

example project on ipl dataset for data analysis

In [25]:

```
#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 = [15946875,17718750,19490625,21262500,23034375,24806250,25244493,27849149,30453805,23500000]
Rahul_Salary = [12000000,12744189,13488377,14232567,14976754,16324500,18038573,19752645,21466718,23180790]
Smith_Salary = [4621800,5828090,13041250,14410581,15779912,14500000,16022500,17545000,19067500,20644400]
Sami_Salary = [3713640,4694041,13041250,14410581,15779912,17149243,18518574,19450000,22407474,22458000]
Pollard_Salary = [4493160,4806720,6061274,13758000,15202590,16647180,18091770,19536360,20513178,21436271]
Morris_Salary = [3348000,4235220,12455000,14410581,15779912,14500000,16022500,17545000,19067500,20644400]
Samson_Salary = [3144240,3380160,3615960,4574189,13520500,14940153,16359805,17779458,18668431,20068563]
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])

#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])
```

In [27]: Salary

```
Out[27]: 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 [29]: Games

```
Out[29]: 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 [31]: Points
```

```
Out[31]: 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 [33]: Games[5]
```

```
Out[33]: array([70, 69, 67, 77, 70, 77, 57, 74, 79, 44])
```

```
In [35]: Games[0:5]
```

```
Out[35]: 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]])
```

```
In [37]: Games
```

```
Out[37]: 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 [39]: Games[0,5]
```

```
Out[39]: 82
```

```
In [41]: Games[0,2]
```

```
Out[41]: 82
```

```
In [43]: Games
```

```
Out[43]: 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 [45]: Games[-3:-1]
```

```
Out[45]: array([[35, 35, 80, 74, 82, 78, 66, 81, 81, 27],  
   [40, 40, 40, 81, 78, 81, 39, 0, 10, 51]])
```

```
In [47]: Games[-3,-1]
```

```
Out[47]: 27
```

```
In [49]: Points
```

```
Out[49]: 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 [51]: Pdict
```

```
Out[51]: {'Sachin': 0,  
'Rahul': 1,  
'Smith': 2,  
'Sami': 3,  
'Pollard': 4,  
'Morris': 5,  
'Samson': 6,  
'Dhoni': 7,  
'Kohli': 8,  
'Sky': 9}
```

```
In [53]: Pdict['Sachin']
```

```
Out[53]: 0
```

```
In [55]: Games[0]
```

```
Out[55]: array([80, 77, 82, 82, 73, 82, 58, 78, 6, 35])
```

```
In [57]: Games[Pdict['Sachin']]
```

```
Out[57]: array([80, 77, 82, 82, 73, 82, 58, 78, 6, 35])
```

```
In [59]: Games
```

```
Out[59]: 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 [61]: Games[1]
```

```
Out[61]: array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])
```

```
In [63]: Pdict['Rahul']
```

```
Out[63]: 1
```

```
In [65]: Points
```

```
Out[65]: 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 [67]: Salary
```

```
Out[67]: 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, 4822800, 5184480, 5546160,
   6993708, 16402500, 17632688, 18862875],
   [ 3031920, 3841443, 13041250, 14410581, 15779912, 14200000,
   15691000, 17182000, 18673000, 15000000]])
```

```
In [69]: Salary/Games
```

```
C:\Users\NAVEEN\AppData\Local\Temp\ipykernel_17452\3709746658.py:1: RuntimeWarning: divide by zero encountered in divide
```

```
Salary/Games
```

```
Out[69]: 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 [71]: import warnings
```

```
warnings.filterwarnings('ignore')
```

```
In [73]: warnings
```

```
Out[73]: <module 'warnings' from 'C:\\Users\\NAVEEN\\anaconda3\\Lib\\warnings.py'>
```

```
In [75]: # import numpy as np
```

```
import matplotlib.pyplot as plt
```

```
plt
```

```
Out[75]: <module 'matplotlib.pyplot' from 'C:\\Users\\NAVEEN\\anaconda3\\Lib\\site-packages\\matplotlib\\pyplot.py'>
```

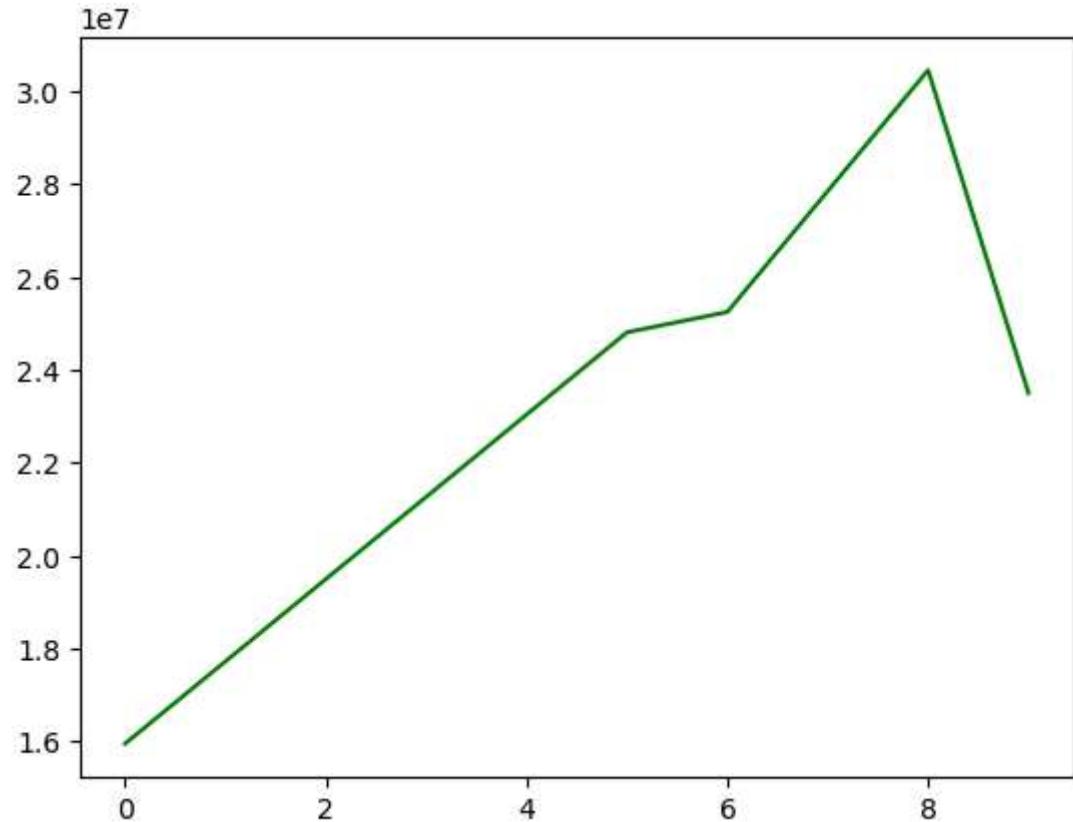
```
In [77]: %matplotlib inline
```

```
In [79]: Salary[0]
```

```
Out[79]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,  
   25244493, 27849149, 30453805, 23500000])
```

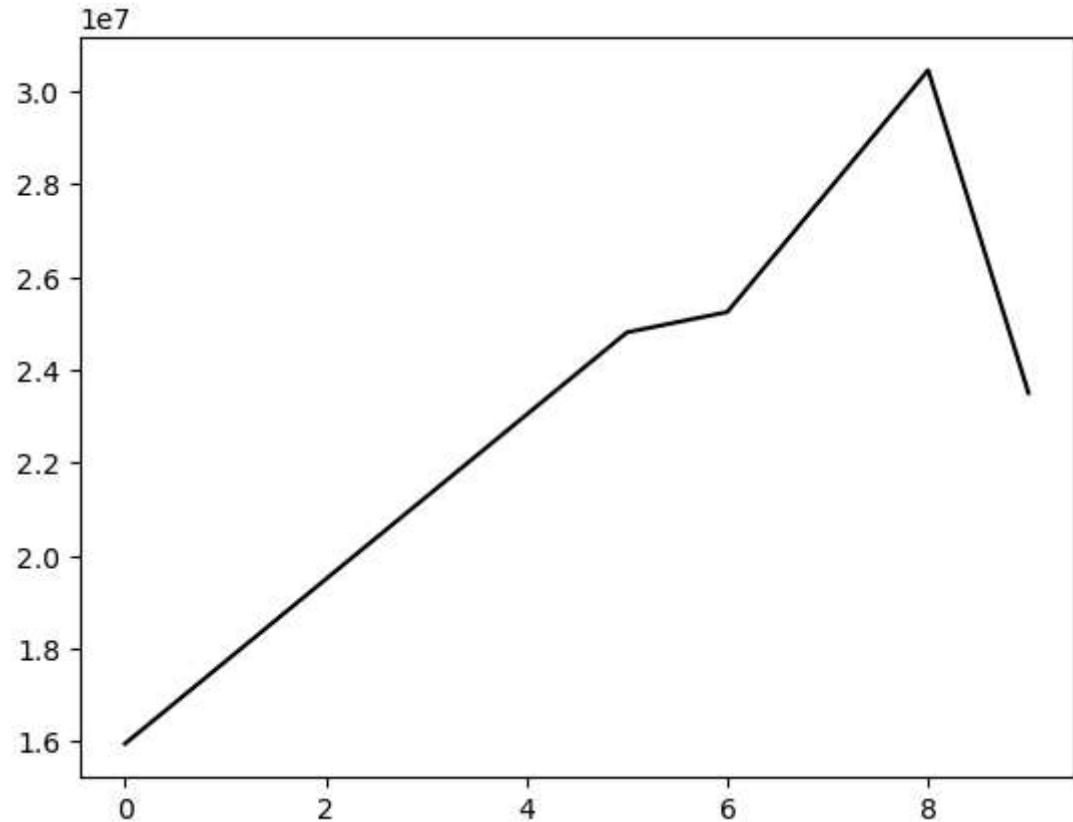
```
In [81]: plt.plot(Salary[0],color = 'green')
```

```
Out[81]: [<matplotlib.lines.Line2D at 0x1672045eed0>]
```



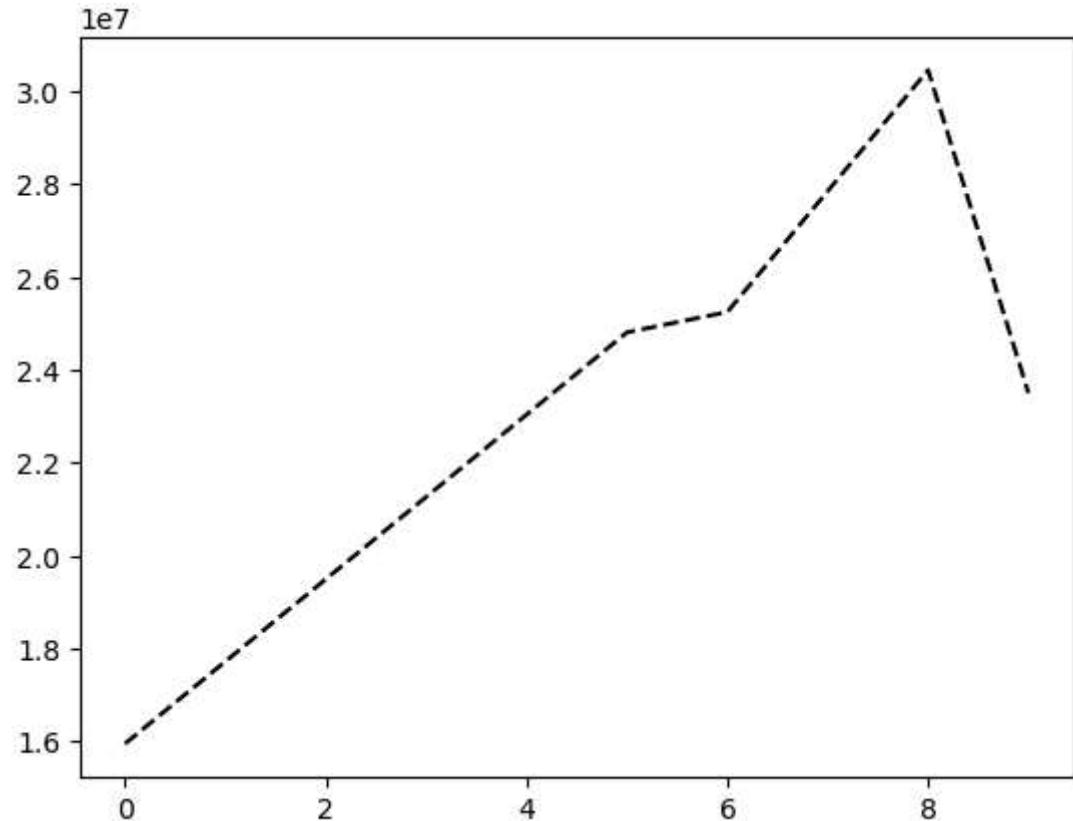
```
In [83]: plt.plot(Salary[0], color = 'k')
```

```
Out[83]: [
```



```
In [85]: plt.plot(Salary[0], color = 'k', ls='--')
```

```
Out[85]: [
```

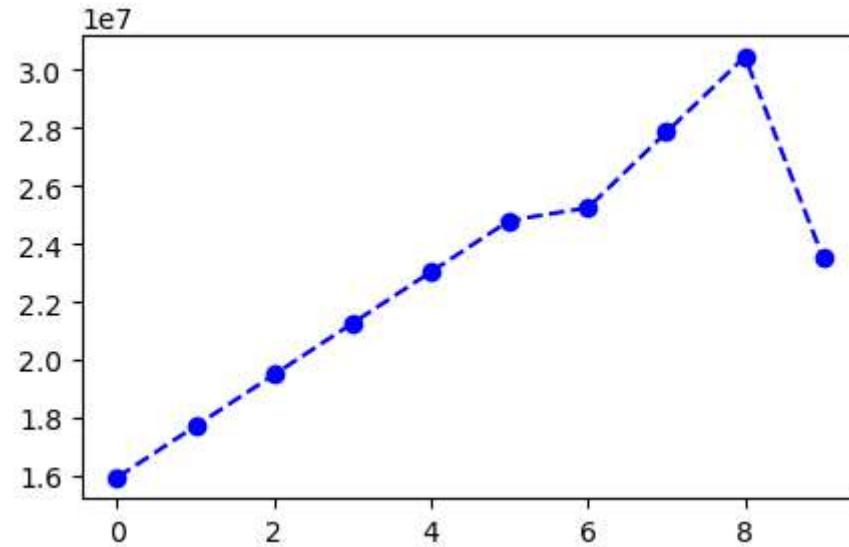


```
In [87]: %matplotlib inline  
plt.rcParams['figure.figsize'] = 5,3  
plt
```

```
Out[87]: <module 'matplotlib.pyplot' from 'C:\\\\Users\\\\NAVEEN\\\\anaconda3\\\\Lib\\\\site-packages\\\\matplotlib\\\\pyplot.py'>
```

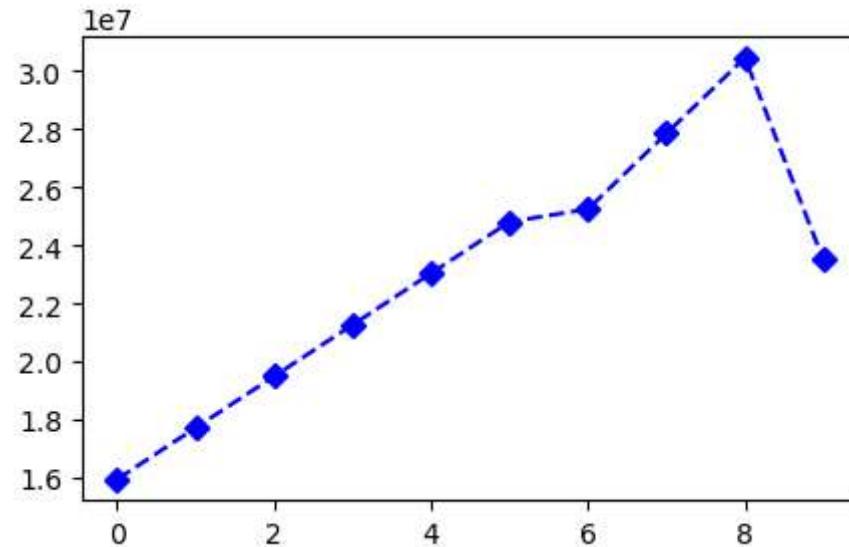
```
In [89]: plt.plot(Salary[0],color = 'blue',ls = '--',marker ='o')
```

```
Out[89]: [<matplotlib.lines.Line2D at 0x167217cb0b0>]
```



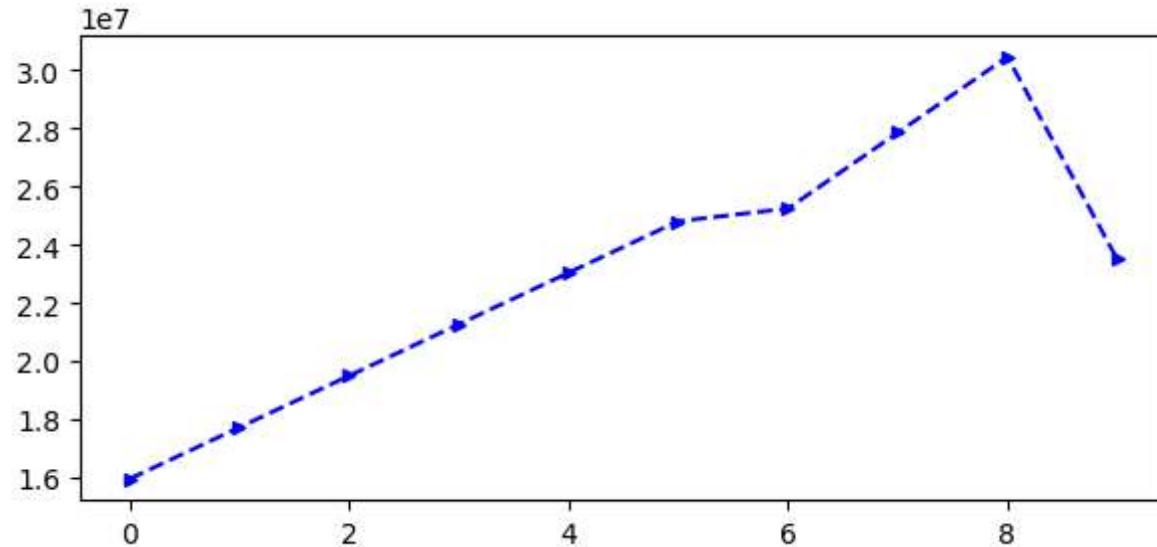
```
In [91]: plt.plot(Salary[0],color = 'blue',ls = '--',marker ='D')
```

```
Out[91]: [
```



```
In [110... plt.plot(Salary[0],color = 'blue',ls = '--',marker ='>',ms=5)
```

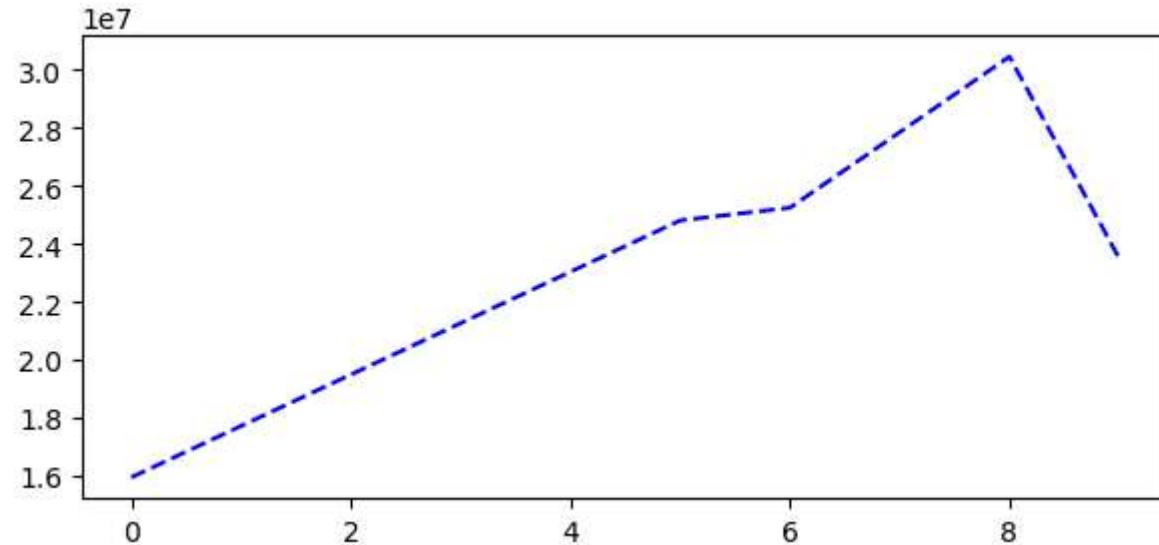
```
Out[110]: <matplotlib.lines.Line2D at 0x16720657260>
```



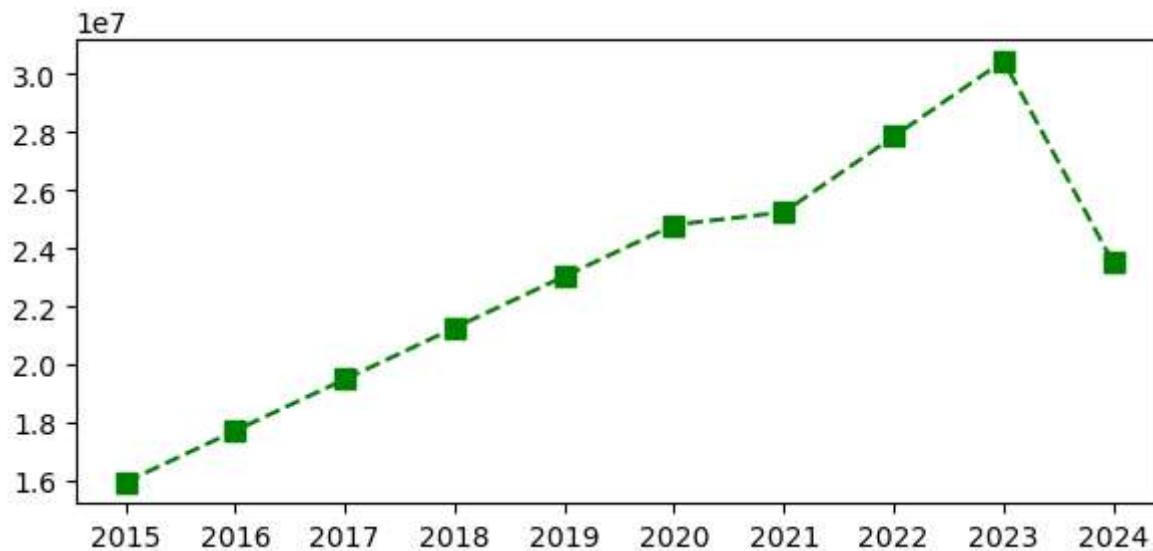
```
In [93]: %matplotlib inline  
plt.rcParams['figure.figsize'] = 7,3  
plt
```

```
Out[93]: <module 'matplotlib.pyplot' from 'C:\\\\Users\\\\NAVEEN\\\\anaconda3\\\\Lib\\\\site-packages\\\\matplotlib\\\\pyplot.py'>
```

```
In [112... plt.plot(Salary[0],color = 'blue',ls = '--',marker = ' ', )  
plt.show()
```



```
In [114]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])
plt.xticks(list(range(0,10)), Seasons, rotation='horizontal')
plt.show()
```



```
In [116]: Salary[0]
```

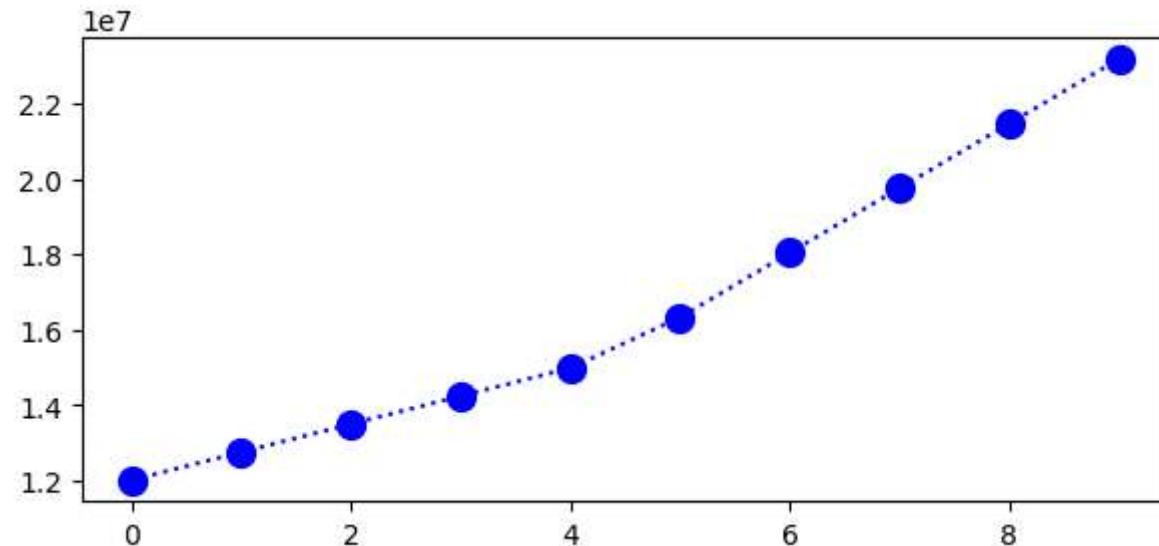
```
Out[116]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,  
   25244493, 27849149, 30453805, 23500000])
```

```
In [118]: Salary[1]
```

```
Out[118]: array([12000000, 12744189, 13488377, 14232567, 14976754, 16324500,  
   18038573, 19752645, 21466718, 23180790])
```

```
In [120]: plt.plot(Salary[1], c='Blue', ls = ':', marker = 'o', ms = 10, label = Players[1])
```

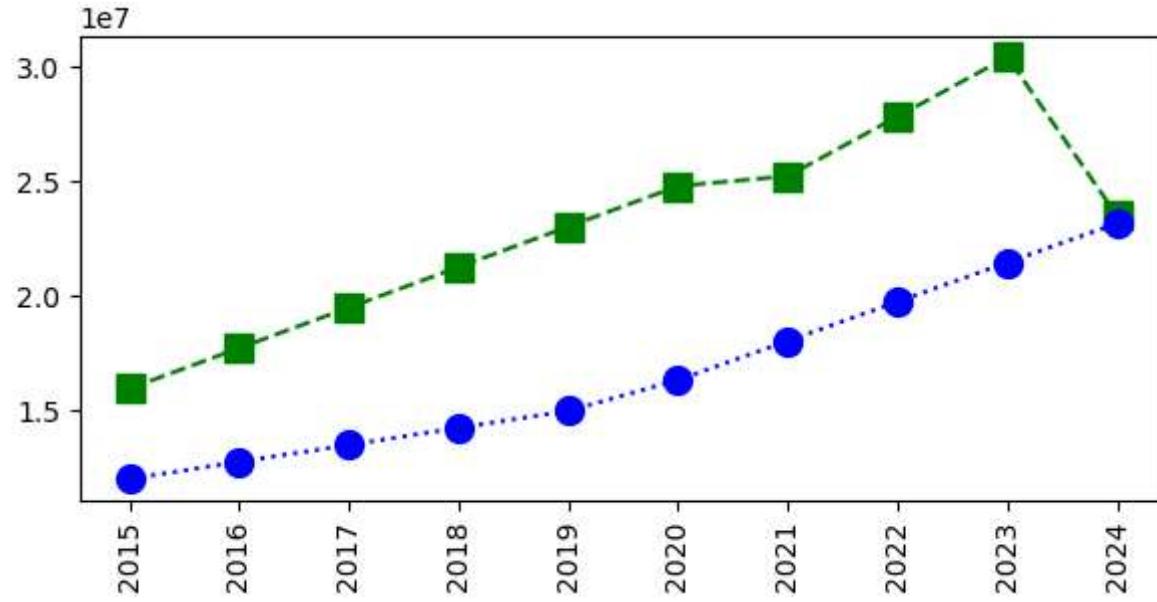
```
Out[120]: [
```



```
In [122]: plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 10, label = Players[0])  
plt.plot(Salary[1], c='Blue', ls = ':', marker = 'o', ms = 10, label = Players[1])
```

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

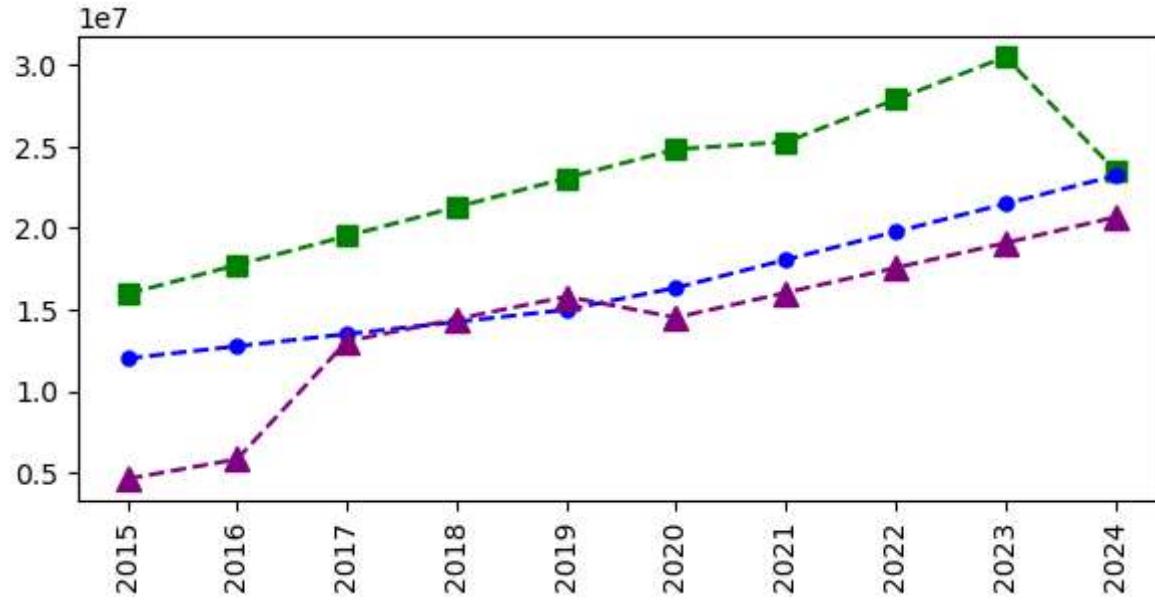
```
plt.show()
```



```
In [124]: 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')

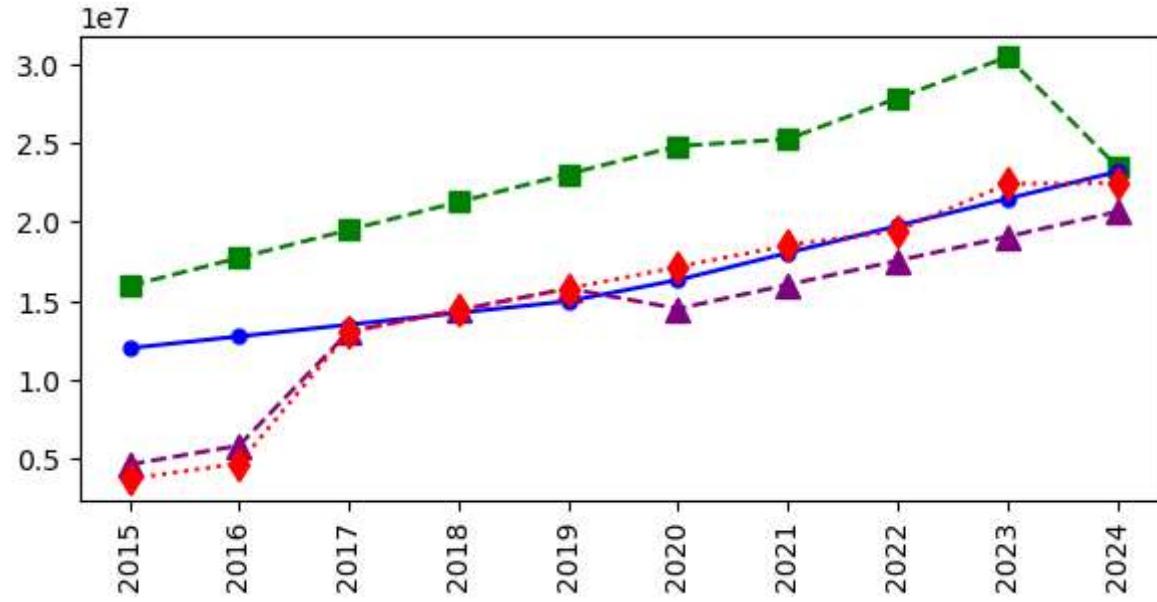
plt.show()
```



```
In [126]: 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.show()
```

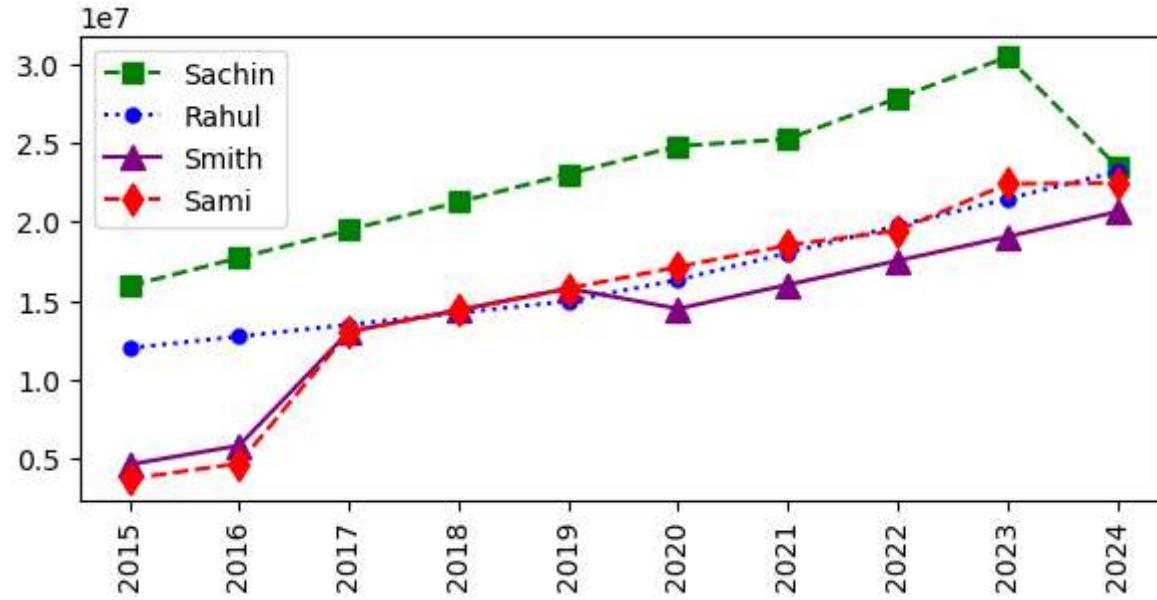


In [128]:

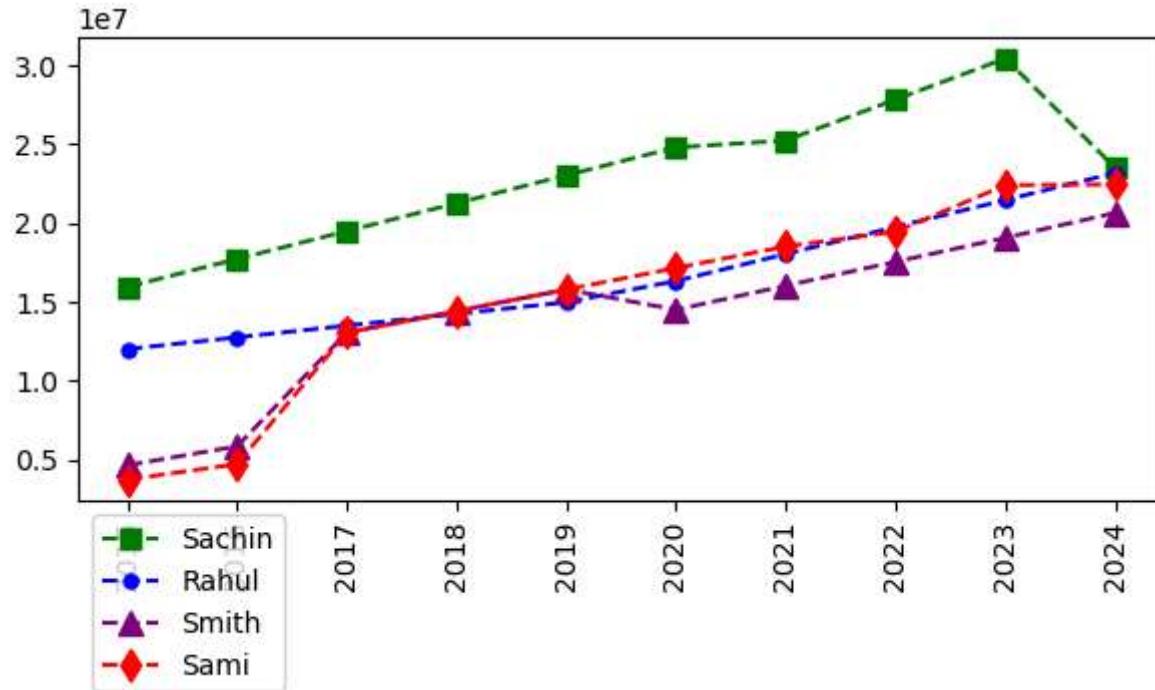
```
# how to add legend in visualisation

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')

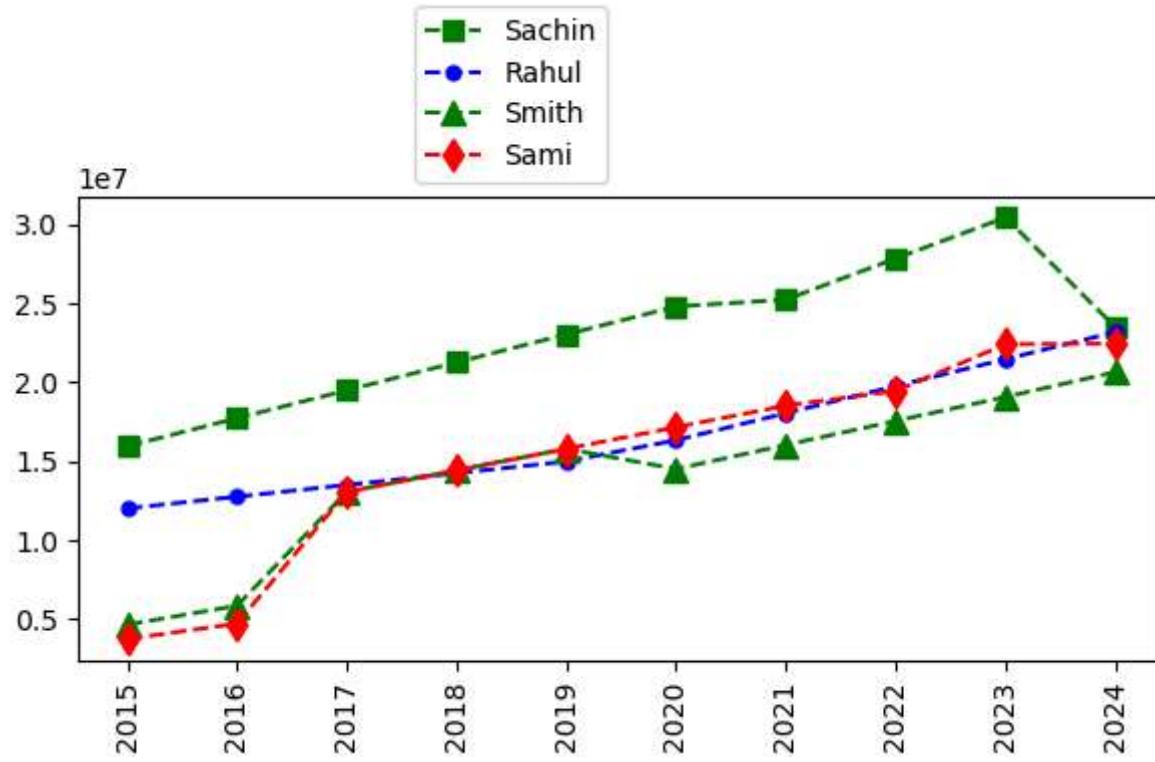
plt.show()
```



```
In [130]:  
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.show()
```



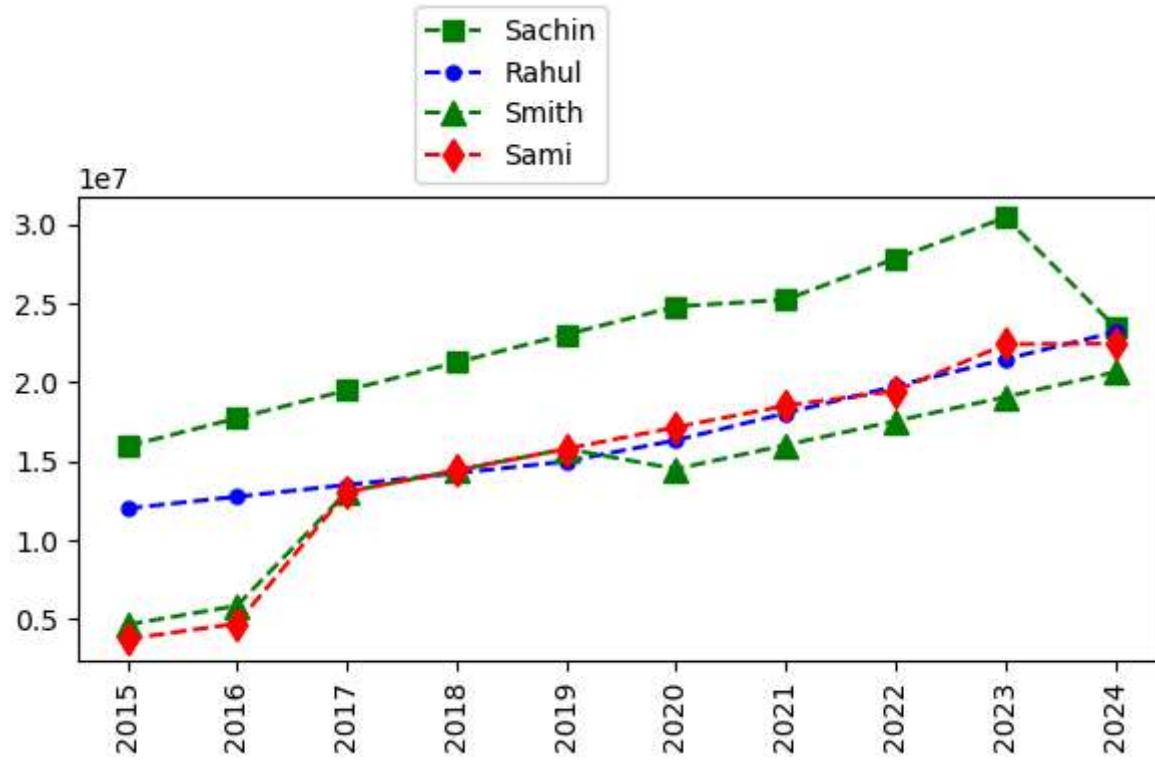
```
In [132...]:  
plt.plot(Salary[0], c='Green', ls = '--', marker = 's', ms = 7, label = Players[0])  
plt.plot(Salary[1], c='Blue', ls = '--', marker = 'o', ms = 5, label = Players[1])  
plt.plot(Salary[2], c='Green', ls = '--', marker = '^', ms = 8, label = Players[2])  
plt.plot(Salary[3], c='Red', 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 [136]:

```
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()
```



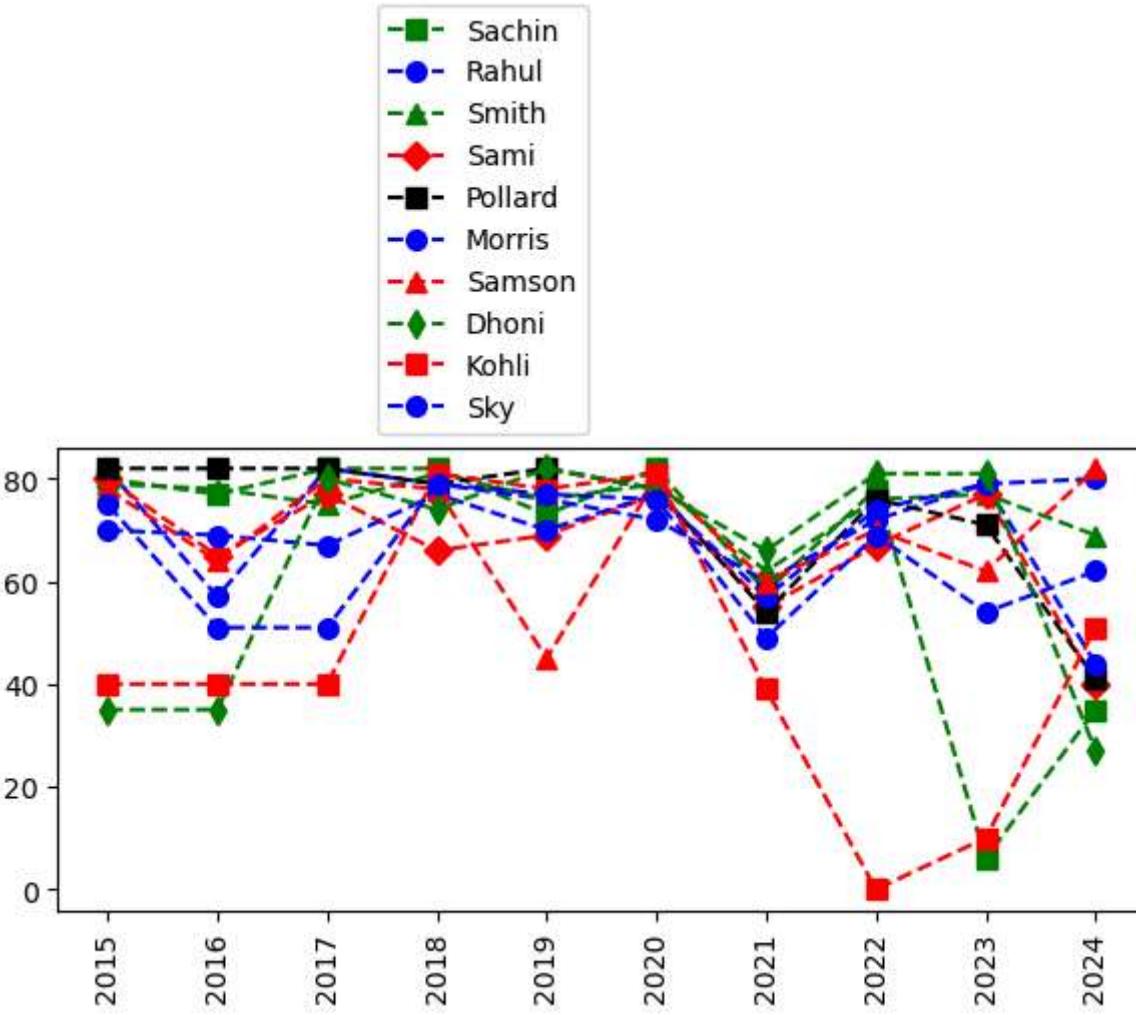
In [144]:

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

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

plt.legend(loc = 'lower right',bbox_to_anchor=(0.5,1) )
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')

plt.show()
```



```
In [97]: list(range(0,10))
```

```
Out[97]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

```
In [ ]:
```

```
In [ ]:
```

```
In [ ]:
```