

# TCG Project 2 - 0756078 陳劭傑

## Version Control & Gist

[https://bitbucket.org/ds282547/tcg\\_project2/](https://bitbucket.org/ds282547/tcg_project2/)

```
git clone https://ds282547@bitbucket.org/ds282547/tcg_project2.git
```

<https://gist.github.com/ds282547/8197522186cf25d4330b40807871eb35>

## Complie (makefile)

TD training program:

```
make train
```

Threes playing program :

```
make play
```

## Instruction

TD training program:

```
./threes_train -total=<no. of games> --weight=save=<weight save path>
```

Ex:

Train 100k games and save to “weight\_001”

```
./threes_train -total=100000 --weight=save=weight_001
```

Threes playing program

```
./threes_play -total=<no. of playing games> --weight=load=<weight load path> --evil=seed=<integer|time> --save=<stat save path>
```

Ex:

Play 1000 games with weight file “weight\_002”

```
./threes_train -total=1000 -weight=load= weight_002
```

Play 1000 games with weight file “weight\_003” with seed 1

```
./threes_train -total=1000 -weight=load=weight_001 -evil=seed=1
```

Play 1000 games with weight file “weight\_003” , use time as seed and save statistics data to “stat.txt”

```
./threes_train -total=1000 -weight=load=weight_001 -evil=seed=time  
-save=stat.txt
```



## Some Result

My playing threes program:

```
0756078@EC037-039:~$ ./threes_play --total=1000 --weight=load=weight001 --evil=seed=time --save=stat.txt
Stat Save to stat.txt
Random Seed = time
load=weight001
Weight table match!
Weight slots number match!
Weight slots number match!
Weight slots number match!
Weight slots number match!
Weight LH slots number match!
Weight LT slots number match!
Used Time: 7.77681 sec
=====Speed=====
[all op]          total=4769598   time=6203 ms   speed=768917 ops
[player op]       total=2380299   time=6073 ms   speed=391947 ops
[evironment op]  total=2389299   time=130 ms    speed=18379223 ops
=====
  TILE      WIN      END
    96  100.00%    0.40%
   192   99.60%    0.90%
   384   98.70%    3.30%
   768   95.40%    7.40%
  1536   88.00%   13.20%
  3072   74.80%   57.40%
  6144   17.40%   17.40%
Max Score:593808 at episode #932
Avg Score:258429.078125
0756078@EC037-039:~$
```

Judge:

```
0756078@EC037-039:~$ ./threes --judge=stat.txt
Threes!-Demo: ./threes --judge=stat.txt

Statistic of 1000 episodes:
Tile   Score    Win%    End%
  96    1579    100%    0.4%
 192    3311    99.6%    0.9%
 384    9743    98.7%    3.3%
 768   27662    95.4%    7.4%
1536   78382    88%     13.2%
3072  264913    74.8%    57.4%
6144  538031    17.4%    17.4%
Average score: 258429
Max score: 593808
Speed: 768917 ops
Player's speed: 391947 ops
Environment's speed: 18379223 ops

Grading: 99 + 5 = 104
```