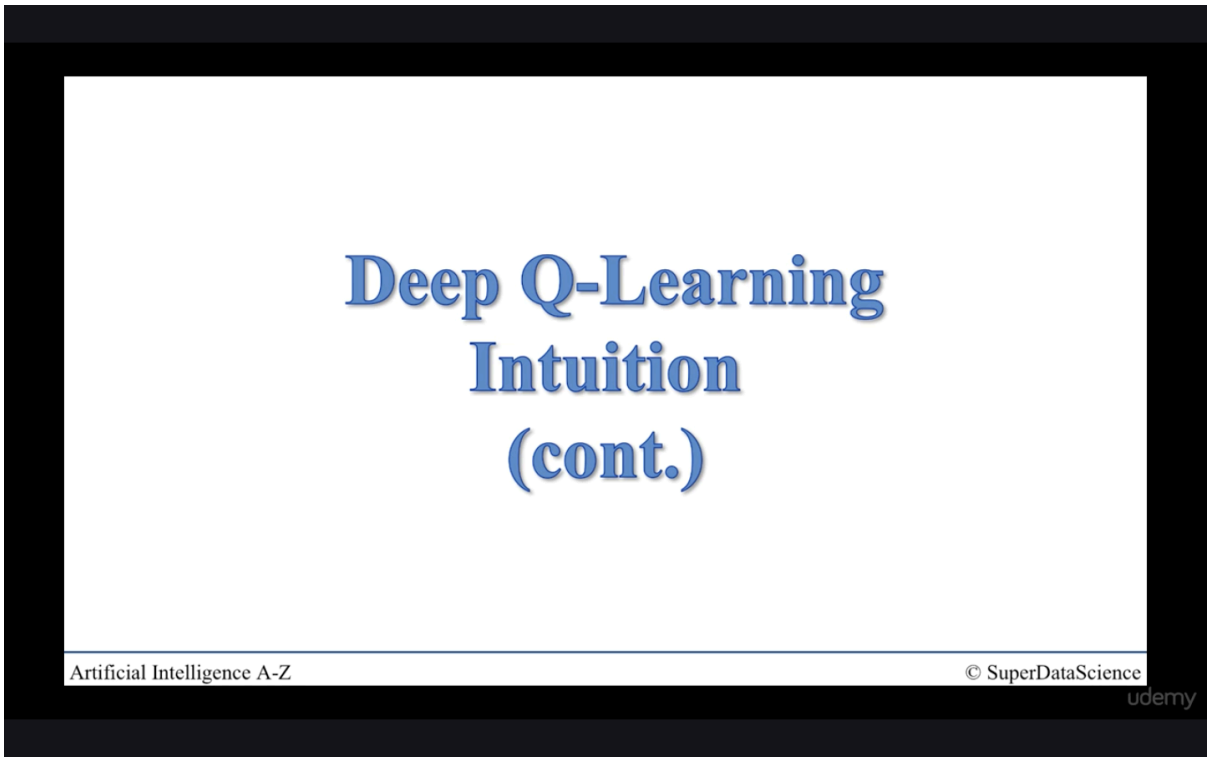
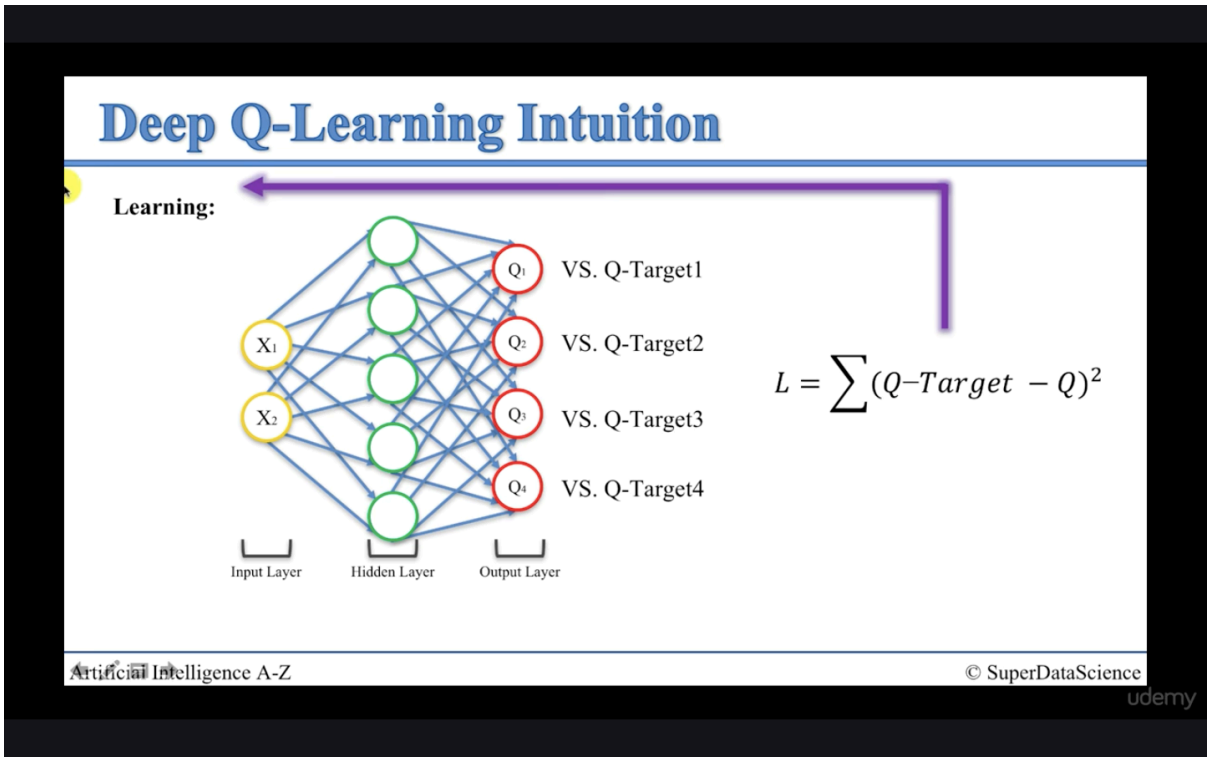
Deep Q-Learning





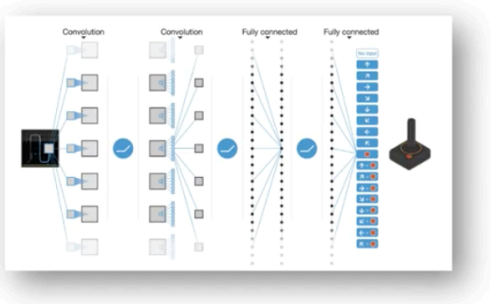
The input is a vector and it's important thing to remember that in here Q values doesn't change.

Additional Reading

Additional Reading:

Simple Reinforcement Learning with Tensorflow (Part 4)

By Arthur Juliani (2016)

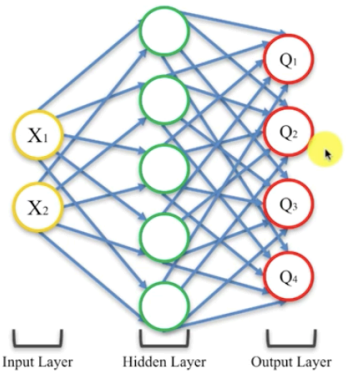


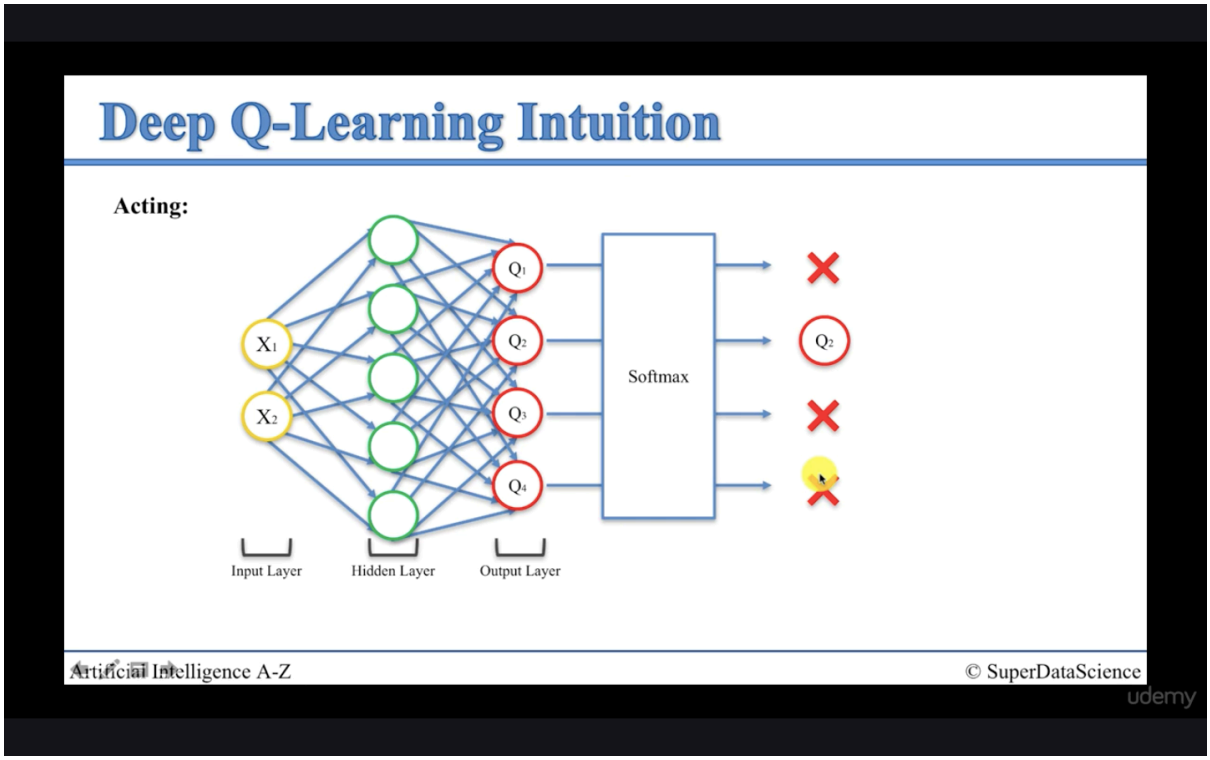
Link:

https://medium.com/@awjuliani/simple-reinforcement-learning-with-tensorflow-part-4-deep-q-networks-and-beyond-8438a3e2b8df

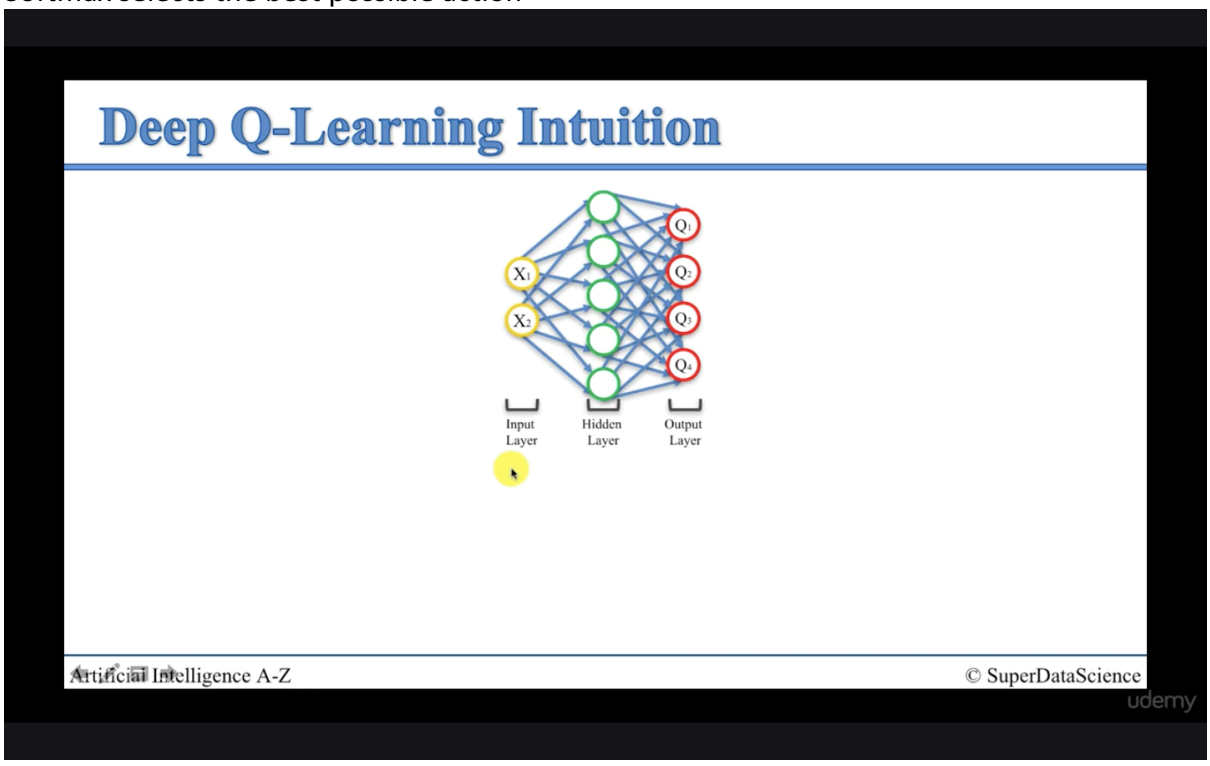
Deep Q-Learning Intuition

Acting:



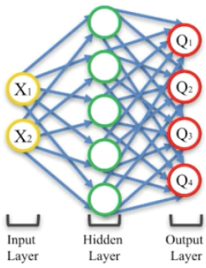


Softmax selects the best possible action



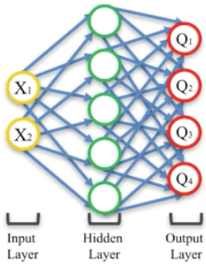
Deep Q-Learning Intuition

Learning:



Deep Q-Learning Intuition

Learning:



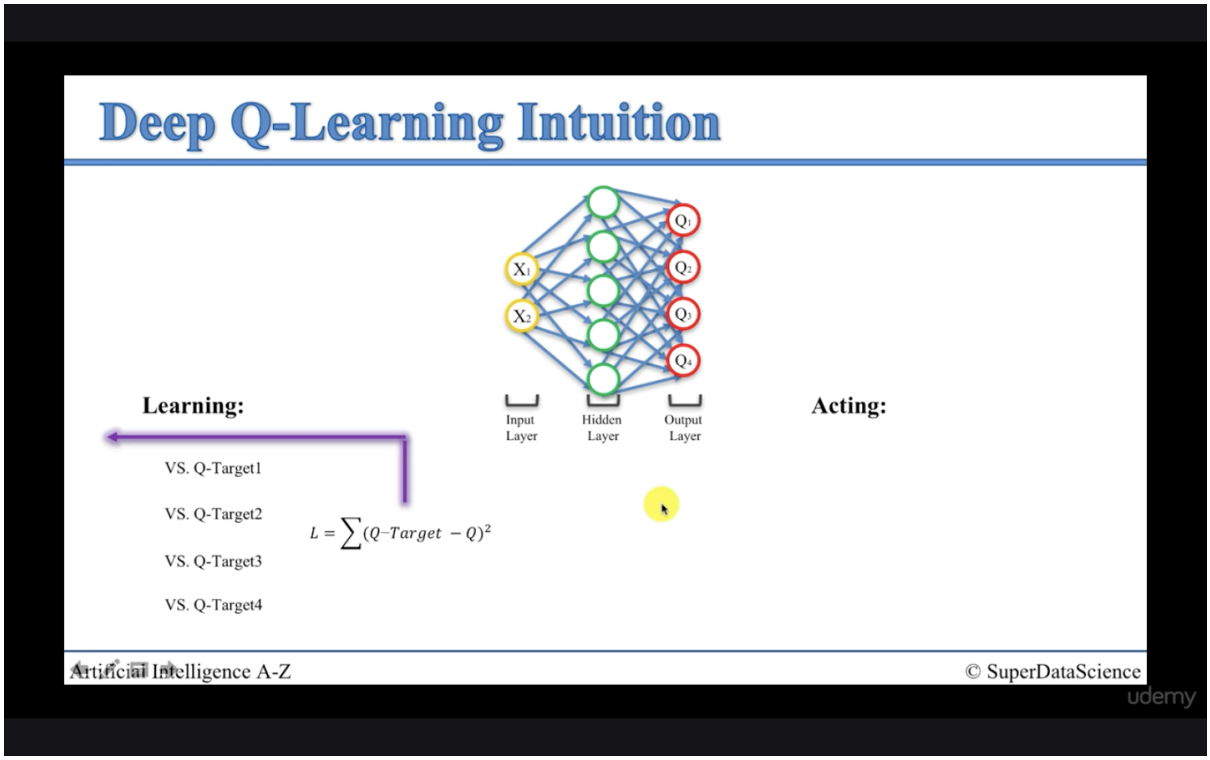
VS. Q-Target1

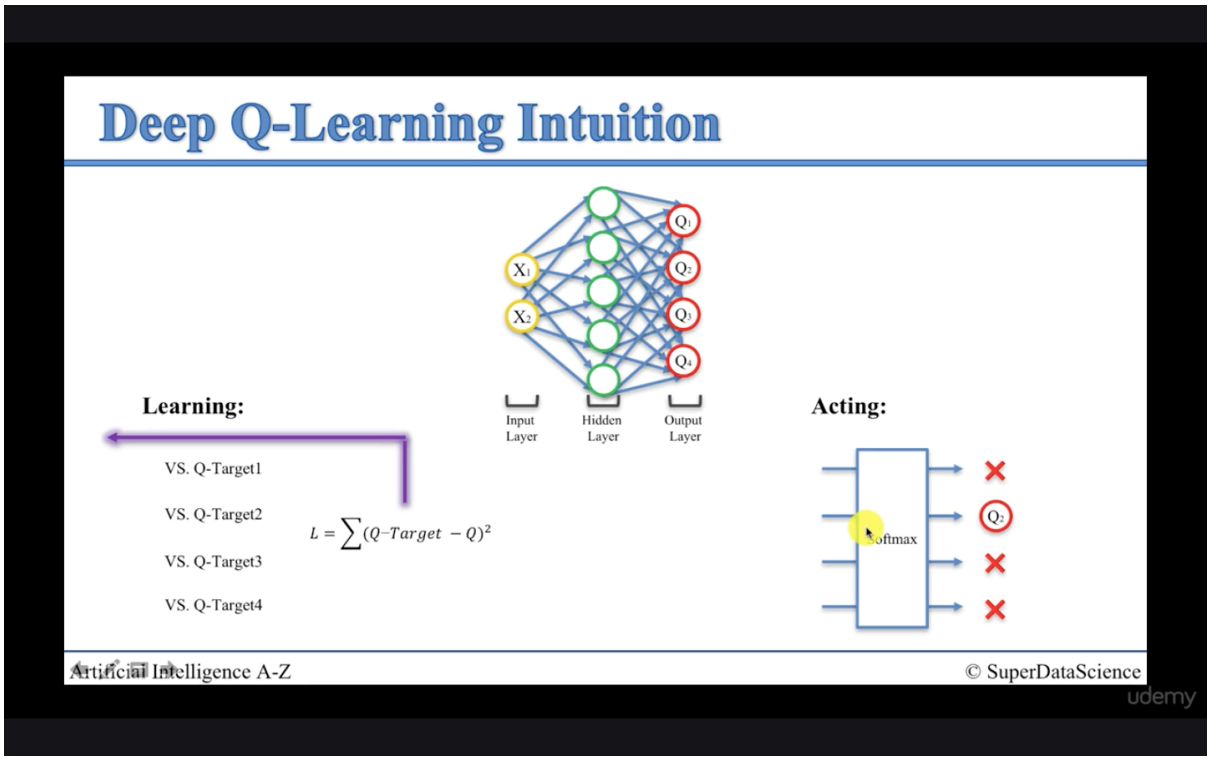
VS. Q-Target2

VS. Q-Target3

VS. Q-Target4

$$L = \sum (Q\text{-}Target - Q)^2$$





Every time a game ends, that's the end of the epoch. And the it starts again and again and again until it gets better at it.