```
import numpy as np
#Seasons
Seasons = ["2010","2011","2012","2013","2014","2015","2016","2017","2018","2019"]
Sdict = {"2010":0,"2011":1,"2012":2,"2013":3,"2014":4,"2015":5,"2016":6,"2017":7,"2018":8,"2019":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 = [3031920,3841443,13041250,14410581,15779912,14200000,15691000,17182000,18673000,150000000]
Salary = np.array([Sachin_Salary, Rahul_Salary, Smith_Salary, Sami_Salary, Pollard_Salary, Morris_Salary, Samson_Salary, Dhoni_Salary, Ko
#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])
import numpy as np
#Seasons
Seasons = ["2010","2011","2012","2013","2014","2015","2016","2017","2018","2019"]
Sdict = {"2010":0,"2011":1,"2012":2,"2013":3,"2014":4,"2015":5,"2016":6,"2017":7,"2018":8,"2019":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]
 \texttt{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 = [3031920,3841443,13041250,14410581,15779912,14200000,15691000,17182000,18673000,150000000]
Salary = np.array([Sachin_Salary, Rahul_Salary, Smith_Salary, Sami_Salary, Pollard_Salary, Morris_Salary, Samson_Salary, Dhoni_Salary, Falary, Falary,
#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])
Games
→ array([[80, 77, 82, 82, 73, 82, 58, 78,
            [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]])
Points
→ array([[2832, 2430, 2323, 2201, 1970, 2078, 1616, 2133,
                                                               83, 7821,
            [1653, 1426, 1779, 1688, 1619, 1312, 1129, 1170, 1245, 1154],
            [2478, 2132, 2250, 2304, 2258, 2111, 1683, 2036, 2089, 1743],
                                                                    966],
            [2122, 1881, 1978, 1504, 1943, 1970, 1245, 1920, 2112,
                                                                    6461.
            [1292, 1443, 1695, 1624, 1503, 1784, 1113, 1296, 1297,
                                                                   928],
            [1572, 1561, 1496, 1746, 1678, 1438, 1025, 1232, 1281,
            [1258, 1104, 1684, 1781, 841, 1268, 1189, 1186, 1185, 1564],
            [ 903, 903, 1624, 1871, 2472, 2161, 1850, 2280, 2593, 686],
                   597, 597, 1361, 1619, 2026, 852,
                                                       0, 159,
            [2040, 1397, 1254, 2386, 2045, 1941, 1082, 1463, 1028, 1331]])
Pdict
→ {'Sachin': 0,
      'Rahul': 1,
      'Smith': 2
      'Sami': 3,
      'Pollard': 4,
      'Morris': 5,
      'Samson': 6,
      'Dhoni': 7,
      'Kohli': 8,
      'Sky': 9}
Salary//Games
→ array([[ 199335, 230113, 237690, 259298, 315539, 302515, 435249,
              357040, 5075634,
                               671428],
            [ 146341,
                               164492, 180159, 197062, 226729, 300642,
                     223582,
              274342,
                       271730,
                                289759],
                                173883, 177908,
                                                 207630, 183544, 258427,
              58503
                        74719,
                               299194],
              230855.
                       247629,
              46420,
                        72216,
                                169366.
                                        218342, 228694, 222717, 336701,
              290298,
                       291006,
                                561450],
                                73917, 174151, 185397, 213425, 335032,
              54794.
                        58618,
              257057.
                       288918.
                                522835],
                                185895,
                                        187150, 225427, 188311, 281096,
              47828
                        61380.
              237094,
                       241360.
                                469190],
              40310,
                        52815,
                                45199,
                                          58643,
                                                 300455, 186751, 272663,
              253992,
                       301103,
                                244738],
                           0.
                                 52140.
                                          60595.
                                                   58498,
                                                           77611, 234948,
                       220155,
              205797,
                                7035411.
```

```
[ 0, 0, 0, 59540, 66467, 68471, 179325, 0, 1763268, 369860],
[ 40425, 75322, 255710, 182412, 204933, 186842, 320224, 249014, 345796, 241935]])
```

np.round(Salary//Games)

```
→ array([[ 199335,
                       230113,
                                 237690,
                                          259298, 315539,
                                                             302515, 435249,
                                 671428],
              357040, 5075634,
            [ 146341,
                                 164492,
                                          180159.
                                                    197062.
                       223582.
                                                             226729.
                                                                      300642.
              274342,
                       271730
                                 289759],
               58503,
                        74719,
                                 173883,
                                          177908,
                                                    207630,
                                                             183544,
                                                                       258427,
              230855,
                       247629,
                                 299194],
               46420,
                                 169366,
                                          218342,
                                                             222717,
                        72216,
                                                    228694,
                                                                       336701,
              290298,
                                 561450],
                       291006.
               54794
                        58618,
                                  73917,
                                          174151,
                                                    185397,
                                                             213425,
                                                                       335032,
              257057,
                       288918,
                                 522835],
               47828.
                        61380.
                                 185895.
                                          187150.
                                                    225427,
                                                             188311.
                                                                      281096.
                                 469190],
              237094.
                       241360.
                                                             186751. 272663.
               40310.
                        52815.
                                  45199.
                                           58643,
                                                    300455.
              253992,
                       301103,
                                 244738],
                   0,
                            0,
                                  52140
                                           60595
                                                     58498
                                                              77611.
                                                                      234948.
              205797,
                       220155,
                                 703541],
                   0,
                            0,
                                      0,
                                           59540.
                                                     66467
                                                               68471,
                                                                      179325,
                                 369860],
                   0, 1763268,
               40425,
                        75322,
                                 255710,
                                          182412,
                                                    204933,
                                                             186842,
                                                                      320224,
            [
              249014,
                       345796,
                                 241935]])
```

import warnings
warnings.filterwarnings('ignore')

pip install matplotlib

```
Requirement already satisfied: matplotlib in /usr/local/lib/python3.11/dist-packages (3.10.0)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (1.3.3)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (4.59.0)
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (1.4.9)
Requirement already satisfied: numpy>=1.23 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (2.0.2)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (25.0)
Requirement already satisfied: python3.11 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (3.2.3)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.11/dist-packages (from matplotlib) (2.9.0.post0)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.7->matplotlib) (1.17.0)
```

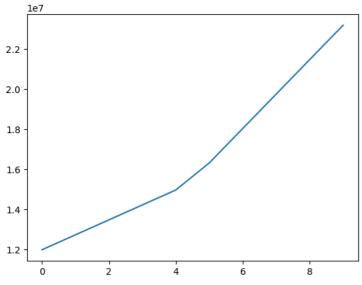
import matplotlib.pyplot as plt

Salary[0]

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

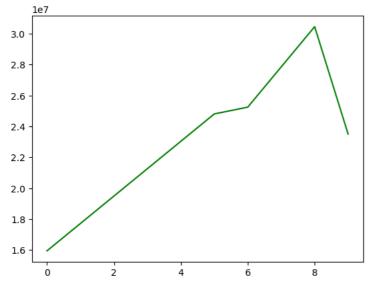
plt.plot((Salary[1]))

(<matplotlib.lines.Line2D at 0x7eef77f0a490>)



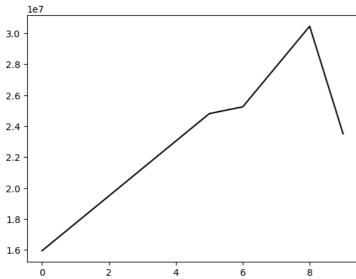
plt.plot(Salary[0],c='g')

[<matplotlib.lines.Line2D at 0x7eef65564a10>]



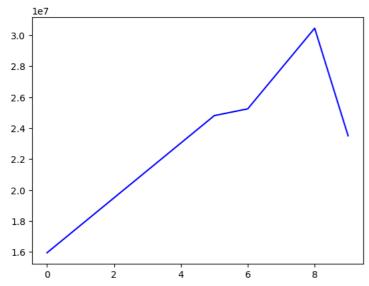
plt.plot(Salary[0],c='k')

→ [<matplotlib.lines.Line2D at 0x7eef65803510>]



plt.plot(Salary[0],c='b')

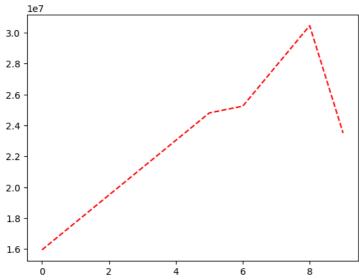
[<matplotlib.lines.Line2D at 0x7eef6588e190>]



Start coding or generate with AI.

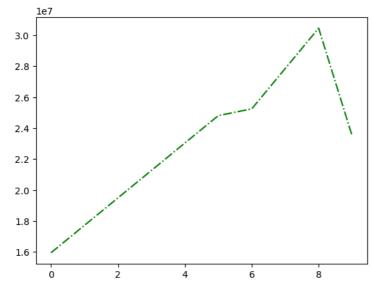
plt.plot(Salary[0],c='r',ls='--')



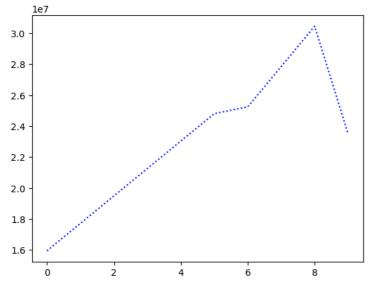


plt.plot(Salary[0],c='g',ls='-.')

[<matplotlib.lines.Line2D at 0x7eef653f5e90>]



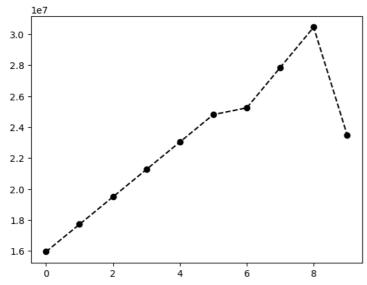
plt.plot(Salary[0],c='b',ls=':')



Start coding or generate with AI.

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

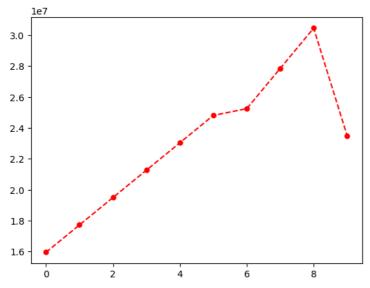
→ [<matplotlib.lines.Line2D at 0x7eef65688650>]



Games[0]

⇒ array([80, 77, 82, 82, 73, 82, 58, 78, 6, 35])

[<matplotlib.lines.Line2D at 0x7eef653962d0>]



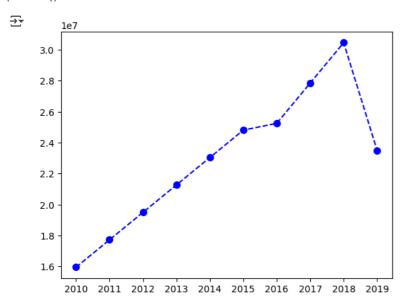
Sdict

₹ {'2010': 0, '2011': 1, '2012': 2, '2013': 3, '2014': 4, '2015': 5, '2016': 6, '2017': 7, '2018': 8, '2019': 9}

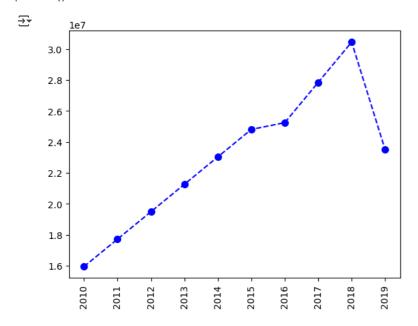
Pdict

```
'Dhoni': 7,
'Kohli': 8,
'Sky': 9}
```

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

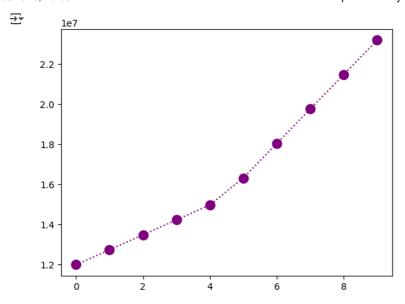


plt.plot(Salary[0],c='b',ls='--',marker='o',ms=7)
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()



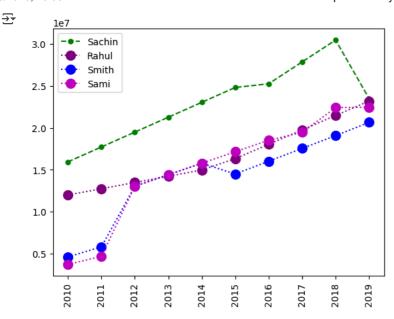
Salary[1]

plt.plot(Salary[1], c='purple', ls=':', marker ='o', ms = 10)
plt.show()

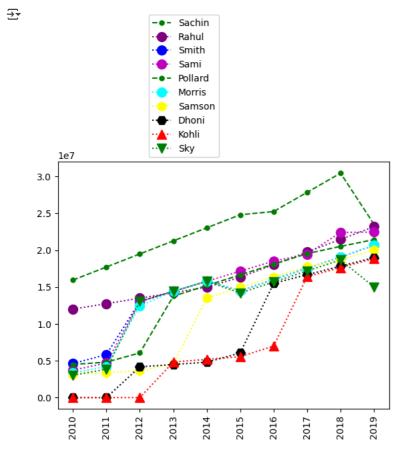


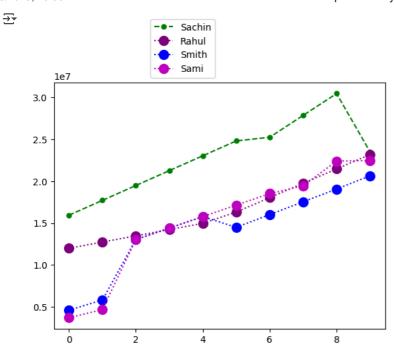
◆ Gemini plt.plot(Salary[0],c='g', ls='--', marker='o', ms=5) plt.plot(Salary[1],c='purple', ls=':',marker='o',ms=10) plt.Plot(Salary[2],c='b',ls=':',marker='o',ms='10') plt.xticks(list(range(0,10)), Seasons, rotation='vertical') plt.show() plt.show() plt.plot(Salary[0],c='g', ls='--', marker='o', ms=5) plt.plot(Salary[1],c='purple', ls=':',marker='o',ms=10) plt.plot(Salary[2],c='b',ls=':',marker='o',ms='10') $\verb|plt.xticks(list(range(0,10)),Seasons,rotation='vertical')|\\$ plt.show() **₹** 3.0 2.5 2.0 1.5 1.0 0.5 2014 2010 2012 2016

```
plt.plot(Salary[0], c = 'g', ls = '--', marker = 'o', ms = 5, label= Players[0])
plt.plot(Salary[1], c = 'purple', ls = ':', marker = 'o', ms = 10, label= Players[1])
plt.plot(Salary[2], c = 'b', ls = ':', marker = 'o', ms = 10, label= Players[2])
plt.plot(Salary[3], c = 'm', ls = ':', marker = 'o', ms = 10, label= Players[3])
plt.legend() # Automatically it will create a color for the players which color bel
plt.xticks(list(range(0,10)), Seasons, rotation = 'vertical')
plt.show()
```



```
plt.plot(Salary[0], c = 'g', ls = '--', marker = 'o', ms = 5, label= Players[0]),
plt.plot(Salary[1], c = 'purple', ls = ':', marker = 'o', ms = 10, label= Players[1]),
plt.plot(Salary[2], c = 'b', ls = ':', marker = 'o', ms = 10, label= Players[2]),
plt.plot(Salary[3], c = 'm', ls = ':', marker = 'o', ms = 10, label= Players[3]),
plt.plot(Salary[4], c = 'g', ls = '--', marker = 'o', ms = 5, label= Players[4]),
plt.plot(Salary[5], c = 'cyan', ls = ':', marker = 'o', ms = 10, label= Players[5]),
plt.plot(Salary[6], c = 'yellow', ls = ':', marker = 'h', ms = 10, label= Players[6]),
plt.plot(Salary[7], c = 'black', ls = ':', marker = 'H', ms = 10, label= Players[7]),
plt.plot(Salary[8], c = 'red', ls = ':', marker = 'H', ms = 10, label= Players[8]),
plt.plot(Salary[9], c = 'green', ls = ':', marker = 'v', ms = 10, label= Players[9]),
plt.legend(loc = 'lower right', bbox_to_anchor = (0.5, 1)) # this piece of parameter
plt.xticks(list(range(0,10)), Seasons, rotation = 'vertical')
```





Start coding or generate with AI.

Charle and an annual column as