

CLIENT-ORGANIZATION-EMPLOYEE Here we have 10 years of DATA & Players & Seasons & Salaries

Requirement....being a dataanalyst we need to be analyse the dataset and find the trend,insight and performance of players ,suggest to the client

```
In [2]: import numpy as np
```

```
In [3]: #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}
```

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

#Salaries
Sachin_Salary = [15946875, 17718750, 19490625, 21262500, 23034375, 24806250, 25244493, 27850000, 30500000, 33500000, 36500000, 39500000, 42500000, 45500000, 48500000, 51500000, 54500000]
Rahul_Salary = [12000000, 12744189, 13488377, 14232567, 14976754, 16324500, 18038573, 19750000, 21500000, 23250000, 25000000, 26750000, 28500000, 30250000, 32000000, 33750000, 35500000]
Smith_Salary = [4621800, 5828090, 13041250, 14410581, 15779912, 14500000, 16022500, 17545000, 19075000, 20612500, 22150000, 23687500, 25225000, 26762500, 28300000, 29837500, 31375000, 32912500]
Sami_Salary = [3713640, 4694041, 13041250, 14410581, 15779912, 17149243, 18518574, 19450000, 20375000, 21312500, 22250000, 23187500, 24125000, 25062500, 25999250, 26937500, 27875000]
Pollard_Salary = [4493160, 4806720, 6061274, 13758000, 15202590, 16647180, 18091770, 19536000, 21087500, 22635000, 24182500, 25725000, 27268800, 28812500, 30356320, 31900000, 33442400, 35087500]
Morris_Salary = [3348000, 4235220, 12455000, 14410581, 15779912, 14500000, 16022500, 17545000, 19075000, 20612500, 22150000, 23687500, 25225000, 26762500, 28300000, 29837500, 31375000, 32912500]
Samson_Salary = [3144240, 3380160, 3615960, 4574189, 13520500, 14940153, 16359805, 17779450, 19217500, 20756250, 22295000, 23833750, 25372500, 26911250, 28447500, 29986250, 31525000, 33063750]
Dhoni_Salary = [0, 0, 4171200, 4484040, 4796880, 6053663, 15506632, 16669630, 17832627, 18990000, 20477500, 22015250, 23553000, 25090750, 26628500, 28166250, 29704000, 31241750, 32779500]
Kohli_Salary = [0, 0, 0, 4822800, 5184480, 5546160, 6993708, 16402500, 17632688, 18862875]
Sky_Salary = [3031920, 3841443, 13041250, 14410581, 15779912, 14200000, 15691000, 17182000]
#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_
```

In [5]: Salary

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

```
Out[6]: 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 [7]: Games[0:5] #top from 0 to 4

```
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]: Points

```
Out[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],  
               [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 [9]: Points[0:5]
```

```
Out[9]: 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]])
```

```
In [10]: Games[0,5] #0th row 5th column
```

```
Out[10]: 82
```

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

```
Out[11]: array([[35, 35, 80, 74, 82, 78, 66, 81, 81, 27],  
                 [40, 40, 40, 81, 78, 81, 39, 0, 10, 51]])
```

```
In [12]: Games[-3,-1]
```

```
Out[12]: 27
```

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

```
C:\Users\srinu\AppData\Local\Temp\ipykernel_11036\3709746658.py:1: RuntimeWarning: d  
ivide by zero encountered in divide  
Salary/Games
```

```
Out[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]])
```

```
In [14]: np.round(Salary//Games)      #we are rounding      and
#to supress float using //
```

```
C:\Users\srinu\AppData\Local\Temp\ipykernel_11036\1254056375.py:1: RuntimeWarning: d
ivide by zero encountered in floor_divide
 np.round(Salary//Games)      #we are rounding      and
```

```
Out[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]])
```

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

```
In [16]: import matplotlib.pyplot as plt #used for visualization
```

matplotlib==datastructure+math+powerful visualization library

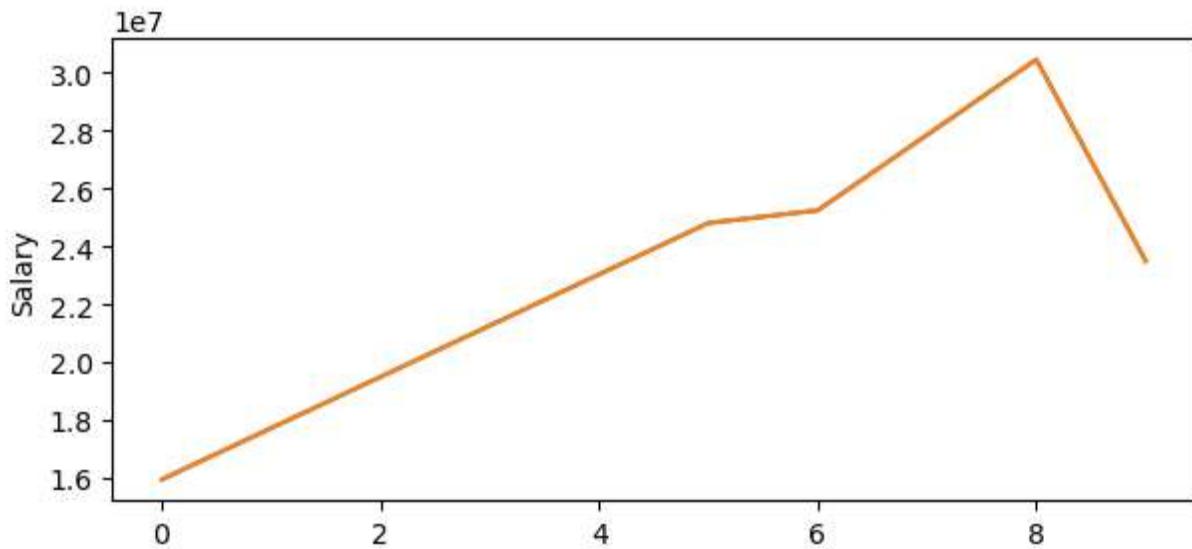
```
In [18]: Salary
```

```
Out[18]: 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 [19]: Salary[0]
```

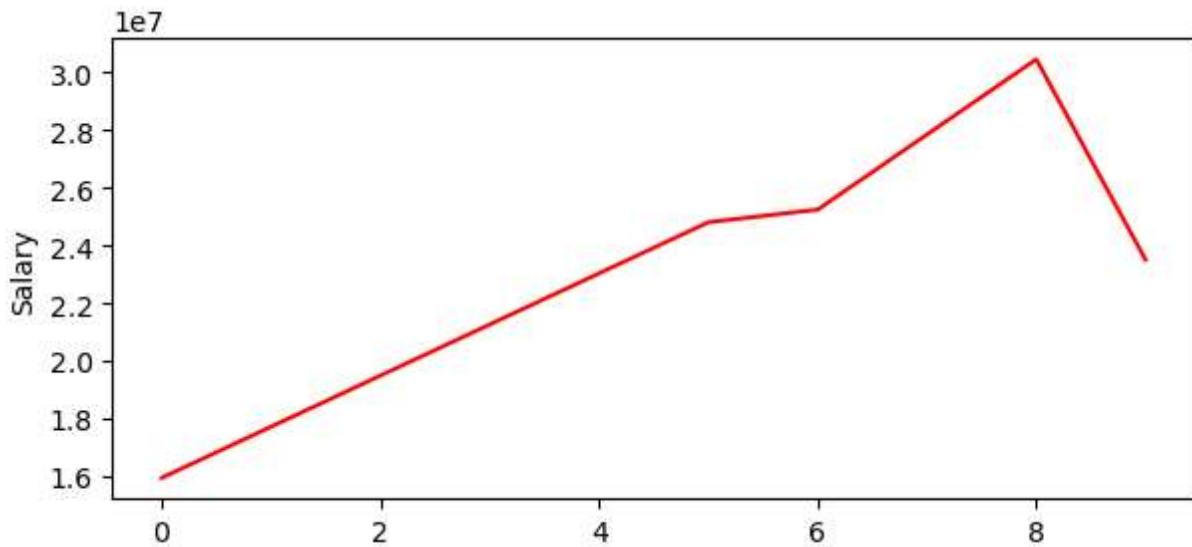
```
Out[19]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,  
25244493, 27849149, 30453805, 23500000])
```

```
In [103... plt.plot(Salary[0])  
plt.ylabel('Salary')  
plt.show()
```

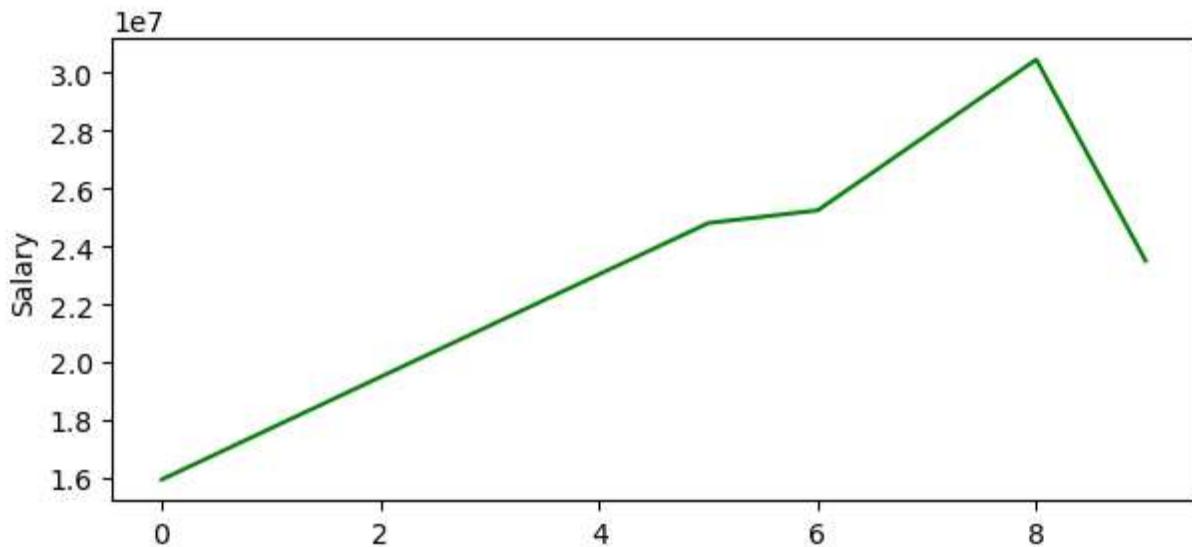


```
In [21]: #based on graph sachin increases still 2023 and then it has decreases
```

```
In [105... plt.plot(Salary[0],c='r') #adding parameter then colour of graph changes  
plt.ylabel('Salary')  
plt.show()
```

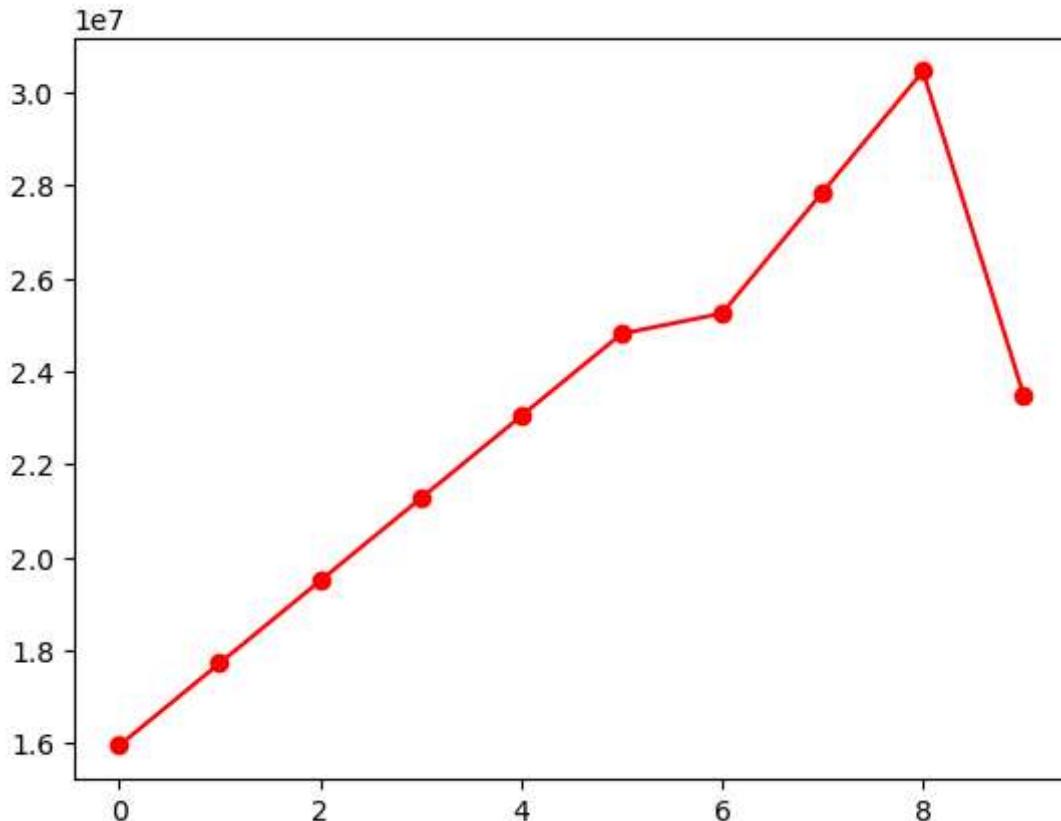


```
In [107... plt.plot(Salary[0],c='g')  
plt.ylabel('Salary')  
plt.show()
```



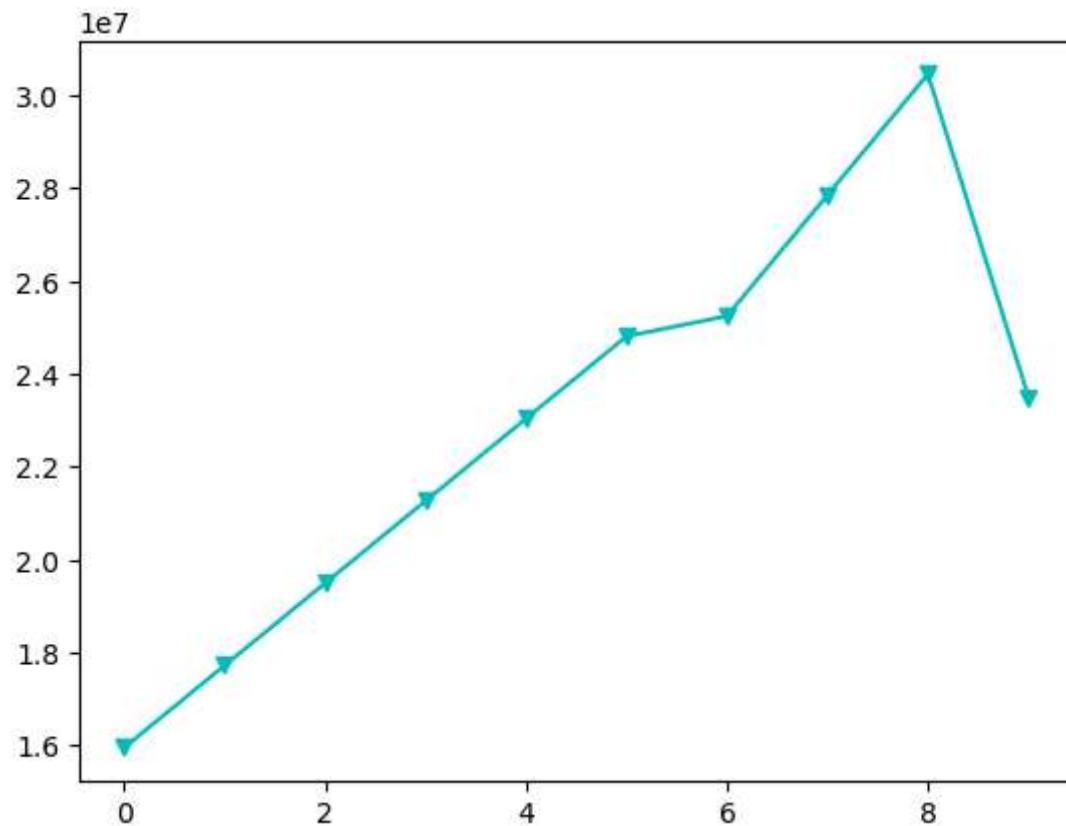
```
In [24]: plt.plot(Salary[0],c='r',marker='o')      #o-----circle Markers  
#v-----triangle Markers
```

```
Out[24]: [
```



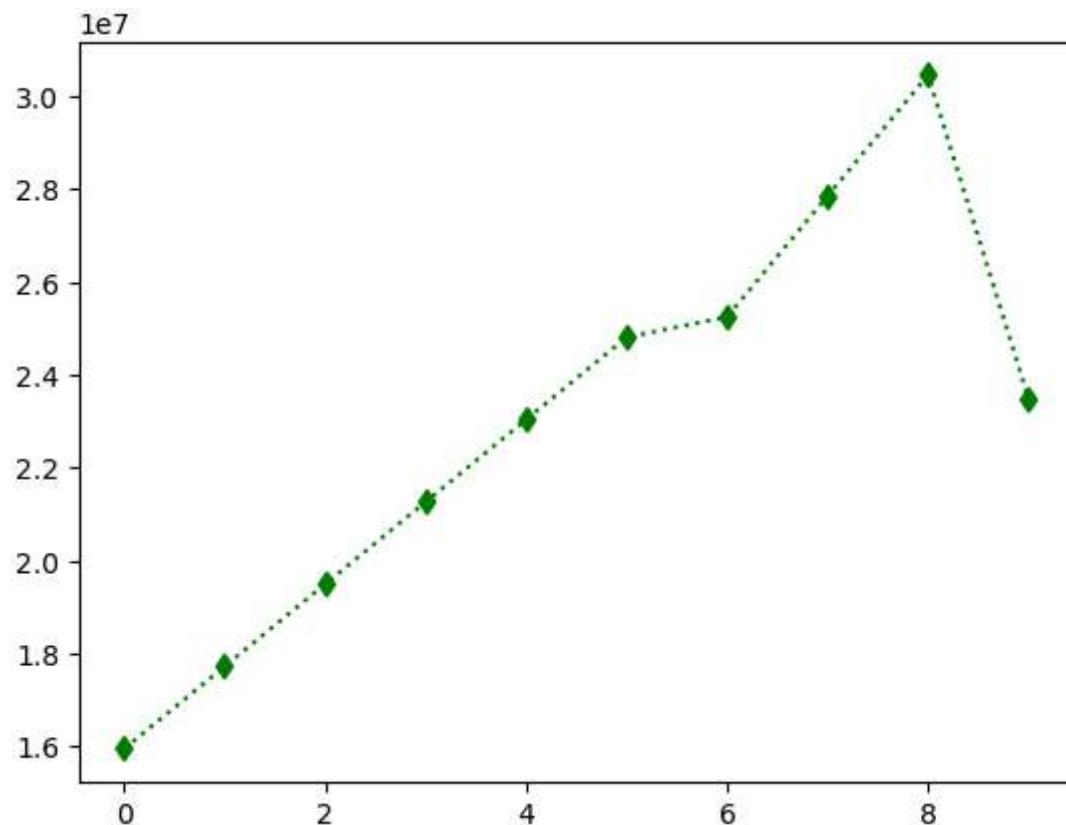
```
In [25]: plt.plot(Salary[0],c='c',marker='v')    #v-----triangle Markers
```

```
Out[25]: [
```



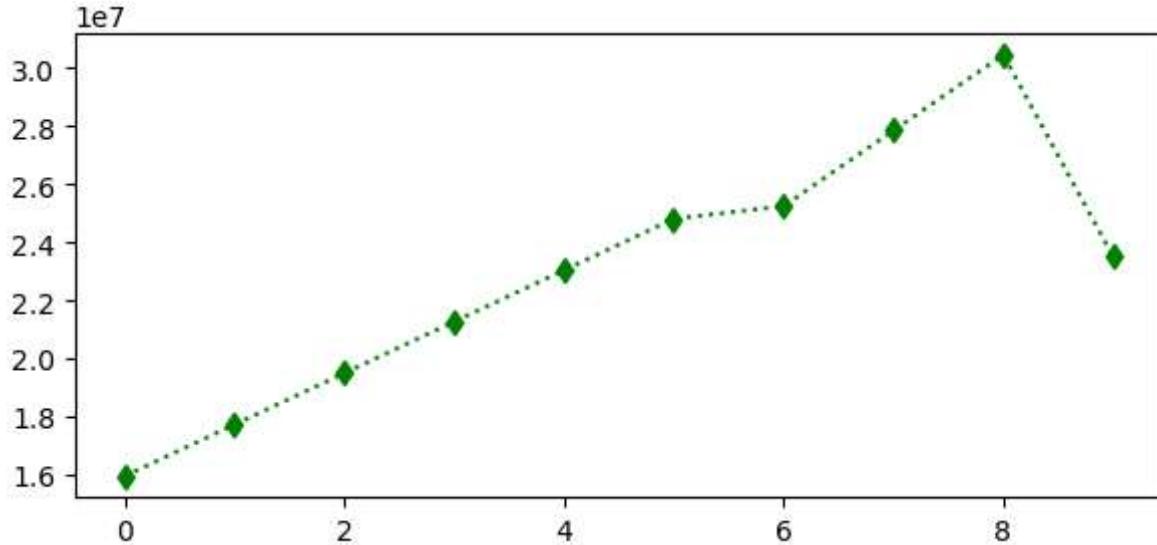
```
In [26]: plt.plot(Salary[0], c='g', marker='d', ls=':')
```

```
Out[26]: [<matplotlib.lines.Line2D at 0x1dcecddb1a0>]
```

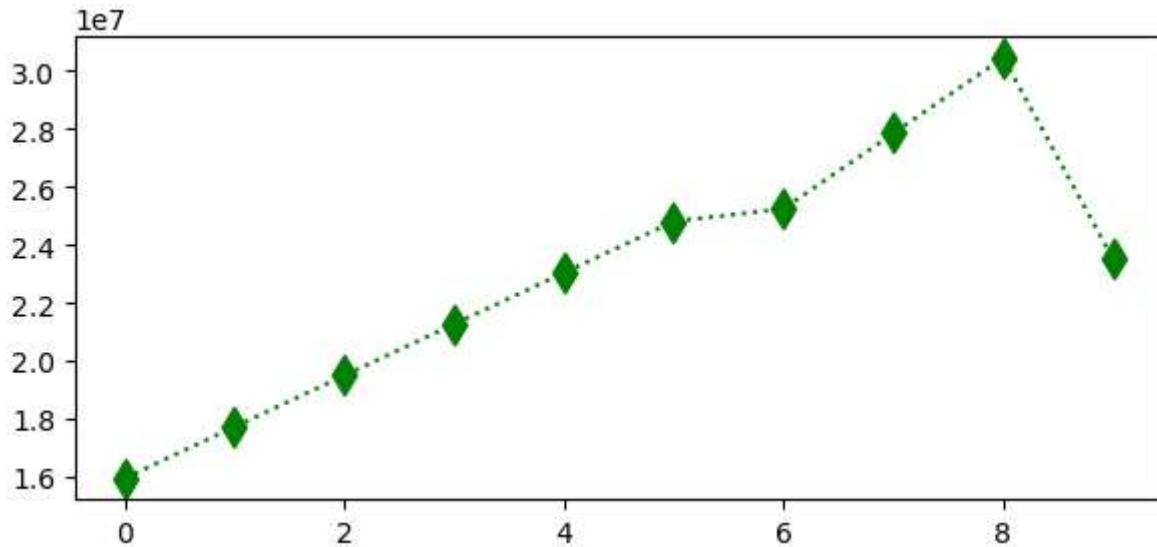


```
In [27]: #Making GRAPH SIZE adjustable  
%matplotlib inline  
plt.rcParams['figure.figsize'] = 7,3    #7...width,3....height
```

```
In [28]: plt.plot(Salary[0],c='g',marker='d',ls=':')
```



```
In [29]: plt.plot(Salary[0],c='g',marker='d',ls=':',ms=10)      #ms---marker size=9  
plt.show()
```



```
In [63]: list(range(0,10))
```

```
Out[63]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

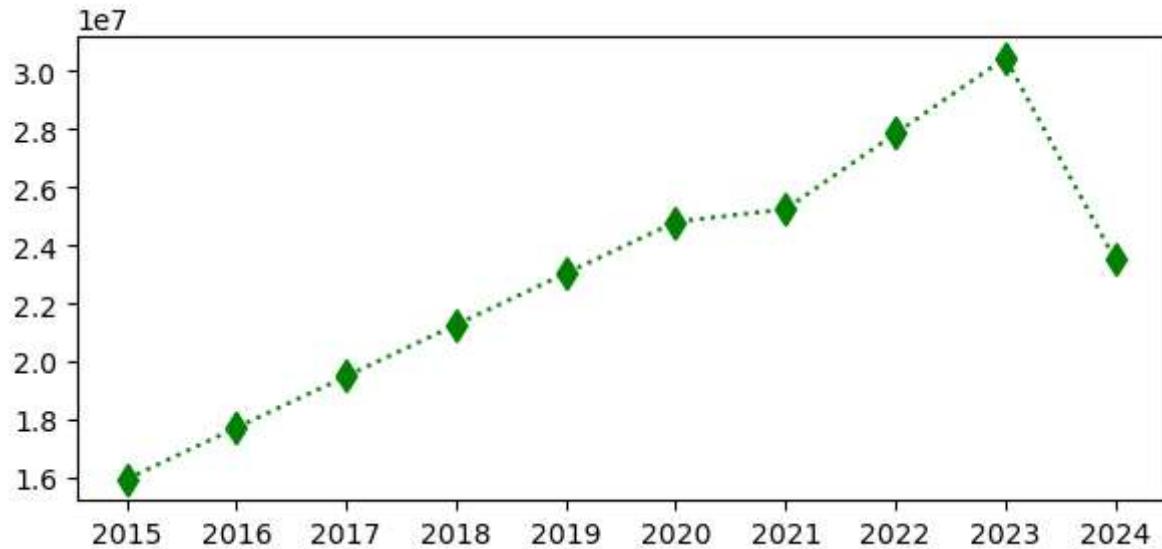
```
In [65]: Seasons
```

```
Out[65]: ['2015',
 '2016',
 '2017',
 '2018',
 '2019',
 '2020',
 '2021',
 '2022',
 '2023',
 '2024']
```

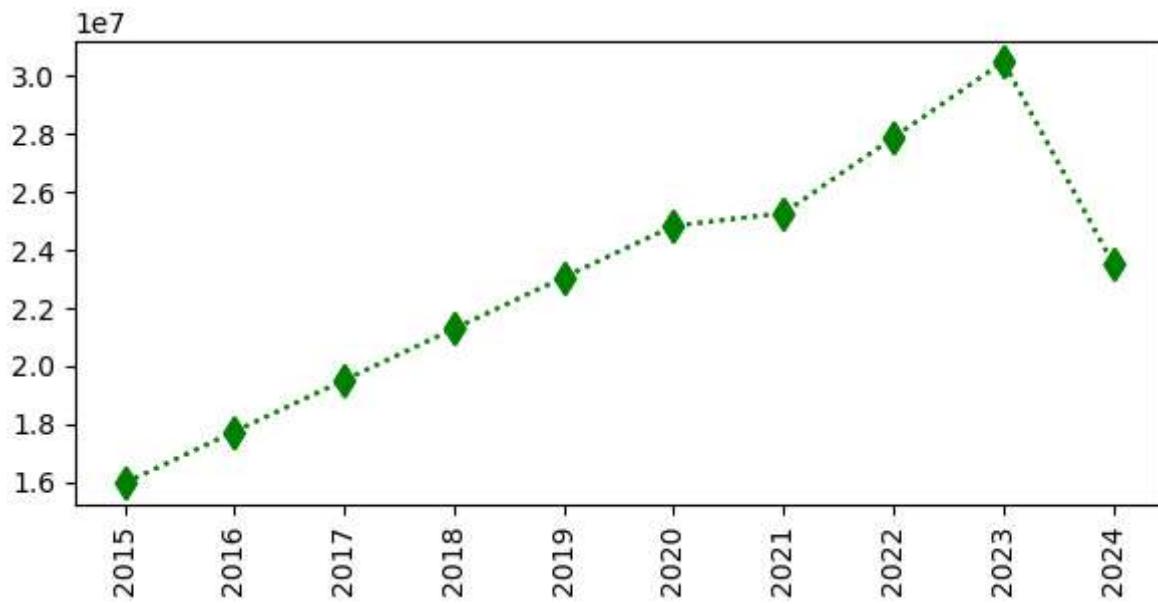
```
In [ ]: #plt.xticks() :is used to set the positions and labels for the ticks on the x-axis
```

Positions: `list(range(0, 10))` specifies the tick positions.. 10 positions **for t**
 Labels: The seasons list specifies the labels that will appear at these positio
 NOTE:Just make sure that the seasons variable **is** defined **and** contains the corre

```
In [71]: plt.plot(Salary[0],c='g',marker='d',ls=':',ms=8)
plt.xticks(list(range(0,10)),Seasons)           #plt.xticks() is used to set t
plt.show()
```

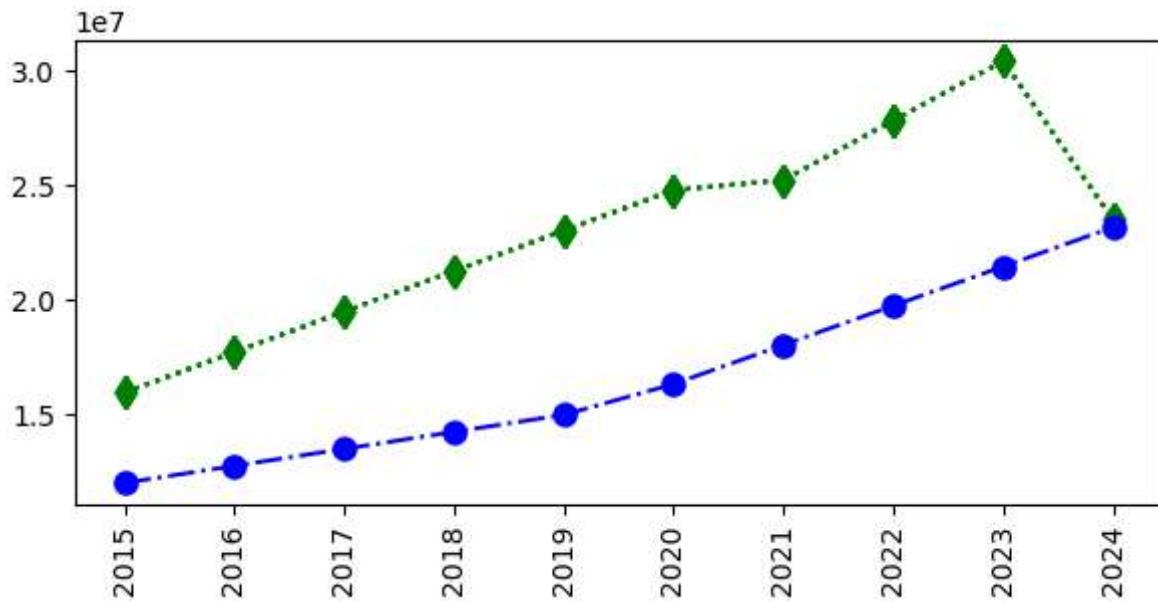


```
In [75]: plt.plot(Salary[0],c='g',marker='d',ls=':',ms=8)
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



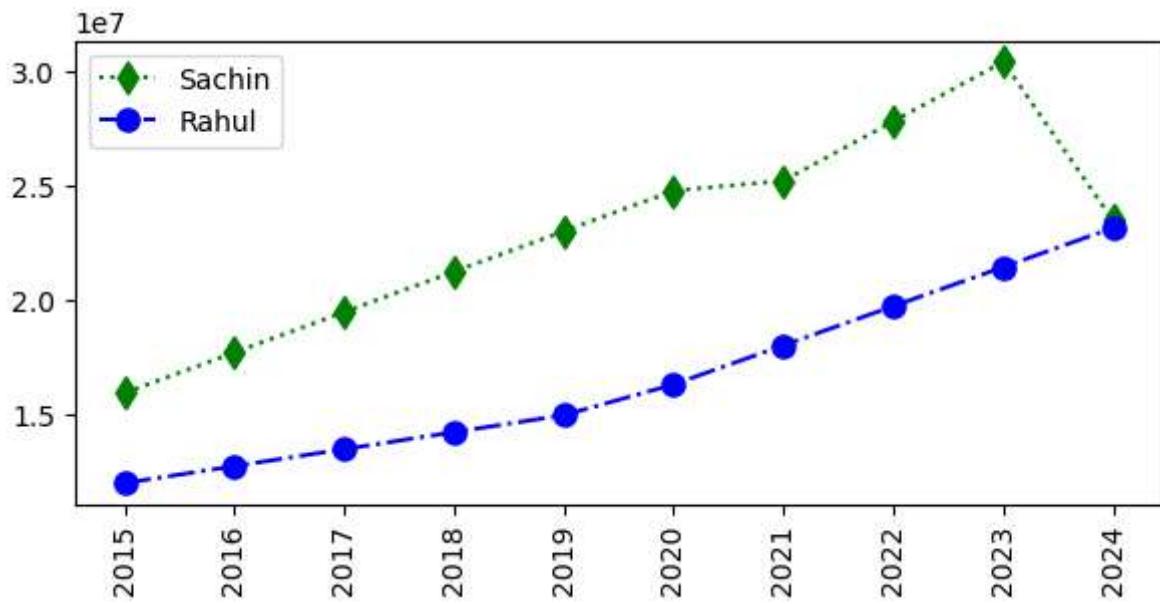
```
In [83]: plt.plot(Salary[0],c='g',marker='d',ls=':',ms=8)
plt.plot(Salary[1],c='b',marker='o',ls='-.',ms=8)

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



```
In [91]: plt.plot(Salary[0],c='g',marker='d',ls=':',ms=8,label=Players[0])
plt.plot(Salary[1],c='b',marker='o',ls='-.',ms=8,label=Players[1])

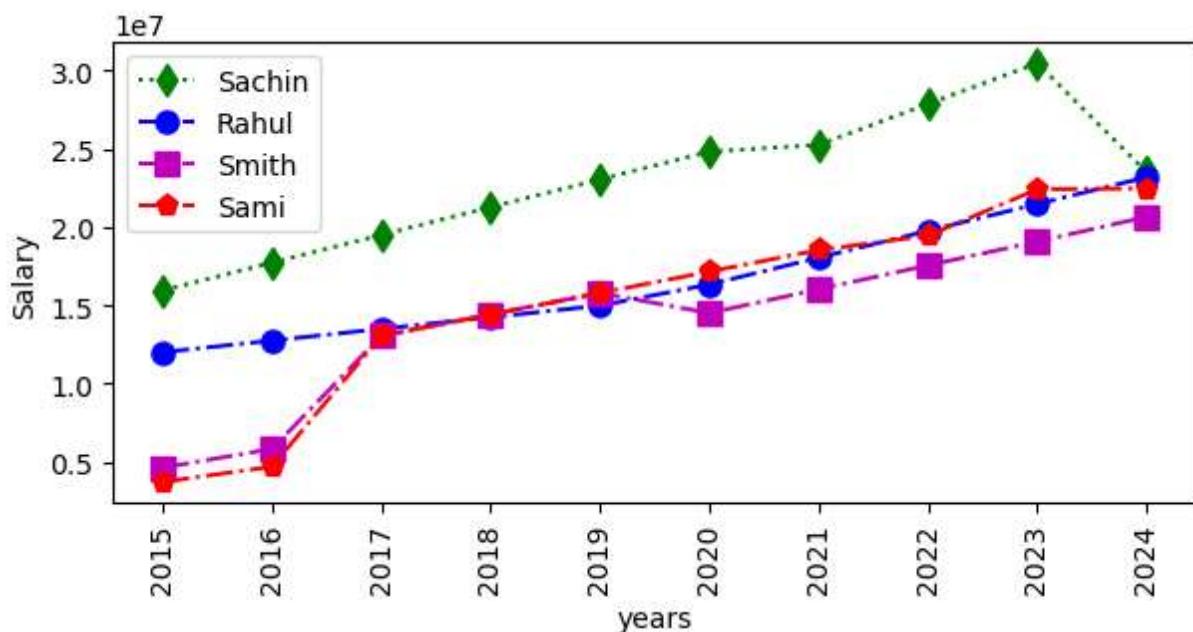
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.legend()
plt.show()
```



In []: #

```
plt.plot(Salary[0],c='g',marker='d',ls=':',ms=8,label=Players[0])
plt.plot(Salary[1],c='b',marker='o',ls='-.',ms=8,label=Players[1])
plt.plot(Salary[2],c='m',marker='s',ls='-.',ms=8,label=Players[2])
plt.plot(Salary[3],c='r',marker='p',ls='-.',ms=8,label=Players[3])

plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.legend()
plt.xlabel('years')
plt.ylabel('Salary')
plt.show()
```



In []:

In []:

In []: