

Matplotlib Using IPL Data Analysis

```
In [1]: #Import numpy
import numpy as np

#Seasons
Seasons = ["2015", "2016", "2017", "2018", "2019", "2020", "2021", "2022", "2023", "2024"]
Sdict = {"2015":0, "2016":1, "2017":2, "2018":3, "2019":4, "2020":5, "2021":6, "2022":7, "2023":8, "2024":9}

#Players
Players = ["Sachin", "Rahul", "Smith", "Sami", "Pollard", "Morris", "Samson", "Dhoni", "Kohli", "Sky"]
Pdict = {"Sachin":0, "Rahul":1, "Smith":2, "Sami":3, "Pollard":4, "Morris":5, "Samson":6, "Dhoni":7, "Kohli":8, "Sky":9}

#Salaries
Sachin_Salary = [15946875, 17718750, 19490625, 21262500, 23034375, 24806250, 25244493, 27849149, 30453800, 32000000]
Rahul_Salary = [12000000, 12744189, 13488377, 14232567, 14976754, 16324500, 18038573, 19752645, 21466718, 23000000]
Smith_Salary = [4621800, 5828090, 13041250, 14410581, 15779912, 14500000, 16022500, 17545000, 19067500, 20000000]
Sami_Salary = [3713640, 4694041, 13041250, 14410581, 15779912, 17149243, 18518574, 19450000, 22407474, 22000000]
Pollard_Salary = [4493160, 4806720, 6061274, 13758000, 15202590, 16647180, 18091770, 19536360, 20513178, 21000000]
Morris_Salary = [3348000, 4235220, 12455000, 14410581, 15779912, 14500000, 16022500, 17545000, 19067500, 20000000]
Samson_Salary = [3144240, 3380160, 3615960, 4574189, 13520500, 14940153, 16359805, 17779458, 18668431, 20000000]
Dhoni_Salary = [0, 0, 4171200, 4484040, 4796880, 6053663, 15506632, 16669630, 17832627, 18995624]
Kohli_Salary = [0, 0, 0, 4822800, 5184480, 5546160, 6993708, 16402500, 17632688, 18862875]
Sky_Salary = [3031920, 3841443, 13041250, 14410581, 15779912, 14200000, 15691000, 17182000, 18673000, 15000000]

#Matrix
Salary = np.array([Sachin_Salary, Rahul_Salary, Smith_Salary, Sami_Salary, Pollard_Salary, Morris_Salary, Samson_Salary, Dhoni_Salary, Kohli_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, Kohli_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, Kohli_PTS, Sky_PTS])
```

```
In [2]: Salary
```

```
Out[2]: 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 [3]: Games
```

```
Out[3]: 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 [4]: Points
```

```
Out[4]: 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 [5]: Games
```

```
Out[5]: 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 [6]: Games[1]
```

```
Out[6]: array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])
```

```
In [7]: Games[0,6]
```

```
Out[7]: np.int64(58)
```

```
In [8]: Salary/Games
```

```
C:\Users\Arman\AppData\Local\Temp\ipykernel_14532\3709746658.py:1: RuntimeWarning: divide by zero encountered in divide
```

```
Salary/Games
```

```
Out[8]: 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., 52140.,
 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 [9]: np.round(Salary//Games)
```

```
C:\Users\Arman\AppData\Local\Temp\ipykernel_14532\3663165759.py:1: RuntimeWarning: divide by zero encountered in floor_divide
```

```
np.round(Salary//Games)
```

```
Out[9]: array([[ 199335, 230113, 237690, 259298, 315539, 302515, 435249,
 357040, 5075634, 671428],
 [ 146341, 223582, 164492, 180159, 197062, 226729, 300642,
 274342, 271730, 289759],
 [ 58503, 74719, 173883, 177908, 207630, 183544, 258427,
 230855, 247629, 299194],
 [ 46420, 72216, 169366, 218342, 228694, 222717, 336701,
 290298, 291006, 561450],
 [ 54794, 58618, 73917, 174151, 185397, 213425, 335032,
 257057, 288918, 522835],
 [ 47828, 61380, 185895, 187150, 225427, 188311, 281096,
 237094, 241360, 469190],
 [ 40310, 52815, 45199, 58643, 300455, 186751, 272663,
 253992, 301103, 244738],
 [ 0, 0, 52140, 60595, 58498, 77611, 234948,
 205797, 220155, 703541],
 [ 0, 0, 0, 59540, 66467, 68471, 179325,
 0, 1763268, 369860],
 [ 40425, 75322, 255710, 182412, 204933, 186842, 320224,
 249014, 345796, 241935]])
```

```
In [10]: import warnings
warnings.filterwarnings('ignore')
#we are using above code to ignore unknown error cause by os updatation on monthly basis
```

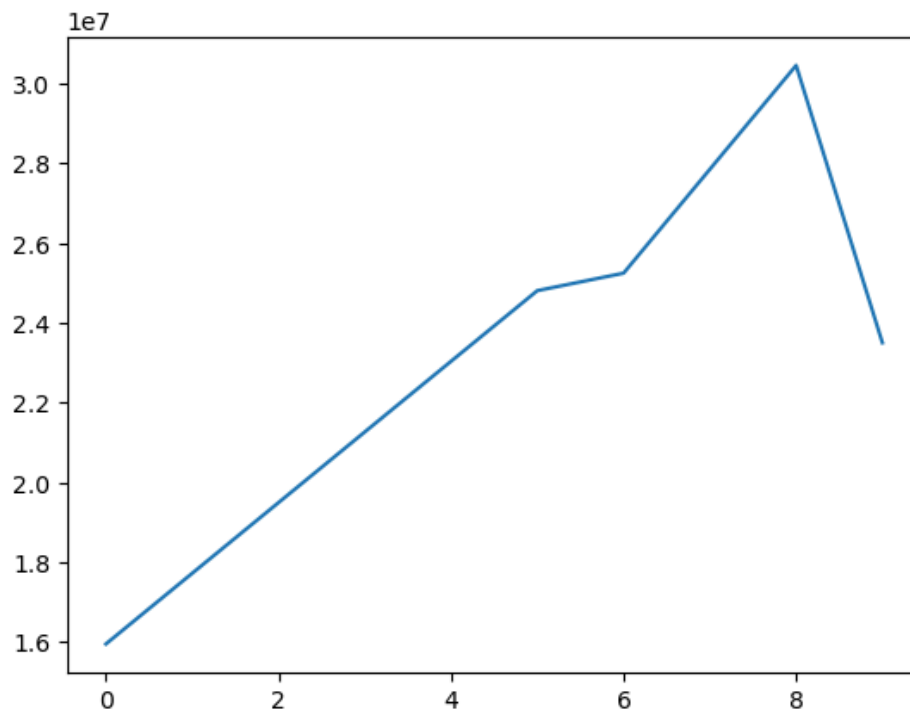
```
In [11]: import matplotlib.pyplot as plt
import numpy as np
```

```
In [12]: Salary[0]
```

```
Out[12]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
                25244493, 27849149, 30453805, 23500000])
```

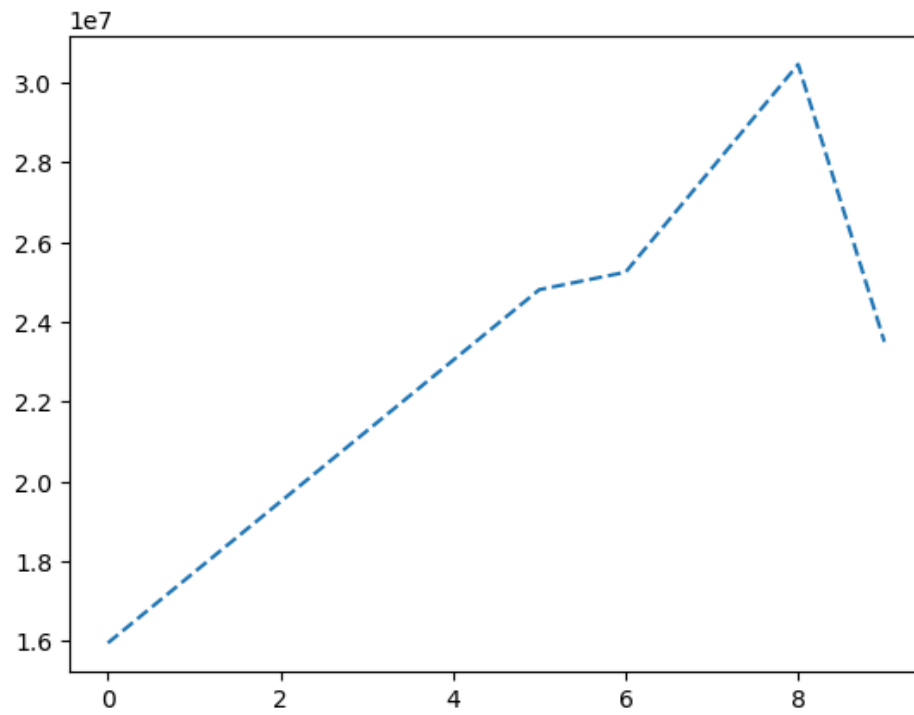
```
In [13]: plt.plot(Salary[0])
```

```
Out[13]: [<matplotlib.lines.Line2D at 0x2994b1b5bd0>]
```



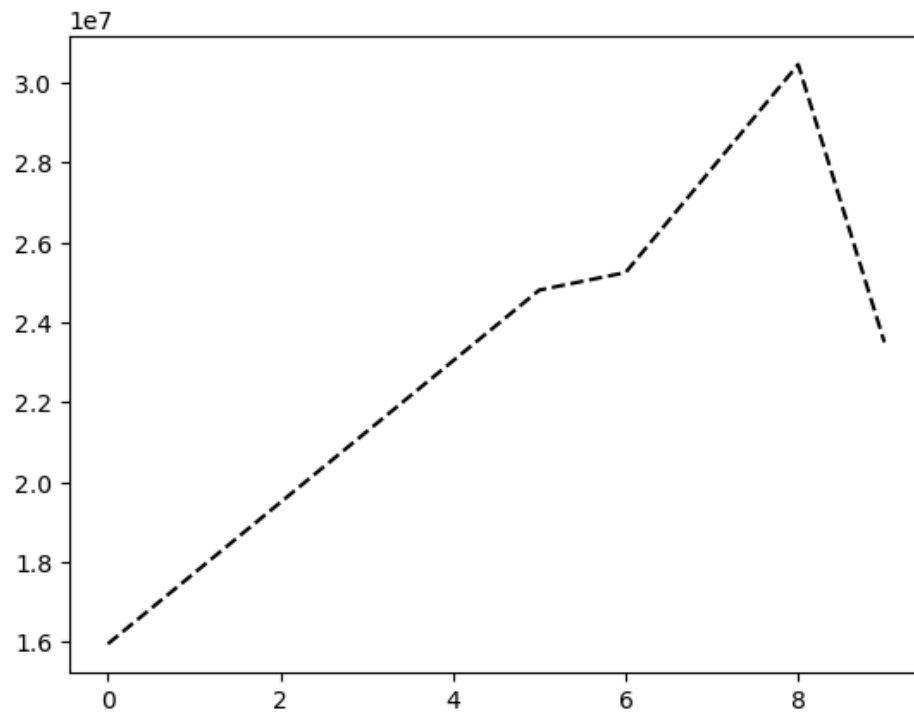
```
In [14]: plt.plot(Salary[0], ls = '--')
```

```
Out[14]: [<matplotlib.lines.Line2D at 0x2994bb1a210>]
```



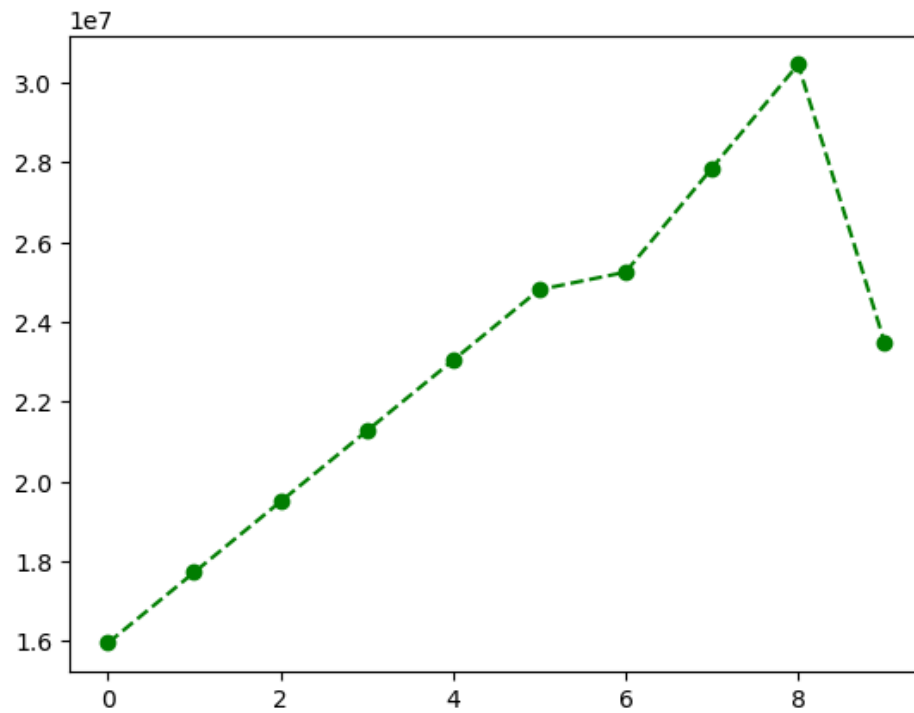
```
In [15]: plt.plot(Salary[0], ls = '--',color='black')
```

```
Out[15]: [ <matplotlib.lines.Line2D at 0x2994bb991d0>]
```



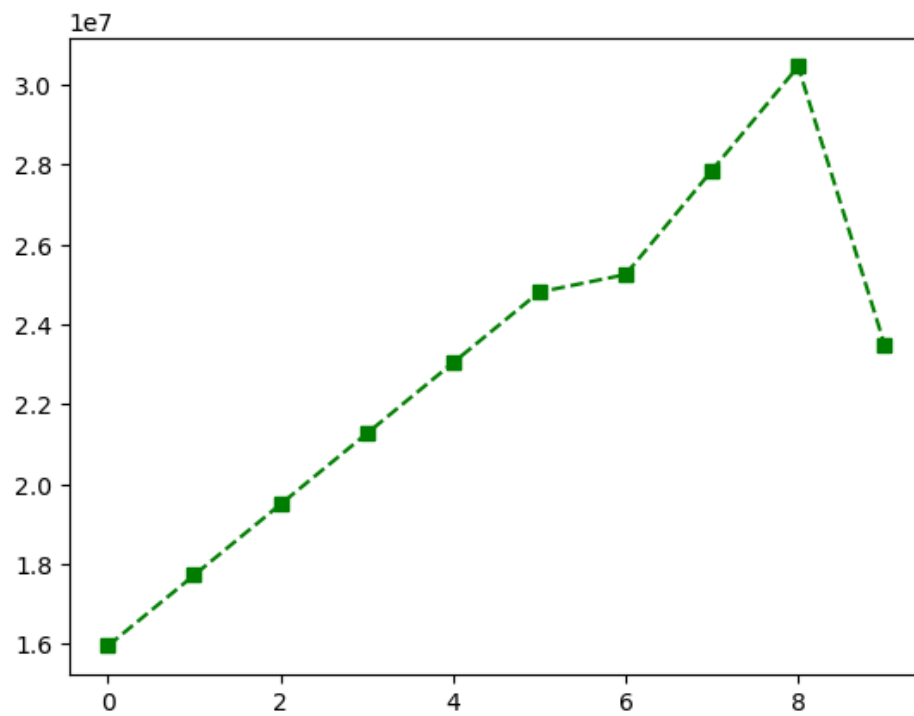
```
In [16]: plt.plot(Salary[0], ls = '--',color='green', marker = 'o')
```

```
Out[16]: [ <matplotlib.lines.Line2D at 0x2994b30f750>]
```



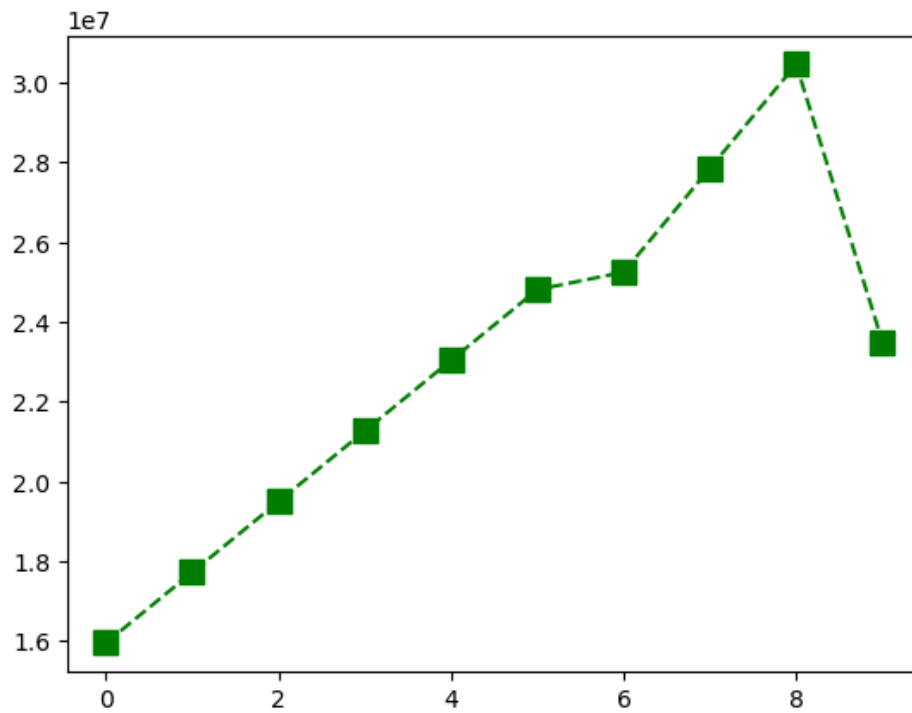
```
In [17]: plt.plot(Salary[0], ls = '--',color='green', marker = 's')
```

```
Out[17]: [matplotlib.lines.Line2D at 0x2994b3a5d10>]
```



```
In [18]: plt.plot(Salary[0], ls = '--',color='green', marker = 's', ms = 10)
```

```
Out[18]: [matplotlib.lines.Line2D at 0x2994cd302d0>]
```



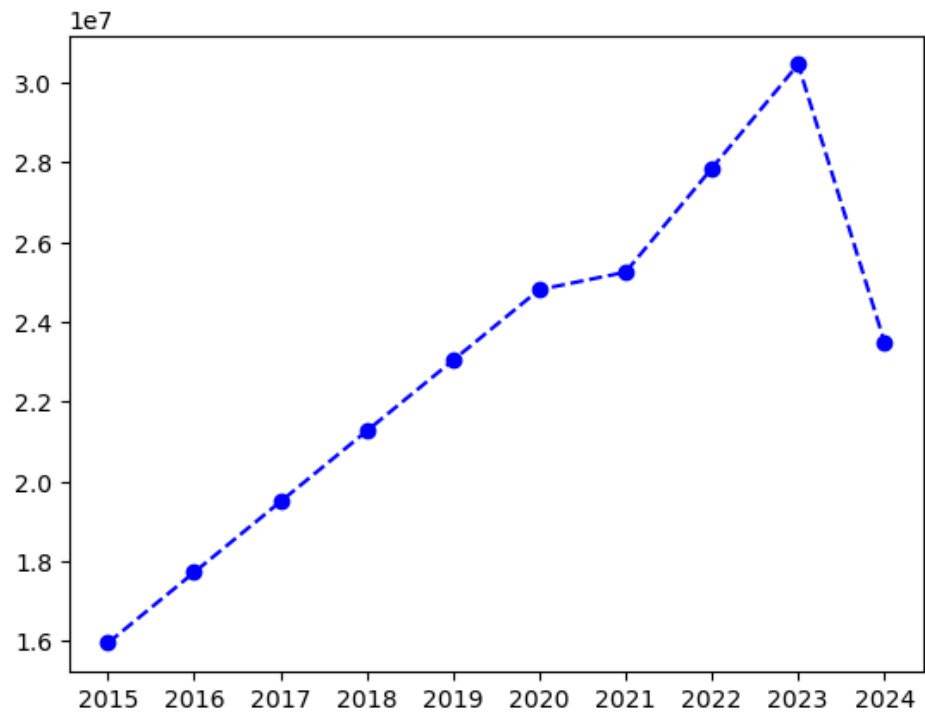
In [20]: Sdict

```
Out[20]: {'2015': 0,
          '2016': 1,
          '2017': 2,
          '2018': 3,
          '2019': 4,
          '2020': 5,
          '2021': 6,
          '2022': 7,
          '2023': 8,
          '2024': 9}
```

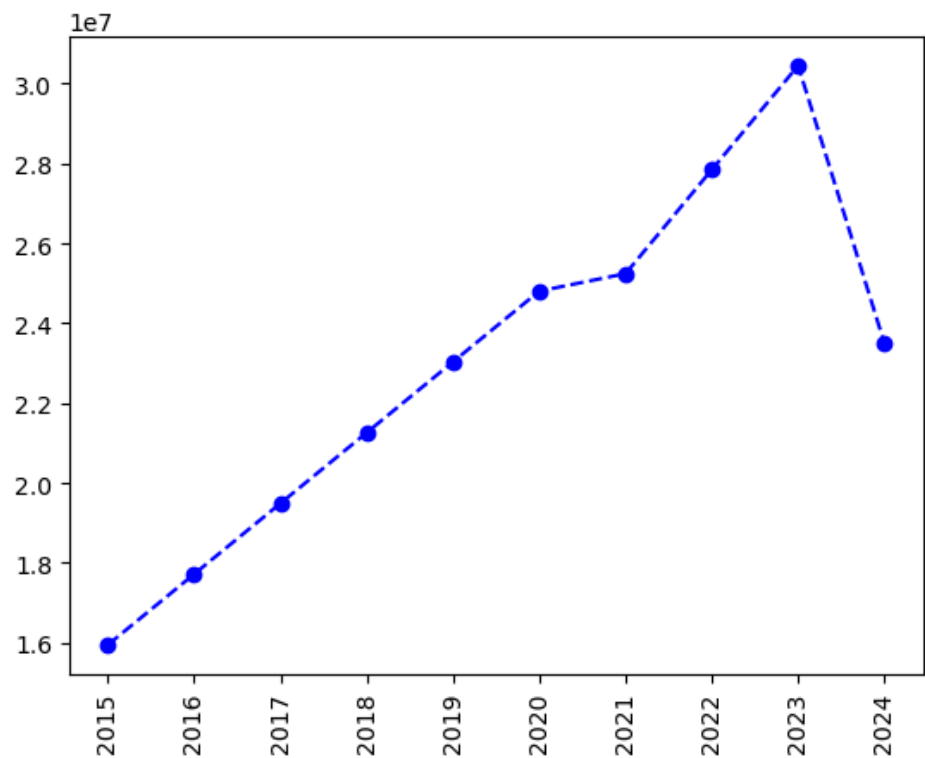
In [21]: Pdict

```
Out[21]: {'Sachin': 0,
          'Rahul': 1,
          'Smith': 2,
          'Sami': 3,
          'Pollard': 4,
          'Morris': 5,
          'Samson': 6,
          'Dhoni': 7,
          'Kohli': 8,
          'Sky': 9}
```

```
In [22]: plt.plot(Salary[0],ls = '--',color = 'blue',marker = 'o', ms = 6)
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



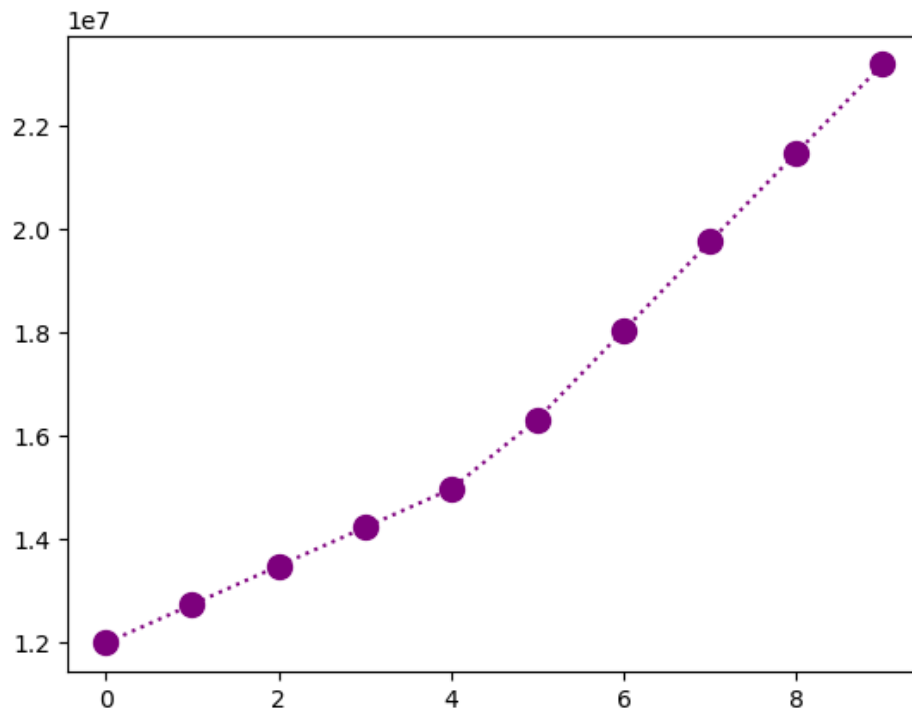
```
In [24]: plt.plot(Salary[0], c='blue', ls = '--', marker = 'o', ms = 6)
plt.xticks(list(range(0,10)),Seasons, rotation = 'vertical')
plt.show()
```



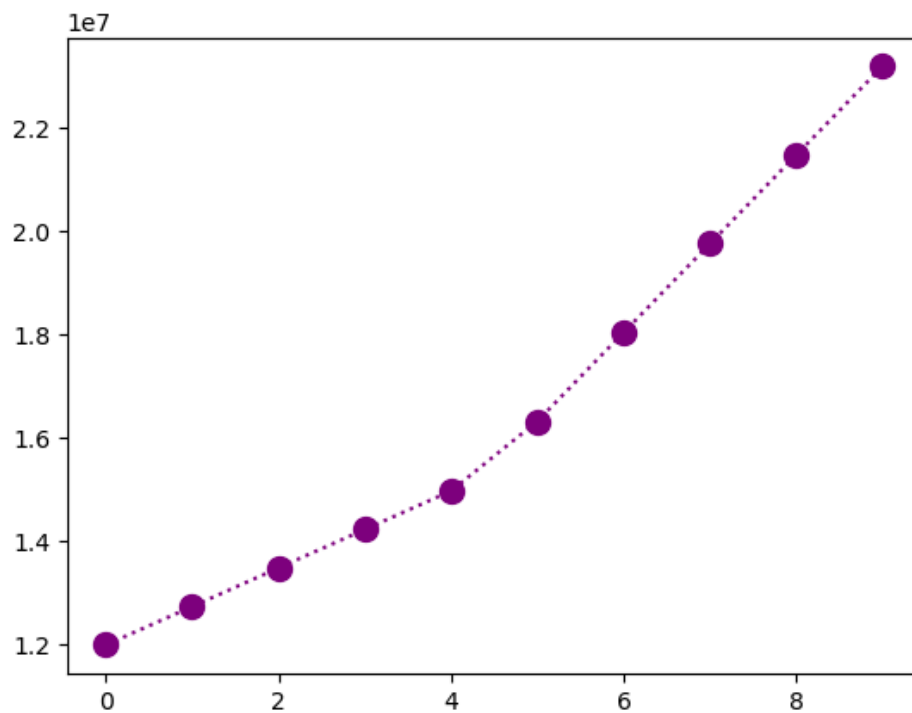
```
In [25]: Salary[1]
```

```
Out[25]: array([12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
18038573, 19752645, 21466718, 23180790])
```

```
In [27]: plt.plot(Salary[1], c='purple', ls = ':', marker = 'o', ms = 10)
plt.show()
```

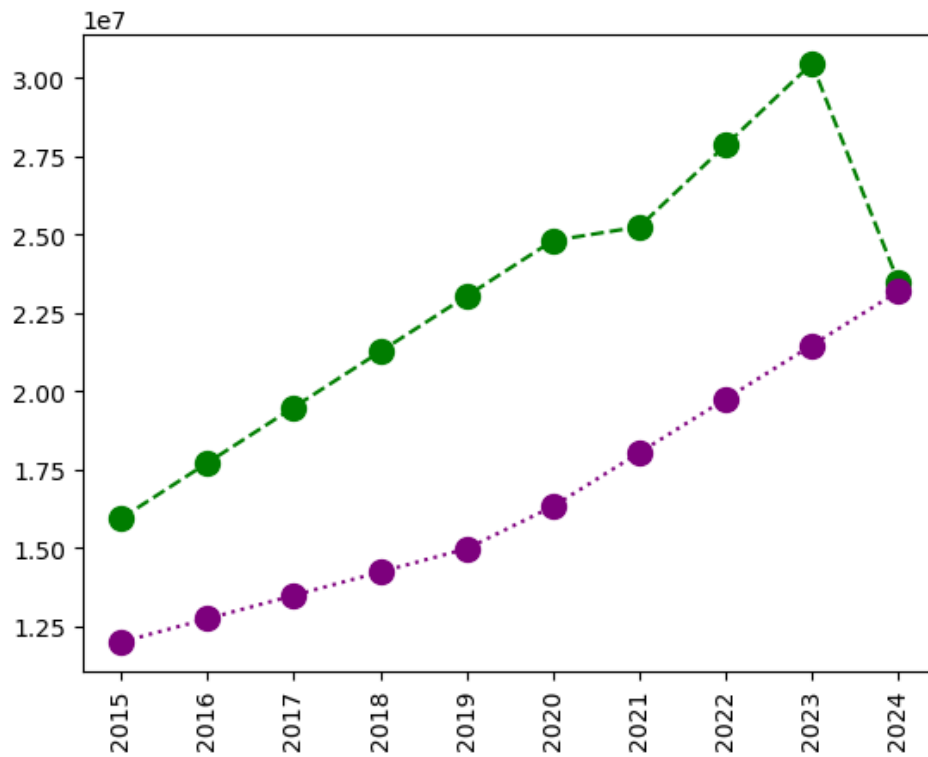



```
In [28]: plt.plot(Salary[1], c='purple', ls = ':', marker = 'o', ms = 10, label = Players[1])
plt.show()
```



```
In [31]: plt.plot(Salary[0], c='green', ls = '--', marker = 'o', ms = 10, label = Players[0])
plt.plot(Salary[1], c='purple', ls = ':', marker = 'o', ms = 10, label = Players[1])

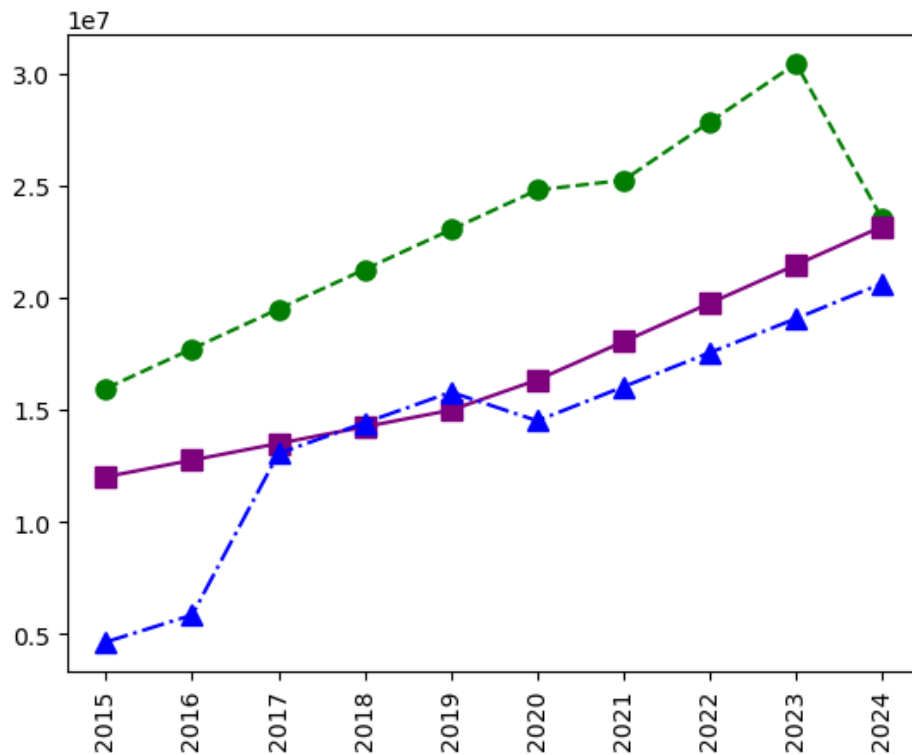
plt.xticks(list(range(0,10)),Seasons, rotation = 'vertical')
plt.show()
```



In [32]: Games

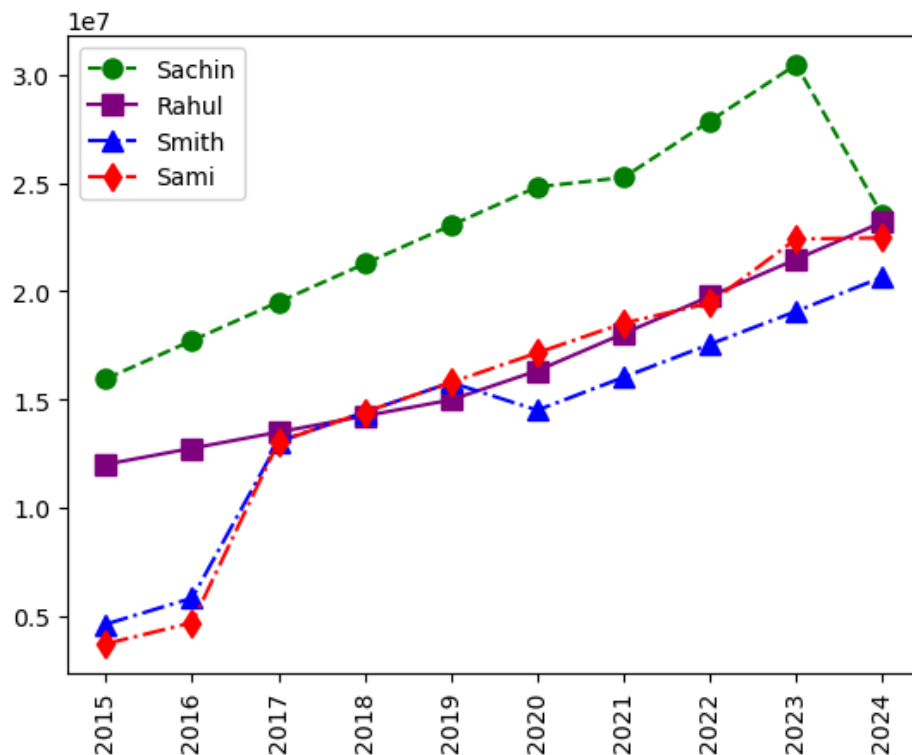
```
Out[32]: array([[80, 77, 82, 82, 73, 82, 58, 78, 6, 35],
 [82, 57, 82, 79, 76, 72, 60, 72, 79, 80],
 [79, 78, 75, 81, 76, 79, 62, 76, 77, 69],
 [80, 65, 77, 66, 69, 77, 55, 67, 77, 40],
 [82, 82, 82, 79, 82, 78, 54, 76, 71, 41],
 [70, 69, 67, 77, 70, 77, 57, 74, 79, 44],
 [78, 64, 80, 78, 45, 80, 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 [34]: plt.plot(Salary[0],ls = '--',color = 'green',marker = 'o', ms = 8, label = Players[0])
plt.plot(Salary[1],ls = '-',color = 'purple',marker = 's', ms = 8, label = Players[1])
plt.plot(Salary[2],ls = '-.',color = 'blue',marker = '^', ms = 8, label = Players[2])
plt.xticks(list(range(0,10)),Seasons, rotation = 'vertical')
plt.show()
```



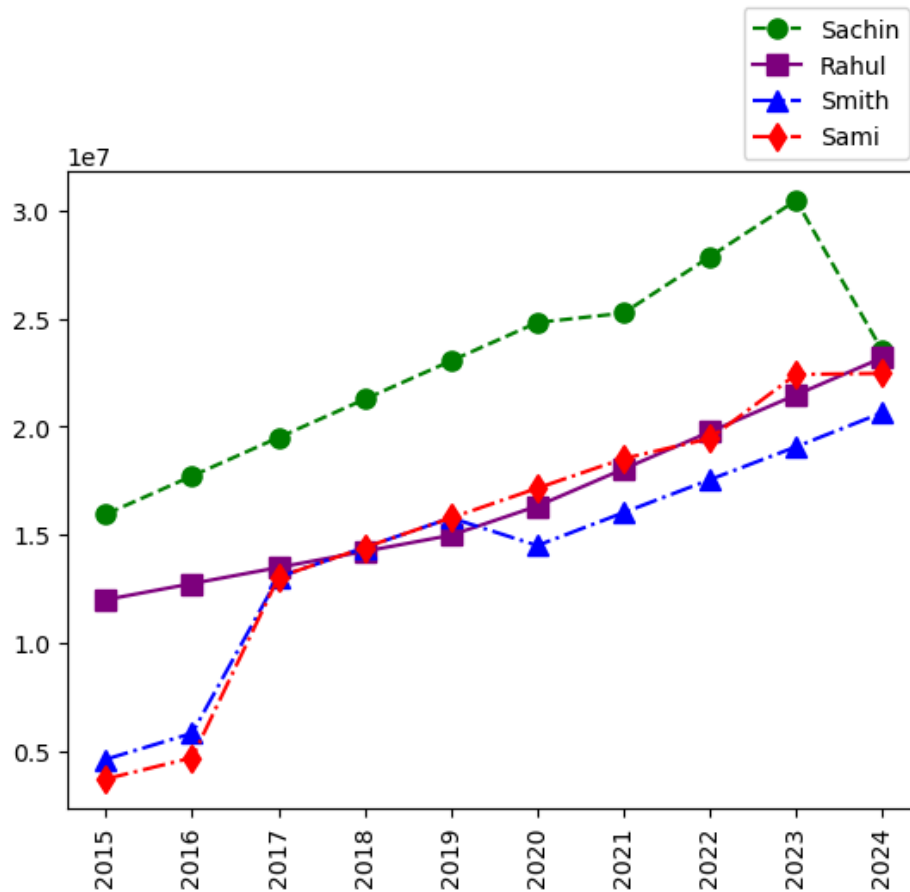
```
In [36]: plt.plot(Salary[0],ls = '--',color = 'green',marker = 'o', ms = 8, label = Players[0])
plt.plot(Salary[1],ls = '-',color = 'purple',marker = 's', ms = 8, label = Players[1])
plt.plot(Salary[2],ls = '-.',color = 'blue',marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3],ls = '-.',color = 'red',marker = 'd', ms = 8, label = Players[3])
plt.xticks(list(range(0,10)),Seasons, rotation = 'vertical')

plt.legend()
plt.show()
```



```
In [38]: plt.plot(Salary[0],ls = '--',color = 'green',marker = 'o', ms = 8, label = Players[0])
plt.plot(Salary[1],ls = '-',color = 'purple',marker = 's', ms = 8, label = Players[1])
plt.plot(Salary[2],ls = '-.',color = 'blue',marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3],ls = '-.',color = 'red',marker = 'd', ms = 8, label = Players[3])
plt.xticks(list(range(0,10)),Seasons, rotation = 'vertical')
```

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

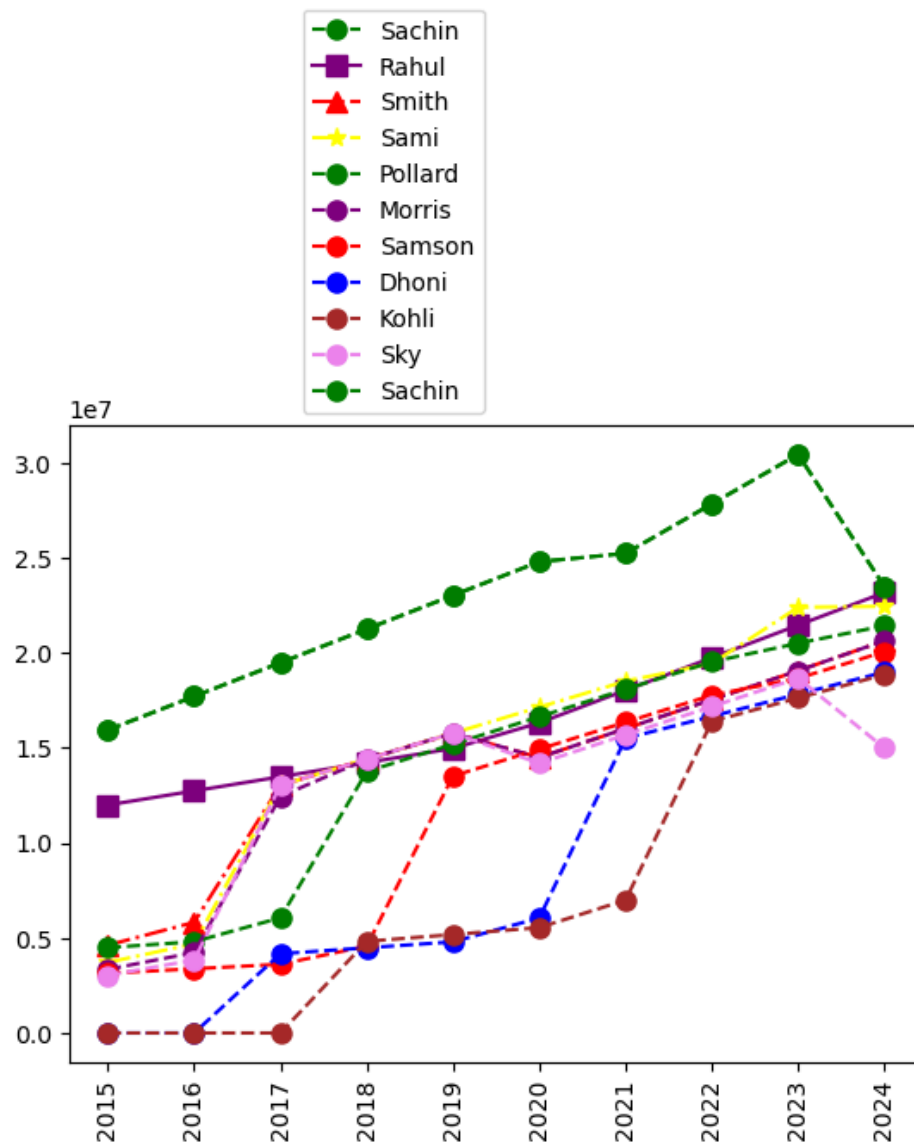


```
In [39]: plt.plot(Salary[0],ls = '--',color = 'green',marker = 'o', ms = 8, label = Players[0])
plt.plot(Salary[1],ls = '--',color = 'purple',marker = 's', ms = 8, label = Players[1])
plt.plot(Salary[2],ls = '-.',color = 'red',marker = '^', ms = 8, label = Players[2])
plt.plot(Salary[3],ls = '-.',color = 'yellow',marker = '*', ms = 8, label = Players[3])
plt.plot(Salary[4],ls = '--',color = 'green',marker = 'o', ms = 8, label = Players[4])
plt.plot(Salary[5],ls = '--',color = 'purple',marker = 'o', ms = 8, label = Players[5])
plt.plot(Salary[6],ls = '--',color = 'red',marker = 'o', ms = 8, label = Players[6])
plt.plot(Salary[7],ls = '--',color = 'blue',marker = 'o', ms = 8, label = Players[7])
plt.plot(Salary[8],ls = '--',color = 'brown',marker = 'o', ms = 8, label = Players[8])
plt.plot(Salary[9],ls = '--',color = 'violet',marker = 'o', ms = 8, label = Players[9])

plt.plot(Salary[0],ls = '--',color = 'green',marker = 'o', ms = 8, label = Players[0])

plt.xticks(list(range(0,10)),Seasons, rotation = 'vertical')

plt.legend(loc = 'lower right', bbox_to_anchor = (0.5,1))
plt.show()
# this is ugly to see so we need to go for power bI
```



In []: