```
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])
```

```
In [2]: Out[2]:
In [3]:
#Points
Sachin PTS = [2832,2430,2323,2201,1970,2078,1616,2133,83,782]
Out[3]:
```

```
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
Salary
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]])
```

Rahul PTS = [1653,1426,1779,1688,1619,1312,1129,1170,1245,1154]

Games

```
[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,
In [4]: Out[4]:
                                        51],
                                        [75, 51, 51, 79, 77, 76, 49, 69, 54,
                                        62]])
                                        Points
                                        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,
In [5]: Out[5]:
                                        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,
In [6]: Out[6]:
                                        1082, 1463, 1028, 1331]])
array([[80, 77, 82, 82, 73, 82, 58, 78, Games
6, 35],
[82, 57, 82, 79, 76, 72, 60, 72, 79,
                                        array([[80, 77, 82, 82, 73, 82, 58, 78,
                                        6, 35],
[79, 78, 75, 81, 76, 79, 62, 76, 77,
                                        [82, 57, 82, 79, 76, 72, 60, 72, 79,
69],
                                        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],
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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]])
Games[5]
array([70, 69, 67, 77, 70, 77, 57, 74, In [9]:
79, 44])
                                        Games[0:5]
In [7]: 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,
In [8]: Out[8]:
                                        69],
                                        [80, 65, 77, 66, 69, 77, 55, 67, 77,
                                        40],
                                        [82, 82, 82, 79, 82, 78, 54, 76, 71,
                                        41]])
                                        Salary
                                        array([[15946875, 17718750, 19490625,
                                        21262500, 23034375, 24806250,
                                        25244493, 27849149, 30453805,
                                        23500000],
                                         [12000000, 12744189, 13488377,
```

```
14232567, 14976754, 16324500,
                                         16022500, 17545000, 19067500,
18038573, 19752645, 21466718,
                                         206444001,
23180790],
                                         [ 3144240, 3380160, 3615960, 4574189,
 [ 4621800, 5828090, 13041250,
                                         13520500, 14940153, 16359805,
14410581, 15779912, 14500000,
                                         17779458, 18668431, 20068563],
16022500, 17545000, 19067500,
                                         [ 0, 0, 4171200, 4484040, 4796880,
20644400],
                                         6053663, 15506632, 16669630, 17832627,
 [ 3713640, 4694041, 13041250,
                                         18995624],
14410581, 15779912, 17149243,
                                         [ 0, 0, 0, 4822800, 5184480, 5546160,
18518574, 19450000, 22407474,
                                         6993708, 16402500, 17632688, 18862875],
224580001,
                                         [ 3031920, 3841443, 13041250,
 [ 4493160, 4806720, 6061274, 13758000, 14410581, 15779912, 14200000,
15202590, 16647180, 18091770,
                                         15691000, 17182000, 18673000,
