Objective:

* Compare win rate between infinite deck and limited deck (and optimal policy?)

State representation

* Player’s current sum
* Dealer’s faced up card
* Contains ace (soft)?
* \*possible for split
* Player advantage point (card limit only)

Terminate condition

* Player’s sum = 21
* Player’s action = stand
* Player’s sum(soft) >21
* Player double down

Reward

* Non-terminate states: 0
* Terminate states:
  + Calculated based on who wins the game

Allowed actions

* Hit
* Stand
* Double
* Split

Rules

* Typical rules are used
* Dealer stands at soft 17
* Double is only permitted at the beginning round
* \*Double allowed after split

Algorithm:

* Deep Q learning

Hyperparameters

* TBD

Player advantage point representation

* 2-6 🡺 +1
* A, 10 🡺 -1
* 7-9 🡺 0