

```
In [486...]: #Import numpy
In [488...]: import numpy as np
In [490...]: #Seasons
Seasons = ["2010", "2011", "2012", "2013", "2014", "2015", "2016", "2017", "2018", "2019"]
Sdict = {"2010":0, "2011":1, "2012":2, "2013":3, "2014":4, "2015":5, "2016":6, "2017":7}

#Players
Players = ["Sachin", "Rahul", "Smith", "Sami", "Pollard", "Morris", "Samson", "Dhoni", "Sky"]
Pdict = {"Sachin":0, "Rahul":1, "Smith":2, "Sami":3, "Pollard":4, "Morris":5, "Samson":6, "Dhoni":7, "Sky":8}

#Salaries
Sachin_Salary = [15946875, 17718750, 19490625, 21262500, 23034375, 24806250, 25244493, 26000000, 27744189, 29488377, 31232567, 33076754, 34324500, 36038573, 37500000, 3921800, 41828090, 43041250, 44410581, 45779912, 46500000, 476022500, 48175, 493160, 50806720, 52061274, 53758000, 55202590, 56647180, 58091770, 5919, 60348000, 6235220, 64255000, 66410581, 68779912, 70450000, 72022500, 7377, 75144240, 77380160, 793615960, 814574189, 8313520500, 8541490153, 87316359805, 891777, 904171200, 924484040, 944796880, 966053663, 9815506632, 10016669630, 10217832627, 1041, 1064171200, 1084822800, 1105184480, 1125546160, 1146993708, 11616402500, 11817632688, 12018862875, 1221731920, 1243841443, 12613041250, 12814410581, 13015779912, 13214200000, 13415691000, 13617182]
#Matrix
Salary = np.array([Sachin_Salary, Rahul_Salary, Smith_Salary, Sami_Salary, Pollard_Salary, Morris_Salary, Samson_Salary, Dhoni_Salary, Sky_Salary])

#Games
Sachin_G = [80, 77, 82, 82, 73, 82, 58, 78, 6, 35]
Rahul_G = [82, 57, 82, 79, 76, 72, 60, 72, 79, 80]
Smith_G = [79, 78, 75, 81, 76, 79, 62, 76, 77, 69]
Sami_G = [80, 65, 77, 66, 69, 77, 55, 67, 77, 40]
Pollard_G = [82, 82, 82, 79, 82, 78, 54, 76, 71, 41]
Morris_G = [70, 69, 67, 77, 70, 77, 57, 74, 79, 44]
Samson_G = [78, 64, 80, 78, 45, 80, 60, 70, 62, 82]
Dhoni_G = [35, 35, 80, 74, 82, 78, 66, 81, 81, 27]
Kohli_G = [40, 40, 40, 81, 78, 81, 39, 0, 10, 51]
Sky_G = [75, 51, 51, 79, 77, 76, 49, 69, 54, 62]
#Matrix
Games = np.array([Sachin_G, Rahul_G, Smith_G, Sami_G, Pollard_G, Morris_G, Samson_G, Dhoni_G, Sky_G])

#Points
Sachin PTS = [2832, 2430, 2323, 2201, 1970, 2078, 1616, 2133, 83, 782]
Rahul PTS = [1653, 1426, 1779, 1688, 1619, 1312, 1129, 1170, 1245, 1154]
Smith PTS = [2478, 2132, 2250, 2304, 2258, 2111, 1683, 2036, 2089, 1743]
Sami PTS = [2122, 1881, 1978, 1504, 1943, 1970, 1245, 1920, 2112, 966]
Pollard PTS = [1292, 1443, 1695, 1624, 1503, 1784, 1113, 1296, 1297, 646]
Morris PTS = [1572, 1561, 1496, 1746, 1678, 1438, 1025, 1232, 1281, 928]
Samson PTS = [1258, 1104, 1684, 1781, 841, 1268, 1189, 1186, 1185, 1564]
Dhoni PTS = [903, 903, 1624, 1871, 2472, 2161, 1850, 2280, 2593, 686]
Kohli PTS = [597, 597, 597, 1361, 1619, 2026, 852, 0, 159, 904]
Sky PTS = [2040, 1397, 1254, 2386, 2045, 1941, 1082, 1463, 1028, 1331]
#Matrix
Points = np.array([Sachin PTS, Rahul PTS, Smith PTS, Sami PTS, Pollard PTS, Morris PTS, Samson PTS, Dhoni PTS, Sky PTS])
```

In [492...]: Salary

```
Out[492... array([[15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
       25244493, 27849149, 30453805, 23500000],
      [12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
       18038573, 19752645, 21466718, 23180790],
      [ 4621800,  5828090, 13041250, 14410581, 15779912, 14500000,
       16022500, 17545000, 19067500, 20644400],
      [ 3713640,  4694041, 13041250, 14410581, 15779912, 17149243,
       18518574, 19450000, 22407474, 22458000],
      [ 4493160,  4806720, 6061274, 13758000, 15202590, 16647180,
       18091770, 19536360, 20513178, 21436271],
      [ 3348000,  4235220, 12455000, 14410581, 15779912, 14500000,
       16022500, 17545000, 19067500, 20644400],
      [ 3144240,  3380160, 3615960, 4574189, 13520500, 14940153,
       16359805, 17779458, 18668431, 20068563],
      [ 0, 0, 4171200, 4484040, 4796880, 6053663,
       15506632, 16669630, 17832627, 18995624],
      [ 0, 0, 0, 4822800, 5184480, 5546160,
       6993708, 16402500, 17632688, 18862875],
      [ 3031920, 3841443, 13041250, 14410581, 15779912, 14200000,
       15691000, 17182000, 18673000, 15000000]])
```

In [494... Games

```
Out[494... array([[80, 77, 82, 82, 73, 82, 58, 78, 6, 35],
       [82, 57, 82, 79, 76, 72, 60, 72, 79, 80],
       [79, 78, 75, 81, 76, 79, 62, 76, 77, 69],
       [80, 65, 77, 66, 69, 77, 55, 67, 77, 40],
       [82, 82, 82, 79, 82, 78, 54, 76, 71, 41],
       [70, 69, 67, 77, 70, 77, 57, 74, 79, 44],
       [78, 64, 80, 78, 45, 80, 60, 70, 62, 82],
       [35, 35, 80, 74, 82, 78, 66, 81, 81, 27],
       [40, 40, 40, 81, 78, 81, 39, 0, 10, 51],
       [75, 51, 51, 79, 77, 76, 49, 69, 54, 62]]])
```

In [496... Points

```
Out[496... array([[2832, 2430, 2323, 2201, 1970, 2078, 1616, 2133, 83, 782],
       [1653, 1426, 1779, 1688, 1619, 1312, 1129, 1170, 1245, 1154],
       [2478, 2132, 2250, 2304, 2258, 2111, 1683, 2036, 2089, 1743],
       [2122, 1881, 1978, 1504, 1943, 1970, 1245, 1920, 2112, 966],
       [1292, 1443, 1695, 1624, 1503, 1784, 1113, 1296, 1297, 646],
       [1572, 1561, 1496, 1746, 1678, 1438, 1025, 1232, 1281, 928],
       [1258, 1104, 1684, 1781, 841, 1268, 1189, 1186, 1185, 1564],
       [ 903, 903, 1624, 1871, 2472, 2161, 1850, 2280, 2593, 686],
       [ 597, 597, 597, 1361, 1619, 2026, 852, 0, 159, 904],
       [2040, 1397, 1254, 2386, 2045, 1941, 1082, 1463, 1028, 1331]]))
```

In [498... mydata = np.arange(0,20)
print(mydata)

```
[ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19]
```

In [500... np.reshape(mydata,(5,4)) # 5 rows & 4 columns

```
Out[500... array([[ 0,  1,  2,  3],
       [ 4,  5,  6,  7],
       [ 8,  9, 10, 11],
       [12, 13, 14, 15],
       [16, 17, 18, 19]]))
```

In [502... mydata

Out[502... array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19])

In [504... #np.reshape(mydata,(5,4), order = 'c') #'C' means to read / write the elements u
MATR1 = np.reshape(mydata, (5,4), order = 'c')
MATR1

Out[504... array([[0, 1, 2, 3],
[4, 5, 6, 7],
[8, 9, 10, 11],
[12, 13, 14, 15],
[16, 17, 18, 19]])

In [506... MATR1

Out[506... array([[0, 1, 2, 3],
[4, 5, 6, 7],
[8, 9, 10, 11],
[12, 13, 14, 15],
[16, 17, 18, 19]])

In [508... # If i want to get only no.3
MATR1[3,3]

Out[508... 15

In [510... MATR1

Out[510... array([[0, 1, 2, 3],
[4, 5, 6, 7],
[8, 9, 10, 11],
[12, 13, 14, 15],
[16, 17, 18, 19]])

In [512... MATR1[-3,-1]

Out[512... 11

In [514... MATR1

Out[514... array([[0, 1, 2, 3],
[4, 5, 6, 7],
[8, 9, 10, 11],
[12, 13, 14, 15],
[16, 17, 18, 19]])

In [516... a1 = ['welcome', 'To', 'TCS']
a2 = ['Google', 'Facebook', 'Notebook']
a3 = [1,2,3]

In [518... a1

Out[518... ['welcome', 'To', 'TCS']

In [520... a2

```
Out[520... ['Google', 'Facebook', 'Notebook']]
```

```
In [522... a3
```

```
Out[522... [1, 2, 3]
```

```
In [524... np.array([a1,a2,a3])
```

```
Out[524... array([[['welcome', 'To', 'TCS'],
                   ['Google', 'Facebook', 'Notebook'],
                   ['1', '2', '3']], dtype='|<U11')
```

```
In [526... np.array(type)
```

```
Out[526... array(<class 'type'>, dtype=object)
```

```
In [528... np.__version__
```

```
Out[528... '1.26.4'
```

```
In [530... Games
```

```
Out[530... array([[80, 77, 82, 82, 73, 82, 58, 78, 6, 35],
                  [82, 57, 82, 79, 76, 72, 60, 72, 79, 80],
                  [79, 78, 75, 81, 76, 79, 62, 76, 77, 69],
                  [80, 65, 77, 66, 69, 77, 55, 67, 77, 40],
                  [82, 82, 82, 79, 82, 78, 54, 76, 71, 41],
                  [70, 69, 67, 77, 70, 77, 57, 74, 79, 44],
                  [78, 64, 80, 78, 45, 80, 60, 70, 62, 82],
                  [35, 35, 80, 74, 82, 78, 66, 81, 81, 27],
                  [40, 40, 40, 81, 78, 81, 39, 0, 10, 51],
                  [75, 51, 51, 79, 77, 76, 49, 69, 54, 62]])
```

```
In [532... Games[1]
```

```
Out[532... array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])
```

```
In [534... Games[5]
```

```
Out[534... array([70, 69, 67, 77, 70, 77, 57, 74, 79, 44])
```

```
In [536... Games[9]
```

```
Out[536... array([75, 51, 51, 79, 77, 76, 49, 69, 54, 62])
```

```
In [538... Games[0:3]
```

```
Out[538... array([[80, 77, 82, 82, 73, 82, 58, 78, 6, 35],
                  [82, 57, 82, 79, 76, 72, 60, 72, 79, 80],
                  [79, 78, 75, 81, 76, 79, 62, 76, 77, 69]])
```

```
In [540... Games[0:8]
```

```
Out[540... 6
```

```
In [542... Games[1,9]
```

```
Out[542... 80
```

```
In [544... Games[9,9]
```

```
Out[544... 62
```

```
In [545... Games[-1:,-9]
```

```
Out[545... array([51])
```

```
In [546... Points
```

```
Out[546... array([[2832, 2430, 2323, 2201, 1970, 2078, 1616, 2133, 83, 782],  
[1653, 1426, 1779, 1688, 1619, 1312, 1129, 1170, 1245, 1154],  
[2478, 2132, 2250, 2304, 2258, 2111, 1683, 2036, 2089, 1743],  
[2122, 1881, 1978, 1504, 1943, 1970, 1245, 1920, 2112, 966],  
[1292, 1443, 1695, 1624, 1503, 1784, 1113, 1296, 1297, 646],  
[1572, 1561, 1496, 1746, 1678, 1438, 1025, 1232, 1281, 928],  
[1258, 1104, 1684, 1781, 841, 1268, 1189, 1186, 1185, 1564],  
[903, 903, 1624, 1871, 2472, 2161, 1850, 2280, 2593, 686],  
[597, 597, 597, 1361, 1619, 2026, 852, 0, 159, 904],  
[2040, 1397, 1254, 2386, 2045, 1941, 1082, 1463, 1028, 1331]])
```

```
In [547... Points[0]
```

```
Out[547... array([2832, 2430, 2323, 2201, 1970, 2078, 1616, 2133, 83, 782])
```

```
In [552... Points[6,1]
```

```
Out[552... 1104
```

```
In [554... Points[3:9]
```

```
Out[554... array([[2122, 1881, 1978, 1504, 1943, 1970, 1245, 1920, 2112, 966],  
[1292, 1443, 1695, 1624, 1503, 1784, 1113, 1296, 1297, 646],  
[1572, 1561, 1496, 1746, 1678, 1438, 1025, 1232, 1281, 928],  
[1258, 1104, 1684, 1781, 841, 1268, 1189, 1186, 1185, 1564],  
[903, 903, 1624, 1871, 2472, 2161, 1850, 2280, 2593, 686],  
[597, 597, 597, 1361, 1619, 2026, 852, 0, 159, 904]])
```

```
In [556... Points[-7:,-9]
```

```
Out[556... array([1881, 1443, 1561, 1104, 903, 597, 1397])
```

```
In [558... dict1={'A':'Apple','B':'Ball','C':'Cat','D':'Dog','E':'Egg','F':'Fish','G':'Gun'  
dict1
```

```
Out[558... {'A': 'Apple',  
'B': 'Ball',  
'C': 'Cat',  
'D': 'Dog',  
'E': 'Egg',  
'F': 'Fish',  
'G': 'Gun'}
```

```
In [560... dict1['A']
```

```
Out[560... 'Apple'
```

```
In [562... dict2={'TCS':'I want to join this company as soon as possible','Meesho':'I Dont  
dict2['TCS']
```

```
Out[562... 'I want to join this company as soon as possible'
```

```
In [564... Games
```

```
Out[564... array([[80, 77, 82, 82, 73, 82, 58, 78, 6, 35],  
[82, 57, 82, 79, 76, 72, 60, 72, 79, 80],  
[79, 78, 75, 81, 76, 79, 62, 76, 77, 69],  
[80, 65, 77, 66, 69, 77, 55, 67, 77, 40],  
[82, 82, 82, 79, 82, 78, 54, 76, 71, 41],  
[70, 69, 67, 77, 70, 77, 57, 74, 79, 44],  
[78, 64, 80, 78, 45, 80, 60, 70, 62, 82],  
[35, 35, 80, 74, 82, 78, 66, 81, 81, 27],  
[40, 40, 40, 81, 78, 81, 39, 0, 10, 51],  
[75, 51, 51, 79, 77, 76, 49, 69, 54, 62]])
```

```
In [566... Pdict['Sachin']
```

```
Out[566... 0
```

```
In [568... Salary/Games
```

```
Out[568]: array([[ 199335.9375 ,  230113.63636364,  237690.54878049,
   259298.7804878 ,  315539.38356164,  302515.24390244,
   435249.87931034,  357040.37179487,  5075634.16666667,
   671428.57142857],
 [ 146341.46341463,  223582.26315789,  164492.40243902,
  180159.07594937,  197062.55263158,  226729.16666667,
  300642.88333333,  274342.29166667,  271730.60759494,
  289759.875     ],
 [ 58503.79746835,  74719.1025641 ,  173883.33333333,
  177908.40740741,  207630.42105263,  183544.30379747,
  258427.41935484,  230855.26315789,  247629.87012987,
  299194.20289855],
 [ 46420.5       ,  72216.01538462,  169366.88311688,
  218342.13636364,  228694.37681159,  222717.44155844,
  336701.34545455,  290298.50746269,  291006.15584416,
  561450.        ],
 [ 54794.63414634,  58618.53658537,  73917.97560976,
  174151.89873418,  185397.43902439,  213425.38461538,
  335032.77777778,  257057.36842105,  288918.        ,
  522835.87804878],
 [ 47828.57142857,  61380.        ,  185895.52238806,
  187150.4025974 ,  225427.31428571,  188311.68831169,
  281096.49122807,  237094.59459459,  241360.75949367,
  469190.90909091],
 [ 40310.76923077,  52815.        ,  45199.5       ,
  58643.44871795,  300455.55555556,  186751.9125       ,
  272663.41666667,  253992.25714286,  301103.72580645,
  244738.57317073],
 [ 0.        ,      0.        ,      0.        ,
  60595.13513514,  58498.53658537,  77611.06410256,
  234948.96969697,  205797.90123457,  220155.88888889,
  703541.62962963],
 [ 0.        ,      0.        ,      0.        ,
  59540.74074074,  66467.69230769,  68471.11111111,
  179325.84615385,                 inf,  1763268.8       ,
  369860.29411765],
 [ 40425.6       ,  75322.41176471,  255710.78431373,
  182412.41772152,  204933.92207792,  186842.10526316,
  320224.48979592,  249014.49275362,  345796.2962963 ,
  241935.48387097]])
```

```
In [570]: np.round(Salary/Games)
```

```
Out[570...]: array([[ 199336.,  230114.,  237691.,  259299.,  315539.,  302515.,
   435250.,  357040.,  5075634.,  671429.],
   [ 146341.,  223582.,  164492.,  180159.,  197063.,  226729.,
   300643.,  274342.,  271731.,  289760.],
   [ 58504.,  74719.,  173883.,  177908.,  207630.,  183544.,
   258427.,  230855.,  247630.,  299194.],
   [ 46420.,  72216.,  169367.,  218342.,  228694.,  222717.,
   336701.,  290299.,  291006.,  561450.],
   [ 54795.,  58619.,  73918.,  174152.,  185397.,  213425.,
   335033.,  257057.,  288918.,  522836.],
   [ 47829.,  61380.,  185896.,  187150.,  225427.,  188312.,
   281096.,  237095.,  241361.,  469191.],
   [ 40311.,  52815.,  45200.,  58643.,  300456.,  186752.,
   272663.,  253992.,  301104.,  244739.],
   [ 0.,  0.,  52140.,  60595.,  58499.,  77611.,
   234949.,  205798.,  220156.,  703542.],
   [ 0.,  0.,  0.,  59541.,  66468.,  68471.,
   179326.,  inf,  1763269.,  369860.],
   [ 40426.,  75322.,  255711.,  182412.,  204934.,  186842.,
   320224.,  249014.,  345796.,  241935.]])
```

```
In [572...]: import warnings
warnings.filterwarnings('ignore')
```

First Visualization

```
In [575...]: import numpy as np
import matplotlib.pyplot as plt
```

In [577...]: Salary

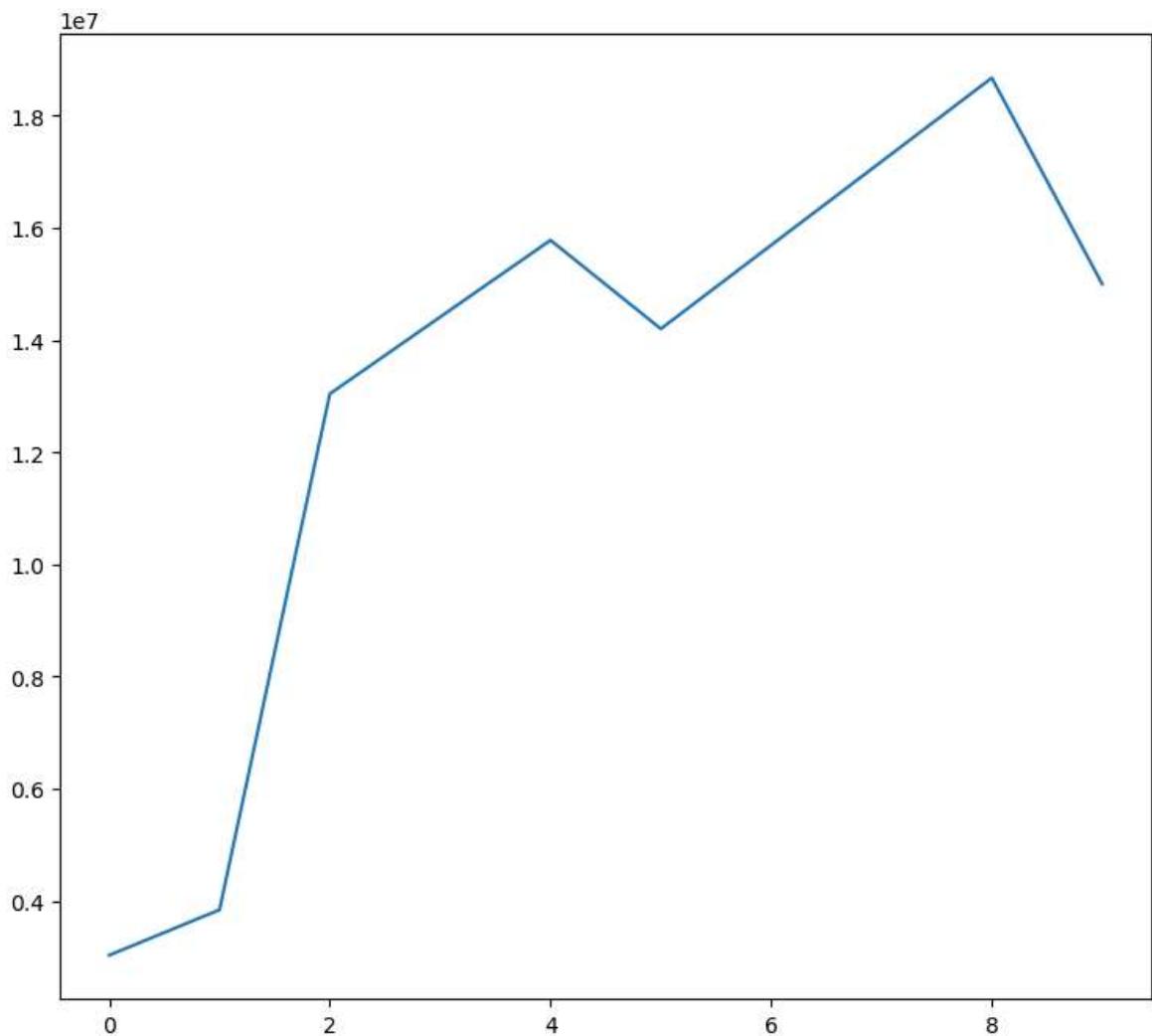
```
Out[577...]: array([[15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
 25244493, 27849149, 30453805, 23500000],
[12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
18038573, 19752645, 21466718, 23180790],
[ 4621800,  5828090, 13041250, 14410581, 15779912, 14500000,
16022500, 17545000, 19067500, 20644400],
[ 3713640,  4694041, 13041250, 14410581, 15779912, 17149243,
18518574, 19450000, 22407474, 22458000],
[ 4493160,  4806720, 6061274, 13758000, 15202590, 16647180,
18091770, 19536360, 20513178, 21436271],
[ 3348000,  4235220, 12455000, 14410581, 15779912, 14500000,
16022500, 17545000, 19067500, 20644400],
[ 3144240,  3380160, 3615960, 4574189, 13520500, 14940153,
16359805, 17779458, 18668431, 20068563],
[ 0,  0,  4171200, 4484040, 4796880, 6053663,
15506632, 16669630, 17832627, 18995624],
[ 0,  0,  0, 4822800, 5184480, 5546160,
6993708, 16402500, 17632688, 18862875],
[ 3031920, 3841443, 13041250, 14410581, 15779912, 14200000,
15691000, 17182000, 18673000, 15000000]])
```

In [579...]: Salary[0]

```
Out[579...]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
25244493, 27849149, 30453805, 23500000])
```

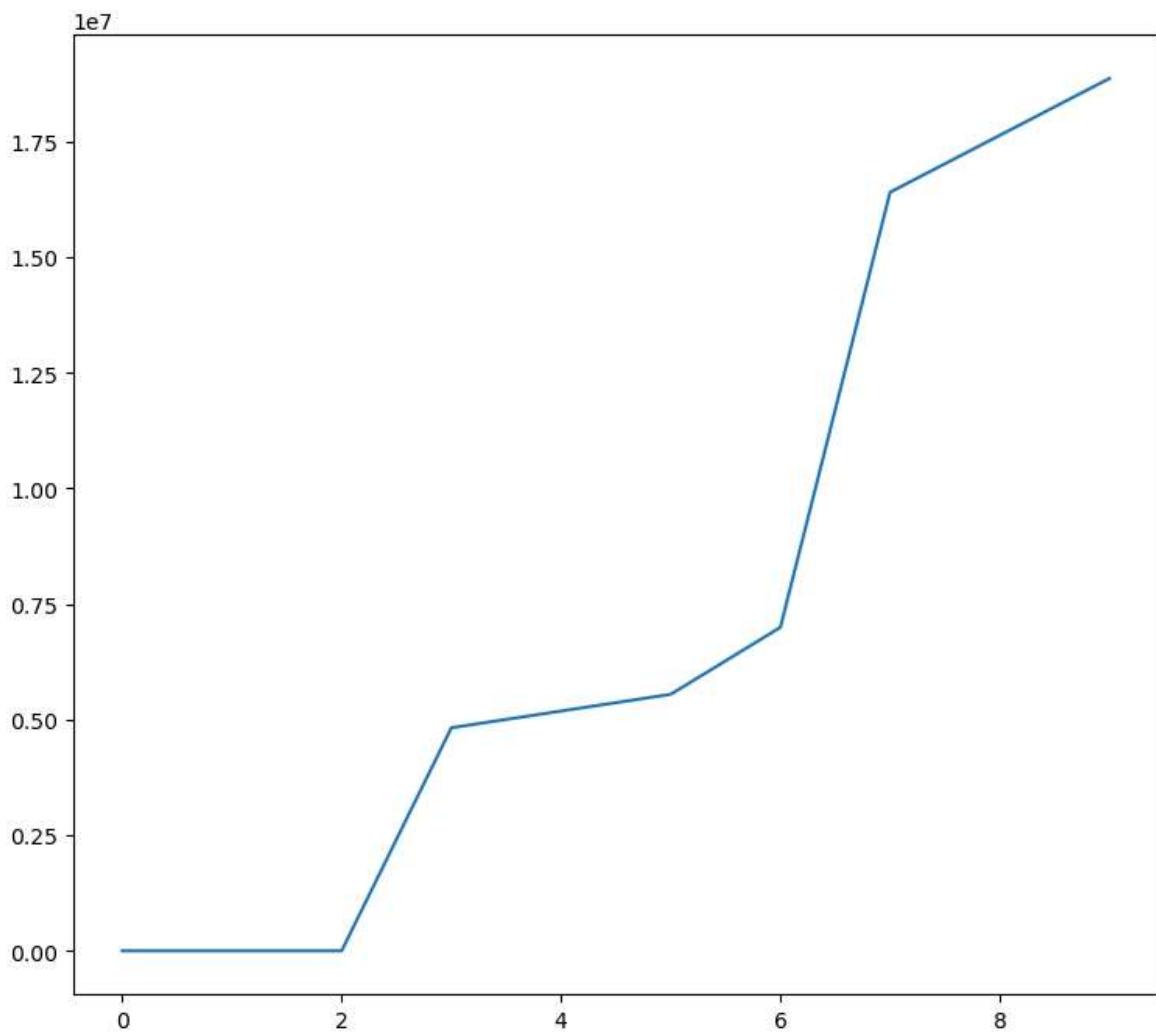
In [581...]: plt.plot(Salary[9])

```
Out[581... [matplotlib.lines.Line2D at 0x2a5754a14f0]]
```



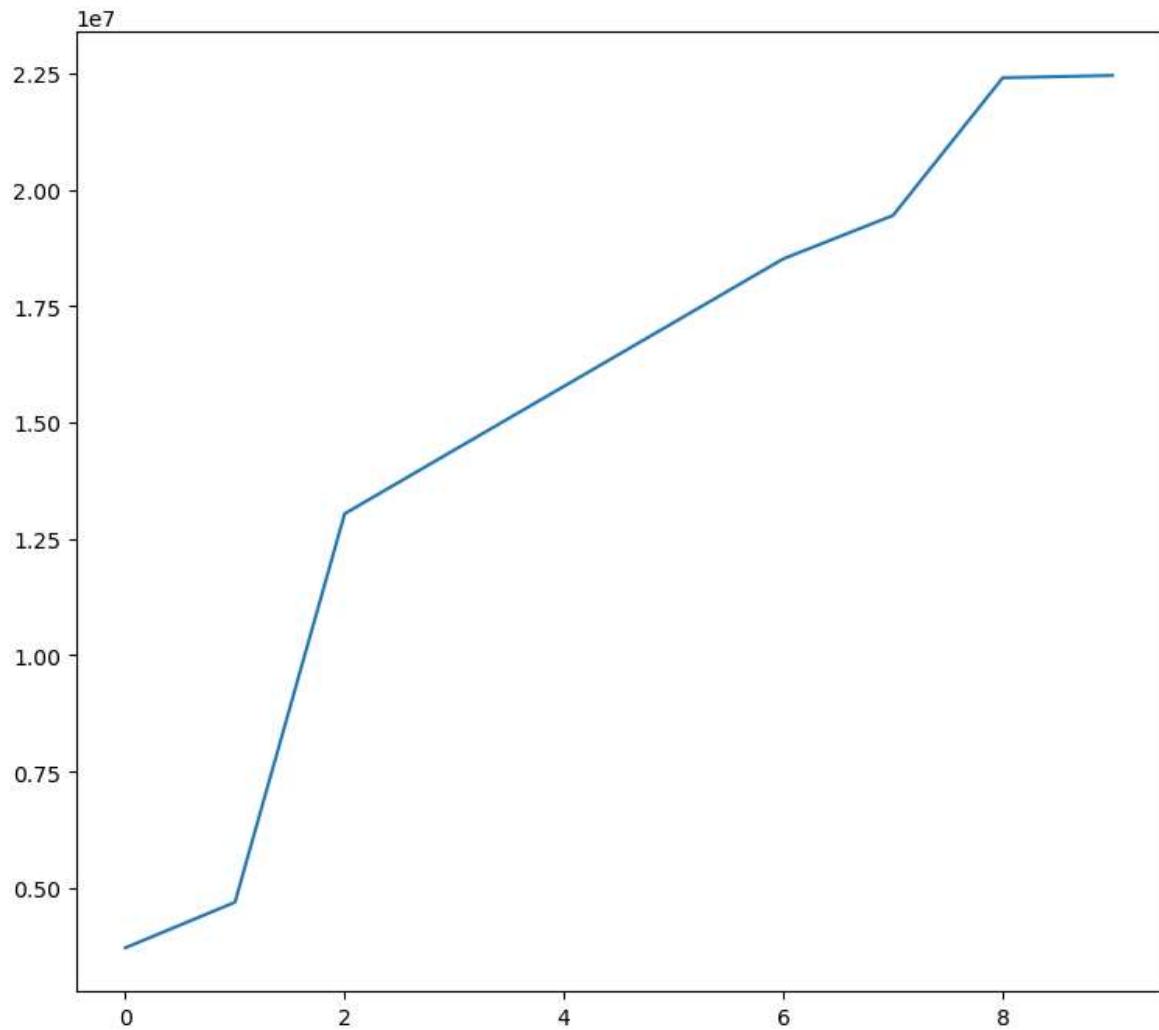
```
In [582... plt.plot(Salary[8])]
```

```
Out[582... [matplotlib.lines.Line2D at 0x2a575f3eab0]]
```



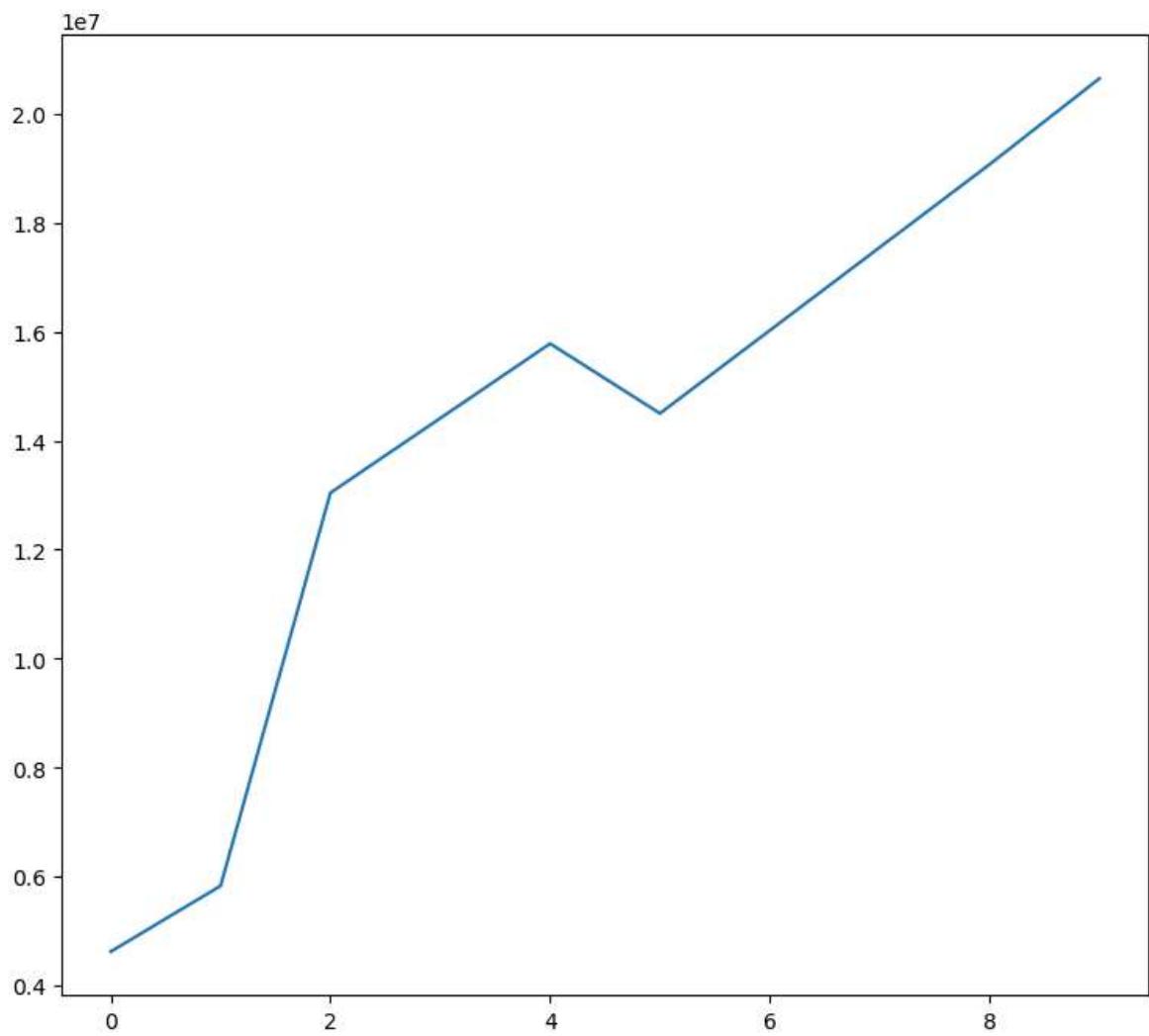
```
In [583...]: plt.plot(Salary[3])
```

```
Out[583...]: [
```



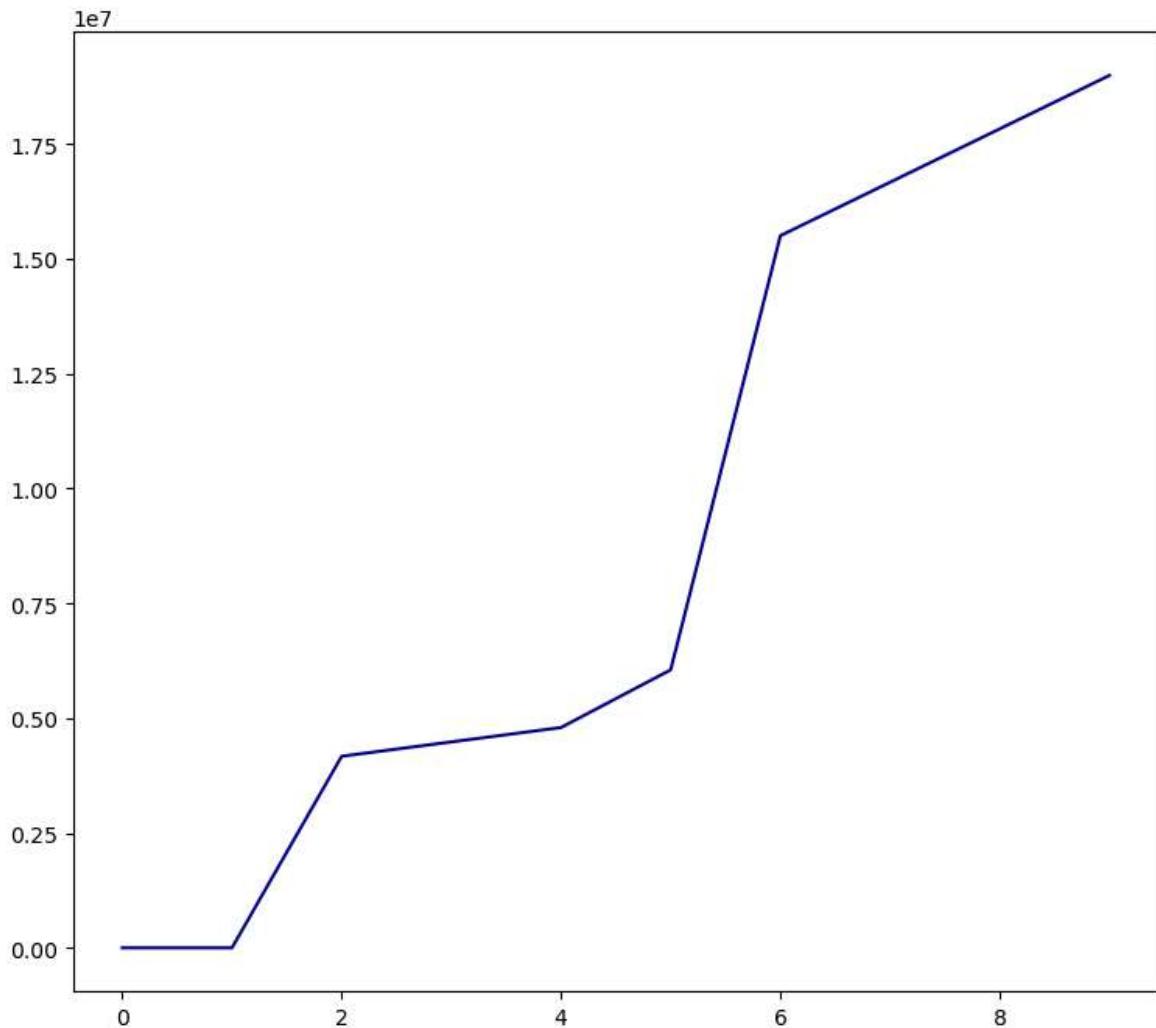
```
In [584]: plt.plot(Salary[2])
```

```
Out[584]: <matplotlib.lines.Line2D at 0x2a57602d070>
```



```
In [585]: plt.plot(Salary[7], c='darkblue')
```

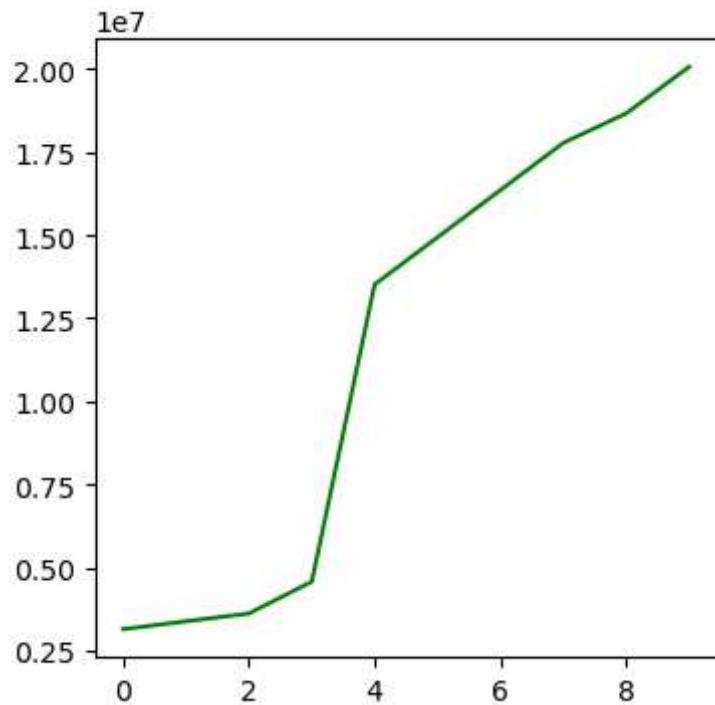
```
Out[585]: [
```



```
In [586...]: %matplotlib inline  
plt.rcParams['figure.figsize'] = 4,4
```

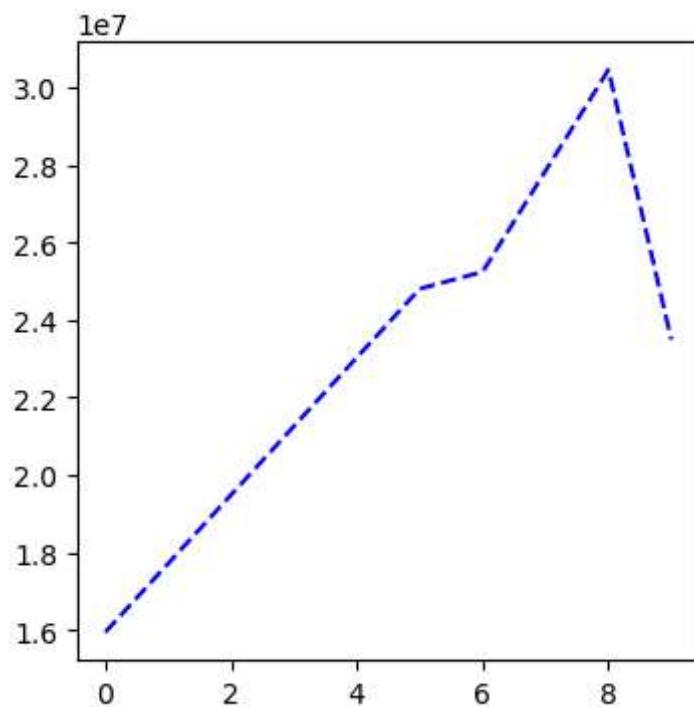
```
In [587...]: plt.plot(Salary[6] , c='green')
```

```
Out[587...]: <matplotlib.lines.Line2D at 0x2a57602fb90>
```

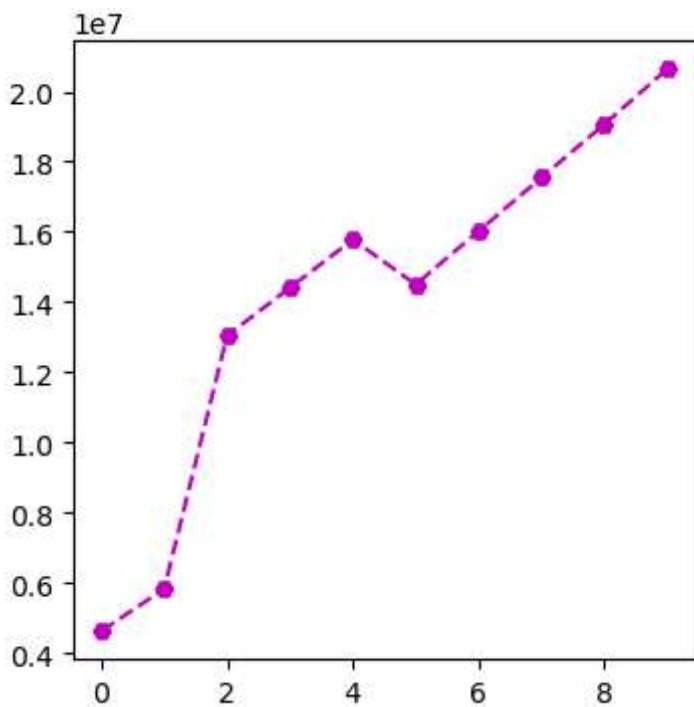


```
In [588]: plt.plot(Salary[0], c='Blue', ls = 'dashed')
```

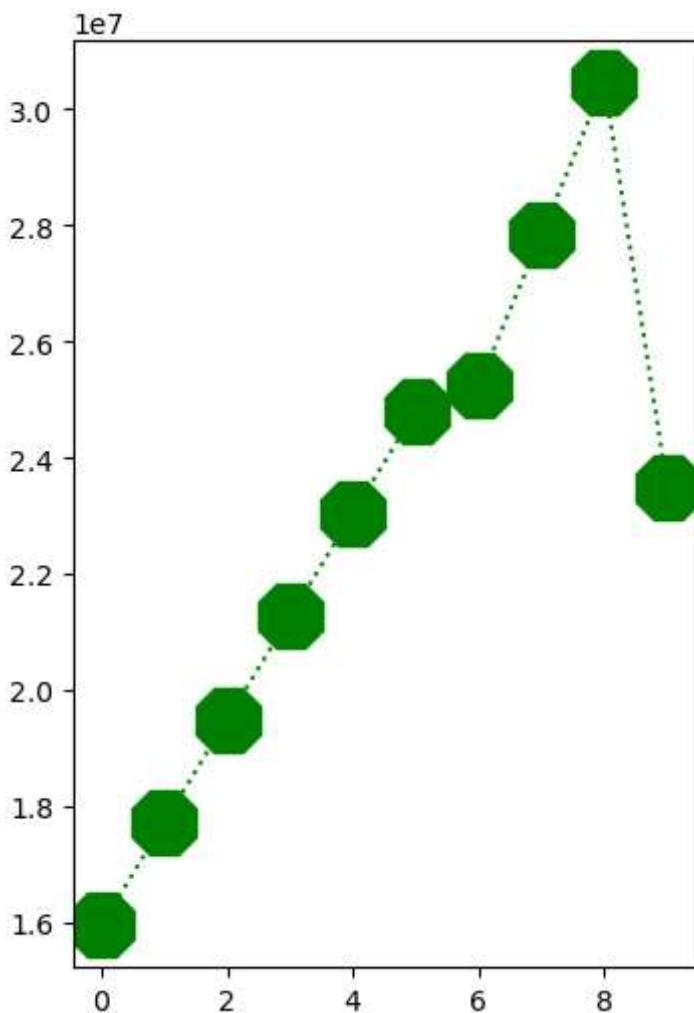
```
Out[588]: <matplotlib.lines.Line2D at 0x2a575acb7a0>
```



```
In [589]: plt.plot(Salary[2], c='m', ls = '--', marker = 'H') # s - squares  
plt.rcParams['figure.figsize'] = 4,6
```



```
In [592]: plt.plot(Salary[0], c='Green', ls = ':', marker = '8', ms = 25)  
plt.show()  
plt.rcParams['figure.figsize']=6,9
```



```
In [595]: list(range(0,10))
```

```
Out[595... [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

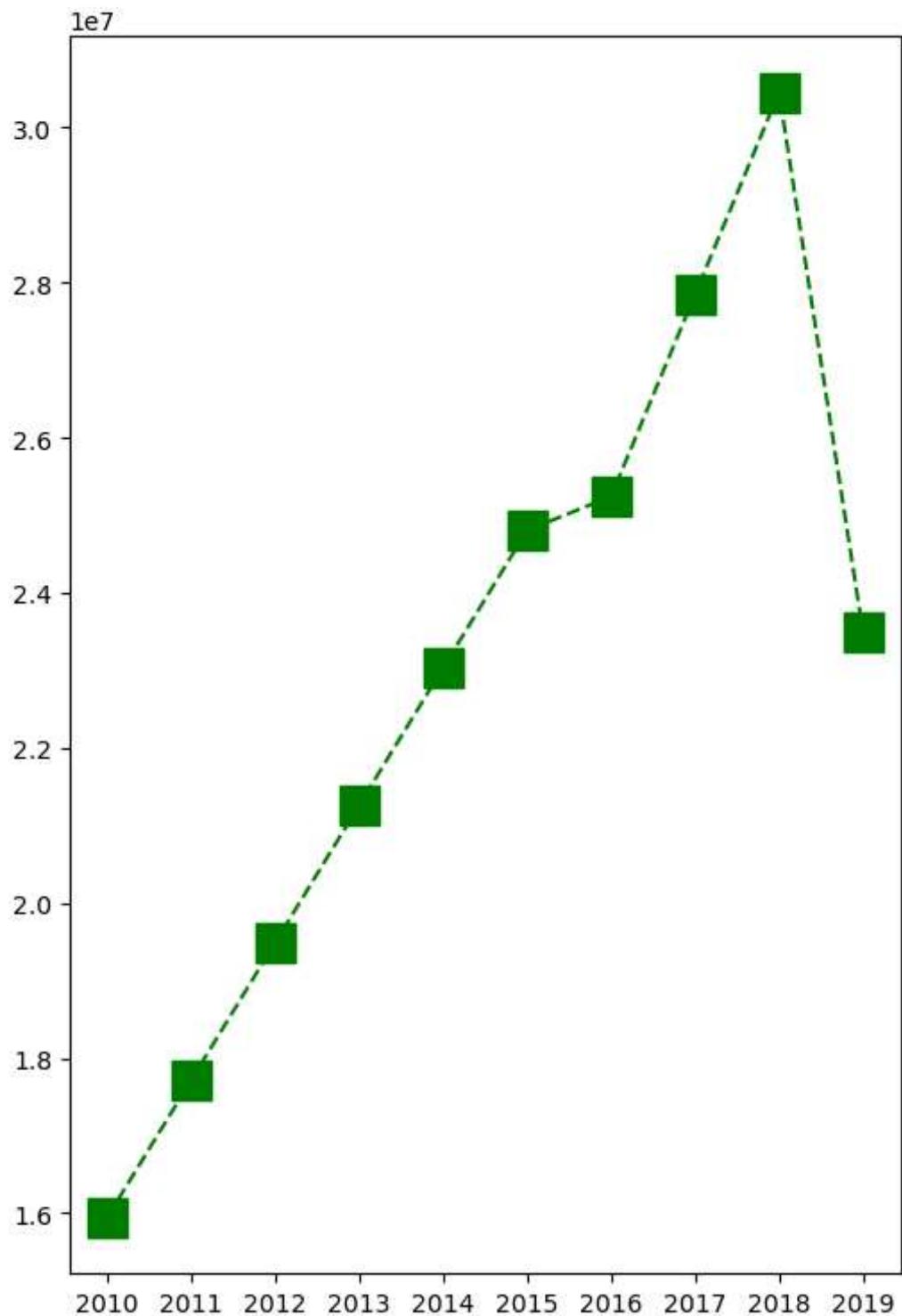
```
In [599... Sdict
```

```
Out[599... {'2010': 0,
             '2011': 1,
             '2012': 2,
             '2013': 3,
             '2014': 4,
             '2015': 5,
             '2016': 6,
             '2017': 7,
             '2018': 8,
             '2019': 9}
```

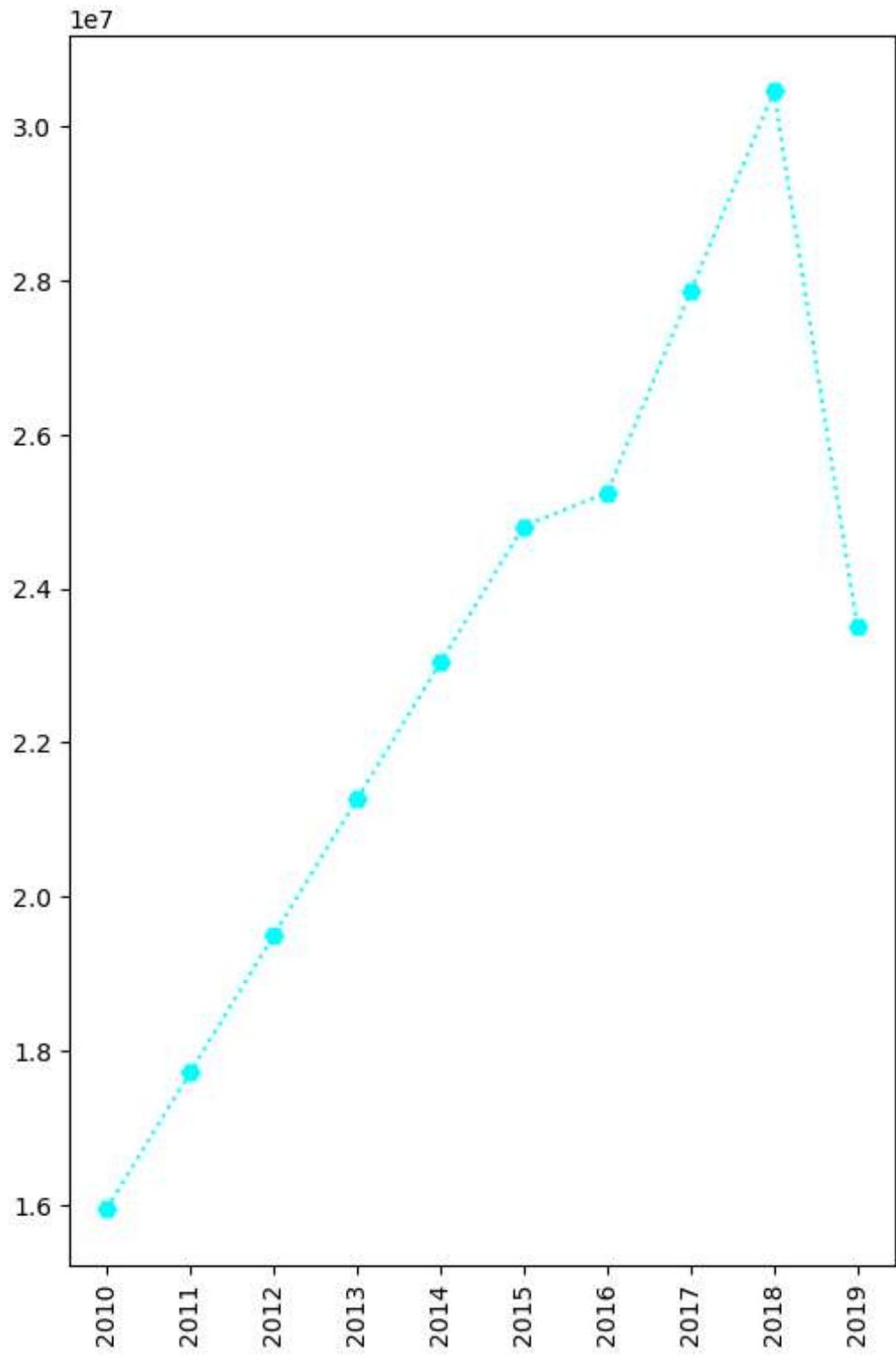
```
In [603... Pdict
```

```
Out[603... {'Sachin': 0,
             'Rahul': 1,
             'Smith': 2,
             'Sami': 3,
             'Pollard': 4,
             'Morris': 5,
             'Samson': 6,
             'Dhoni': 7,
             'Kohli': 8,
             'Sky': 9}
```

```
In [607... plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 16)
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```



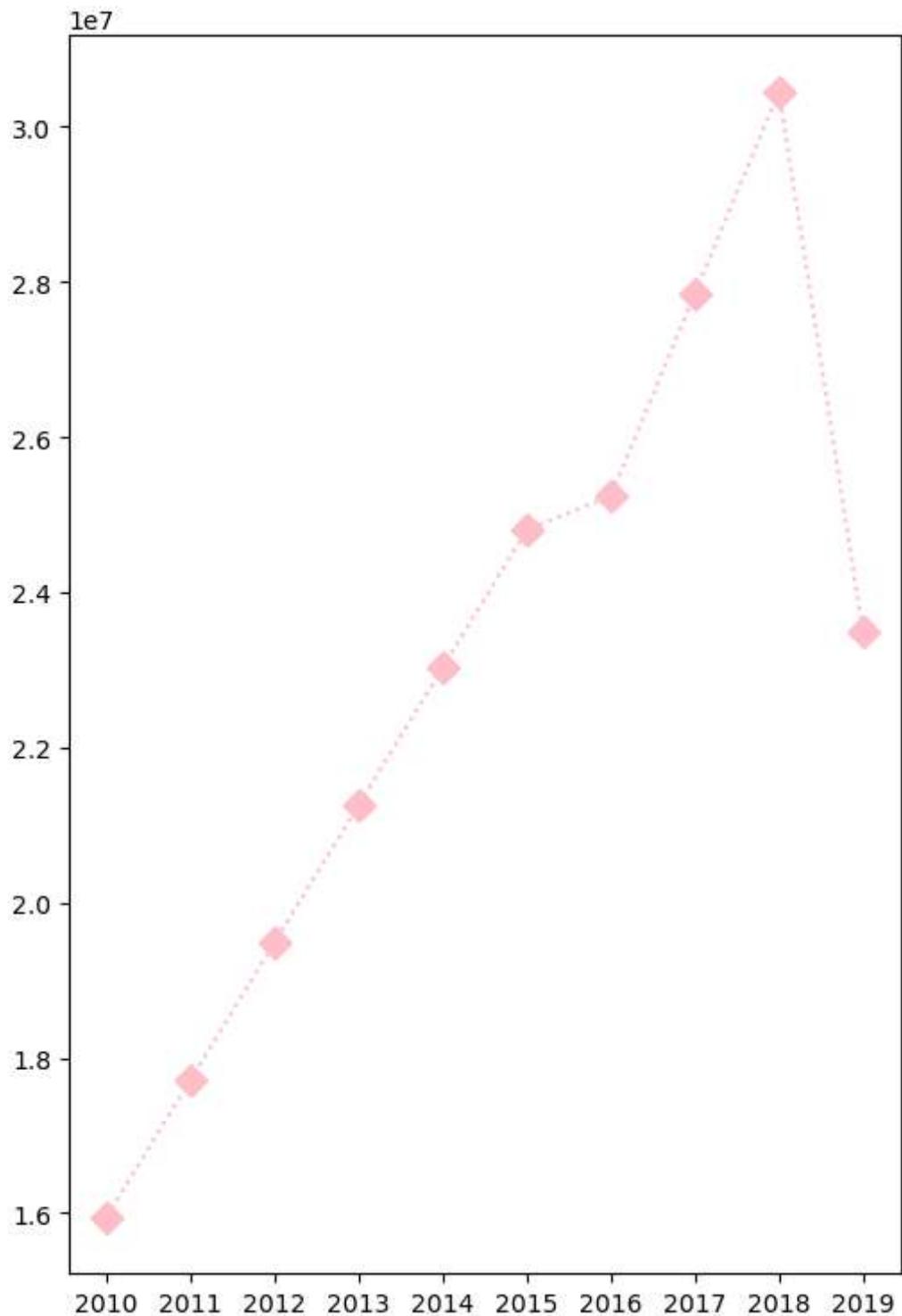
```
In [609]: plt.plot(Salary[0], c='cyan', ls = ':', marker = 'H', ms = 7, label = Players[5])
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.show()
```



In [611...]: Games

```
Out[611...]: array([[80, 77, 82, 82, 73, 82, 58, 78, 6, 35],  
   [82, 57, 82, 79, 76, 72, 60, 72, 79, 80],  
   [79, 78, 75, 81, 76, 79, 62, 76, 77, 69],  
   [80, 65, 77, 66, 69, 77, 55, 67, 77, 40],  
   [82, 82, 82, 79, 82, 78, 54, 76, 71, 41],  
   [70, 69, 67, 77, 70, 77, 57, 74, 79, 44],  
   [78, 64, 80, 78, 45, 80, 60, 70, 62, 82],  
   [35, 35, 80, 74, 82, 78, 66, 81, 81, 27],  
   [40, 40, 40, 81, 78, 81, 39, 0, 10, 51],  
   [75, 51, 51, 79, 77, 76, 49, 69, 54, 62]])
```

```
In [613...]: plt.plot(Salary[0], c='Pink', ls = ':', marker = 'D', ms = 9, label = Players[8])
plt.xticks(list(range(0,10)), Seasons, rotation='horizontal')
plt.show()
```



```
In [614...]: Salary[0]
```

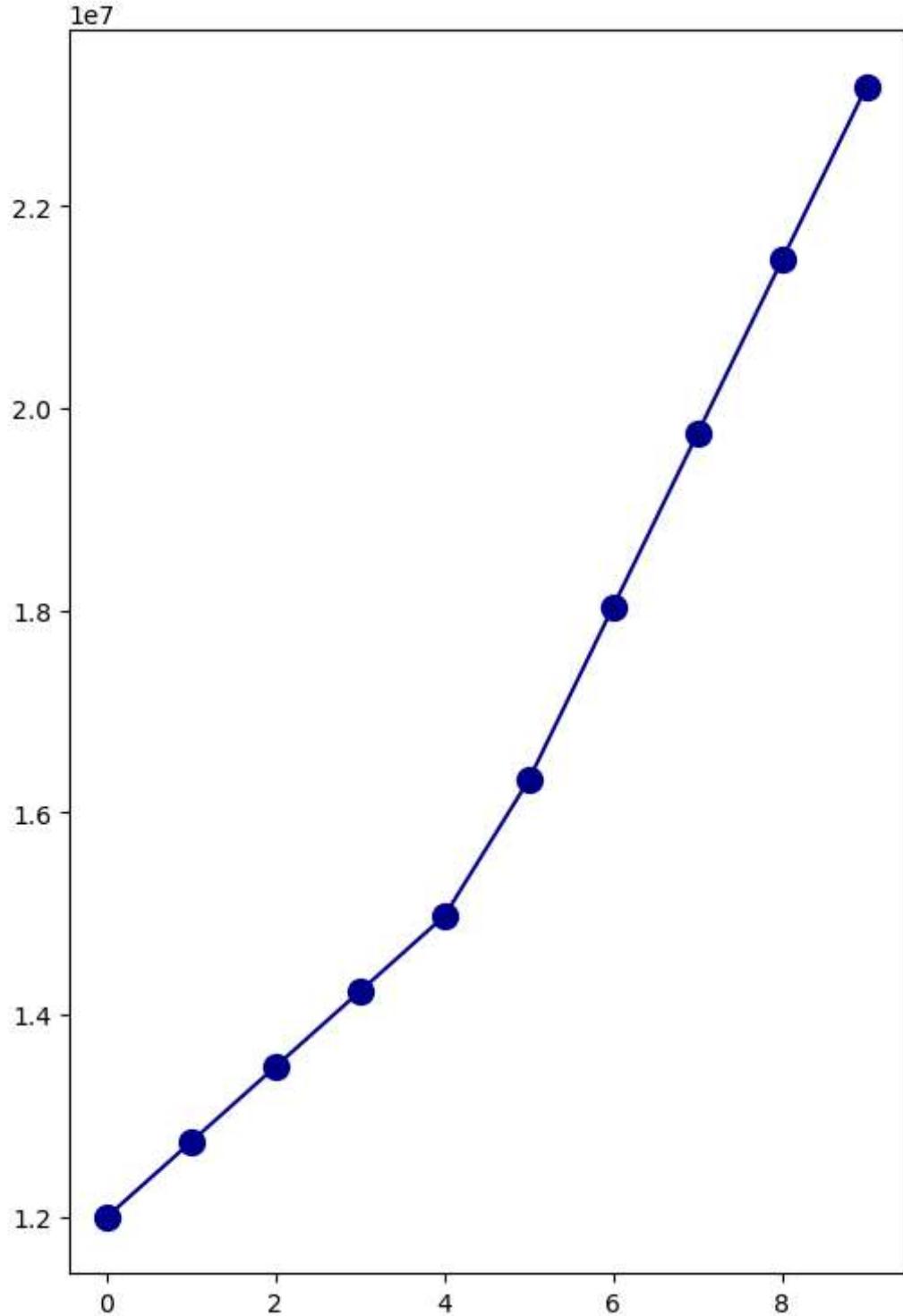
```
Out[614...]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
25244493, 27849149, 30453805, 23500000])
```

```
In [617...]: Salary[1]
```

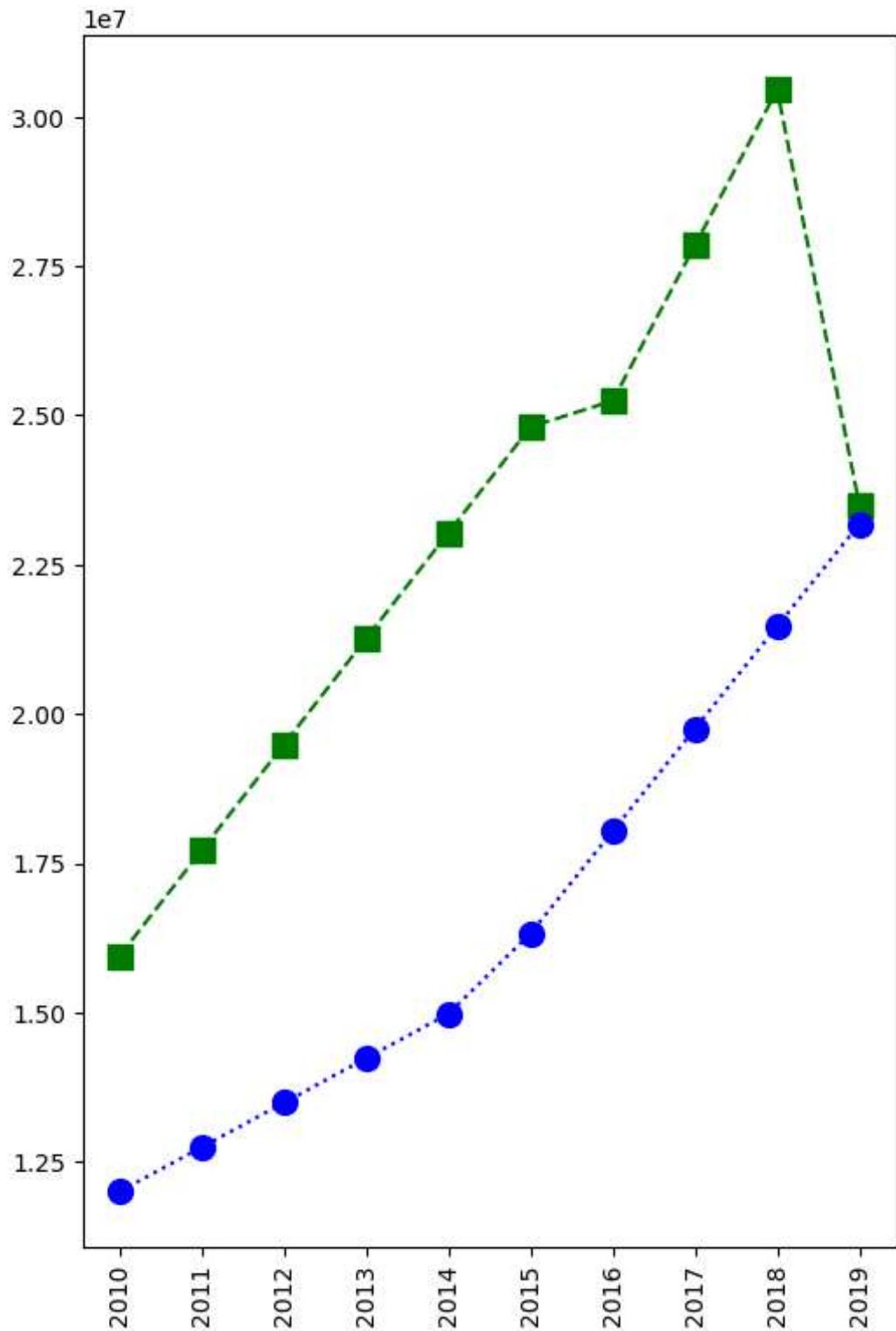
```
Out[617...]: array([12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
18038573, 19752645, 21466718, 23180790])
```

```
In [619... plt.plot(Salary[1], c='DarkBlue', ls = '--', marker = 'o', ms = 10, label = Player
```

```
Out[619... <matplotlib.lines.Line2D at 0x2a576084f80>]
```

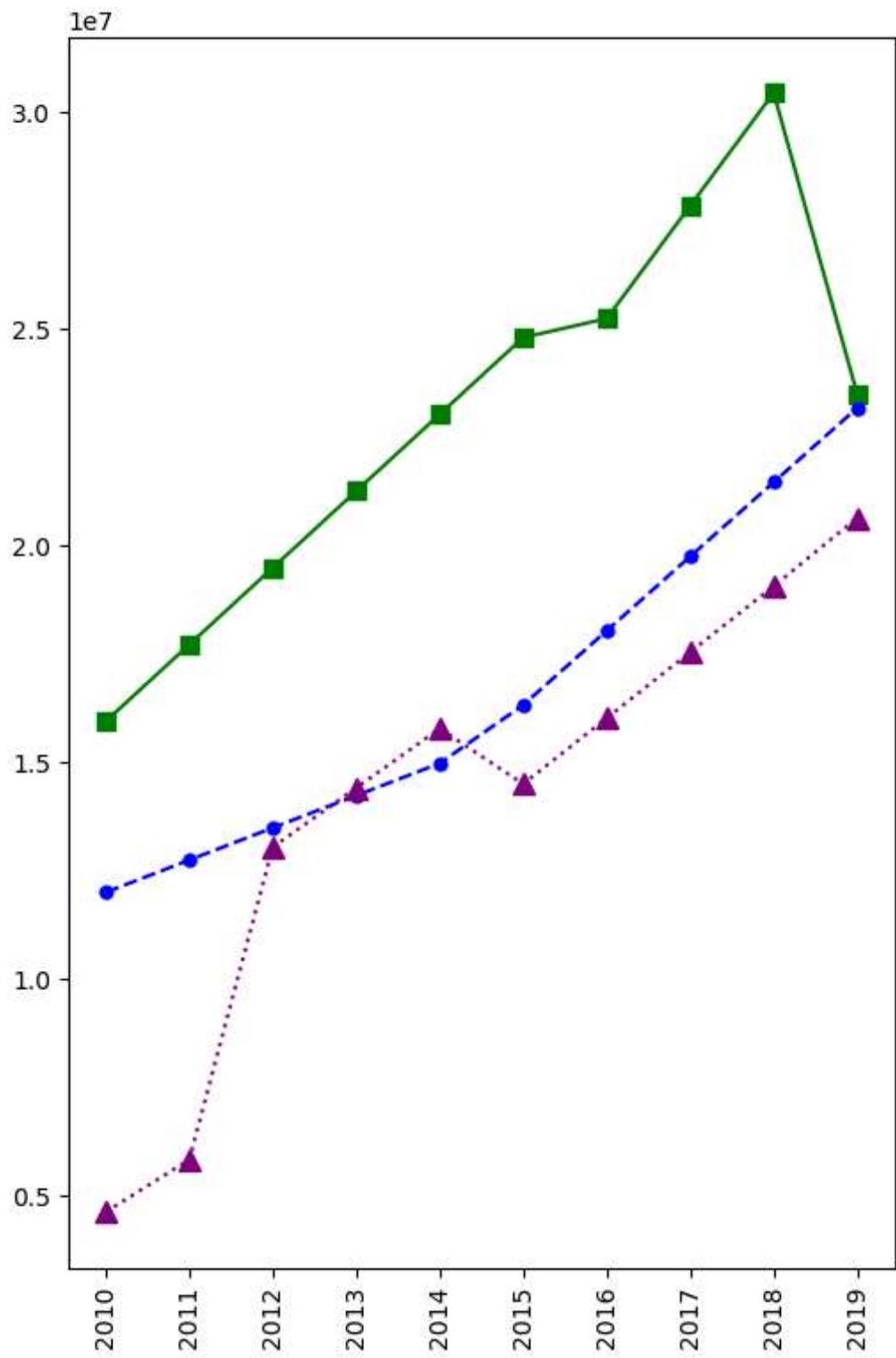


```
In [621... plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 10, label = Players
plt.plot(Salary[1], c='Blue', ls = ':', marker = 'o', ms = 10, label = Players[1]
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.show()
```



```
In [623]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])
plt.plot(Salary[1], c='Blue', ls = '-.', marker = 'o', ms = 5, label = Players[1])
plt.plot(Salary[2], c='purple', ls = ':', marker = '^', ms = 8, label = Players[2])
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')

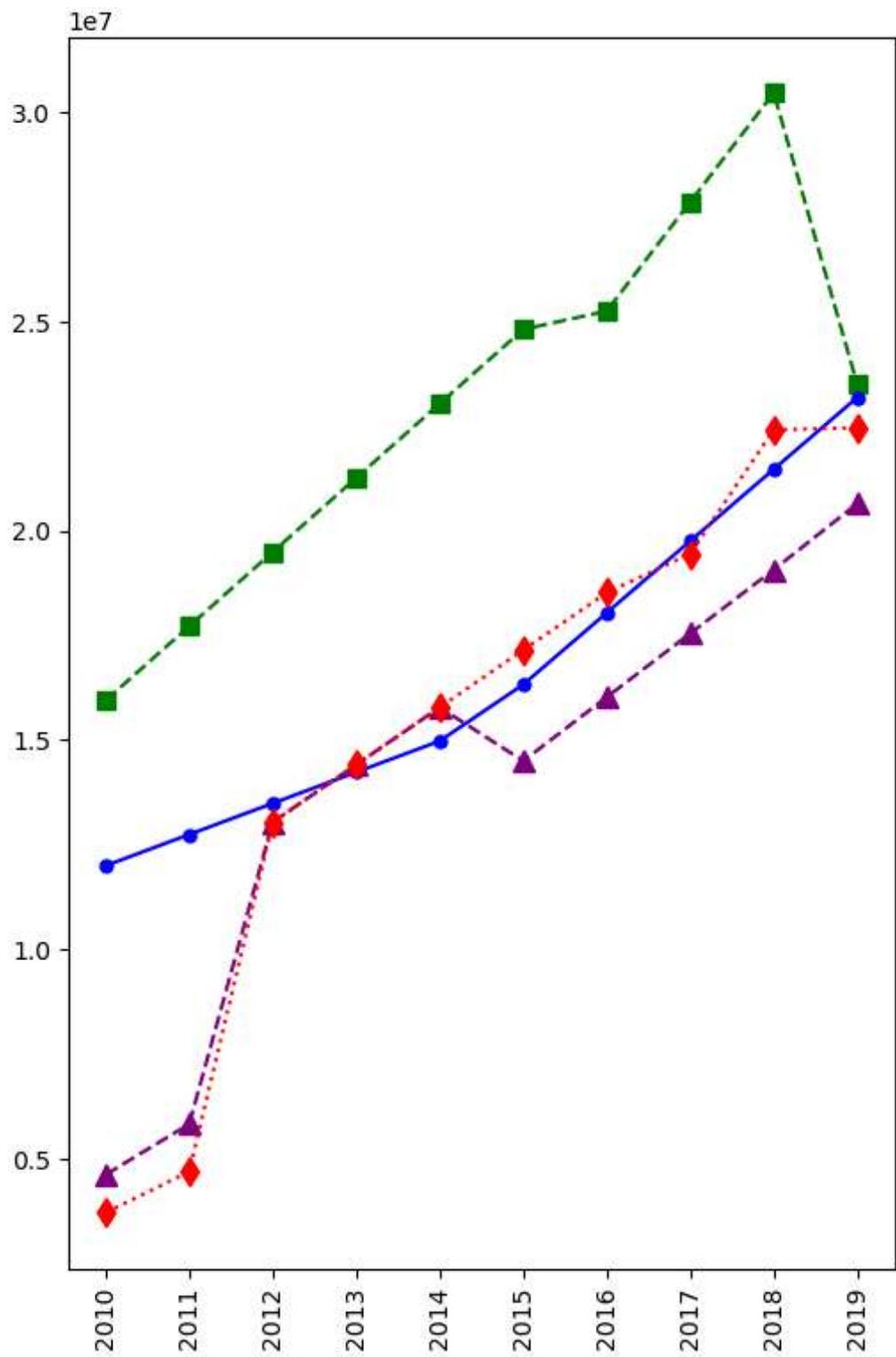
plt.show()
```



```
In [625]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])
plt.plot(Salary[1], c='Blue', ls = '-.', marker = 'o', ms = 5, label = Players[1])
plt.plot(Salary[2], c='purple', ls = '--', marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3], c='Red', ls = ':', marker = 'd', ms = 8, label = Players[3])

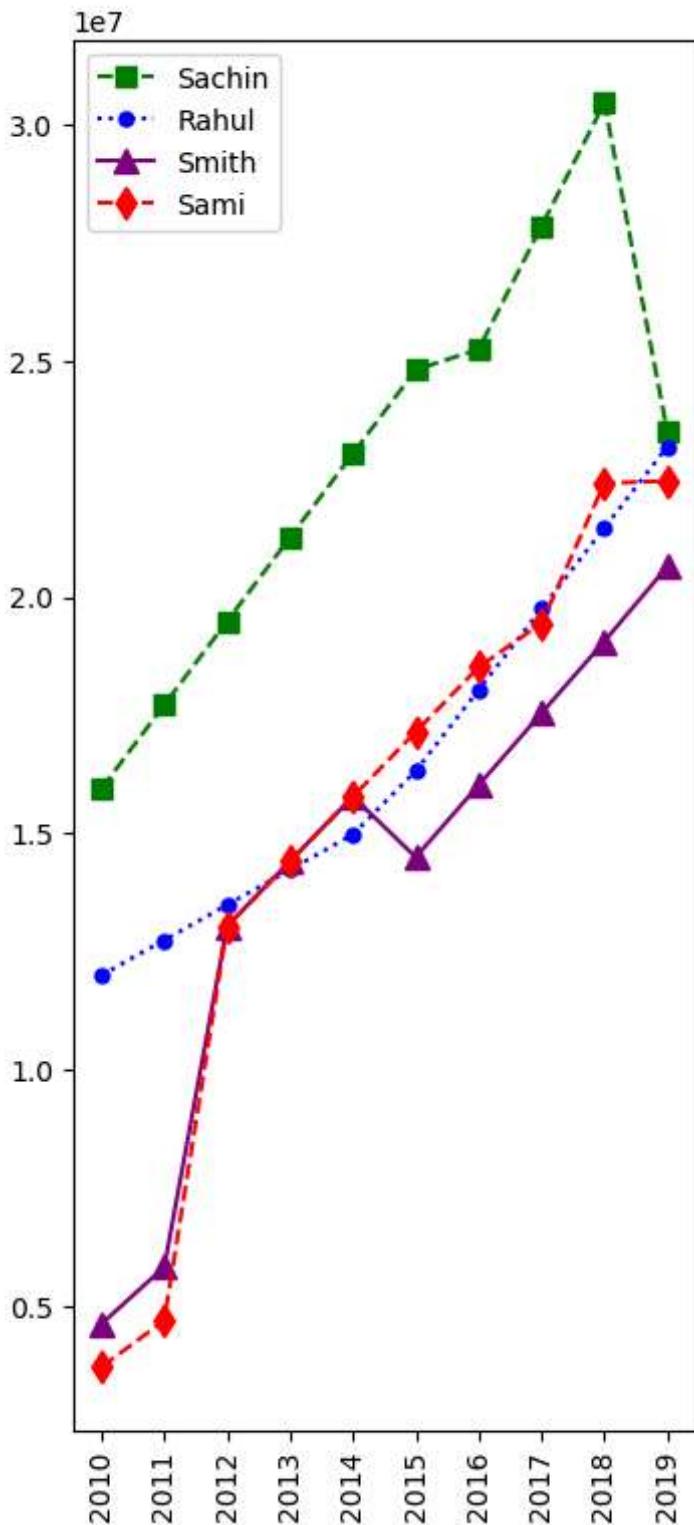
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.rcParams['figure.figsize']=4,9

plt.show()
```



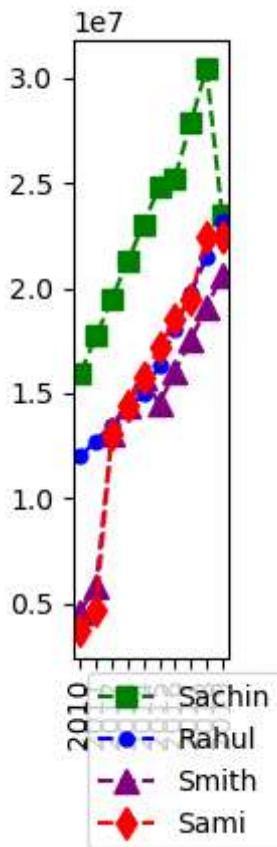
```
In [627]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])
plt.plot(Salary[1], c='Blue', ls = ':', marker = 'o', ms = 5, label = Players[1])
plt.plot(Salary[2], c='purple', ls = '-.', marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3], c='Red', ls = '---', marker = 'd', ms = 8, label = Players[3])
plt.legend()
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.rcParams['figure.figsize']=1,4

plt.show()
```



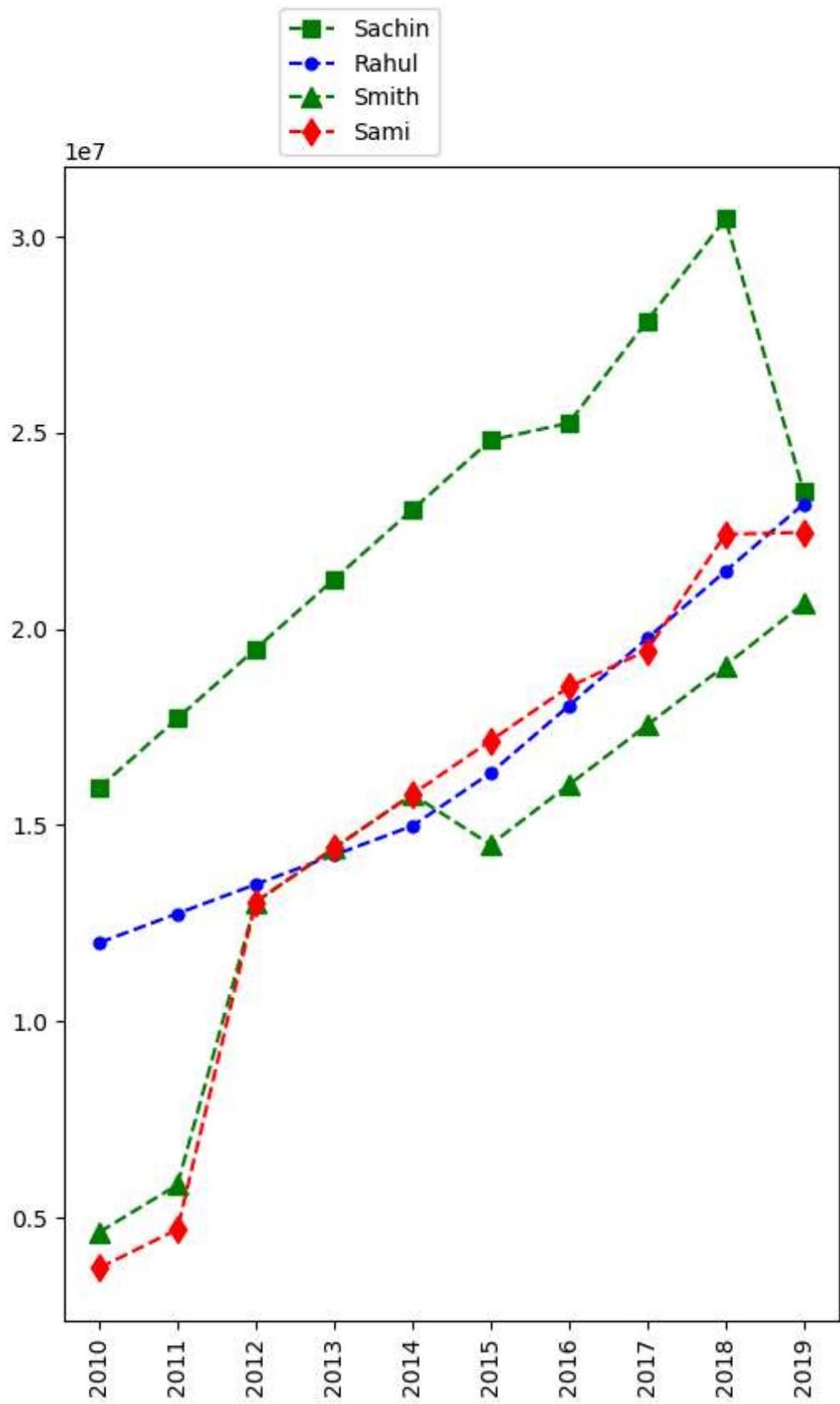
```
In [629]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])
plt.plot(Salary[1], c='Blue', ls = '--', marker = 'o', ms = 5, label = Players[1])
plt.plot(Salary[2], c='purple', ls = '--', marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3], c='Red', ls = '--', marker = 'd', ms = 8, label = Players[3])
plt.legend(loc = 'upper left',bbox_to_anchor=(0,0) )
plt.xticks(list(range(0,10)), Seasons,rotation='vertical')
plt.rcParams['figure.figsize']=6,9

plt.show()
```



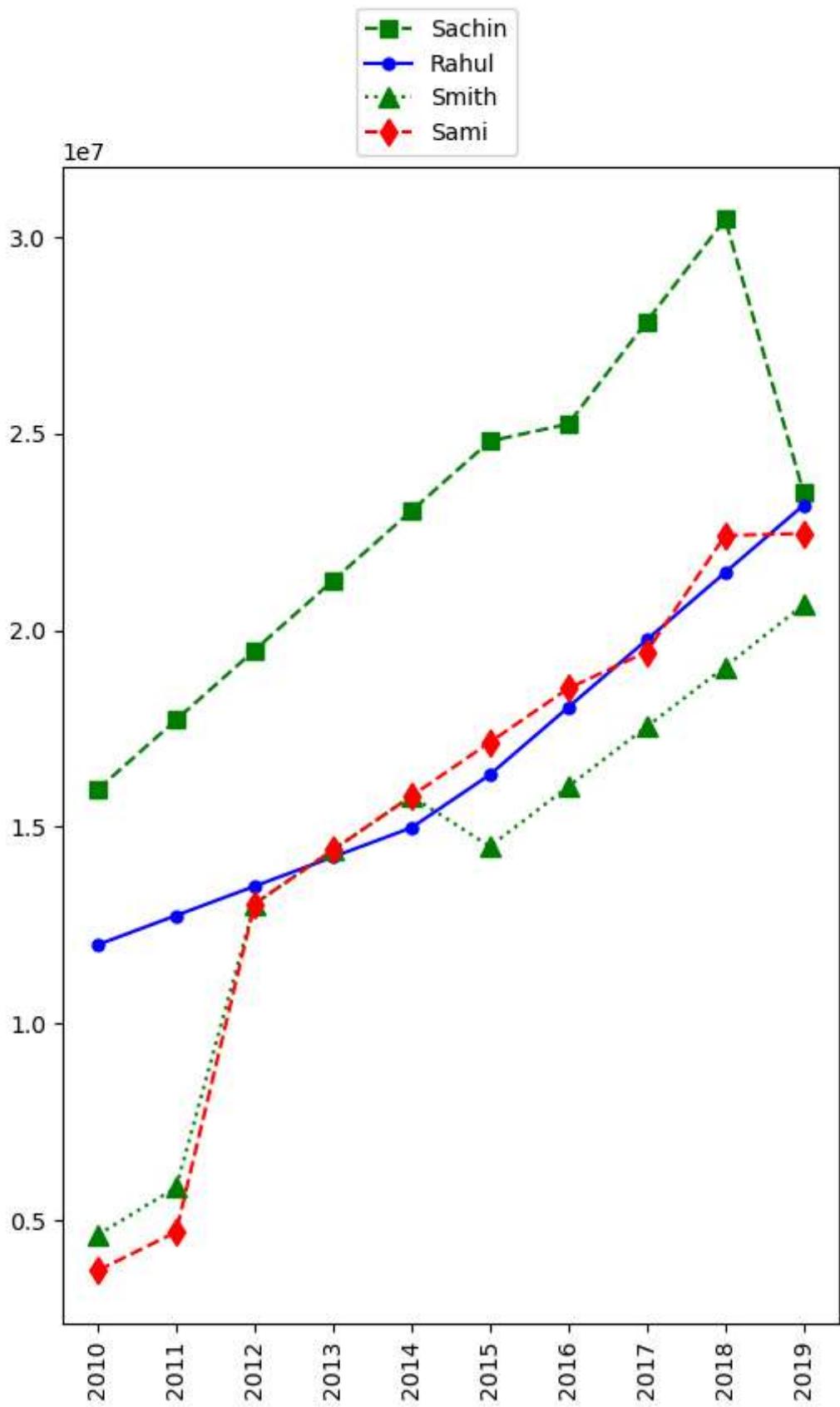
```
In [631]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])
plt.plot(Salary[1], c='Blue', ls = '--', marker = 'o', ms = 5, label = Players[1])
plt.plot(Salary[2], c='Green', ls = '--', marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3], c='Red', ls = '--', marker = 'd', ms = 8, label = Players[3])
plt.legend(loc = 'lower right',bbox_to_anchor=(0.5,1) )
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')

plt.show()
```



```
In [633]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])
plt.plot(Salary[1], c='Blue', ls = '-.', marker = 'o', ms = 5, label = Players[1])
plt.plot(Salary[2], c='Green', ls = ':', marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3], c='Red', ls = '--', marker = 'd', ms = 8, label = Players[3])
plt.legend(loc = 'lower right',bbox_to_anchor=(0.6,1))
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')

plt.show()
```

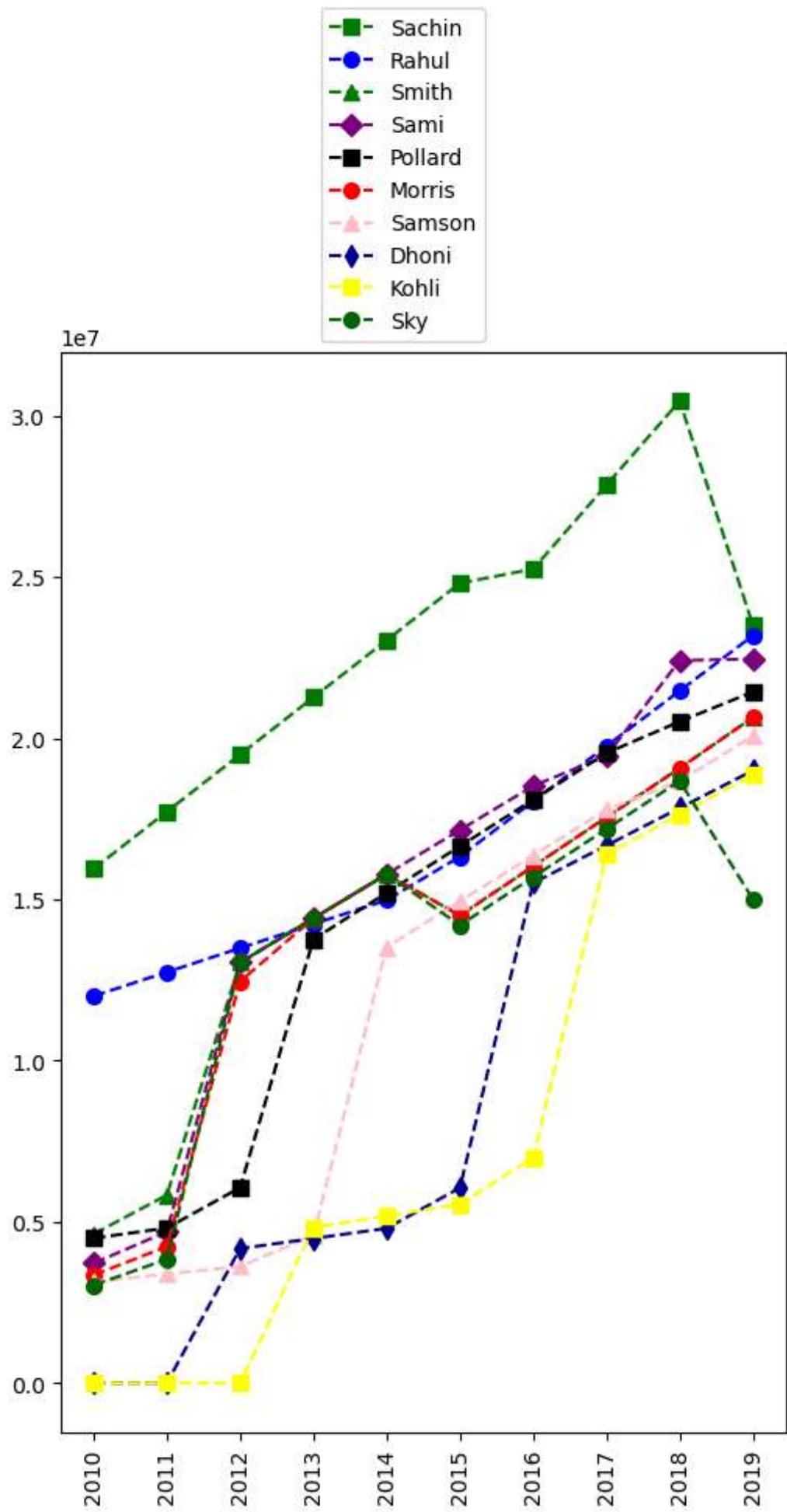


```
In [635]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0]
plt.plot(Salary[1], c='Blue', ls = '--', marker = 'o', ms = 7, label = Players[1]
plt.plot(Salary[2], c='Green', ls = '--', marker = '^', ms = 7, label = Players[2]
plt.plot(Salary[3], c='Purple', ls = '--', marker = 'D', ms = 7, label = Players[3]
plt.plot(Salary[4], c='Black', ls = '--', marker = 's', ms = 7, label = Players[4]
plt.plot(Salary[5], c='Red', ls = '--', marker = 'o', ms = 7, label = Players[5]
plt.plot(Salary[6], c='Pink', ls = '--', marker = '^', ms = 7, label = Players[6]
plt.plot(Salary[7], c='Darkblue', ls = '--', marker = 'd', ms = 7, label = Players[7]
plt.plot(Salary[8], c='yellow', ls = '--', marker = 's', ms = 7, label = Players[8])
```

```
plt.plot(Salary[9], c='Darkgreen', ls = '--', marker = 'o', ms = 7, label = Play

plt.legend(loc = 'lower right',bbox_to_anchor=(0.6,1) )
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.rcParams['figure.figsize']=1,5

plt.show()
```



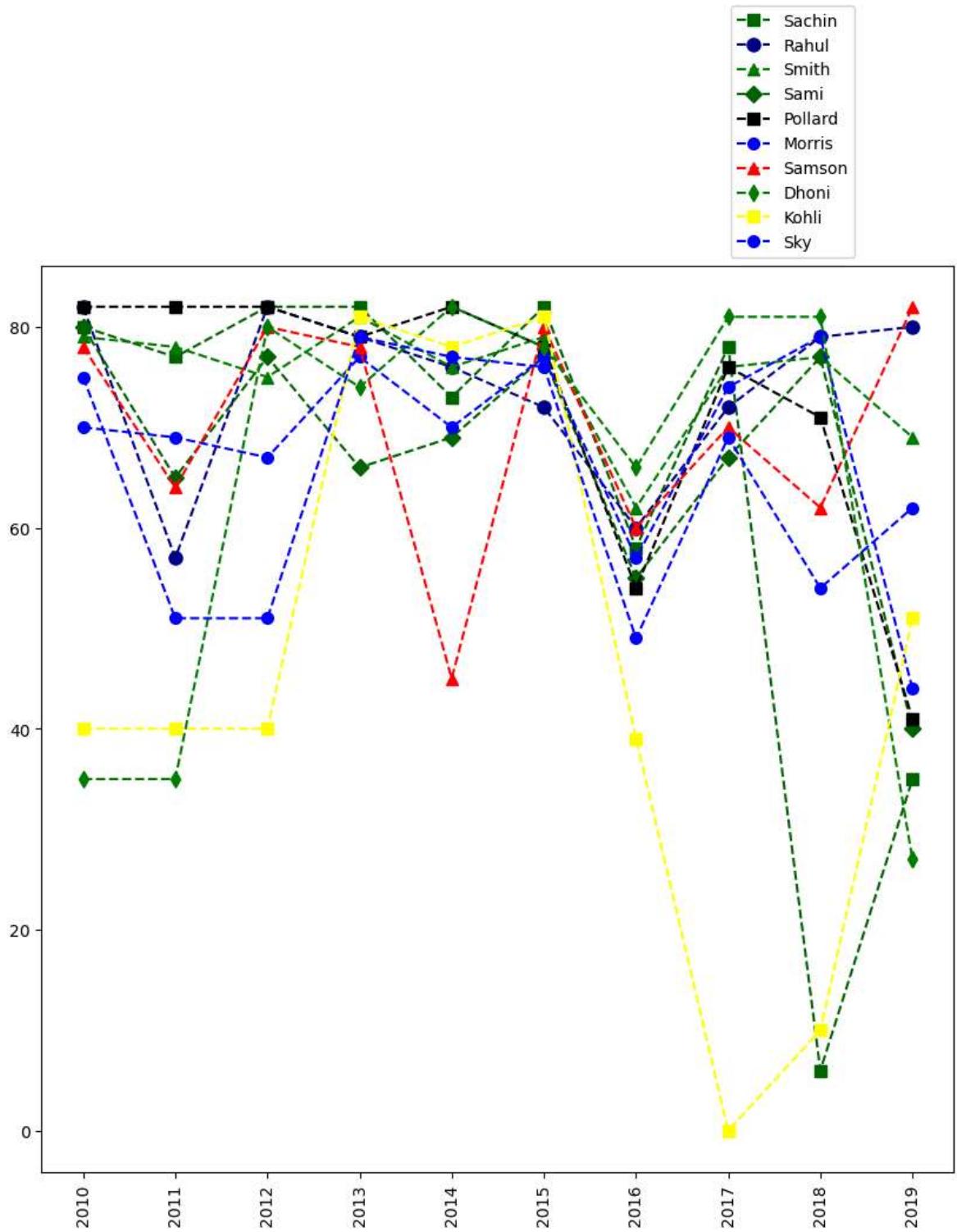
In [644...]

```
# we can visualize the how many games played by a player

plt.plot(Games[0], c='DarkGreen', ls = '--', marker = 's', ms = 7, label = Player[0])
plt.plot(Games[1], c='DarkBlue', ls = '--', marker = 'o', ms = 8, label = Player[1])
plt.plot(Games[2], c='Green', ls = '--', marker = '^', ms = 7, label = Player[2])
plt.plot(Games[3], c='Darkgreen', ls = '--', marker = 'D', ms = 7, label = Player[3])
plt.plot(Games[4], c='Black', ls = '--', marker = 's', ms = 7, label = Player[4])
plt.plot(Games[5], c='Blue', ls = '--', marker = 'o', ms = 7, label = Player[5])
plt.plot(Games[6], c='red', ls = '--', marker = '^', ms = 7, label = Player[6])
plt.plot(Games[7], c='Green', ls = '--', marker = 'd', ms = 7, label = Player[7])
plt.plot(Games[8], c='yellow', ls = '--', marker = 's', ms = 7, label = Player[8])
plt.plot(Games[9], c='Blue', ls = '--', marker = 'o', ms = 7, label = Player[9])

plt.legend(loc = 'lower right',bbox_to_anchor=(0.9,1) )
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.rcParams['figure.figsize']=9,8

plt.show()
```



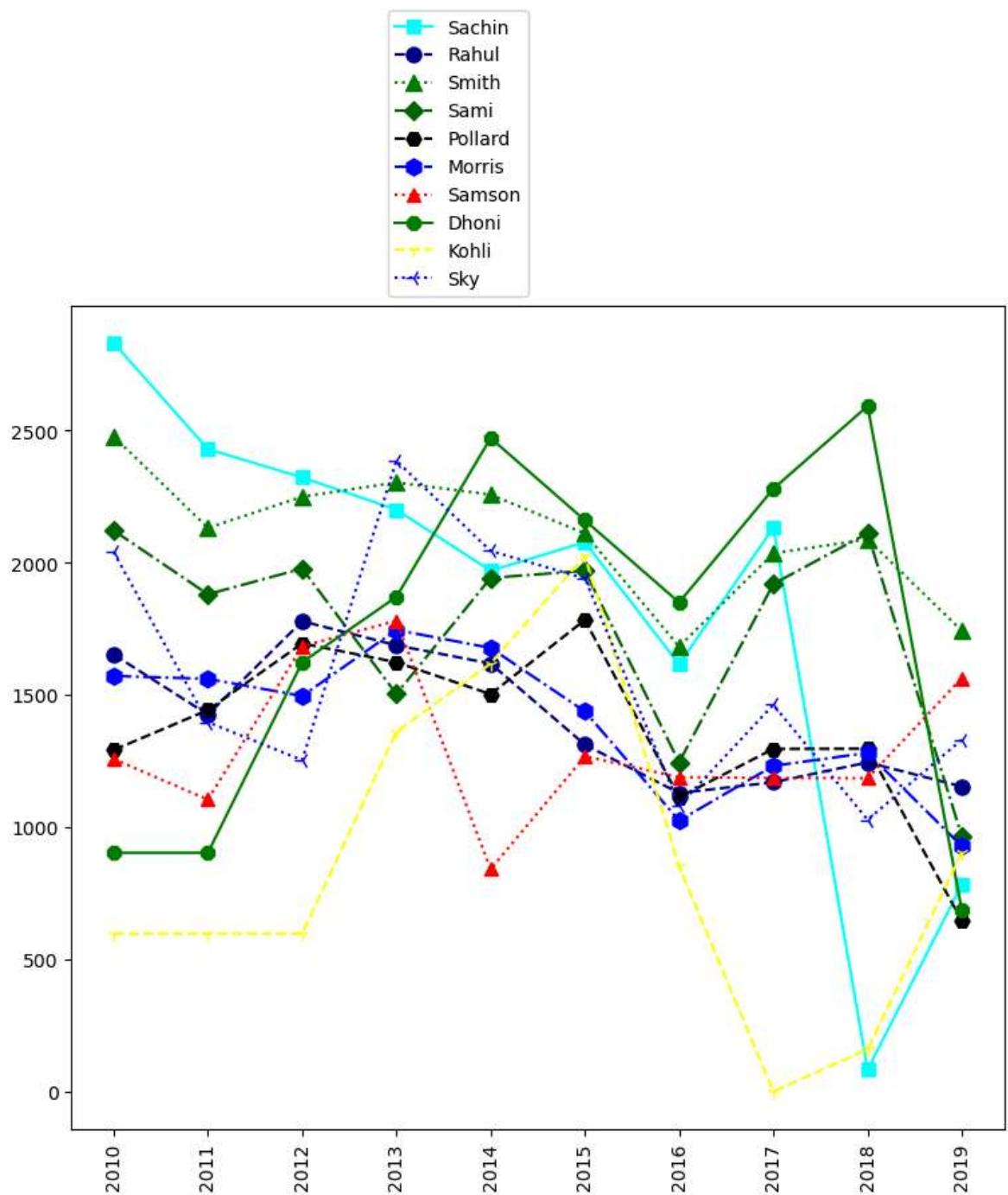
In [639...]: # we can visualize the how many points get by a player

```
plt.plot(Points[0], c='cyan', ls = '-.', marker = 's', ms = 7, label = Players[0])
plt.plot(Points[1], c='DarkBlue', ls = '--', marker = 'o', ms = 8, label = Players[1])
plt.plot(Points[2], c='Green', ls = ':', marker = '^', ms = 9, label = Players[2])
plt.plot(Points[3], c='Darkgreen', ls = '-.', marker = 'D', ms = 7, label = Players[3])
plt.plot(Points[4], c='Black', ls = '--', marker = 'H', ms = 8, label = Players[4])
plt.plot(Points[5], c='Blue', ls = '-.', marker = 'h', ms = 9, label = Players[5])
plt.plot(Points[6], c='red', ls = ':', marker = '^', ms = 7, label = Players[6])
plt.plot(Points[7], c='Green', ls = '-.', marker = '8', ms = 8, label = Players[7])
plt.plot(Points[8], c='yellow', ls = '--', marker = '1', ms = 7, label = Players[8])
plt.plot(Points[9], c='Blue', ls = ':', marker = '3', ms = 9, label = Players[9])

plt.legend(loc = 'lower right',bbox_to_anchor=(0.5,1))
```

```
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.rcParams['figure.figsize']=10,10

plt.show()
```



In []:

In []:

In []:

In []: