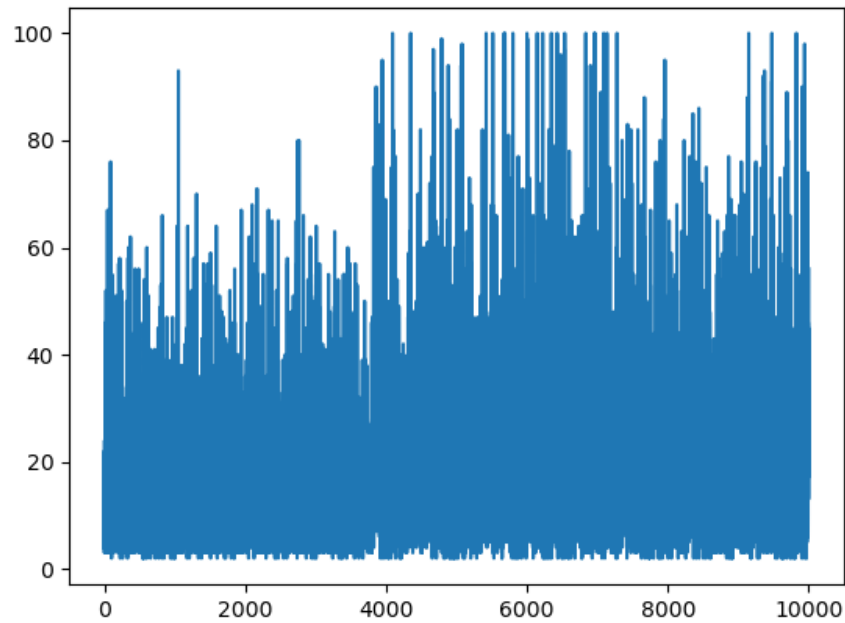


Figure 1: Sarsa training length



Figure 2: Sarsa V

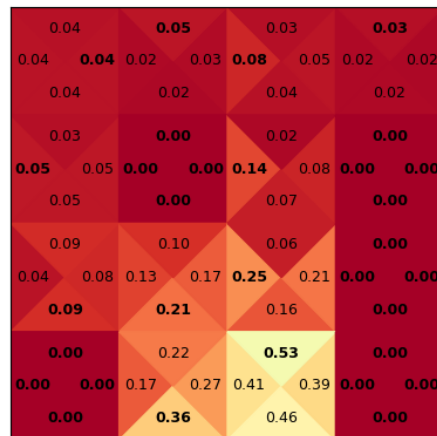


Figure 3: Sarsa Q

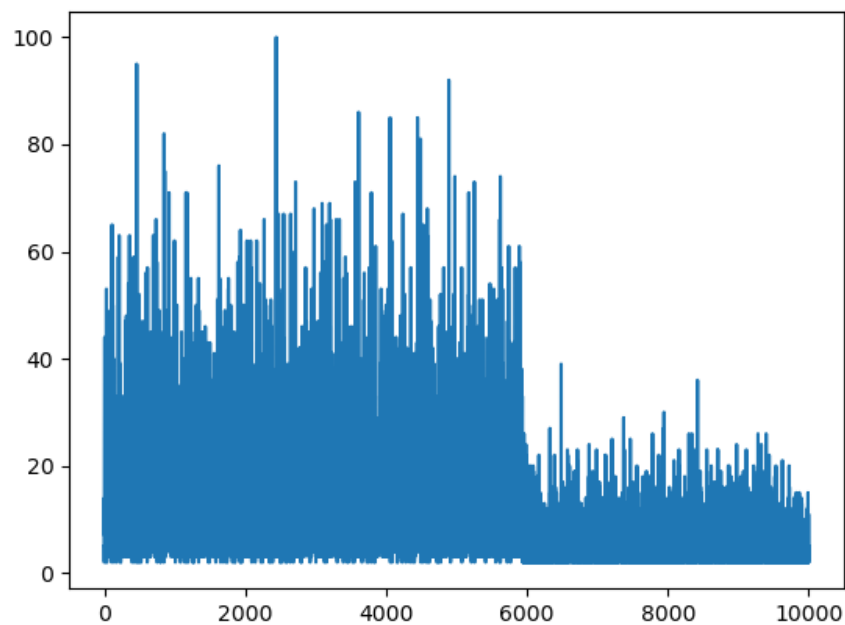


Figure 4: Q-Learning training length

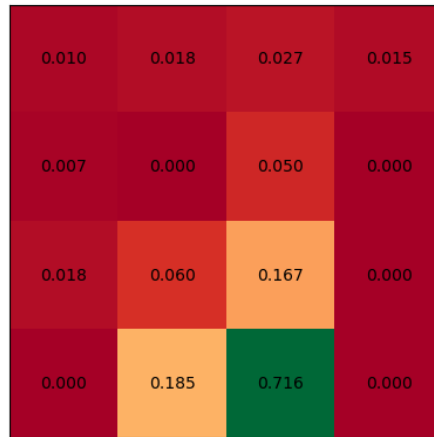


Figure 5: Q-Learning V

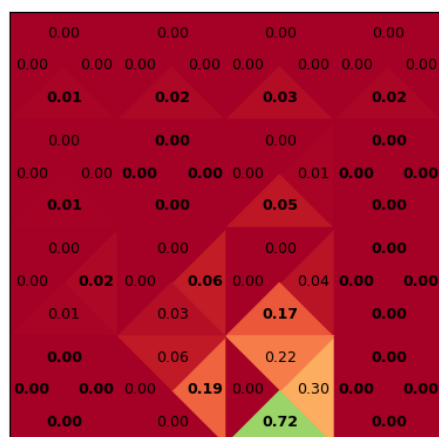


Figure 6: Q-Learning Q