

# Playoff2020

September 27, 2020

## 1 Playoff Picker

### 1.1 MLB 2020

#### 1.1.1 The Plague Year, The Silly Season

```
[5]: import random
```

```
[6]: class Team:
    def __init__(self, win_pct, name):
        self.name = name
        self.win_pct = win_pct
```

```
[108]: class PlayoffSeries:
    def __init__(self, team1, team2, ngames):
        self.team1 = team1
        self.team2 = team2
        self.ngames = ngames
        self.results = []
    def playball(self):
        team1_win_pct = 0.5*(self.team1.win_pct + (1-self.team2.win_pct))
        for i in range(self.ngames):
            score = random.random()
            if score < team1_win_pct:
                self.results.append(self.team1.name)
            else:
                self.results.append(self.team2.name)
            if self.results.count(self.team1.name) > (self.ngames / 2.0):
                self.winner = self.team1
                self.games_played = i+1
                break
            elif self.results.count(self.team2.name) > (self.ngames / 2.0):
                self.winner = self.team2
                self.games_played = i+1
                break
```

```
[107]: class Bracket:
    def __init__(self, teamlist, ngamelist):
```

```

        self.teams = teamlist
        self.ngamelist = ngamelist
        self.ntteams = len(teamlist)
        self.rounds = len(ngamelist)
    def playout(self):
        self.series_list = []
        these_teams = self.teams
        curr_n_teams = self.ntteams
        for r in range(self.rounds):
            this_round = []
            this_round_ngames = self.ngamelist[r]
            winners = []
            for i in range(int(curr_n_teams/2)):
                this_round.
→append(PlayoffSeries(these_teams[i],these_teams[-1-1*i],this_round_ngames))
                this_round[-1].playball()
                winners.append(this_round[-1].winner)
                # print(type(winners[-1]))
            self.series_list.append(this_round)
            these_teams = winners
            curr_n_teams = len(winners)
    def printout(self):
        for j, playoff_round in enumerate(self.series_list):
            print('Round ',j+1,' results')
            for series in playoff_round:
                print(series.winner.name,' won in ',series.games_played,' games.
→')

```

```
[51]: format_list = [3,5,7]
```

```
[52]: import csv
```

```

[62]: al_list = []
with open('./Documents/al2020.csv') as al_file:
    al_reader = csv.reader(al_file,delimiter=',')
    for row in al_reader:
        print(row)
        al_list.append(Team((float(row[1])/
→(float(row[1])+float(row[2]))),row[0]))

```

```

['Rays', '40', '20']
['As', '36', '24']
['Twins', '36', '24']
['Indians', '35', '25']
['Yankees', '33', '27']
['Astros', '29', '31']
['White Sox', '35', '25']

```

```
['Blue Jays', '32', '28']
```

```
[63]: nl_list = []  
      with open('./Documents/nl2020.csv') as nl_file:  
          nl_reader = csv.reader(nl_file,delimiter=',')  
          for row in nl_reader:  
              print(row)  
              nl_list.append(Team((float(row[1])/  
→(float(row[1])+float(row[2]))),row[0]))
```

```
['Dodgers', '43', '17']  
['Braves', '35', '25']  
['Cubs', '34', '26']  
['Padres', '37', '23']  
['Cardinals', '30', '28']  
['Marlins', '31', '29']  
['Reds', '31', '29']  
['Brewers', '29', '31']
```

```
[109]: al_bracket = Bracket(al_list,format_list)  
       nl_bracket = Bracket(nl_list,format_list)
```

```
[110]: al_bracket.playout()
```

```
[111]: al_bracket.printout()
```

```
Round 1 results  
Rays won in 2 games.  
White Sox won in 2 games.  
Astros won in 3 games.  
Yankees won in 2 games.  
Round 2 results  
Rays won in 4 games.  
Astros won in 4 games.  
Round 3 results  
Rays won in 5 games.
```

```
[112]: nl_bracket.playout()  
       nl_bracket.printout()
```

```
Round 1 results  
Dodgers won in 3 games.  
Reds won in 3 games.  
Cubs won in 2 games.  
Padres won in 2 games.  
Round 2 results  
Padres won in 4 games.  
Cubs won in 5 games.
```

Round 3 results  
Padres won in 6 games.

```
[113]: world_series = PlayoffSeries(al_bracket.series_list[-1][-1].winner,  
                                   nl_bracket.series_list[-1][-1].winner,  
                                   7)
```

```
[114]: world_series.playball()
```

```
[115]: world_series.results
```

```
[115]: ['Rays', 'Padres', 'Padres', 'Padres', 'Rays', 'Rays', 'Padres']
```

Your World Series champion Padres win in a dramatic Game 7 after letting the Rays come back from a deficit of 3 games to 1.

```
[ ]:
```