

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

#Players
Players = ["Sachin","Rahul","Smith","Sami","Pollard","Morris","Samson","Dhoni",""
Pdict = {"Sachin":0,"Rahul":1,"Smith":2,"Sami":3,"Pollard":4,"Morris":5,"Samson"

#Salaries
Sachin_Salary = [15946875,17718750,19490625,21262500,23034375,24806250,25244493,
Rahul_Salary = [12000000,12744189,13488377,14232567,14976754,16324500,18038573,1
Smith_Salary = [4621800,5828090,13041250,14410581,15779912,14500000,16022500,175
Sami_Salary = [3713640,4694041,13041250,14410581,15779912,17149243,18518574,1945
Pollard_Salary = [4493160,4806720,6061274,13758000,15202590,16647180,18091770,19
Morris_Salary = [3348000,4235220,12455000,14410581,15779912,14500000,16022500,17
Samson_Salary = [3144240,3380160,3615960,4574189,13520500,14940153,16359805,1777
Dhoni_Salary = [0,0,4171200,4484040,4796880,6053663,15506632,16669630,17832627,1
Kohli_Salary = [0,0,0,4822800,5184480,5546160,6993708,16402500,17632688,18862875
Sky_Salary = [3031920,3841443,13041250,14410581,15779912,14200000,15691000,17182
#Matrix
Salary = np.array([Sachin_Salary, Rahul_Salary, Smith_Salary, Sami_Salary, Polla

#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, Samso

#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, Morr
```

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,         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 [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[6,5]
```

```
Out[6]: np.int64(80)
```

```
In [7]: Games[1,0]
```

```
Out[7]: np.int64(82)
```

```
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,        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 [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, 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 [10]: Salary/Games
```

```
C:\Users\SWAPNA\AppData\Local\Temp\ipykernel_18896\3709746658.py:1: RuntimeWarning:
g: 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,
  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 [11]: np.round(Salary//Games)
```

```
C:\Users\SWAPNA\AppData\Local\Temp\ipykernel_18896\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],
 [ 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]])
```

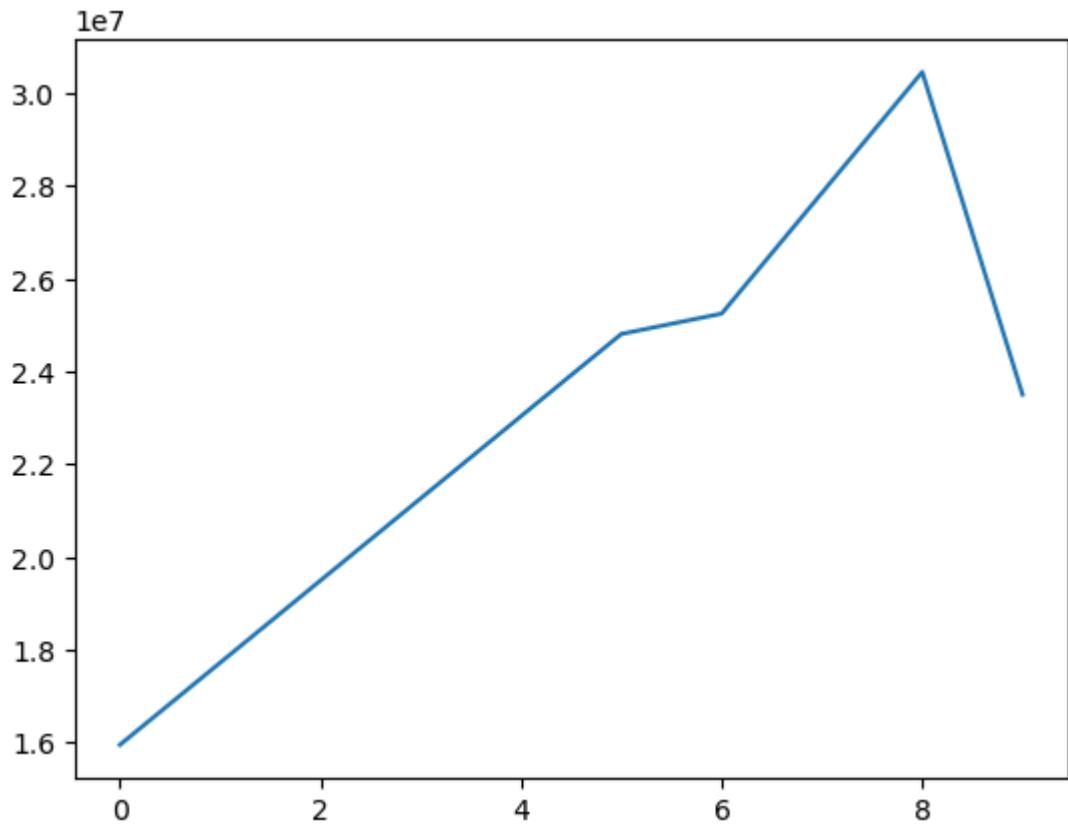
```
In [12]: import warnings
warnings.filterwarnings('ignore')
#the above code we are using that to ignore unknown error code caused by os upda
```

```
In [13]: import matplotlib.pyplot as plt
#import numpy as np
```

```
In [14]: Salary[0]
```

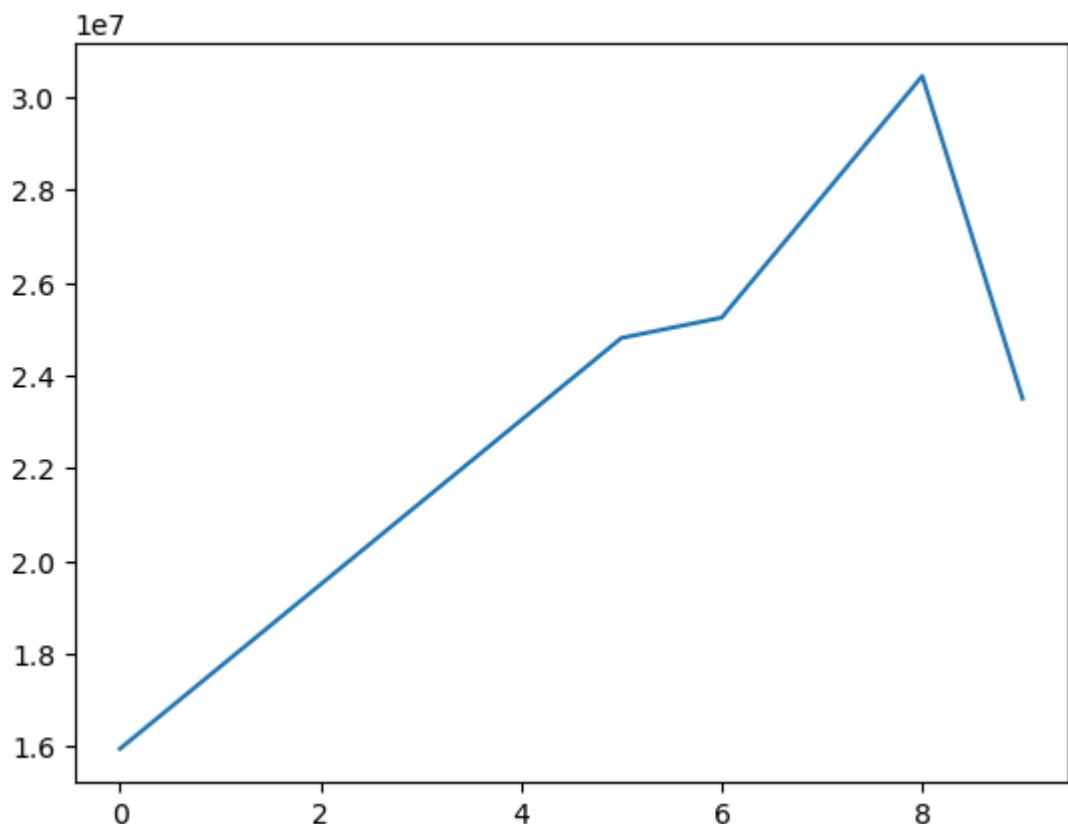
```
Out[14]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
 25244493, 27849149, 30453805, 23500000])
```

```
In [15]: plt.plot(Salary[0])
plt.show()
```