19536360, 20513178, 21436271],
                                         15000000]])
 [ 3348000, 4235220, 12455000,
14410581, 15779912, 14500000,
                                         Games
Out[9]: In [10]:
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                              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,
array([[80, 77, 82, 82, 73,
                              69, 54, 62]])
82, 58, 78, 6, 35], [82, 57,
82, 79, 76, 72, 60, 72, 79, Salary/Games
80], [79, 78, 75, 81, 76,
        C:\Users\rahee\AppData\Local\Temp\ipykernel 15936\3709746658.py:1: RuntimeWarning: divide by zero encountered in divide
        Salary/Games
Out[10]:
                                    671428.57142857],
array([[ 199335.9375 ,
                                     [ 146341.46341463,
230113.63636364, 237690.54878049,
                                    223582.26315789, 164492.40243902,
259298.7804878 , 315539.38356164,
                                    180159.07594937, 197062.55263158,
302515.24390244, 435249.87931034,
                                    226729.16666667, 300642.88333333,
357040.37179487, 5075634.16666667,
                                    274342.29166667, 271730.60759494,
```

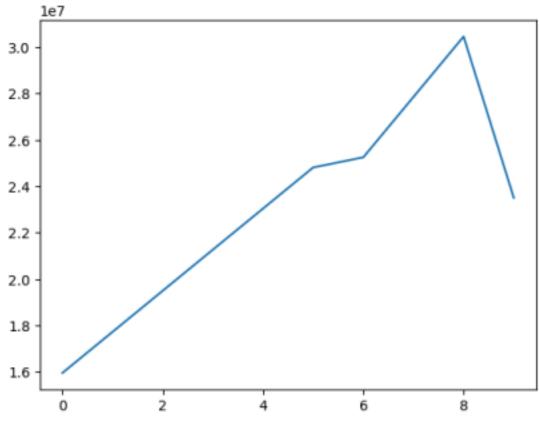
```
289759.875 ],
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258427.41935484, 230855.26315789,
                                   244738.57317073],
247629.87012987, 299194.20289855], [ 0. , 0. , 52140. ,
                                   60595.13513514, 58498.53658537,
[ 46420.5 , 72216.01538462,
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                                   205797.90123457, 220155.88888889,
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                                   703541.62962963],
291006.15584416, 561450. ],
                                    [ 0. , 0. , 0. , 59540.74074074,
[ 54794.63414634, 58618.53658537,
                                   66467.69230769, 68471.11111111,
73917.97560976, 174151.89873418,
                                   179325.84615385, inf, 1763268.8,
185397.43902439, 213425.38461538,
                                   369860.29411765],
335032.77777778, 257057.36842105,
                                    [ 40425.6 , 75322.41176471,
288918., 522835.87804878],
                                   255710.78431373, 182412.41772152,
[ 47828.57142857, 61380. ,
                                   204933.92207792, 186842.10526316,
185895.52238806, 187150.4025974,
                                   320224.48979592, 249014.49275362,
225427.31428571, 188311.68831169,
                                   345796.2962963,
281096.49122807, 237094.59459459,
                                   241935.48387097]])
241360.75949367, 469190.90909091],
In [11]:
                /Games)
np.round(Salary/
```

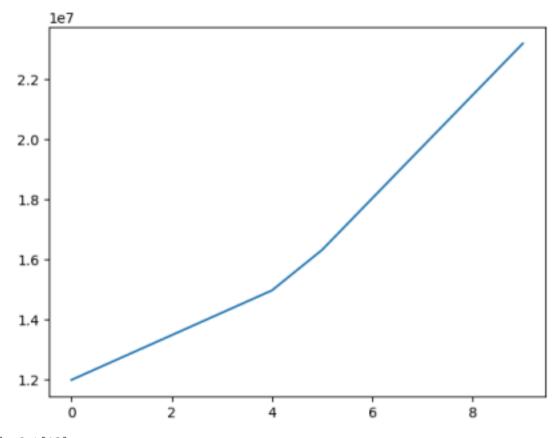
C:\Users\rahee\AppData\Local\Temp\ipykernel_15936\3663165759.py:1: RuntimeWarning: divide by zero encountered in floor_divide np.round(Salary//Games)

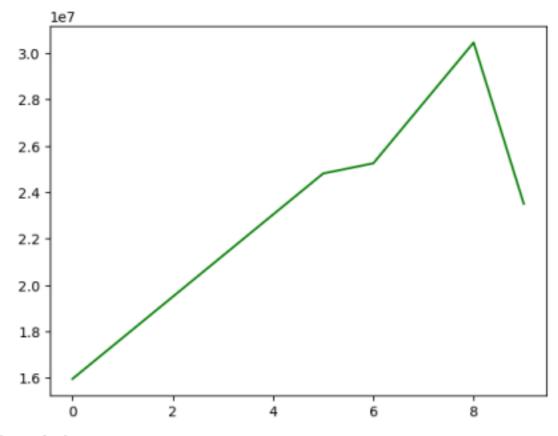
Out[11]:

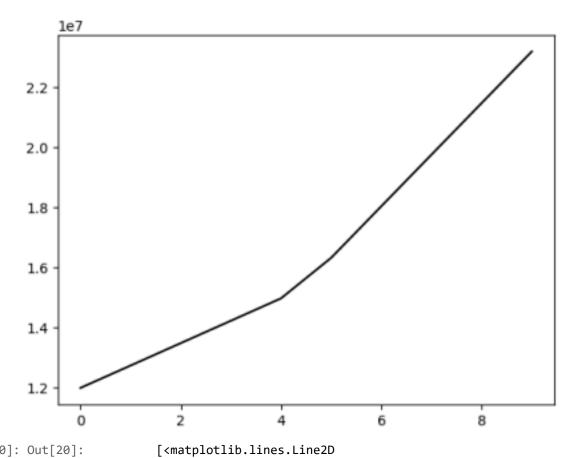
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                                         188311, 281096, 237094, 241360,
                                         469190],
                                         [ 40310, 52815, 45199, 58643, 300455,
                                         186751, 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]])
                                         import warnings
                                        warnings.filterwarnings('ignore')
                                         import matplotlib.pyplot as plt
In [12]:
                                         Salary
                                         Out[14]:
In [13]: In [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,
```

```
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,
In [15]: Out[15]:
                                        18673000, 15000000]])
                                        Salary[0]
In [16]: Out[16]:
                                        array([15946875, 17718750, 19490625,
                                        21262500, 23034375, 24806250, 25244493,
array([[15946875, 17718750, 19490625,
                                        27849149, 30453805, 23500000])
21262500, 23034375, 24806250, 25244493,
27849149, 30453805, 23500000],
                                        plt.plot(Salary[0])
[12000000, 12744189, 13488377,
                                        plt.show
14232567, 14976754, 16324500, 18038573,
19752645, 21466718, 23180790],
                                        <function
[ 4621800, 5828090, 13041250, 14410581, matplotlib.pyplot.show(close=None,
15779912, 14500000, 16022500, 17545000, block=None)>
```

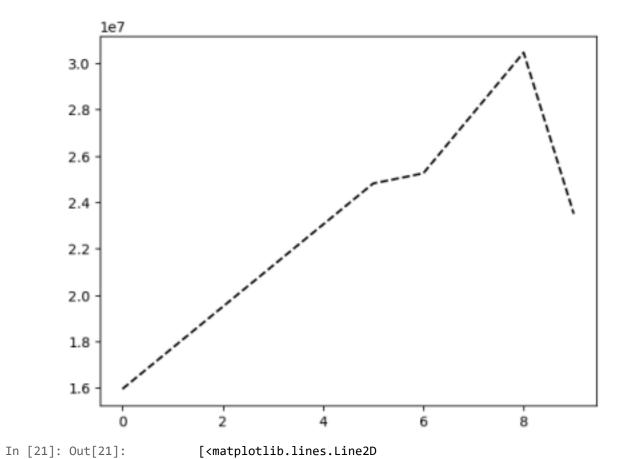




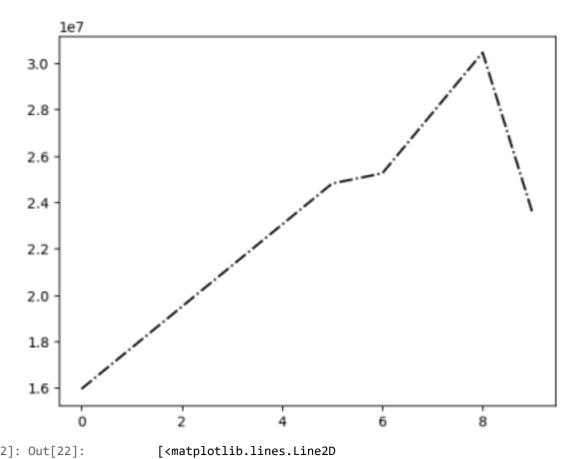




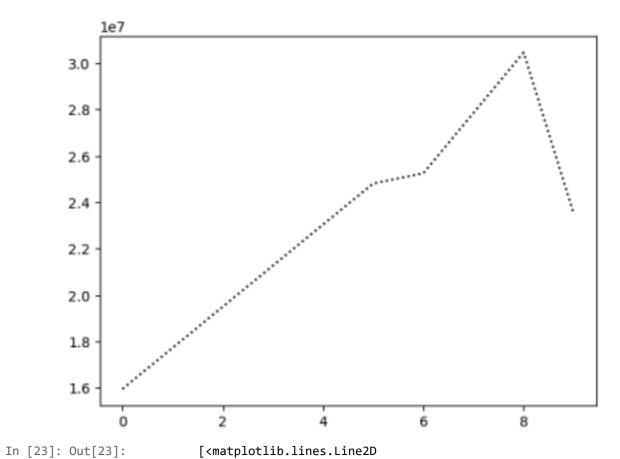
In [20]: Out[20]: [<matplotlib.lines.Lin
plt.plot(Salary[0],color='kat 0x11e10dd5340>]
',ls='--')



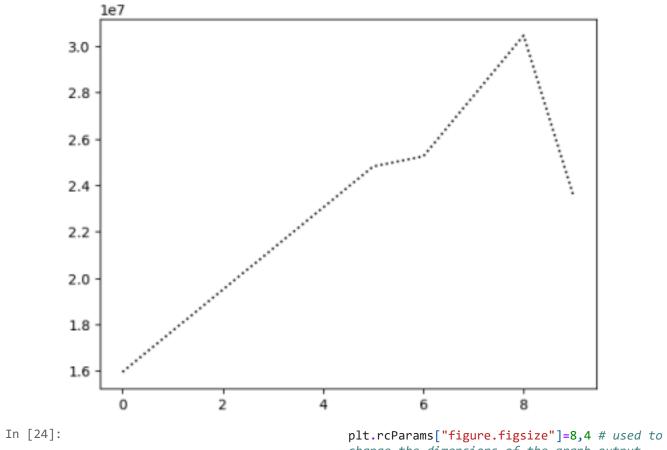
plt.plot(Salary[0],color='kat 0x11e10e74320>]
',ls='-.')



In [22]: Out[22]: [<matplotlib.lines.Line
plt.plot(Salary[0],color='kat 0x11e12800590>]
',ls=':')



plt.plot(Salary[0],color='kat 0x11e1285d010>]
',ls=':')



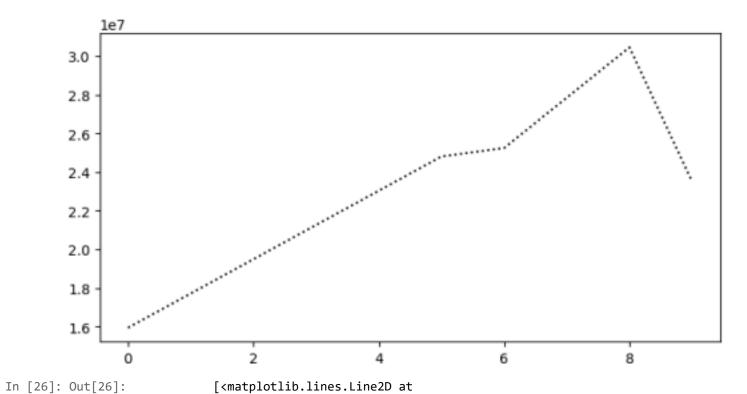
In [25]: Out[25]:

%matplotlib inline

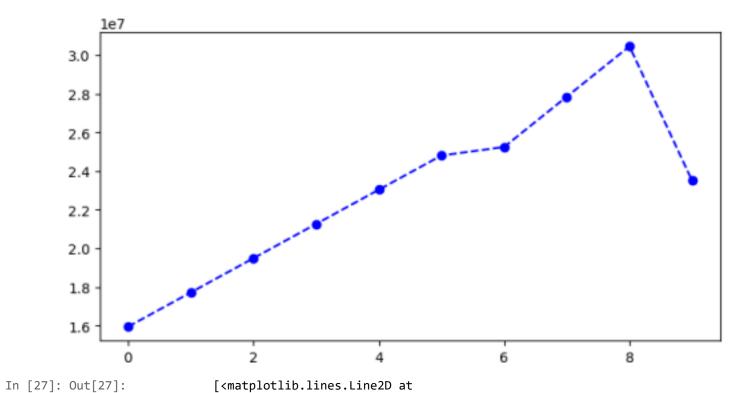
change the dimensions of the graph output

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

[<matplotlib.lines.Line2D at 0x11e10f09a30>]

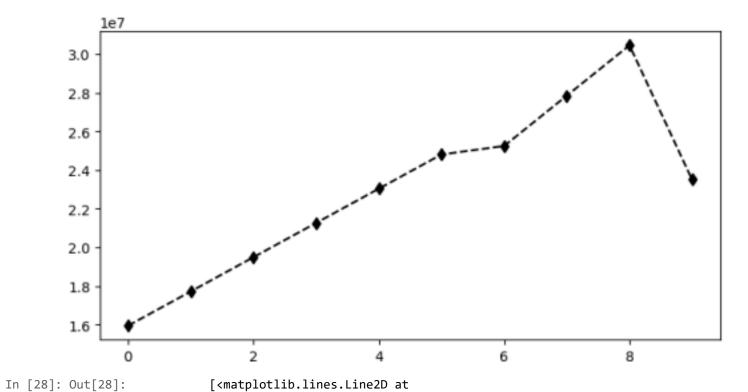


plt.plot(Salary[0],color='b',0x11e10f6e540>]
ls='--',marker='o')

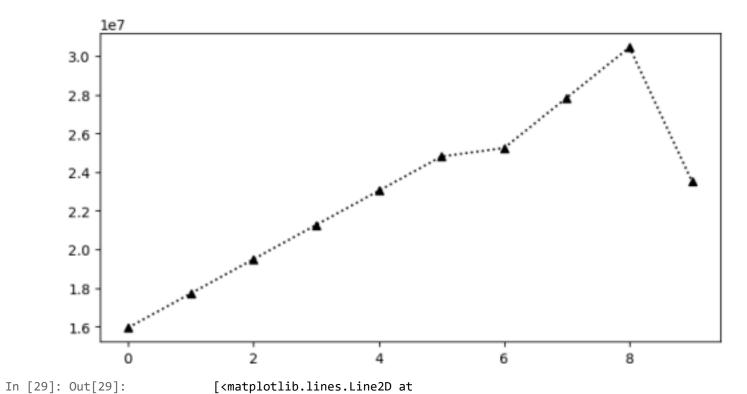


plt.plot(Salary[0],color='k',0x11e129d7320>]

ls='--',marker='d')

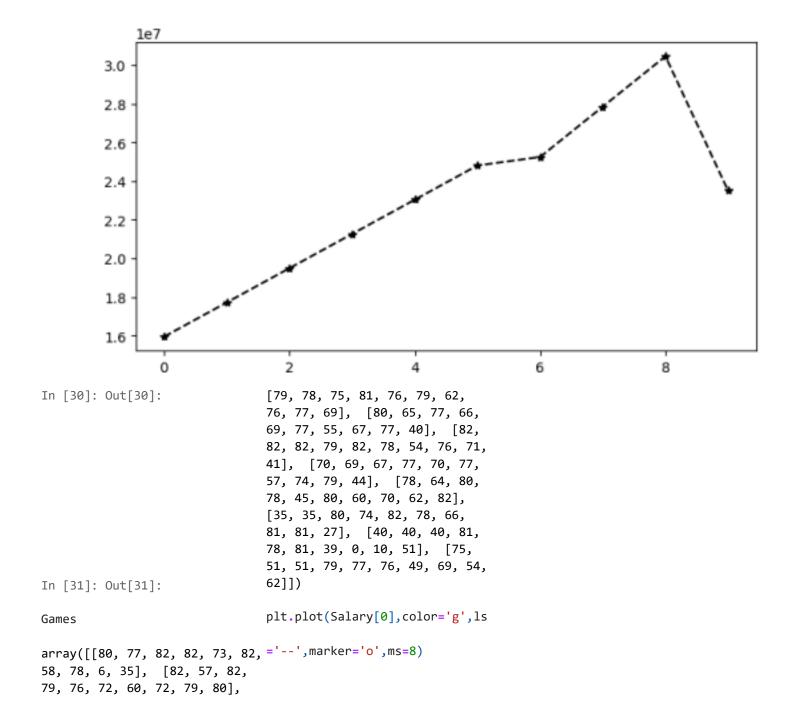


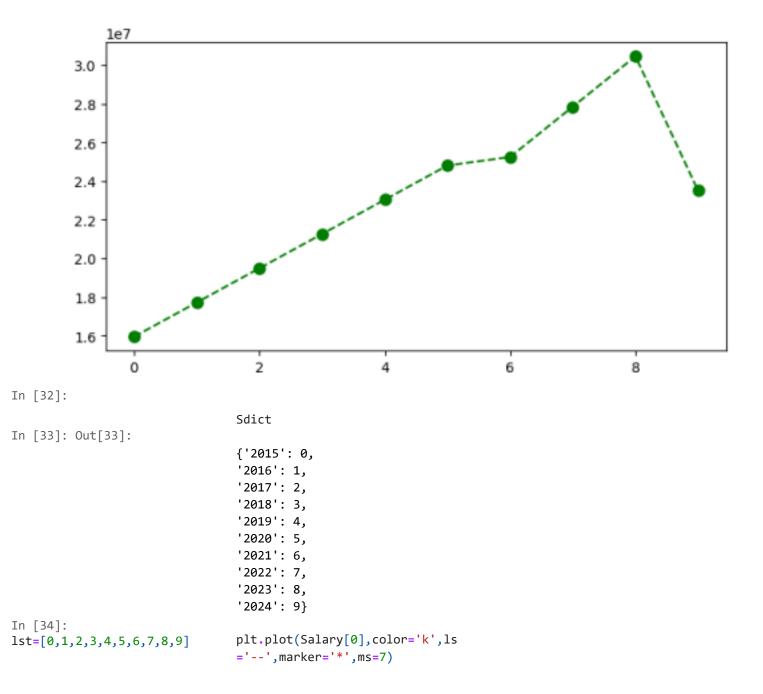
plt.plot(Salary[0],color='k' 0x11e12a3f620>]
,ls=':',marker='^')

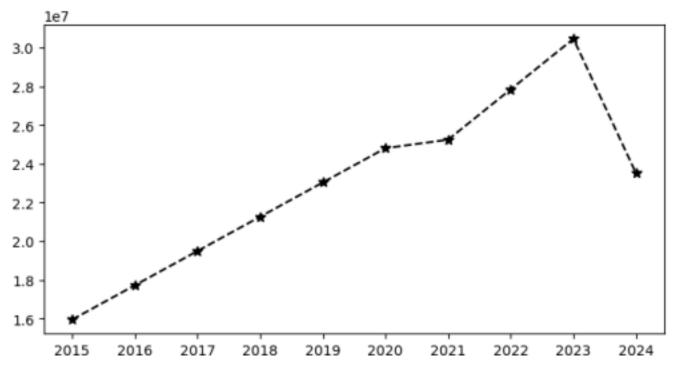


plt.plot(Salary[0],color='k',0x11e12adc440>]

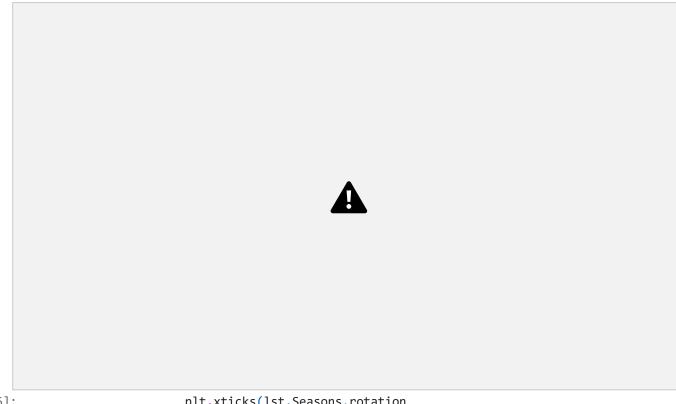
ls='--',marker='*')







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



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





```
In [39]: Out[39]:
                                         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,
In [40]:
                                         27],
Games
                                         [40, 40, 40, 81, 78, 81, 39, 0, 10,
                                         51],
array([[80, 77, 82, 82, 73, 82, 58, 78,
                                         [75, 51, 51, 79, 77, 76, 49, 69, 54,
6, 35],
                                         62]])
 [82, 57, 82, 79, 76, 72, 60, 72, 79,
```

```
plt.plot(Salary[2],color='m',ls='--',mar
plt.plot(Salary[1],color='g',ls='--',marker='*',ms=8,label=Players[2])
ker='o',ms=8,label=Players[1])
                                        plt.plot(Salary[3],color='c',ls='--',mar
plt.plot(Salary[0],color='k',ls='--',marker='^',ms=8,label=Players[3])
ker='s',ms=8,label=Players[0])
         plt.legend()
         plt.xticks(lst,Seasons,rotation='vertical')
         plt.show()
In [41]:
                                        plt.plot(Salary[3],color='c',ls='--',ma
plt.plot(Salary[1],color='g',ls='--',ma rker='^',ms=8,label=Players[3])
rker='o',ms=8,label=Players[1])
plt.plot(Salary[0],color='k',ls='--',ma plt.legend(loc="best",bbox_to_anchor=(0)
rker='s',ms=8,label=Players[0])
                                        .5,1))
plt.plot(Salary[2],color='m',ls='--',ma
rker='*',ms=8,label=Players[2])
                                        plt.xticks(lst,Seasons,rotation='vertic
```

al')

```
plt.show()
```

```
Players[4]) plt.plot(Games[5], c='Blue', ls = '--',
In [42]:
#we can visualise all players at once but the graph marker = 'o', ms = 7, label = Players[5])
plotted wouldn't fetch any useful insights
                                                   plt.plot(Games[6], c='red', ls = '--', marker =
plt.plot(Games[0], c='Green', ls = '--', marker = '^', ms = 7, label = Players[6]) plt.plot(Games[7],
's', ms = 7, label = Players[0]) plt.plot(Games[1], c='Green', ls = '--', marker = 'd', ms = 7, label =
c='Blue', ls = '--', marker = 'o', ms = 7, label = Players[7]) plt.plot(Games[8], c='Red', ls = '--',
                                                   marker = 's', ms = 7, label = Players[8])
Players[1]) plt.plot(Games[2], c='Green', ls =
'--', marker = '^', ms = 7, label = Players[2])
                                                   plt.plot(Games[9], c='Blue', ls = '--', marker =
plt.plot(Games[3], c='Red', ls = '--', marker =
                                                   'o', ms = 7, label = Players[9])
'D', ms = 7, label = Players[3]) plt.plot(Games[4],
c='Black', ls = '--', marker = 's', ms = 7, label =
 plt.legend(loc = 'lower right',bbox to anchor=(0.5,1) )
```

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

In []: