

# cricket data project

March 18, 2025

```
[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 =_
↳[15946875,17718750,19490625,21262500,23034375,24806250,25244493,27849149,30453805,23500000]
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, 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])

```

[2]: Salary

```

[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]])
```

```
[3]: Games
```

```
[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]])
```

```
[4]: Points
```

```
[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]])
```

```
[5]: Games[0]
```

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

```
[6]: Games[1]
```

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

```
[7]: Games[0:4]
```

```
[7]: 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]])
```

```
[8]: Points[0:5]
```

```
[8]: 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]])
```

```
[9]: Games[0,5]
```

```
[9]: 82
```

```
[10]: Games[-3:-1]
```

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

```
[11]: Games[-3,-1]
```

```
[11]: 27
```

```
[12]: Salary
```

```
[12]: 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]])
```

```
[13]: Salary/Games
```

```
C:\Users\Dheeraj jais\AppData\Local\Temp\ipykernel_8052\3709746658.py:1:  
RuntimeWarning: divide by zero encountered in divide  
Salary/Games
```

```
[13]: 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]])
```

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

```
C:\Users\Dheeraj jais\AppData\Local\Temp\ipykernel_8052\3663165759.py:1:
RuntimeWarning: divide by zero encountered in floor_divide
np.round(Salary//Games)
```

```
[14]: 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]])
```

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

```
[16]: import matplotlib.pyplot as plt
```

```
[17]: Salary
```

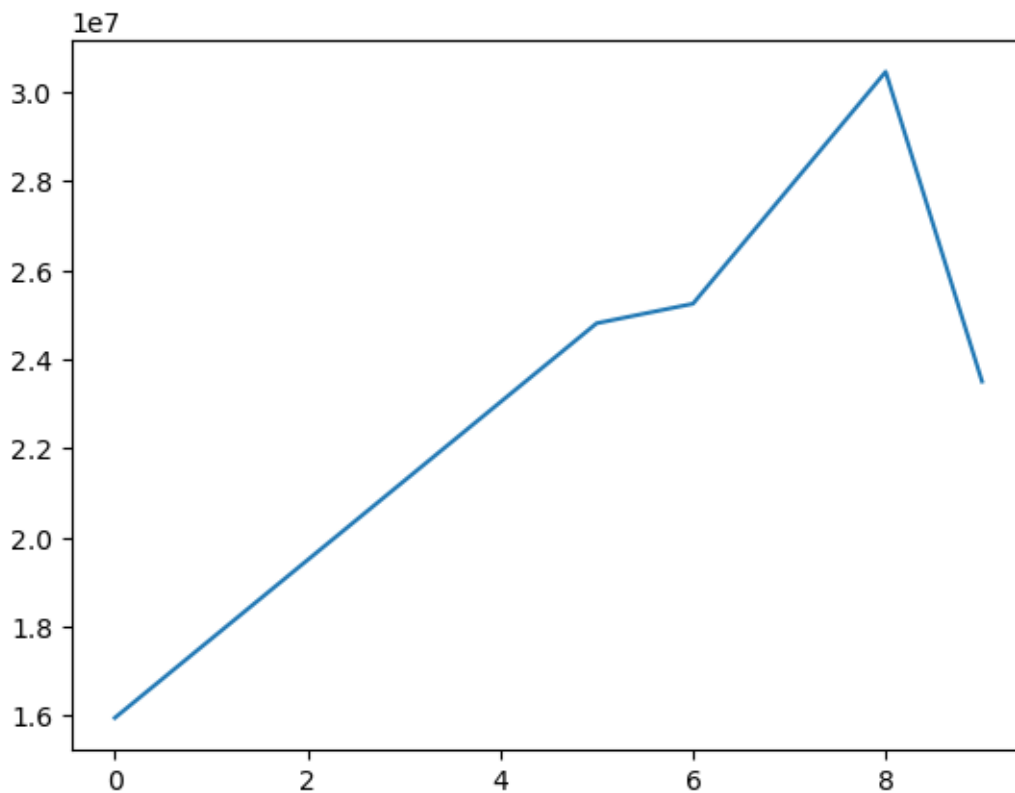
```
[17]: array([[15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
                25244493, 27849149, 30453805, 23500000],
              [12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
                18038573, 19752645, 21466718, 23180790],
              [ 4621800,   5828090, 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]])
```

```
[18]: Salary[0]
```

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

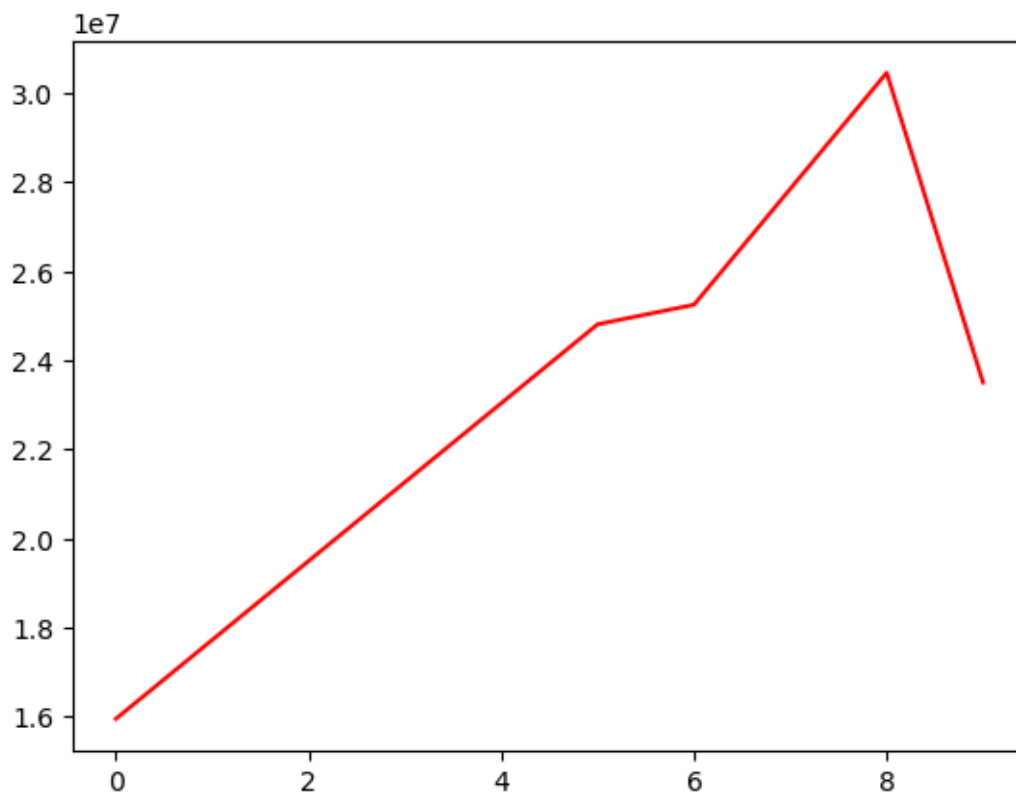
```
[19]: plt.plot(Salary[0])
      plt.show()
```



insight1: based on above graph sachin salary increase till 2023 & then it has decrease

```
[20]: plt.plot(Salary[0],c='r')
```

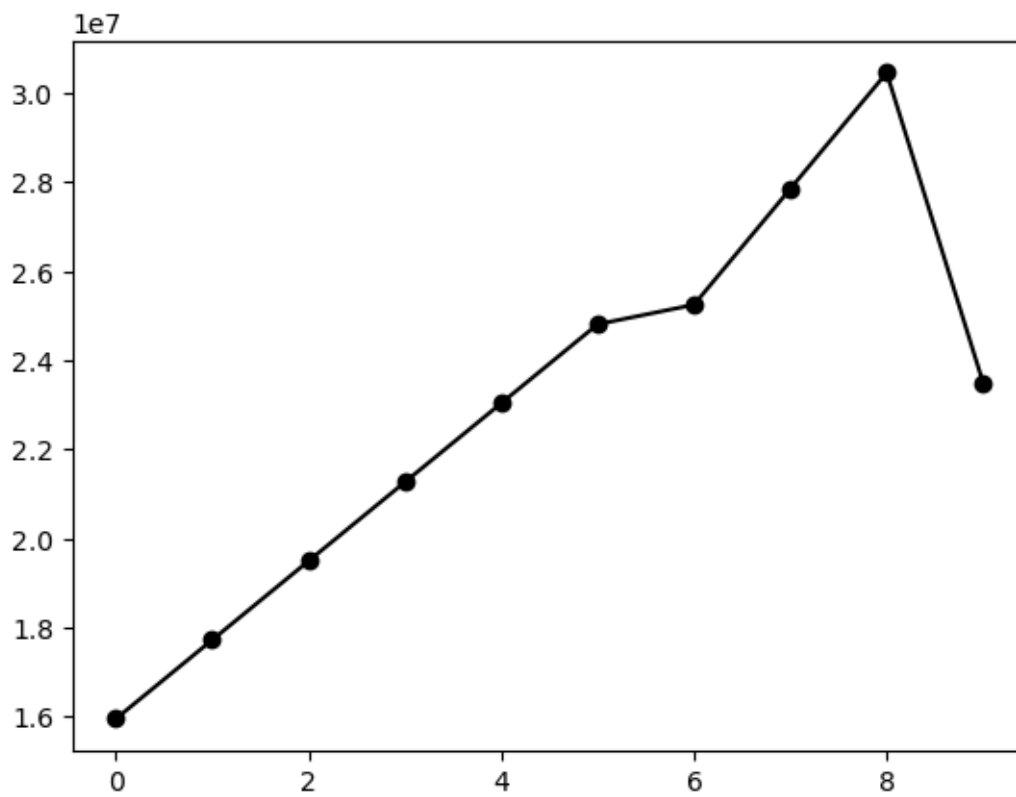
```
[20]: [<matplotlib.lines.Line2D at 0x2809f96e690>]
```



```
[21]: plt.plot(Salary[0],c='k',marker='o')
```

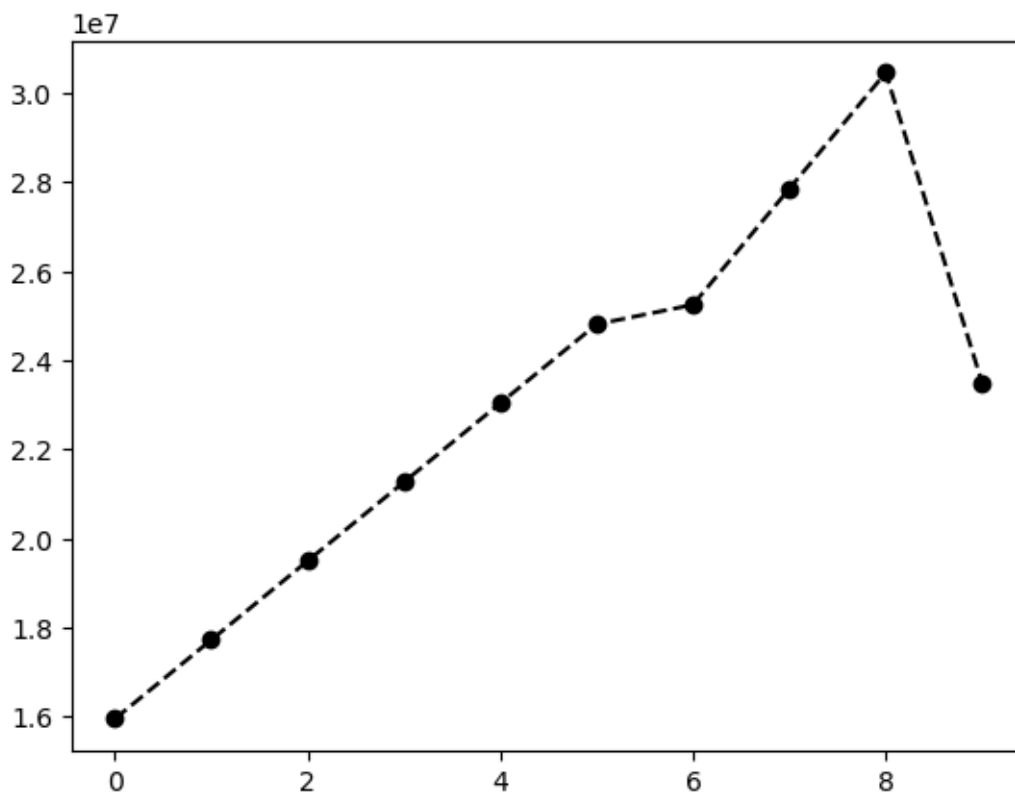
```
[21]: [<matplotlib.lines.Line2D at 0x280a123c320>]
```





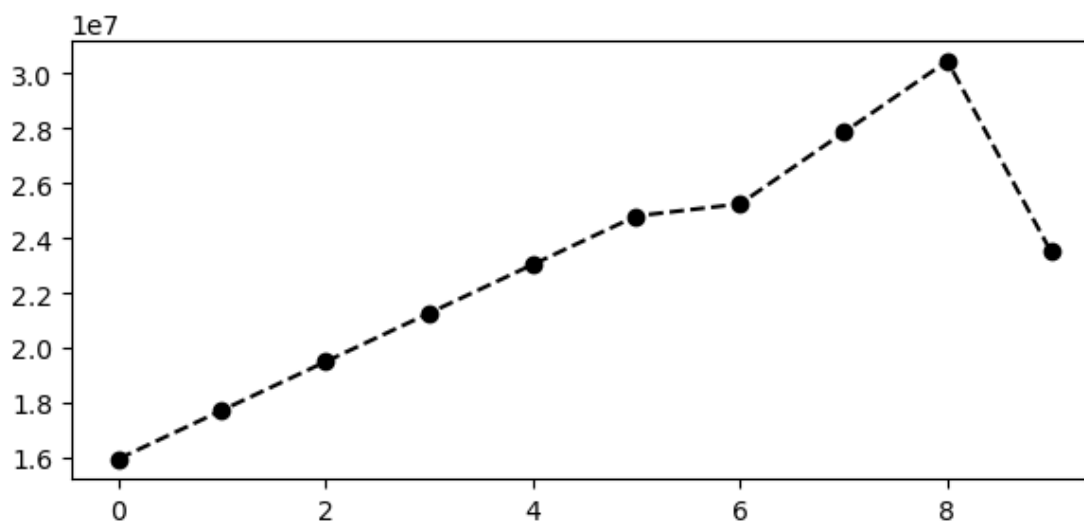
```
[22]: plt.plot(Salary[0], c='k', marker='o', ls='--')
```

```
[22]: [<matplotlib.lines.Line2D at 0x280a129dbe0>]
```

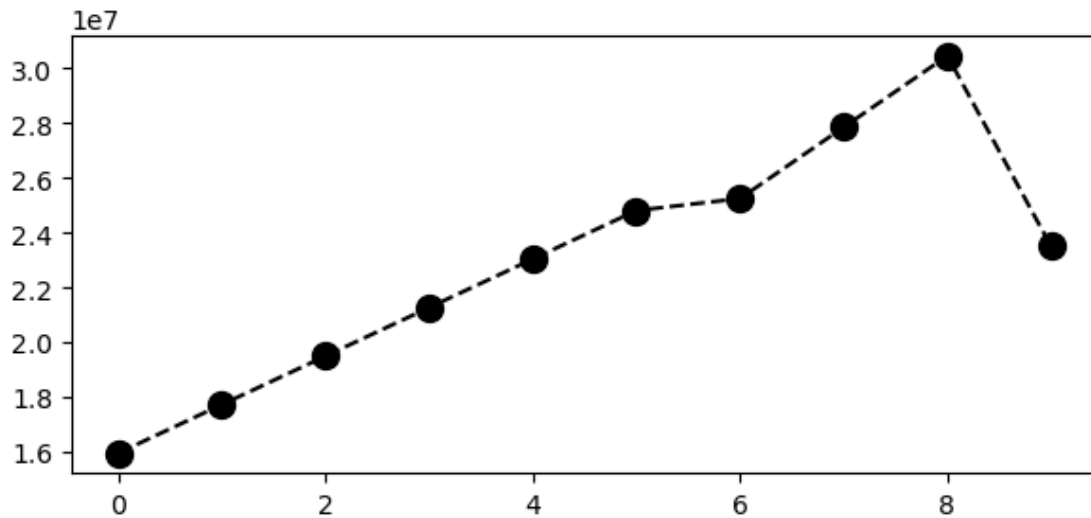


```
[23]: %matplotlib inline
plt.rcParams['figure.figsize']=7,3    #width\height
```

```
[24]: plt.plot(Salary[0],c='k',marker='o',ls='--')
plt.show()
```



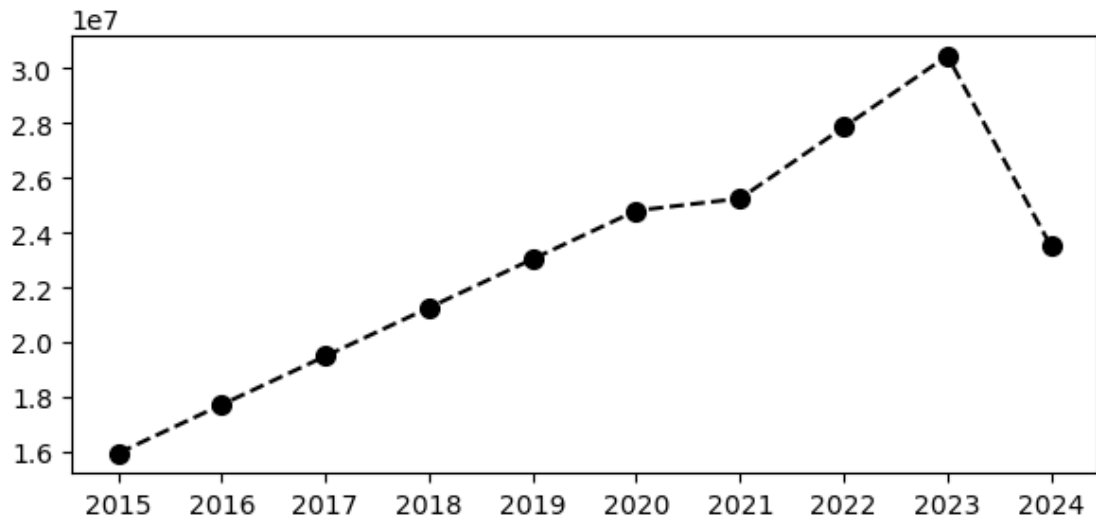
```
[25]: plt.plot(Salary[0],c='k',marker='o',ls='--',ms=10)
plt.show()
```



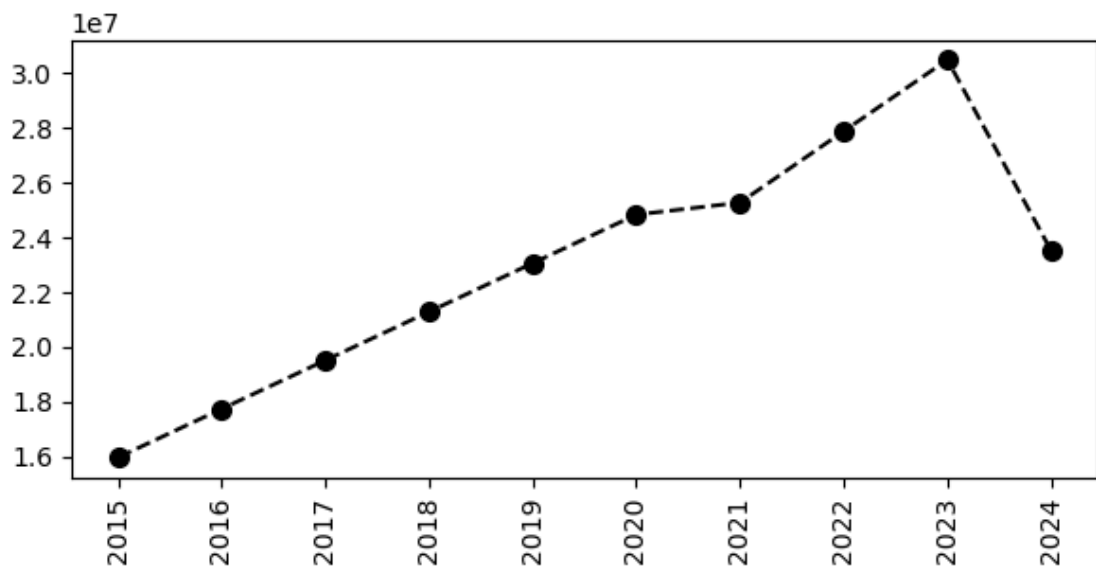
```
[26]: list(range(0,10))
```

```
[26]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

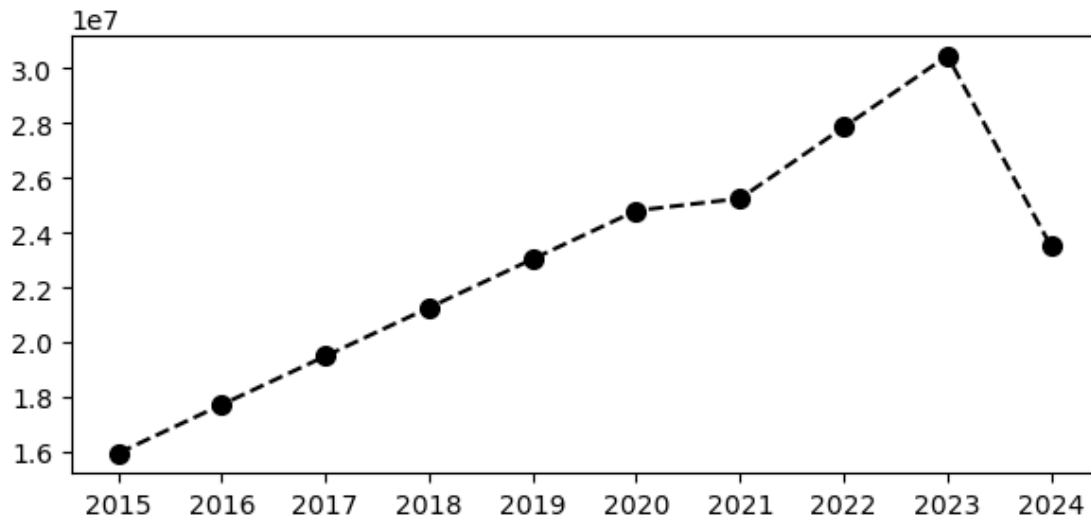
```
[27]: plt.plot(Salary[0],ls='--',c='k',marker='o',ms=7)
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



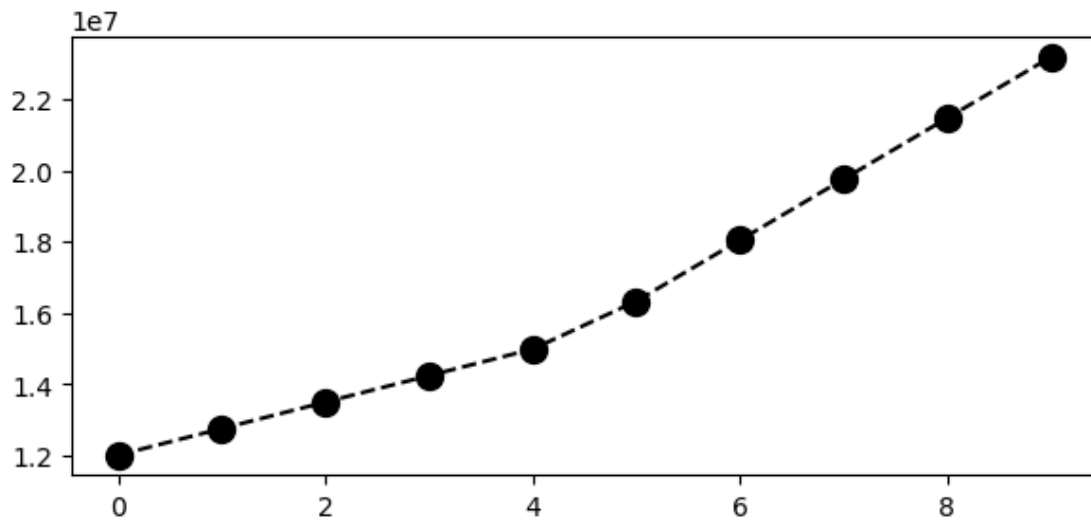
```
[28]: plt.plot(Salary[0],ls='--',c='k',marker='o',ms=7)
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



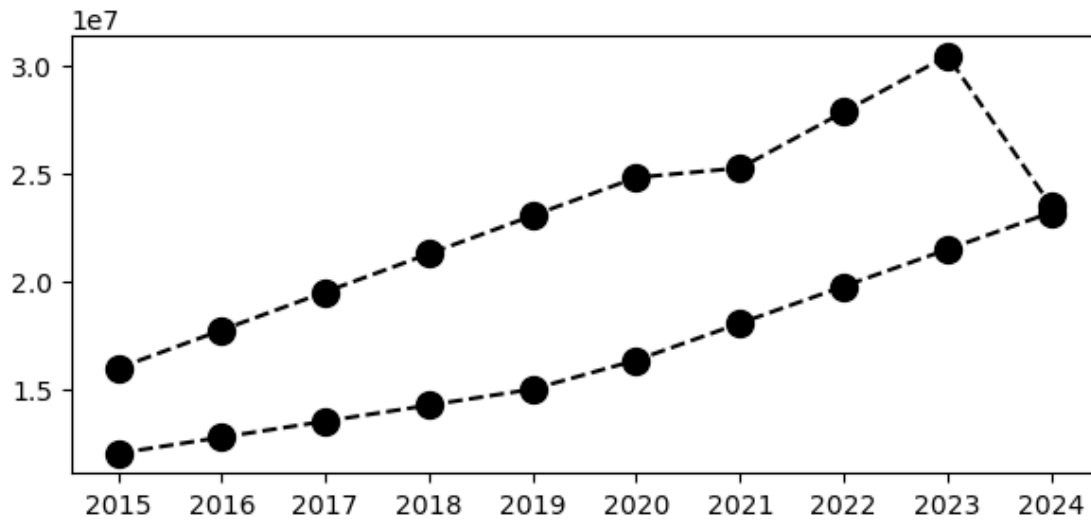
```
[29]: plt.plot(Salary[0],ls='--',c='k',marker='o',ms=7)
plt.xticks(list(range(0,10)),Seasons,rotation='horizontal')
plt.show()
```



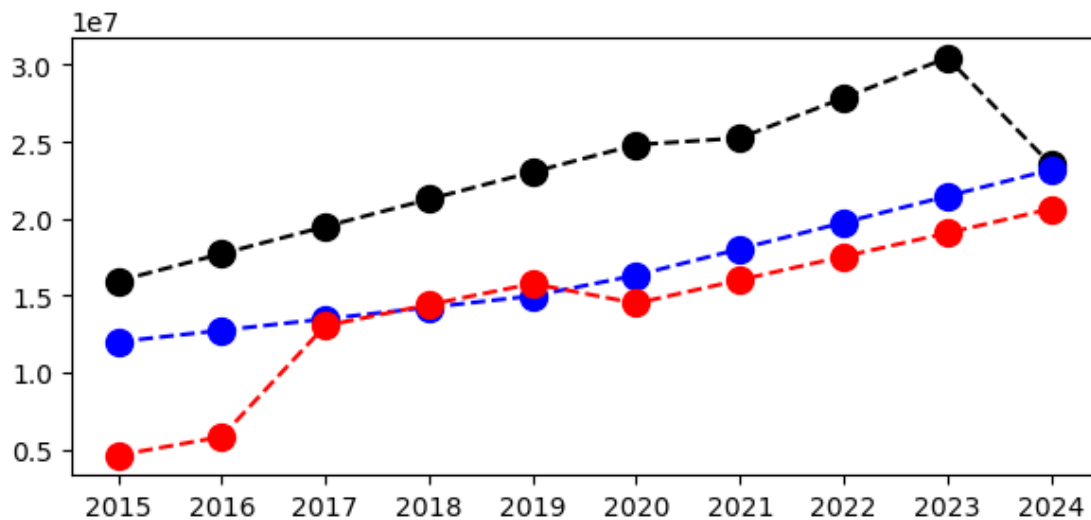
```
[30]: plt.plot(Salary[1],c='k',ls='--',marker='o',ms=10,label=Players[1])
plt.show()
```



```
[31]: plt.plot(Salary[0],c='k',ls='--',marker='o',ms=10,label=Players[0])
plt.plot(Salary[1],c='k',ls='--',marker='o',ms=10,label=Players[1])
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```

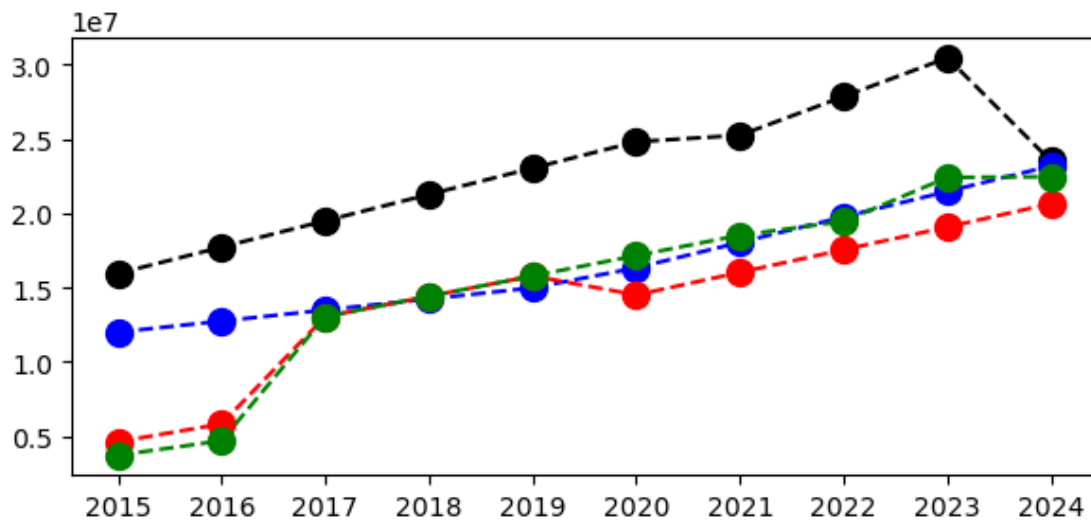


```
[32]: plt.plot(Salary[0],c='k',ls='--',marker='o',ms=10,label=Players[0])
plt.plot(Salary[1],c='b',ls='--',marker='o',ms=10,label=Players[1])
plt.plot(Salary[2],c='r',ls='--',marker='o',ms=10,label=Players[2])
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```

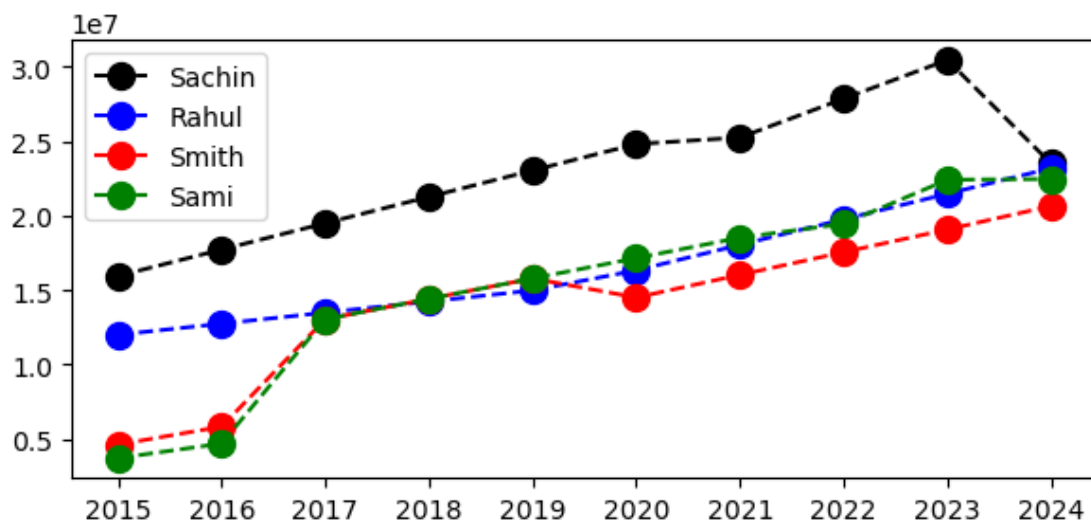


```
[33]: plt.plot(Salary[0],c='k',ls='--',marker='o',ms=10,label=Players[0])
plt.plot(Salary[1],c='b',ls='--',marker='o',ms=10,label=Players[1])
plt.plot(Salary[2],c='r',ls='--',marker='o',ms=10,label=Players[2])
plt.plot(Salary[3],c='g',ls='--',marker='o',ms=10,label=Players[3])
```

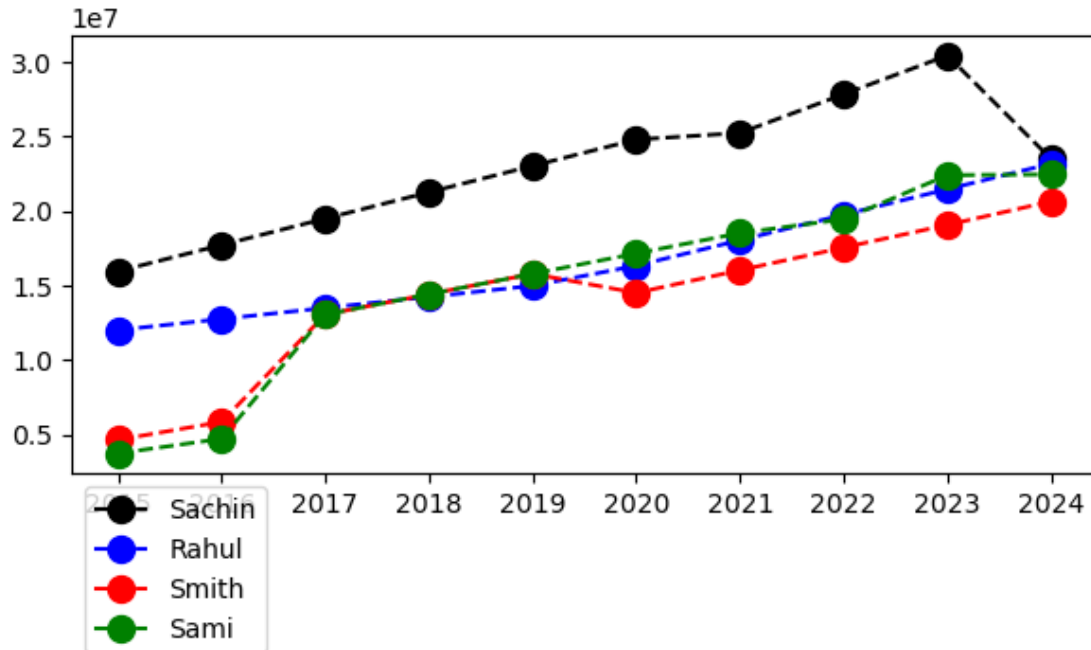
```
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```



```
[34]: plt.plot(Salary[0],c='k',ls='--',marker='o',ms=10,label=Players[0])
plt.plot(Salary[1],c='b',ls='--',marker='o',ms=10,label=Players[1])
plt.plot(Salary[2],c='r',ls='--',marker='o',ms=10,label=Players[2])
plt.plot(Salary[3],c='g',ls='--',marker='o',ms=10,label=Players[3])
plt.legend()
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```

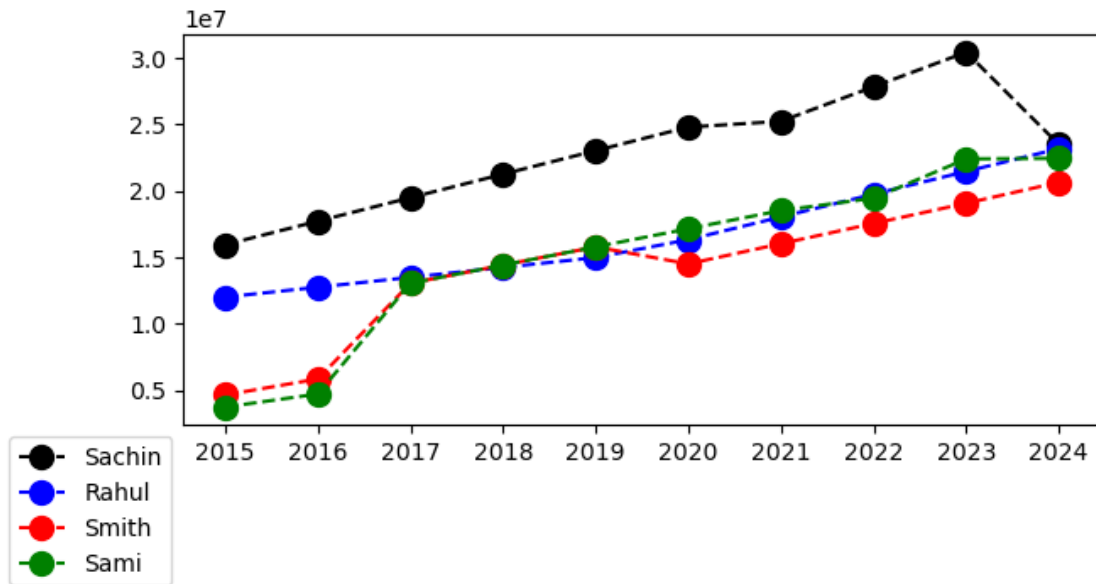


```
[35]: plt.plot(Salary[0],c='k',ls='--',marker='o',ms=10,label=Players[0])
plt.plot(Salary[1],c='b',ls='--',marker='o',ms=10,label=Players[1])
plt.plot(Salary[2],c='r',ls='--',marker='o',ms=10,label=Players[2])
plt.plot(Salary[3],c='g',ls='--',marker='o',ms=10,label=Players[3])
plt.legend(loc = 'upper left',bbox_to_anchor=(0,0) )
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```



```
[36]: plt.plot(Salary[0],c='k',ls='--',marker='o',ms=10,label=Players[0])
plt.plot(Salary[1],c='b',ls='--',marker='o',ms=10,label=Players[1])
plt.plot(Salary[2],c='r',ls='--',marker='o',ms=10,label=Players[2])
plt.plot(Salary[3],c='g',ls='--',marker='o',ms=10,label=Players[3])
plt.legend(loc = 'upper right',bbox_to_anchor=(0,0) )
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```



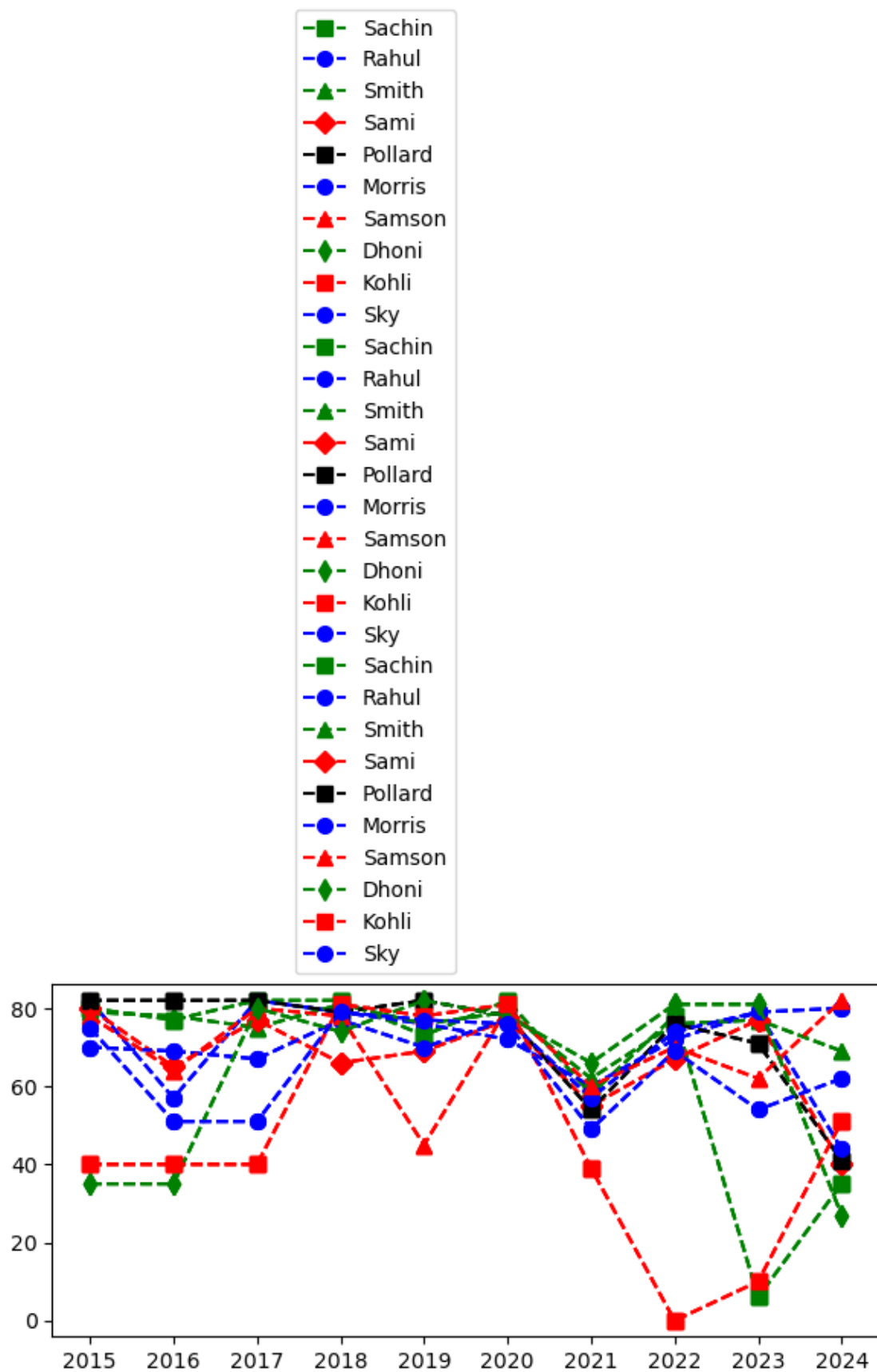


```
[40]: # we can visualize the how many games played by a player

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)

plt.show()
```



[ ]: