

ASSIGNMENT - 1MACHINE LEARNINGQUESTION-1

Initial Money = 1000 \$

Play until you run out of money or for 10 games.

Run simulations for 10 rounds.

RESULTS OF SIMULATIONS:-

ROUND	ENDING AMOUNT	NUMBER OF GAMES.
1	1000	10
2	1500	10
3	1700	10
4	0	7
5	0	4
6	1600	10
7	1300	10
8	1600	10
9	1600	10
10	1700	10

The persons hypothesis that he claims that can beat "any" game of chance is false as in the above simulation we see the player loosing in round 4 & 5.

On multiple further simulations I observed that the winning rate of 80% (in the first simulation 10 rounds) varies for each simulation (sometimes its as low as 40% wins, i.e. table varies for each simulation).

```
craps.game.R x StockMarket.R x trading.R x sma x
Source on Save Run Source
games Next Prev All Replace Replace All
In selection Match case Whole word Regex Wrap
53- if(bet>balance && game!=10){
54-   bet <- balance
55- }
56- }
57- else{
58-   balance <- balance + bet
59-   bet <- 100
60- }
61- }
62- cat("Round=",round," Number of Games = ",game, " Ending Amount=", balance,"\n\n")
63- }
64- }
65- }
66- #do this 10 times , 10 rounds or until you run out of money
67- }
67:1 (Top Level) R Script
Console ~/
+ }
+ cat("Round=",round," Games played = ",game, " Balance=", balance,"\n\n")
+ }
Round= 1 Games played = 10 Balance= 1000
Round= 2 Games played = 10 Balance= 1500
Round= 3 Games played = 10 Balance= 1700
Round= 4 Games played = 7 Balance= 0
Round= 5 Games played = 4 Balance= 0
Round= 6 Games played = 10 Balance= 1600
Round= 7 Games played = 10 Balance= 1300
Round= 8 Games played = 10 Balance= 1600
Round= 9 Games played = 10 Balance= 1600
Round= 10 Games played = 10 Balance= 1700
> for(round in 1:10){
+   balance <- 1000
```

Environment History

Global Environment

Values

sma	An 'xts' object on 2000-01-03/2015-12-31 containing:	
balance	0	
bet	0	
buy.hold	List of 8	
data	Environment	
game	4	
i	10L	
round	10L	
sma.cross	Large list (9 elements, 517.2 Kb)	
tickers	chr [1:7] "DJIA" "SPY" "AAPL" "BAC" "NFLX" "PCLN" "AMZN"	
x	0	

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Name	Description	Version
<input checked="" type="checkbox"/> random	True Random Numbers using RANDOM.ORG	0.2.5
<input type="checkbox"/> randomForest	Breiman and Cutler's random forests for classification and regression	4.6-10
<input type="checkbox"/> gtable	Arrange grobs in tables.	0.1.2