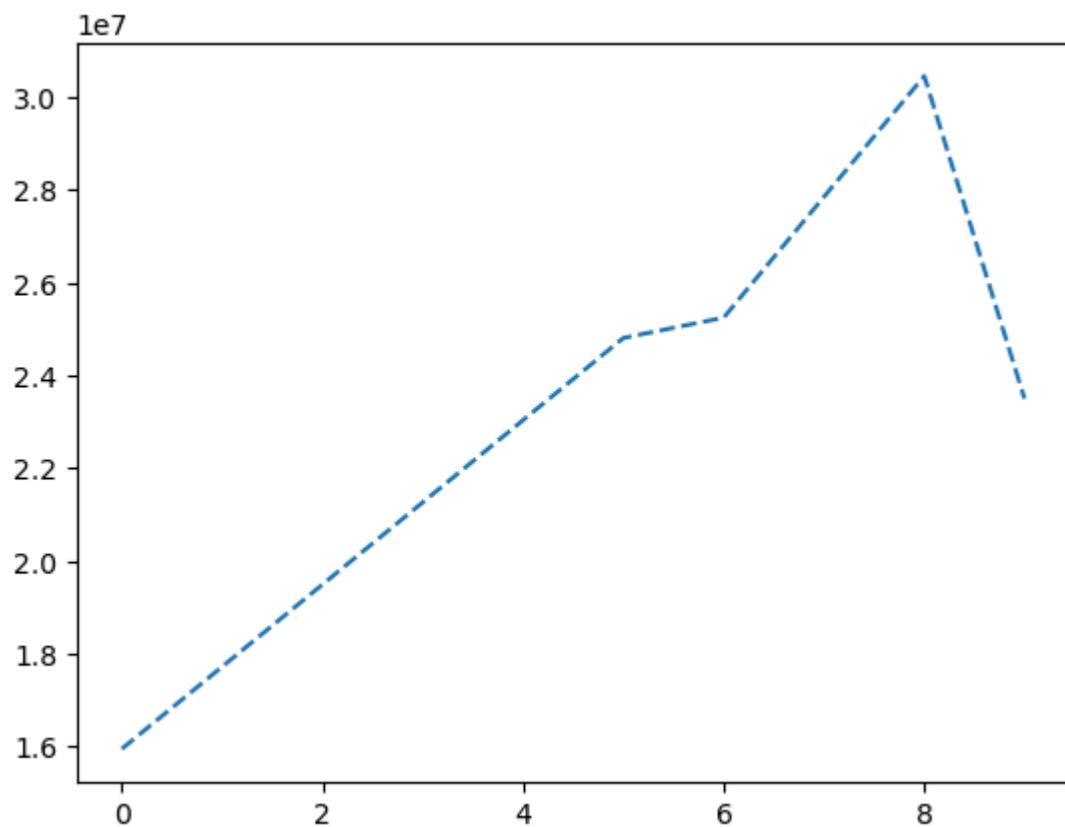
```
In [16]: plt.plot(Salary[0])
```

```
Out[16]: [<matplotlib.lines.Line2D at 0x1e0621eae90>]
```



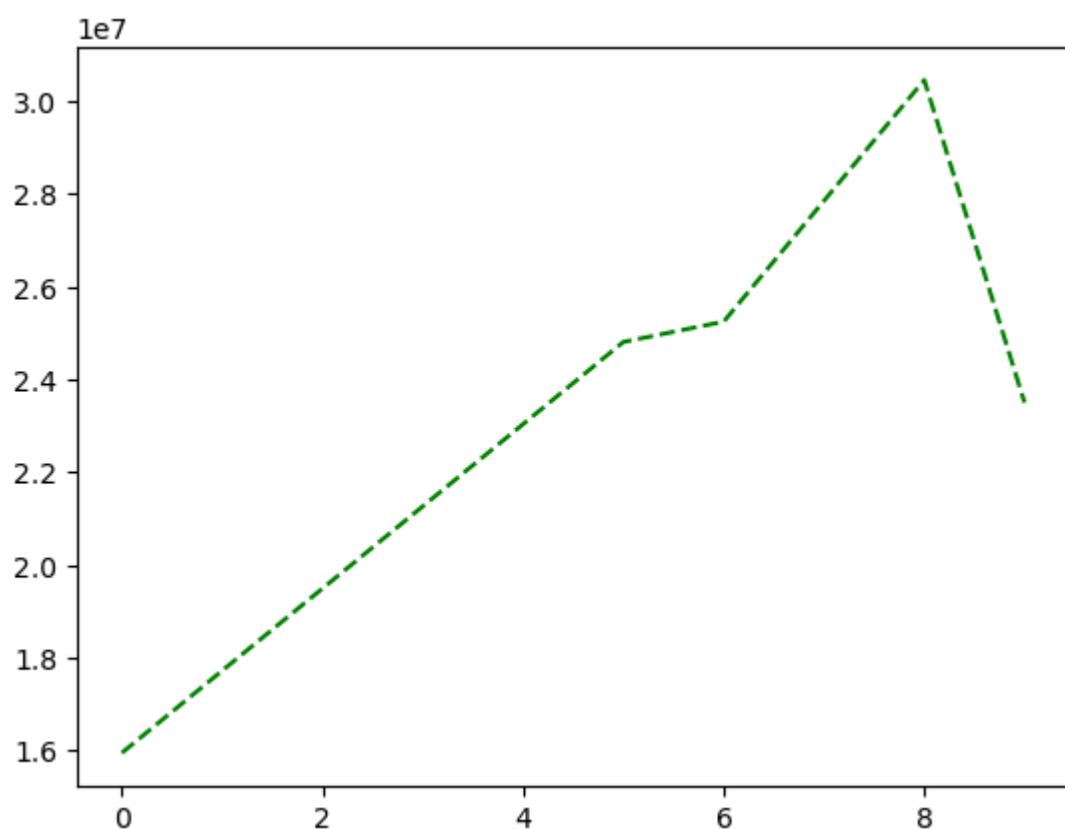
```
In [17]: plt.plot(Salary[0], ls = '--')
```

```
Out[17]: [<matplotlib.lines.Line2D at 0x1e062279e50>]
```



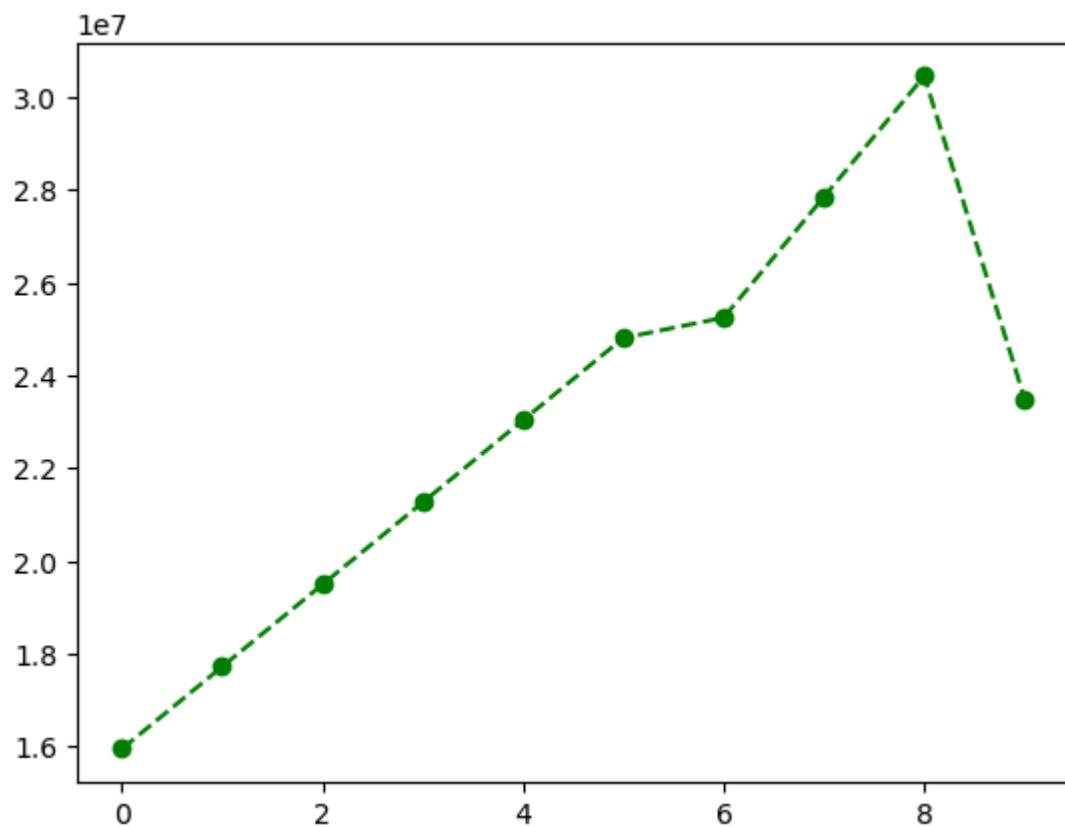
```
In [18]: plt.plot(Salary[0], ls = '--', c = 'g')
```

```
Out[18]: [<matplotlib.lines.Line2D at 0x1e062314410>]
```



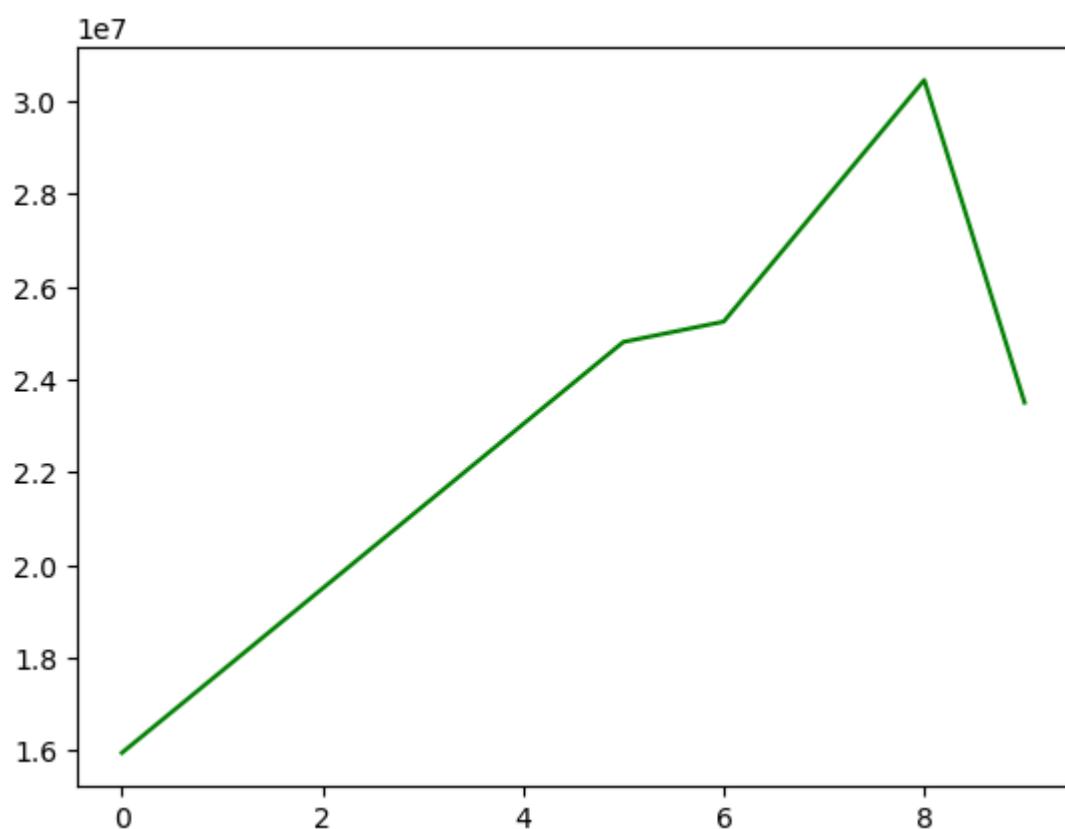
```
In [19]: plt.plot(Salary[0], ls = '--', c = 'g', marker = 'o')
```

```
Out[19]: [<matplotlib.lines.Line2D at 0x1e062b2e990>]
```



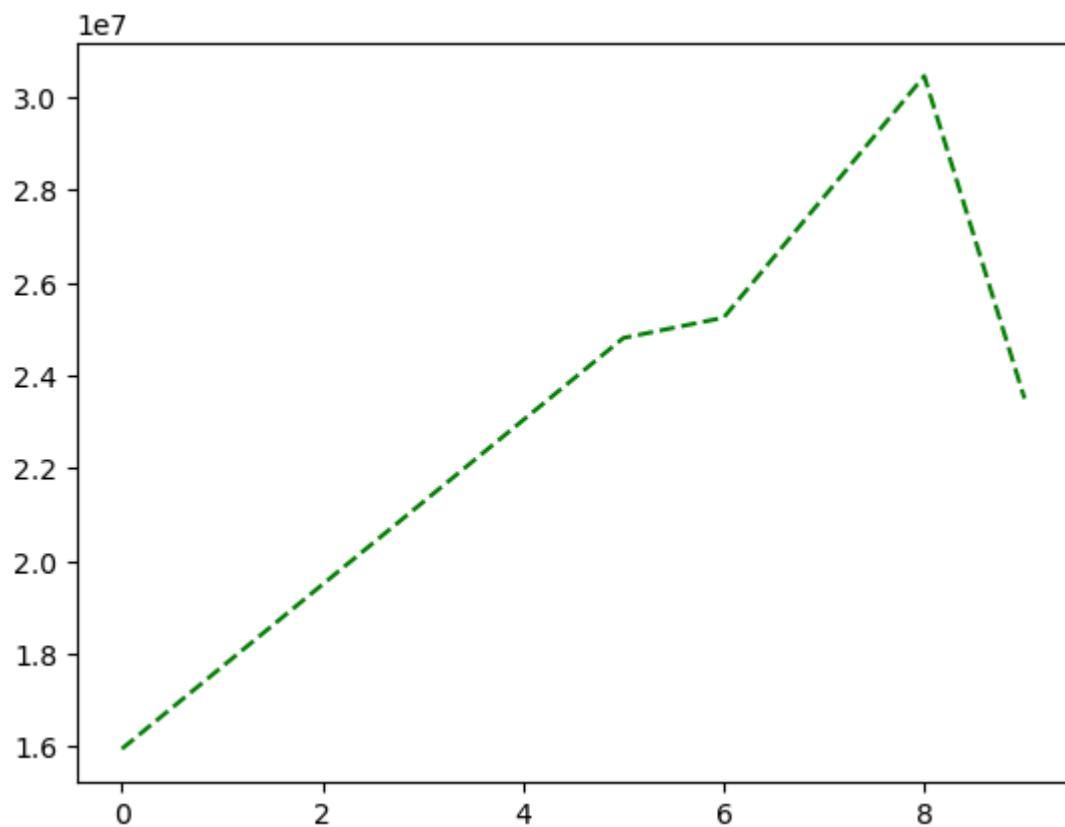
```
In [20]: plt.plot(Salary[0], ls = '-.', c = 'g')
```

```
Out[20]: [<matplotlib.lines.Line2D at 0x1e062bbcf50>]
```



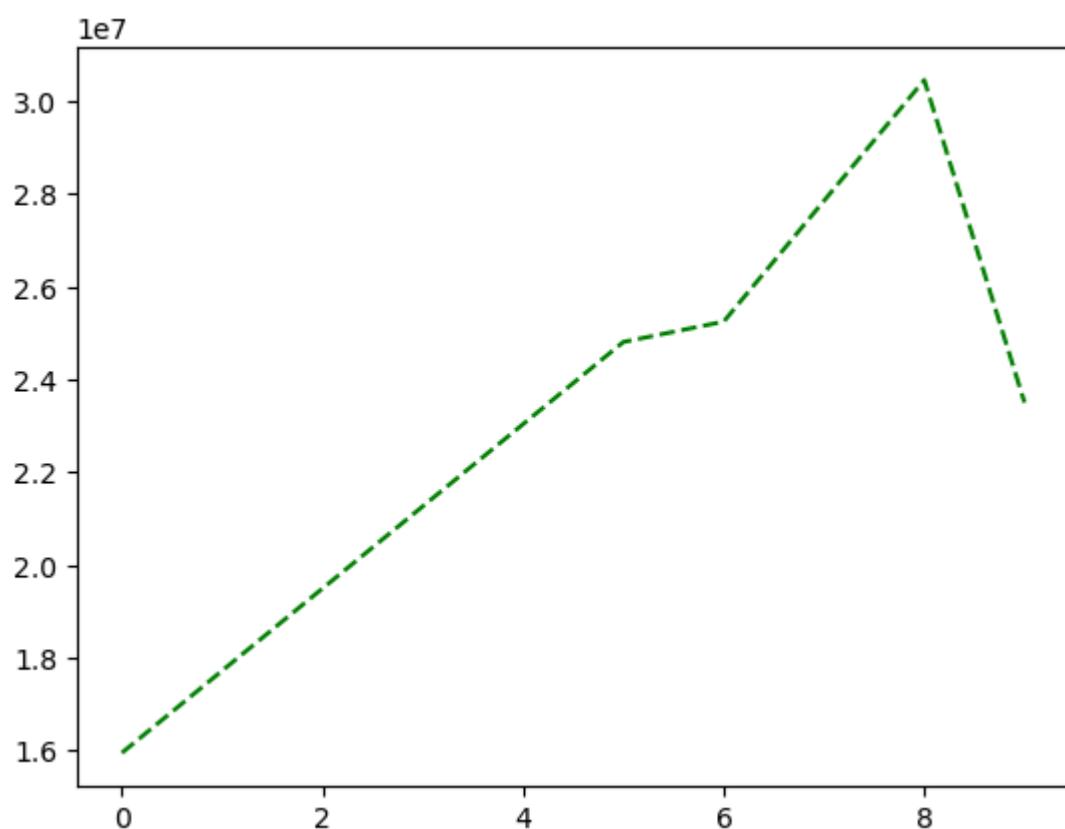
```
In [21]: plt.plot(Salary[0], ls = '--', c = 'g')
```

```
Out[21]: [<matplotlib.lines.Line2D at 0x1e0629cb4d0>]
```



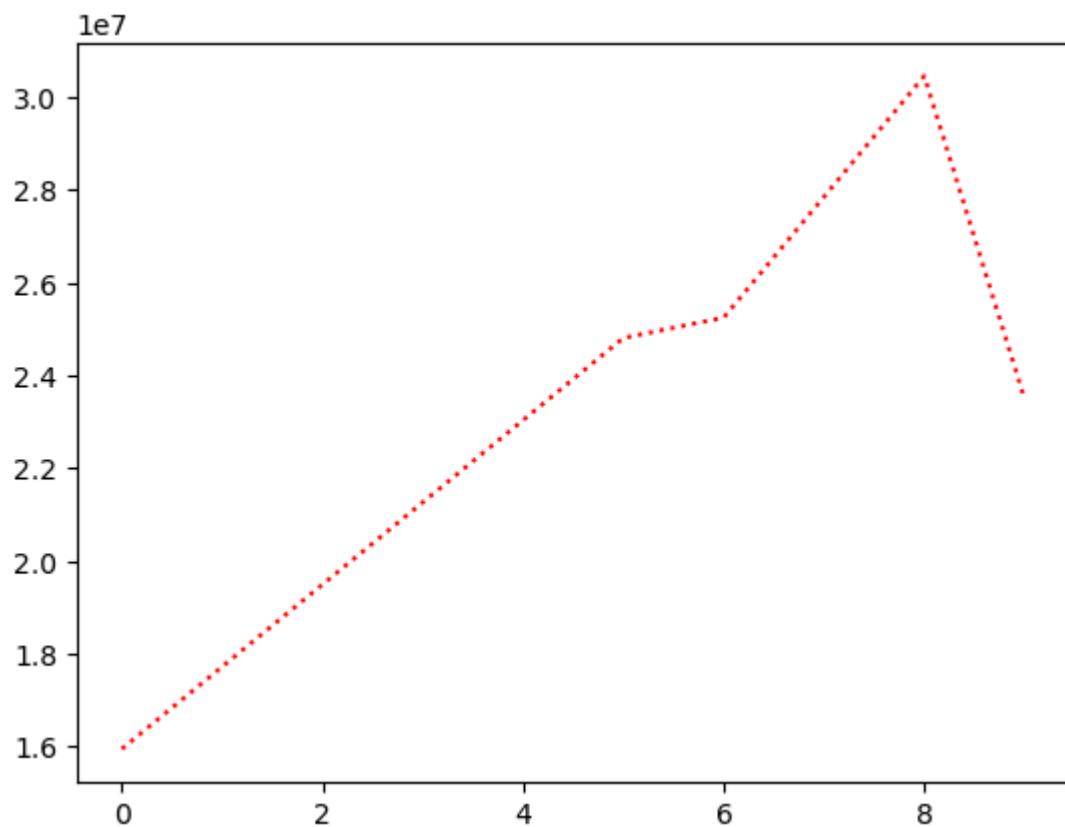
```
In [22]: plt.plot(Salary[0], ls = '--', c = 'g')
```

```
Out[22]: [<matplotlib.lines.Line2D at 0x1e062a65a90>]
```



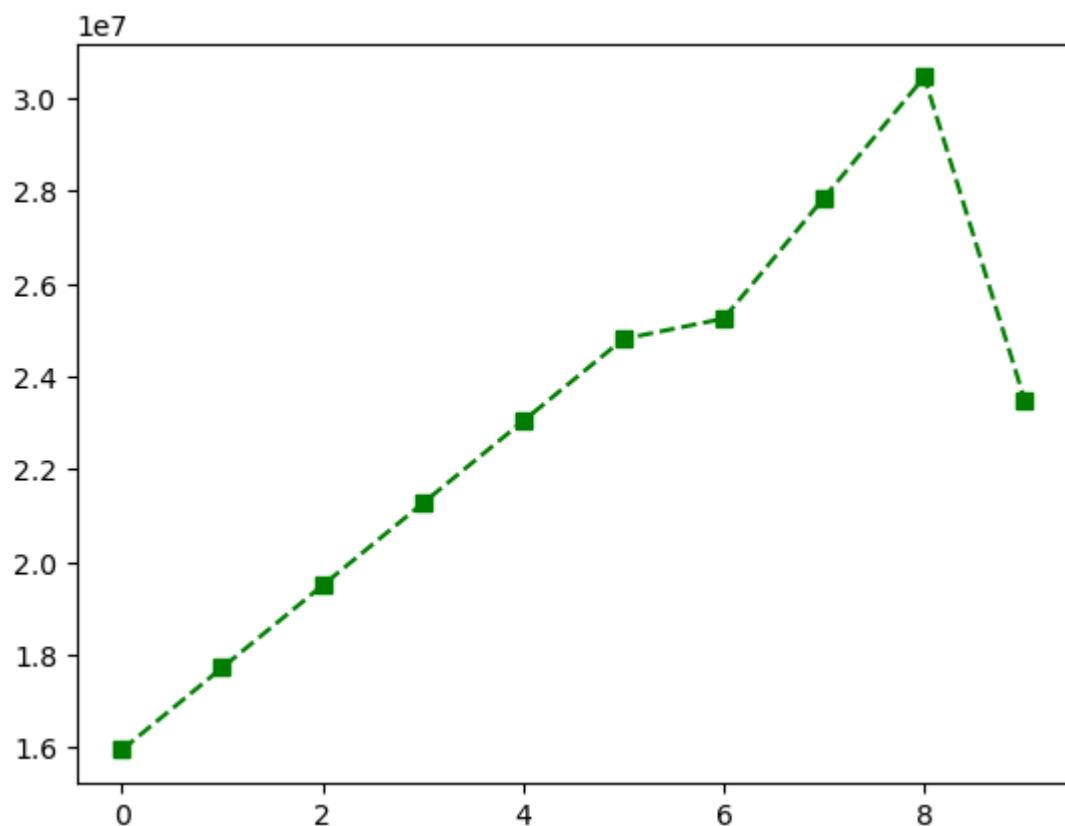
```
In [23]: plt.plot(Salary[0], ls = ':', c = 'r')
```

```
Out[23]: [<matplotlib.lines.Line2D at 0x1e063d38050>]
```



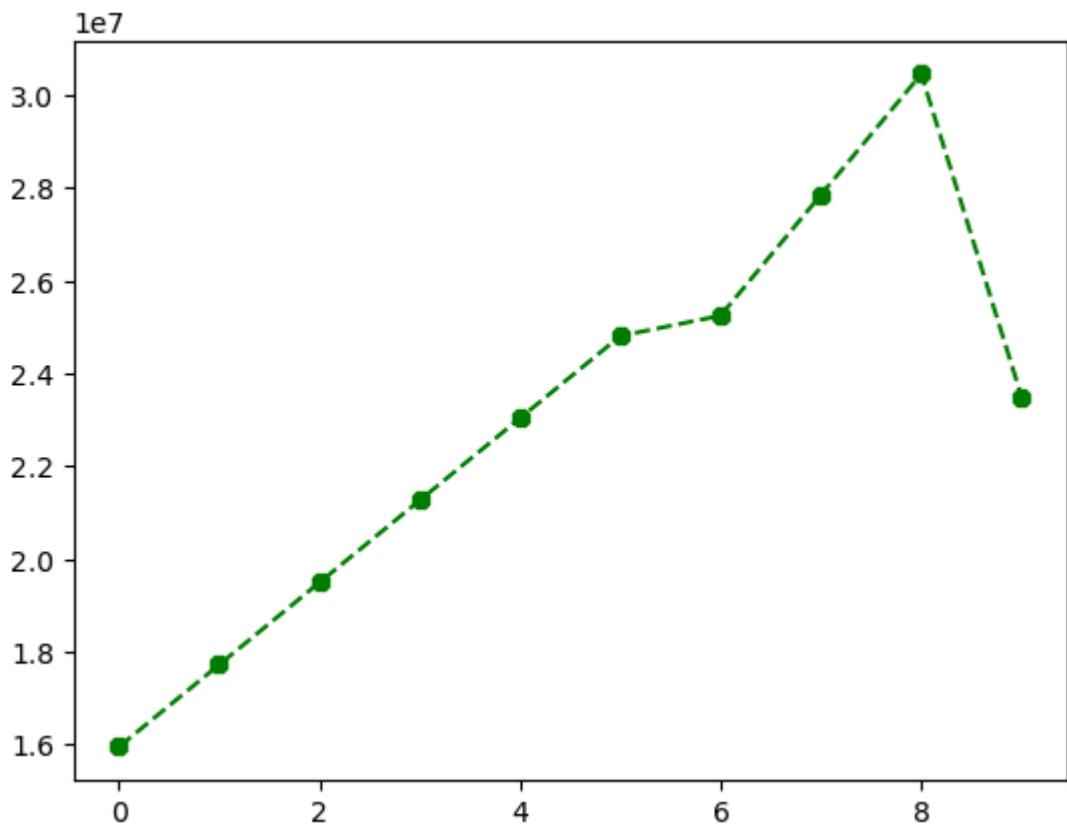
```
In [24]: plt.plot(Salary[0], ls = '--', c = 'g', marker = 's')
```

```
Out[24]: [<matplotlib.lines.Line2D at 0x1e063d8e5d0>]
```



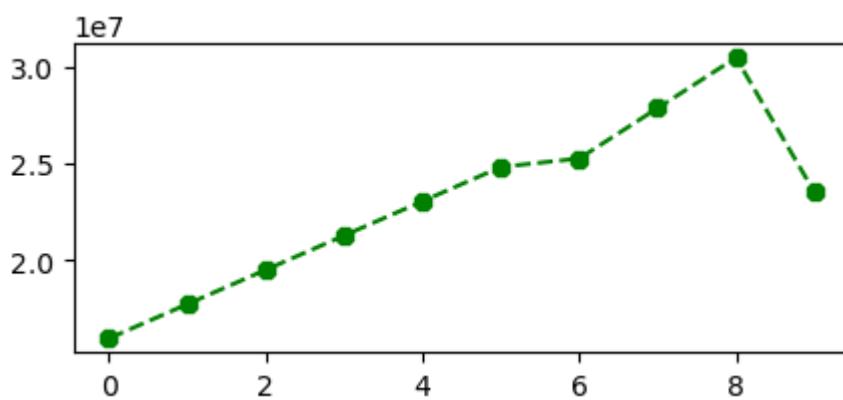
```
In [25]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8')
```

```
Out[25]: <matplotlib.lines.Line2D at 0x1e063be8b90>
```

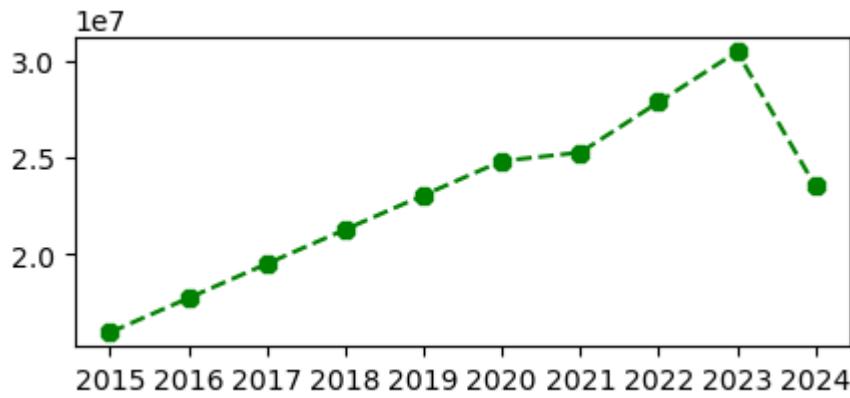


```
In [26]: %matplotlib inline  
plt.rcParams['figure.figsize'] = 5,2
```

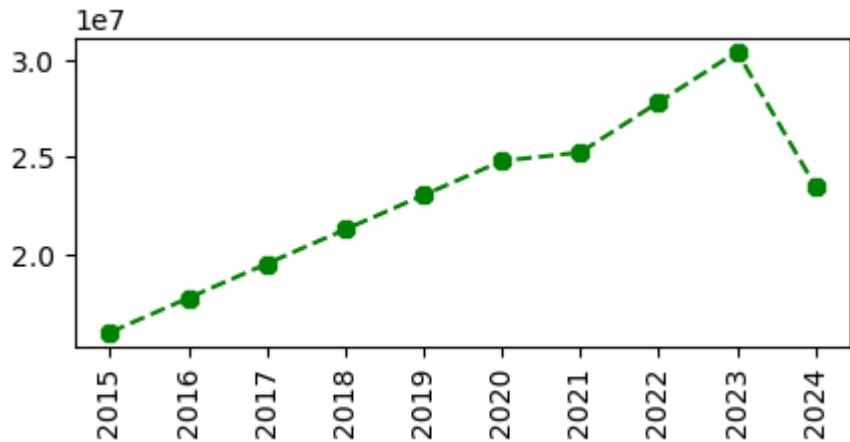
```
In [27]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8')  
plt.show()
```



```
In [28]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8')  
plt.xticks(list(range(0,10)), Seasons)  
plt.show()
```



```
In [29]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8')
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



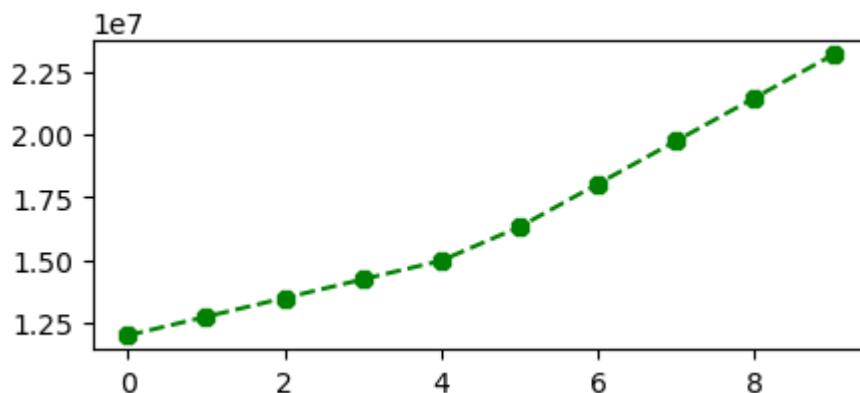
```
In [30]: Salary[0]
```

```
Out[30]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
25244493, 27849149, 30453805, 23500000])
```

```
In [31]: Salary[1]
```

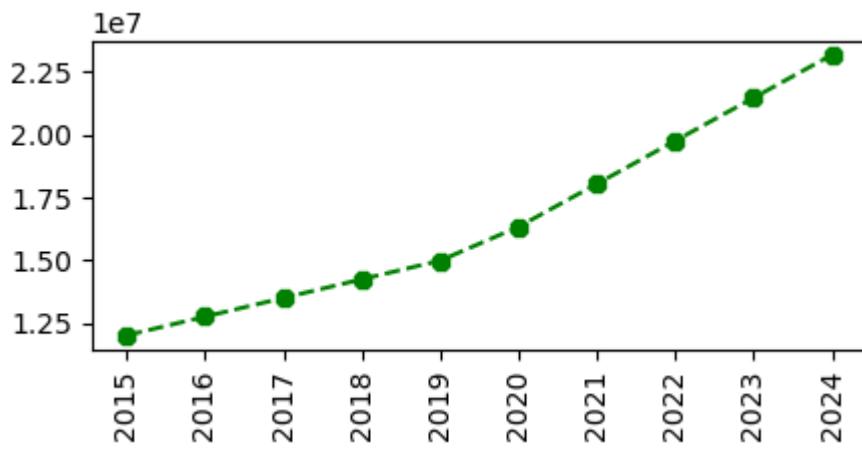
```
Out[31]: array([12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
18038573, 19752645, 21466718, 23180790])
```

```
In [32]: plt.plot(Salary[1], ls = '--', c = 'g', marker = '8')
plt.show()
```

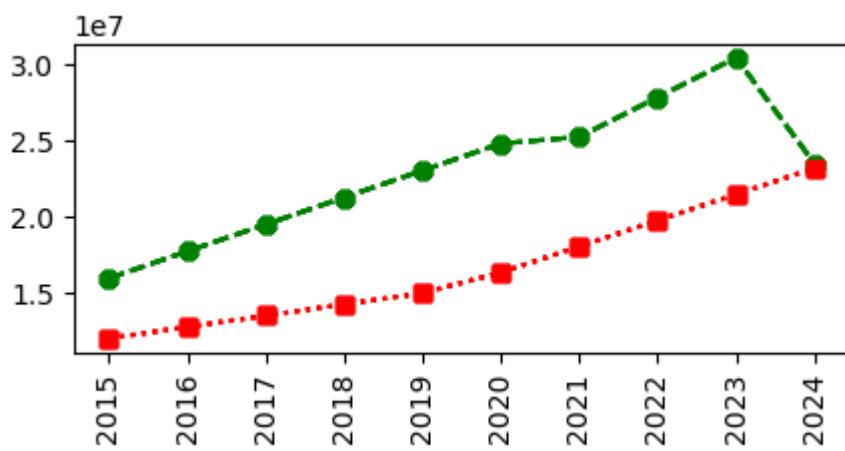


```
In [33]: plt.plot(Salary[1], ls = '--', c = 'g', marker = '8')
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
```

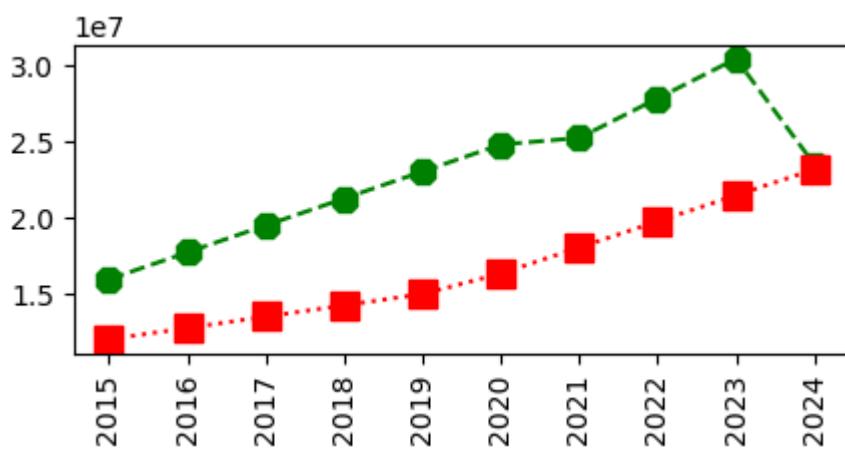
```
plt.show()
```



```
In [42]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8')
plt.plot(Salary[1], ls = ':', c = 'r', marker = 's')
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.show()
```

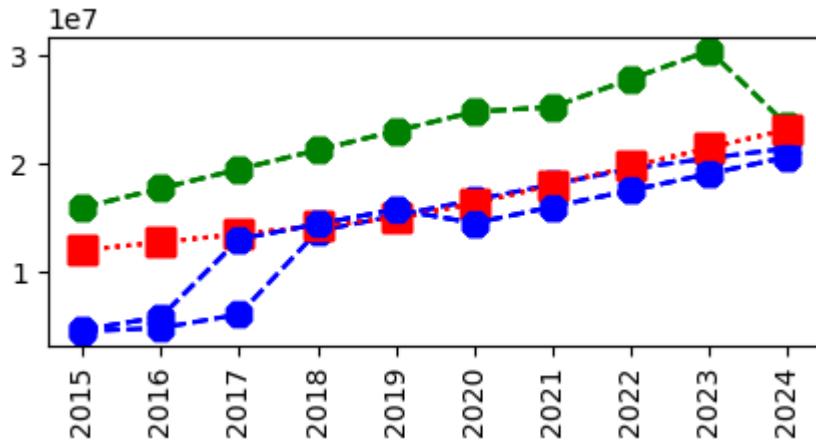


```
In [35]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8', ms = '10', label = Players[0])
plt.plot(Salary[1], ls = ':', c = 'r', marker = 's', ms = '10', label = Players[1])
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.show()
```



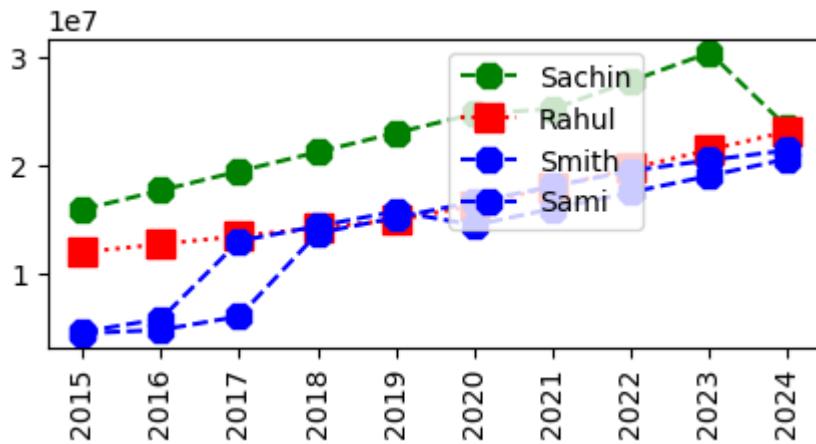
```
In [45]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8', ms = '10', label = Players[0])
plt.plot(Salary[1], ls = ':', c = 'r', marker = 's', ms = '10', label = Players[1])
plt.plot(Salary[2], ls = '--', c = 'b', marker = '8', ms = '10', label = Players[2])
```

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



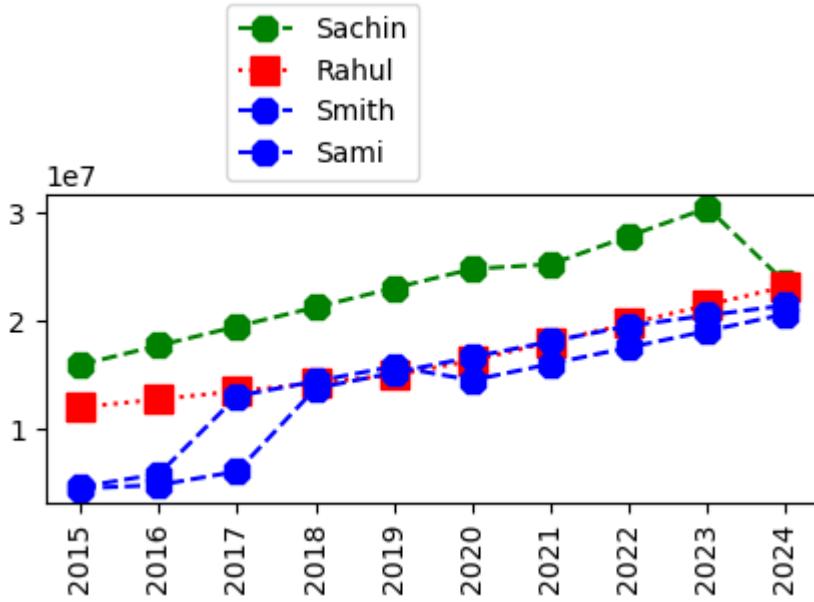
```
In [46]: plt.plot(Salary[0], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[0])
plt.plot(Salary[1],ls = ':',c = 'r',marker = 's',ms = '10',label = Players[1])
plt.plot(Salary[2], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[2])
plt.plot(Salary[4], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[3])
plt.legend(loc = 'upper left',bbox_to_anchor=(0.5, 1))
```

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



```
In [47]: plt.plot(Salary[0], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[0])
plt.plot(Salary[1],ls = ':',c = 'r',marker = 's',ms = '10',label = Players[1])
plt.plot(Salary[2], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[2])
plt.plot(Salary[4], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[3])
plt.legend(loc = 'lower right',bbox_to_anchor=(0.5, 1))
```

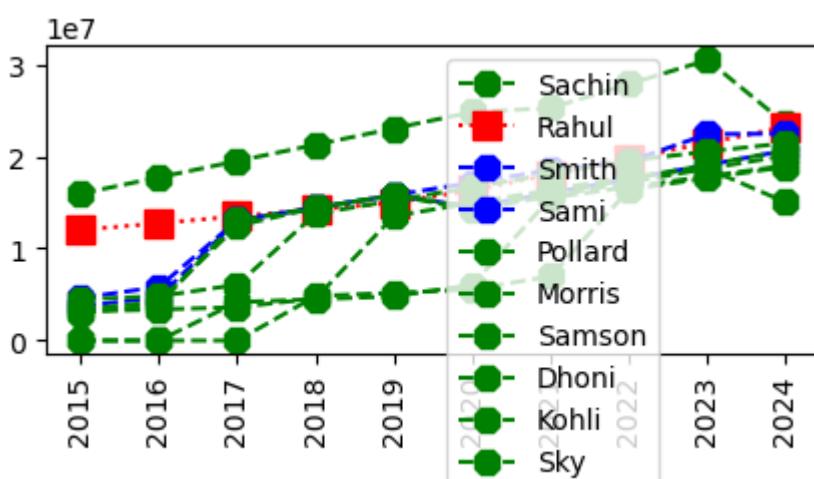
```
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



```
In [48]: plt.plot(Salary[0], ls = '--', c = 'g', marker = '8', ms = '10',label = Players[0])
plt.plot(Salary[1],ls = ':',c = 'r',marker = 's',ms = '10',label = Players[1])
plt.plot(Salary[2], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[2])
plt.plot(Salary[3], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[3])
plt.plot(Salary[4], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[4])
plt.plot(Salary[5], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[5])
plt.plot(Salary[6], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[6])
plt.plot(Salary[7], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[7])
plt.plot(Salary[8], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[8])
plt.plot(Salary[9], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[9])

plt.legend(loc = 'upper left',bbox_to_anchor=(0.5, 1))

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



```
In [49]: plt.plot(Salary[0], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[0])
plt.plot(Salary[1],ls = ':',c = 'r',marker = 's',ms = '10',label = Players[1])
plt.plot(Salary[2], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[2])
plt.plot(Salary[3], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[3])
plt.plot(Salary[4], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[4])
plt.plot(Salary[5], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[5])
```

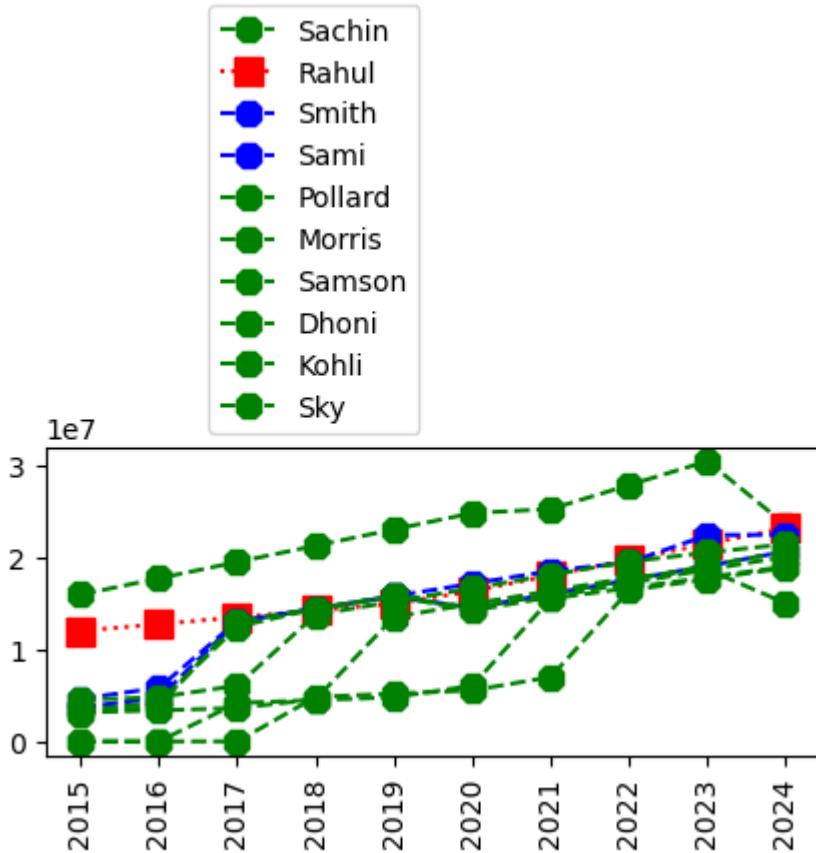
```

plt.plot(Salary[6], ls = '--', c = 'g', marker = '8', ms = '10',label = Players[6])
plt.plot(Salary[7], ls = '--', c = 'g', marker = '8', ms = '10',label = Players[7])
plt.plot(Salary[8], ls = '--', c = 'g', marker = '8', ms = '10',label = Players[8])
plt.plot(Salary[9], ls = '--', c = 'g', marker = '8', ms = '10',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()

```



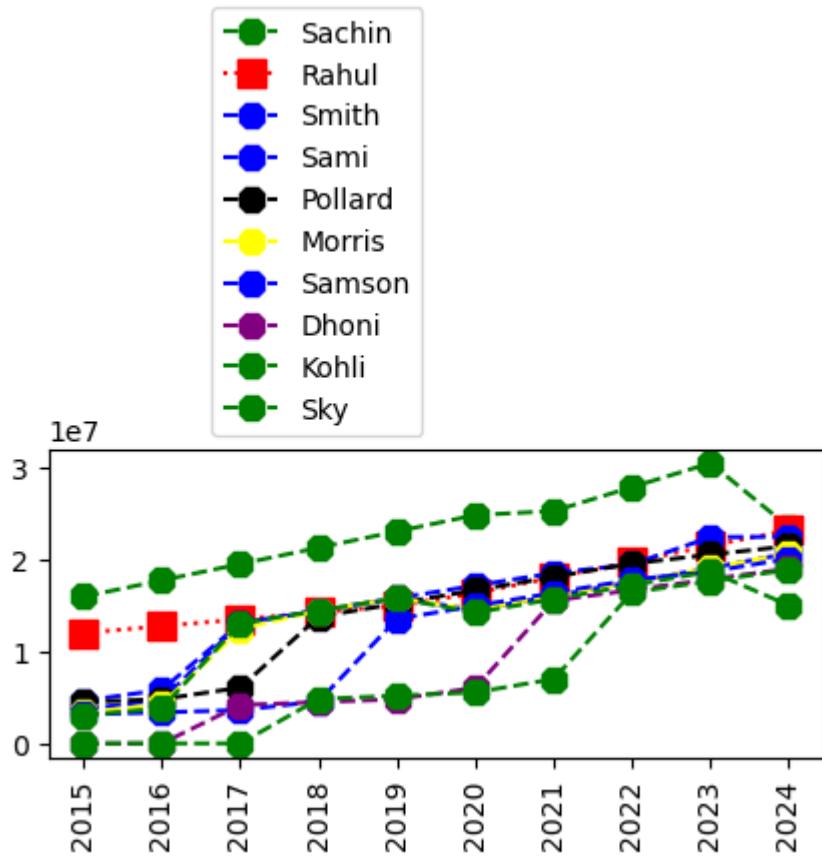
```

In [50]: plt.plot(Salary[0], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[0])
plt.plot(Salary[1],ls = ':',c = 'r',marker = 's',ms = '10',label = Players[1])
plt.plot(Salary[2], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[2])
plt.plot(Salary[3], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[3])
plt.plot(Salary[4], ls = '--',c = 'black',marker = '8',ms = '10',label = Players[4])
plt.plot(Salary[5], ls = '--',c = 'yellow',marker = '8',ms = '10',label = Player)
plt.plot(Salary[6], ls = '--',c = 'b',marker = '8',ms = '10',label = Players[6])
plt.plot(Salary[7], ls = '--',c = 'purple',marker = '8',ms = '10',label = Player)
plt.plot(Salary[8], ls = '--',c = 'g',marker = '8',ms = '10',label = Players[8])
plt.plot(Salary[9], ls = '--',c = 'g',marker = '8',ms = '10',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()

```



```
In [ ]: #when there is a more data matplotlib couldn't handle then we use power bi or tab
```