```
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 = [15946875,17718750,19490625,21262500,23034375,24806250,25244493,27849149,30453805,23500000]
        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
        #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
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, 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 [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[5]
Out[6]: array([70, 69, 67, 77, 70, 77, 57, 74, 79, 44])
```

```
In [7]: Games[0:5]
Out[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],
                [82, 82, 82, 79, 82, 78, 54, 76, 71, 41]])
In [8]: Salary
Out[8]: 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, 4171200, 4484040, 4796880, 6053663,
                15506632, 16669630, 17832627, 18995624],
                                  0,
                                           0, 4822800, 5184480, 5546160,
                        0,
                  6993708, 16402500, 17632688, 18862875],
                [ 3031920, 3841443, 13041250, 14410581, 15779912, 14200000,
                15691000, 17182000, 18673000, 15000000]])
In [9]: Games
```

```
Out[9]: 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, 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, 51, 79, 77, 76, 49, 69, 54, 62]])
```

In [10]: Salary/Games

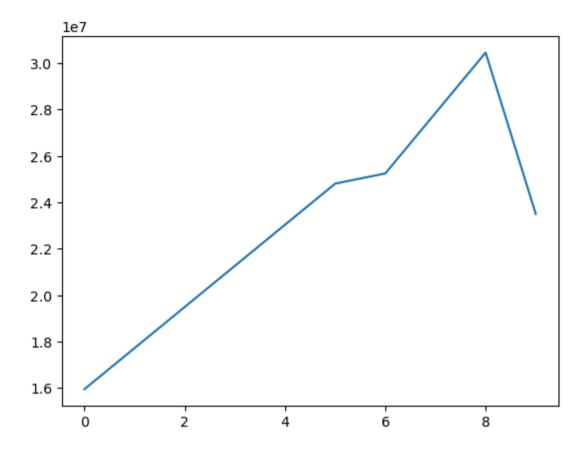
C:\Users\rahee\AppData\Local\Temp\ipykernel_15936\3709746658.py:1: RuntimeWarning: divide by zero encountered in divide Salary/Games

```
Out[10]: 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,
                                    207630.42105263, 183544.30379747,
                  177908.40740741,
                  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, 300455.5555556, 186751.9125
                  272663.41666667, 253992.25714286, 301103.72580645,
                  244738.57317073],
                       0.
                                                       52140.
                                     58498.53658537,
                   60595.13513514,
                                                       77611.06410256,
                  234948.96969697, 205797.90123457, 220155.88888889,
                  703541.62962963],
                       0.
                                                           0.
                   59540.74074074,
                                     66467.69230769,
                                                       68471.11111111,
                  179325.84615385,
                                                inf, 1763268.8
                  369860.29411765],
                                     75322.41176471, 255710.78431373,
                 [ 40425.6
                  182412.41772152,
                                    204933.92207792, 186842.10526316,
                  320224.48979592, 249014.49275362, 345796.2962963,
                  241935.48387097]])
```

```
In [11]: np.round(Salary//Games)
       C:\Users\rahee\AppData\Local\Temp\ipykernel 15936\3663165759.py:1: RuntimeWarning: divide by zero encountered in floor divide
         np.round(Salary//Games)
Out[11]: 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],
                         72216, 169366, 218342, 228694, 222717, 336701,
                [ 46420,
                 290298, 291006, 561450],
                [ 54794,
                          58618, 73917, 174151, 185397, 213425, 335032,
                 257057, 288918, 522835],
                         61380, 185895, 187150, 225427, 188311, 281096,
                [ 47828,
                 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 [12]: import warnings
        warnings.filterwarnings('ignore')
In [13]: import matplotlib.pyplot as plt
In [14]: Salary
```

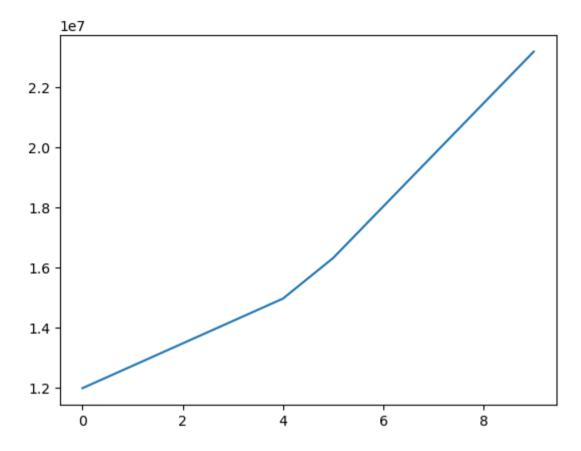
```
Out[14]: array([[15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
                 25244493, 27849149, 30453805, 23500000],
                 [12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
                 18038573, 19752645, 21466718, 23180790],
                 [ 4621800, 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, 4171200, 4484040, 4796880, 6053663,
                         0,
                 15506632, 16669630, 17832627, 18995624],
                                   0,
                                            0, 4822800, 5184480, 5546160,
                  6993708, 16402500, 17632688, 18862875],
                 [ 3031920, 3841443, 13041250, 14410581, 15779912, 14200000,
                 15691000, 17182000, 18673000, 15000000]])
In [15]: | Salary[0]
Out[15]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
                 25244493, 27849149, 30453805, 23500000])
In [16]: plt.plot(Salary[0])
         plt.show
```

Out[16]: <function matplotlib.pyplot.show(close=None, block=None)>



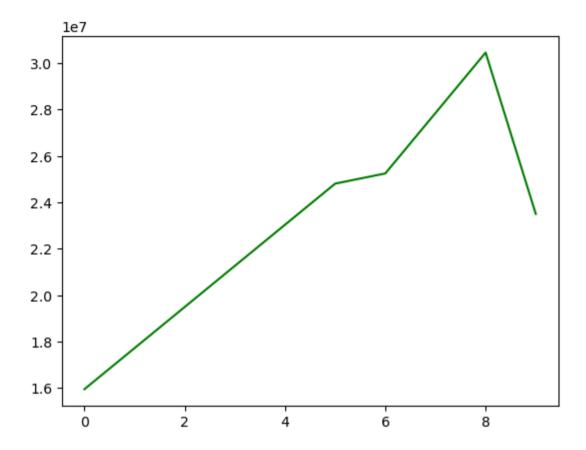
```
In [17]: plt.plot(Salary[1])
    plt.show
```

Out[17]: <function matplotlib.pyplot.show(close=None, block=None)>



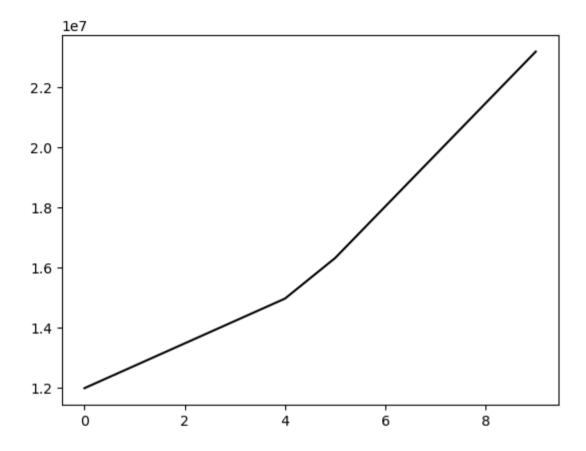
```
In [18]: plt.plot(Salary[0], color='g')
   plt.show
```

Out[18]: <function matplotlib.pyplot.show(close=None, block=None)>



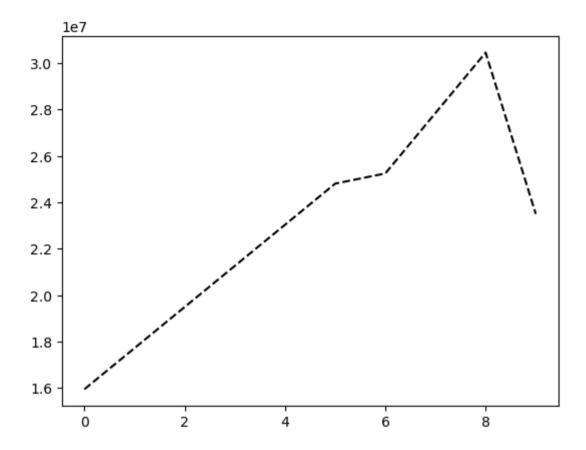
```
In [19]: plt.plot(Salary[1],color='k')
   plt.show
```

Out[19]: <function matplotlib.pyplot.show(close=None, block=None)>



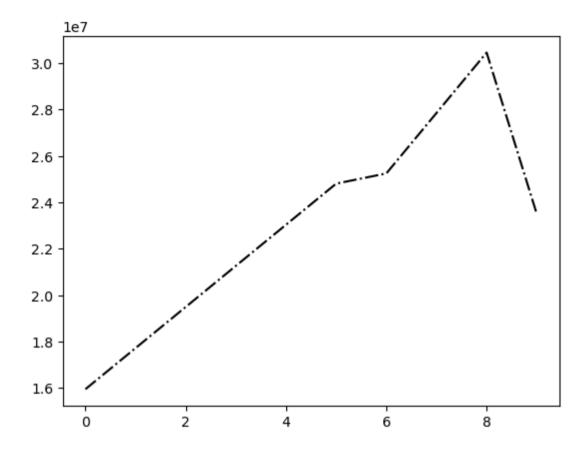
In [20]: plt.plot(Salary[0],color='k',ls='--')

Out[20]: [<matplotlib.lines.Line2D at 0x11e10dd5340>]



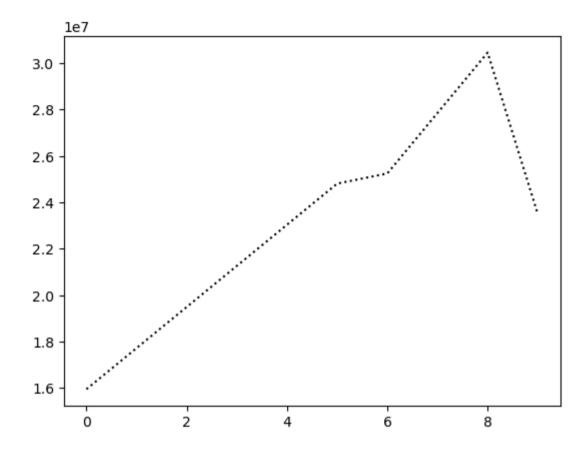
In [21]: plt.plot(Salary[0],color='k',ls='-.')

Out[21]: [<matplotlib.lines.Line2D at 0x11e10e74320>]



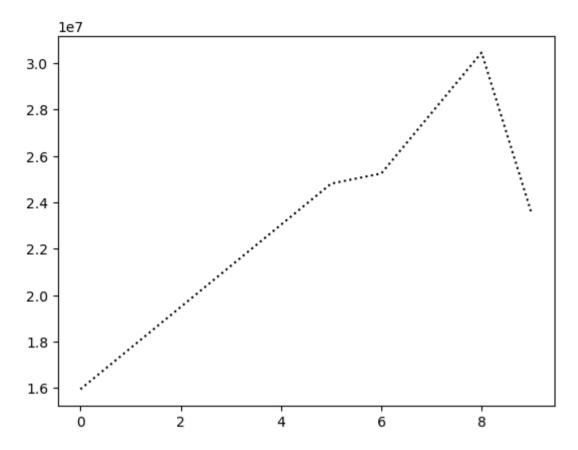
In [22]: plt.plot(Salary[0],color='k',ls=':')

Out[22]: [<matplotlib.lines.Line2D at 0x11e12800590>]



In [23]: plt.plot(Salary[0],color='k',ls=':')

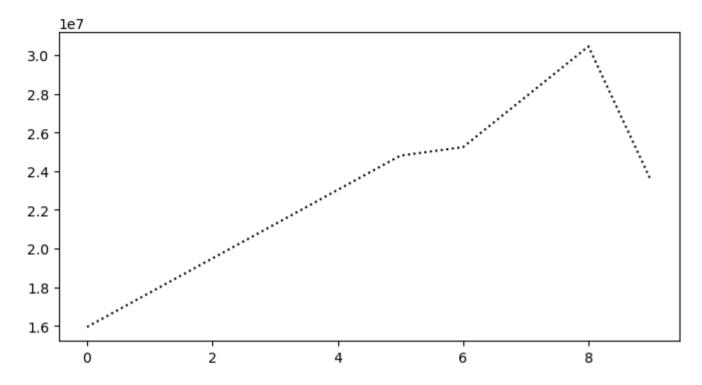
Out[23]: [<matplotlib.lines.Line2D at 0x11e1285d010>]



```
In [24]: %matplotlib inline
   plt.rcParams["figure.figsize"]=8,4 # used to change the dimensions of the graph output

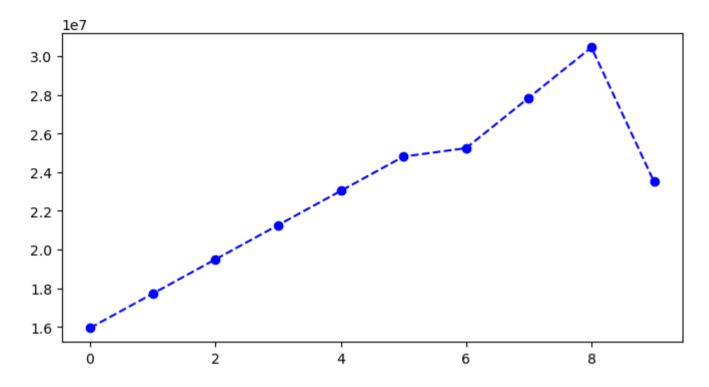
In [25]: plt.plot(Salary[0],color='k',ls=':')
```

Out[25]: [<matplotlib.lines.Line2D at 0x11e10f09a30>]



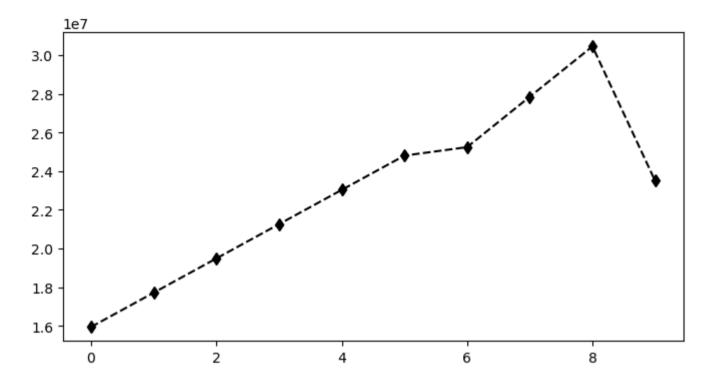
In [26]: plt.plot(Salary[0],color='b',ls='--',marker='o')

Out[26]: [<matplotlib.lines.Line2D at 0x11e10f6e540>]



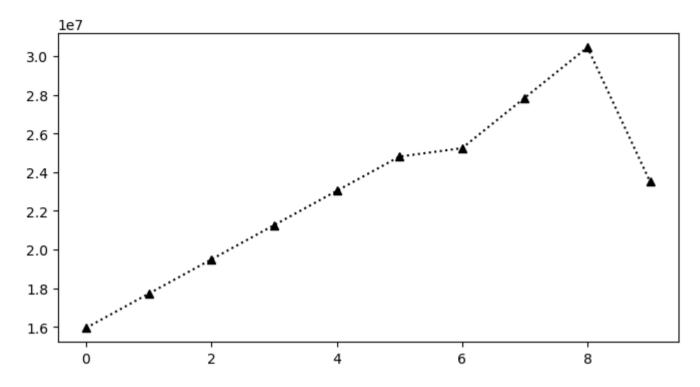
In [27]: plt.plot(Salary[0],color='k',ls='--',marker='d')

Out[27]: [<matplotlib.lines.Line2D at 0x11e129d7320>]



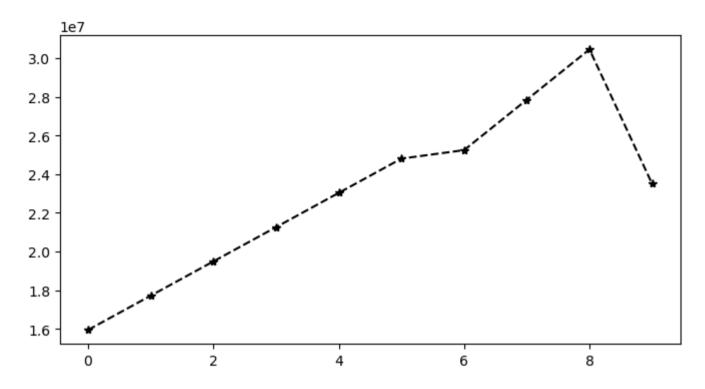
In [28]: plt.plot(Salary[0],color='k',ls=':',marker='^')

Out[28]: [<matplotlib.lines.Line2D at 0x11e12a3f620>]

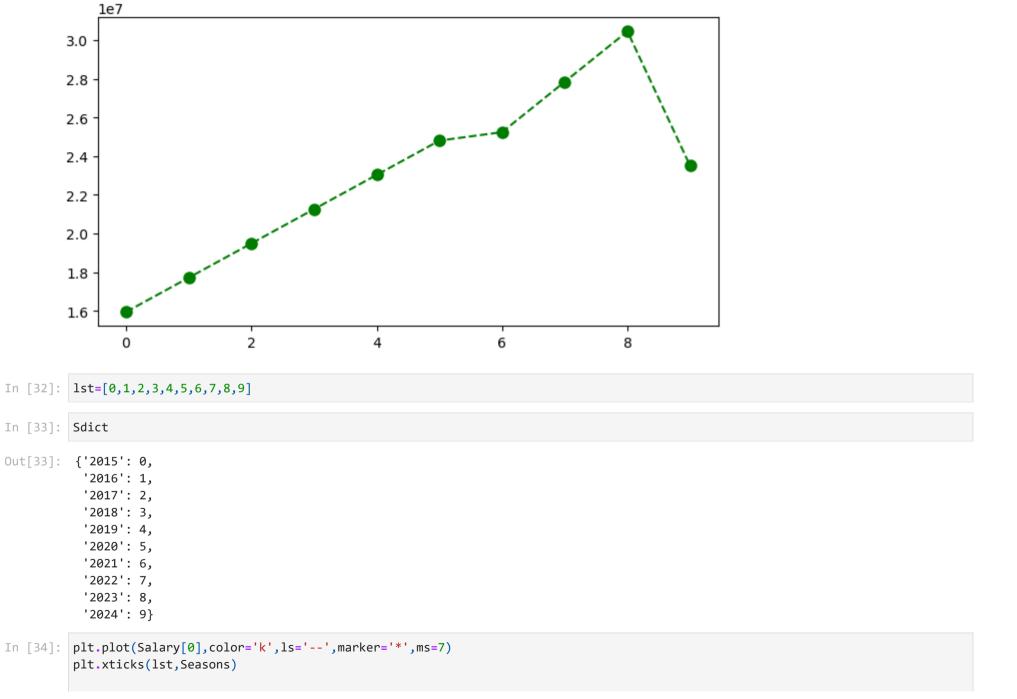


In [29]: plt.plot(Salary[0],color='k',ls='--',marker='*')

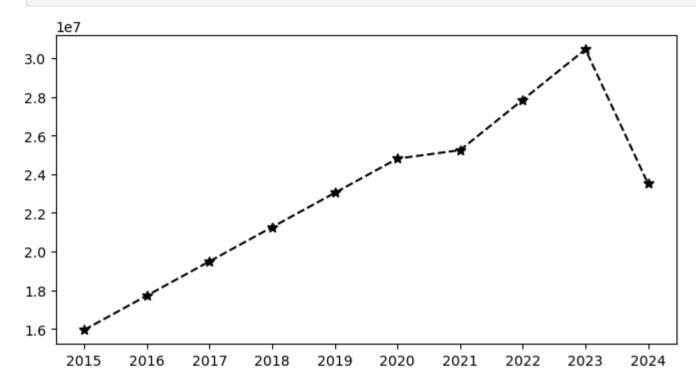
Out[29]: [<matplotlib.lines.Line2D at 0x11e12adc440>]



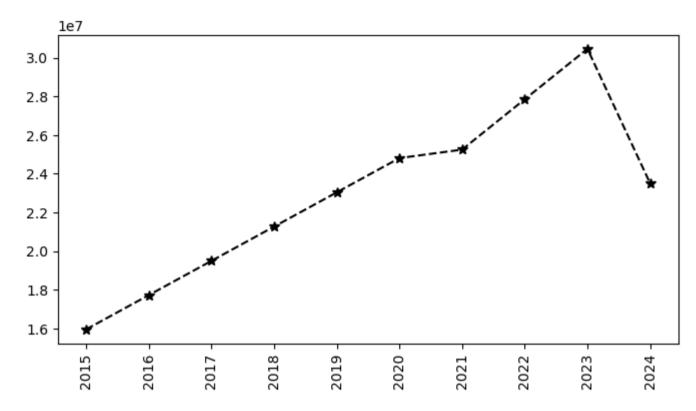
Out[31]: [<matplotlib.lines.Line2D at 0x11e12b44980>]



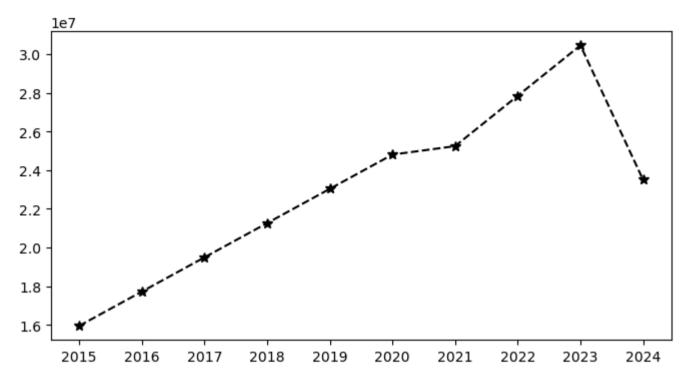
```
plt.show()
```

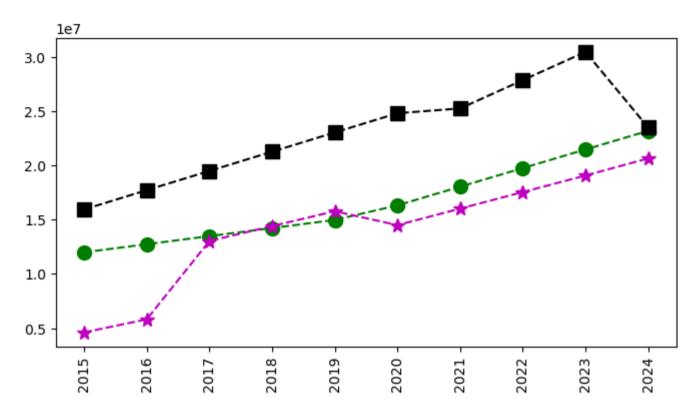


```
In [35]: plt.plot(Salary[0],color='k',ls='--',marker='*',ms=7)
    plt.xticks(lst,Seasons,rotation='vertical')
    plt.show()
```

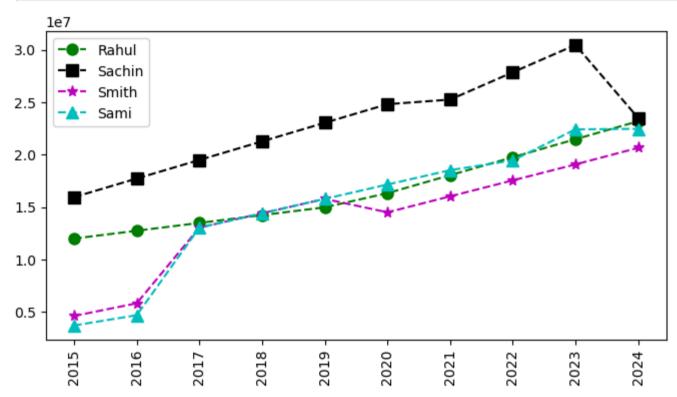


```
In [36]: plt.plot(Salary[0],color='k',ls='--',marker='*',ms=7)
    plt.xticks(lst,Seasons,rotation='horizontal')
    plt.show()
```





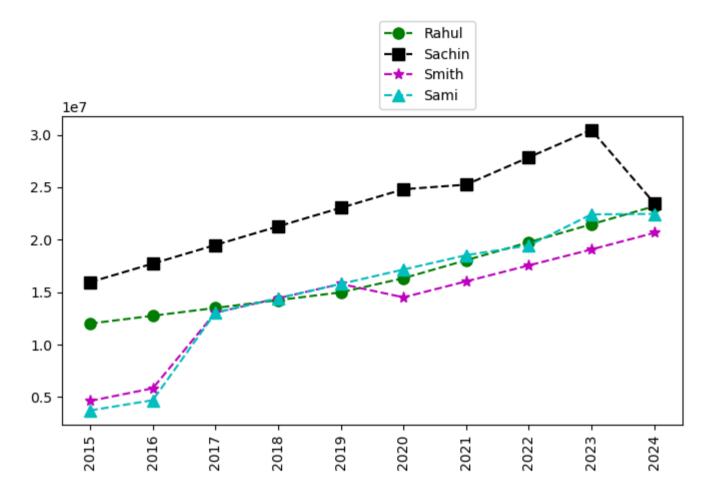
```
plt.legend()
plt.xticks(lst,Seasons,rotation='vertical')
plt.show()
```



```
In [41]: plt.plot(Salary[1],color='g',ls='--',marker='o',ms=8,label=Players[1])
    plt.plot(Salary[0],color='k',ls='--',marker='s',ms=8,label=Players[0])
    plt.plot(Salary[2],color='m',ls='--',marker='*',ms=8,label=Players[2])
    plt.plot(Salary[3],color='c',ls='--',marker='^',ms=8,label=Players[3])

plt.legend(loc="best",bbox_to_anchor=(0.5,1))

plt.xticks(lst,Seasons,rotation='vertical')
    plt.show()
```



#we can visualise all players at once but the graph plotted wouldnt fetch any useful insights
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 = 'D', 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[6])
plt.plot(Games[6], c='red', ls = '--', marker = 'a'', 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()
                                   -II- Sachin
                                       - Rahul

    Smith

                                         Sami

    Pollard

    Morris

                                        Samson
                                       - Dhoni
                                         Kohli
                                         Sky
60 -
40
20 -
 0 -
                                    2018
                                                       2020
                                                                           2022
                                                                                    2023
                                                                                              2024
                                                                 2021
```

In []: