



```
In [20]: #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"]
Pdct = {"Sachin":0, "Rahul":1, "Smith":2, "Sami":3, "Pollard":4, "Morris":5, "Samson":6, "Dhoni":7}

#Salaries
Sachin_Salary = [15946875, 17718750, 19490625, 21262500, 23034375, 24806250, 25244490, 26687500, 28125000, 29562500]
Rahul_Salary = [12000000, 12744189, 13488377, 14232567, 14976754, 16324500, 18038573, 19752646, 21466719, 23180792]
Smith_Salary = [4621800, 5828090, 13041250, 14410581, 15779912, 14500000, 16022500, 17445000, 18867500, 20290000]
Sami_Salary = [3713640, 4694041, 13041250, 14410581, 15779912, 17149243, 18518574, 19887905, 21257236, 22626567]
Pollard_Salary = [4493160, 4806720, 6061274, 13758000, 15202590, 16647180, 18091770, 19536360, 20980950, 22425540]
Morris_Salary = [3348000, 4235220, 12455000, 14410581, 15779912, 14500000, 16022500, 17445000, 18867500, 20290000]
Samson_Salary = [3144240, 3380160, 3615960, 4574189, 13520500, 14940153, 16359805, 17779457, 19199109, 20618761]
Dhoni_Salary = [0, 0, 4171200, 4484040, 4796880, 6053663, 15506632, 16669630, 17832627, 18995625]
Kohli_Salary = [0, 0, 0, 4822800, 5184480, 5546160, 6993708, 16402500, 17632688, 18862876]
Sky_Salary = [3031920, 3841443, 13041250, 14410581, 15779912, 14200000, 15691000, 17182000, 18673000, 20164000]

#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_PTS, Samson_PTS, Dhoni_PTS, Kohli_PTS, Sky_PTS])
```

In [21]: Salary

```
Out[21]: 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 [22]: Games

```
Out[22]: 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 [23]: Points

```
Out[23]: 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 [24]: Games[1]

```
Out[24]: array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])
```

```
In [25]: Games[0:6]
```

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

```
In [26]: Games[0,6]
```

```
Out[26]: np.int64(58)
```

```
In [27]: Salary/Games
```

```

Out[27]: 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 [28]: np.round(Salary//Games)

```

```
Out[28]: 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]])
```

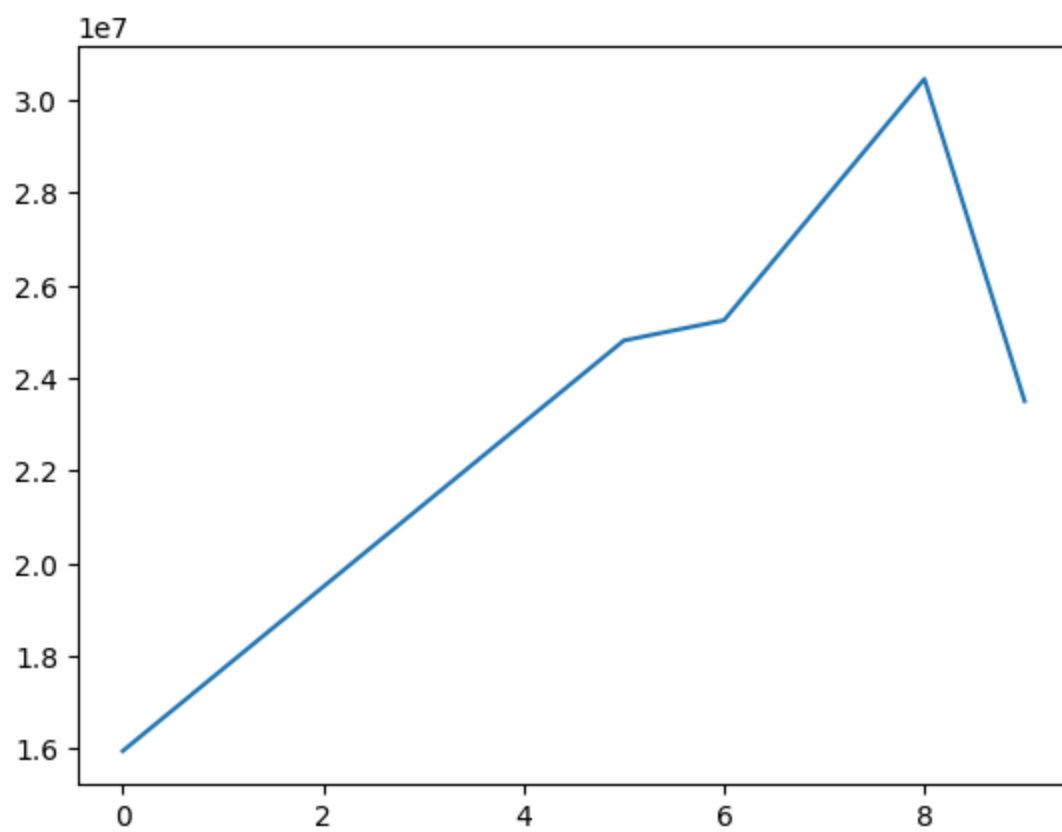
```
In [29]: import warnings
warnings.filterwarnings('ignore')
```

```
In [30]: import matplotlib.pyplot as plt
import numpy as np
Salary[0]
```

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

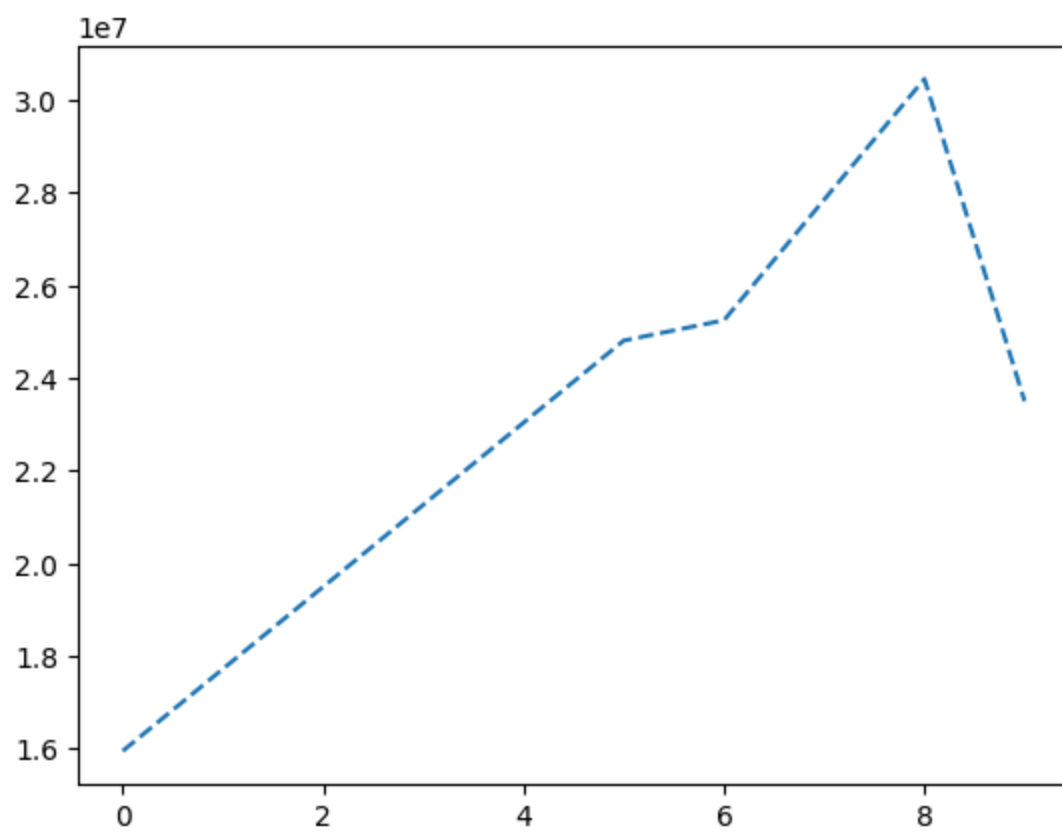
```
In [31]: plt.plot(Salary[0])
```

```
Out[31]: [<matplotlib.lines.Line2D at 0x165b3c96d50>]
```



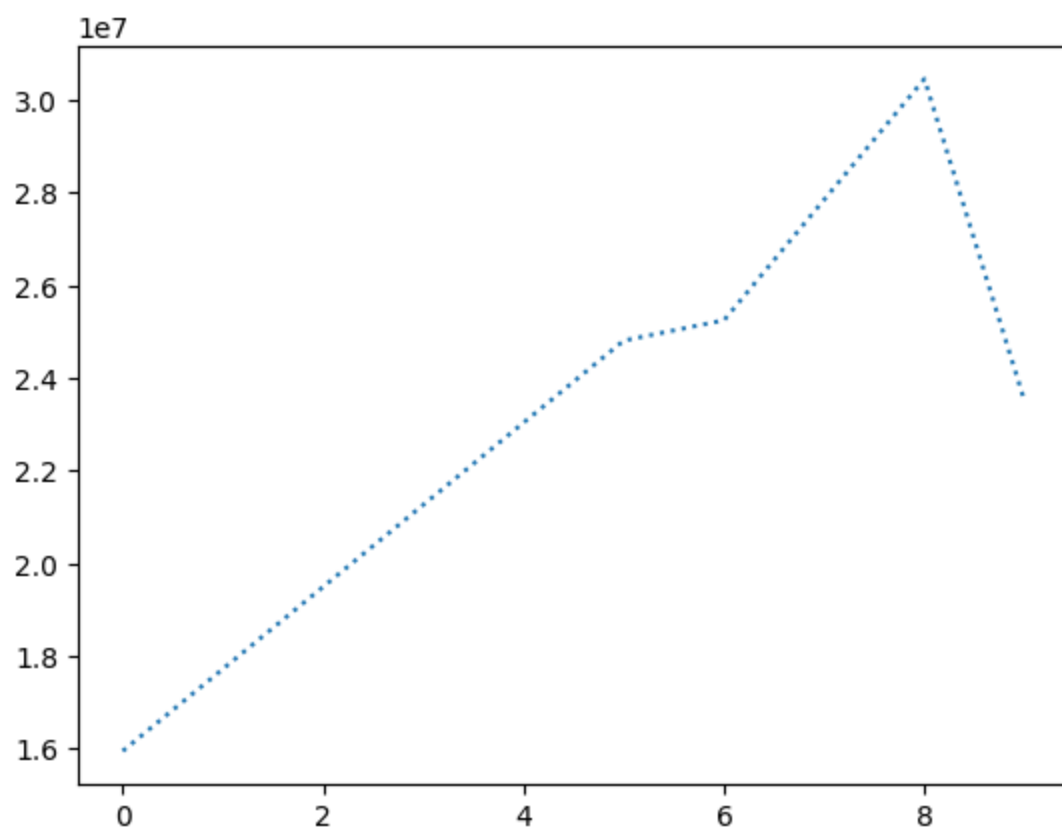
```
In [32]: plt.plot(Salary[0],ls='--')
```

```
Out[32]: [<matplotlib.lines.Line2D at 0x165b3add590>]
```



```
In [33]: plt.plot(Salary[0],ls=':')
```

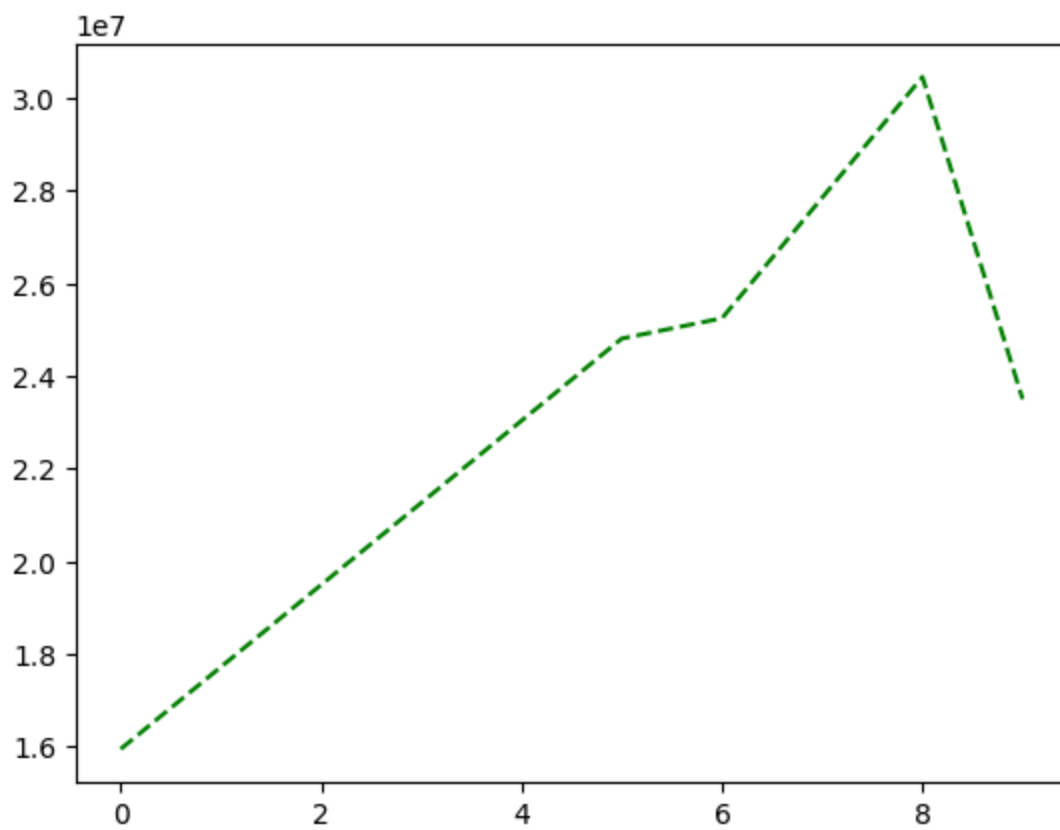
```
Out[33]: [<matplotlib.lines.Line2D at 0x165b3b33c50>]
```



```
In [34]: plt.plot(Salary[0],ls='--',color='green')
```

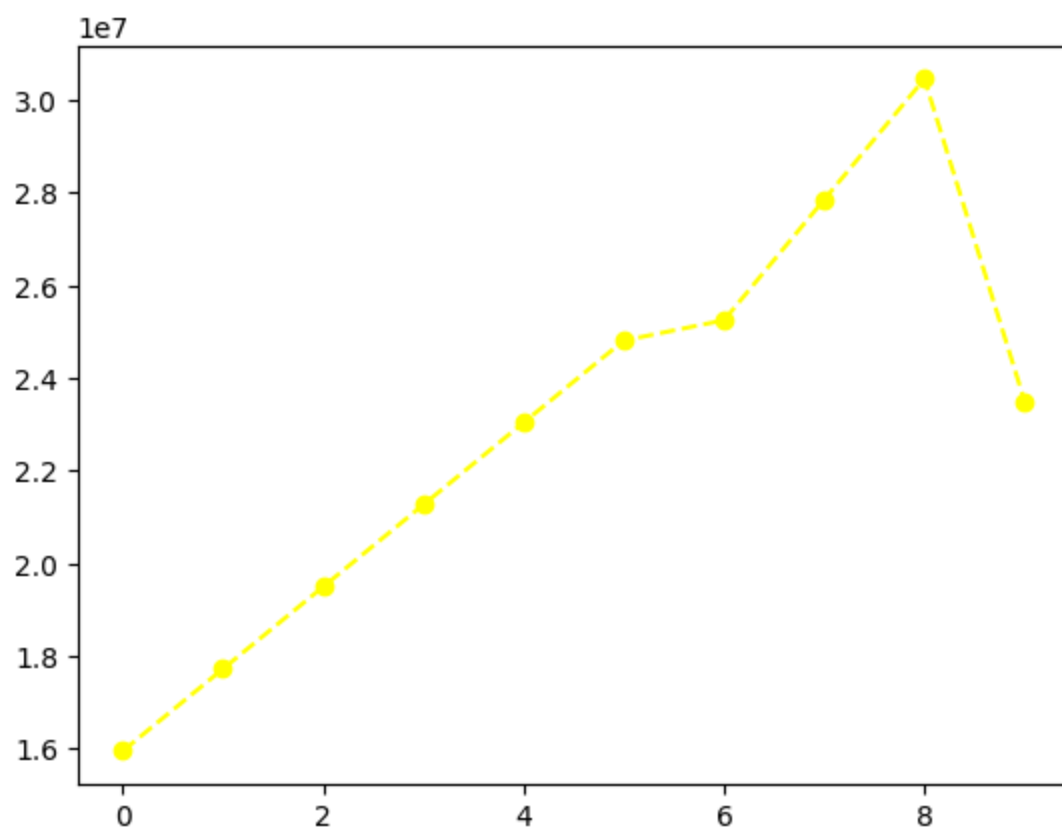
```
Out[34]: [<matplotlib.lines.Line2D at 0x165b3e36210>]
```





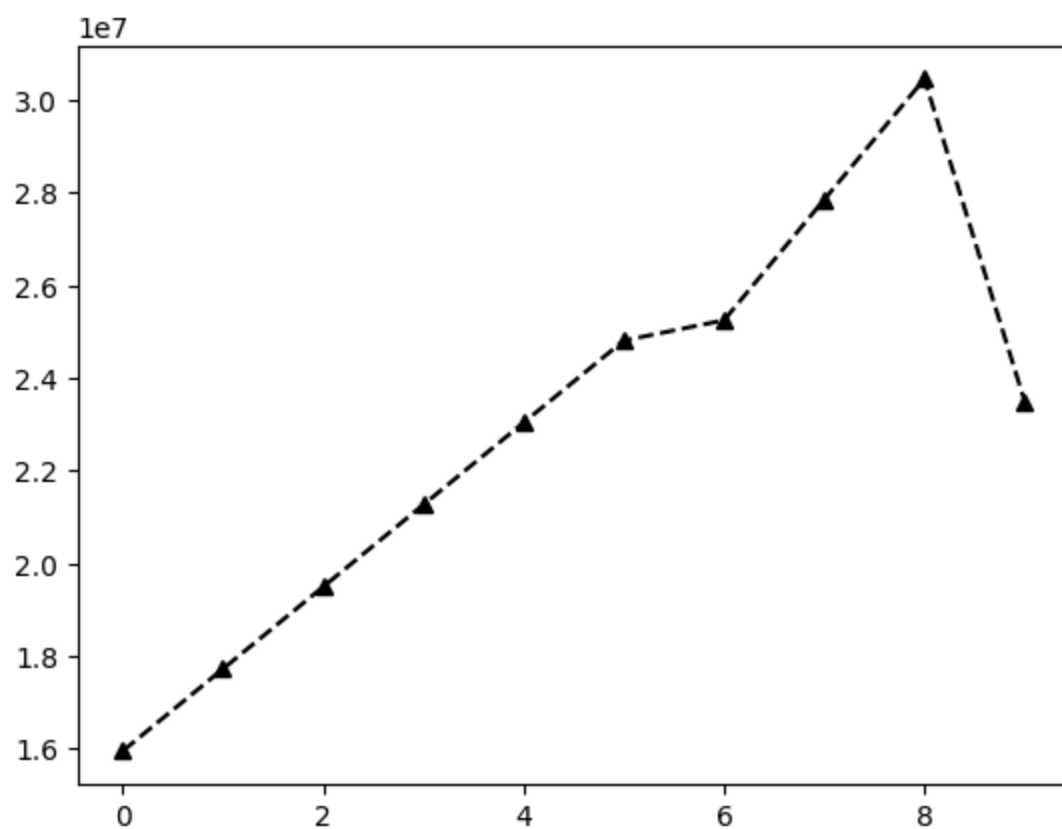
```
In [35]: plt.plot(Salary[0],ls='--',color='yellow',marker='o')
```

```
Out[35]: [<matplotlib.lines.Line2D at 0x165b3e9c7d0>]
```



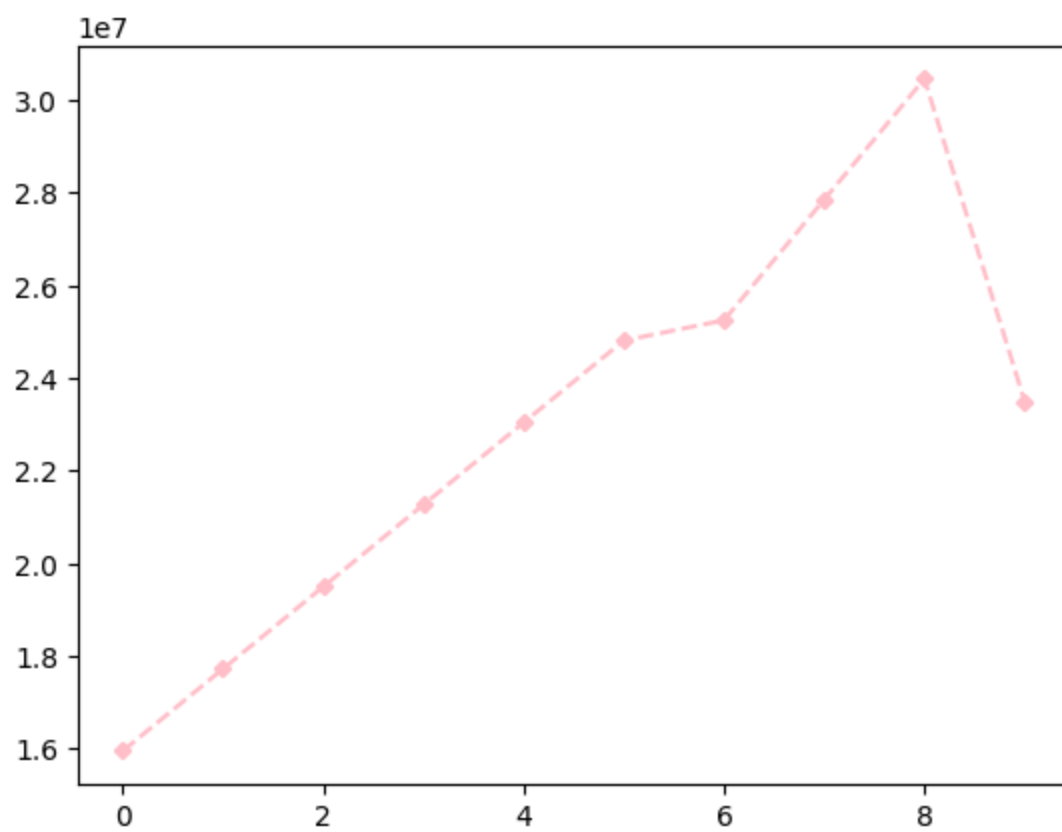
```
In [36]: plt.plot(Salary[0],ls='--',color='black',marker='^')
```

```
Out[36]: [matplotlib.lines.Line2D at 0x165b4eced50]
```



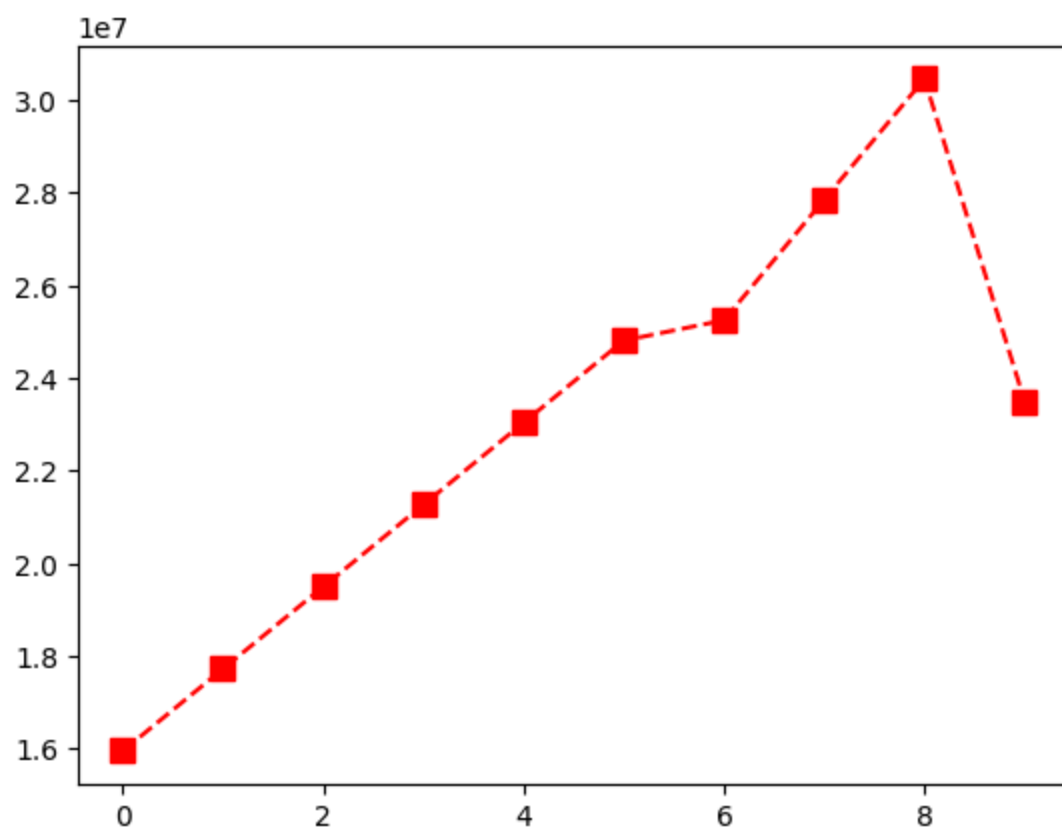
```
In [37]: plt.plot(Salary[0],ls='--',color='pink',marker='D',ms=4)
```

```
Out[37]: [<matplotlib.lines.Line2D at 0x165b4f55310>]
```

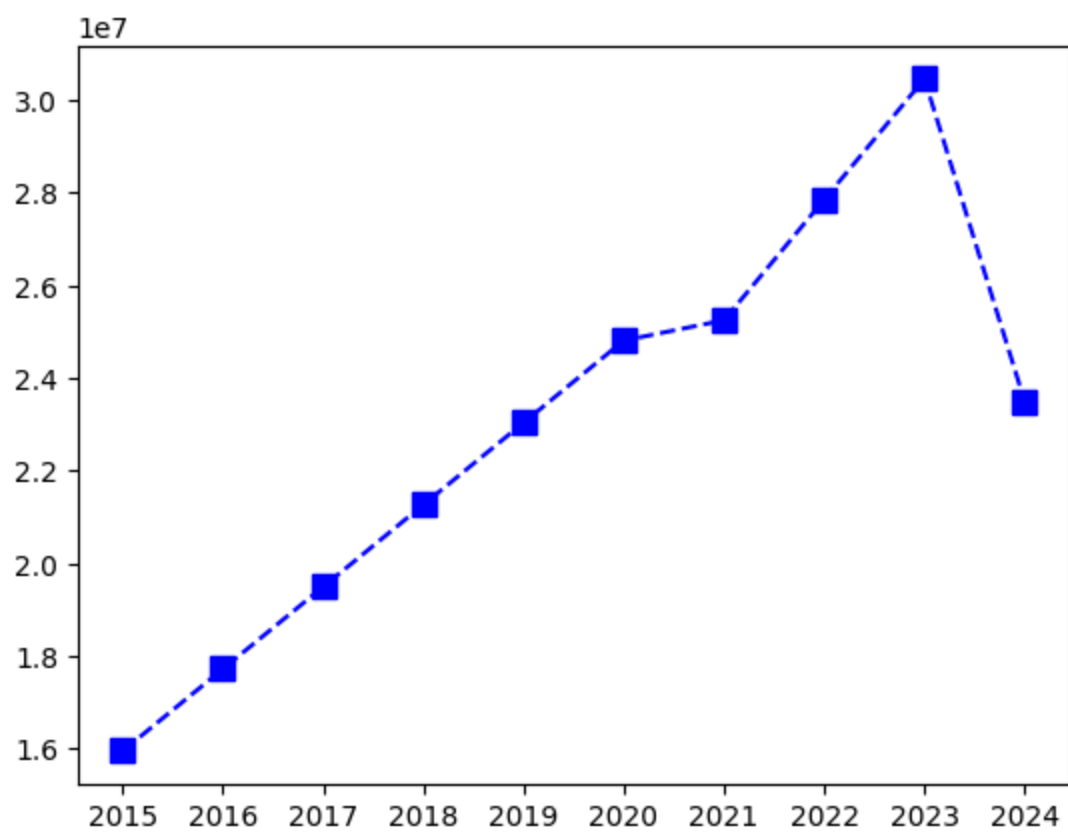


```
In [38]: plt.plot(Salary[0],ls='--',color='red',marker='s',ms=8)
```

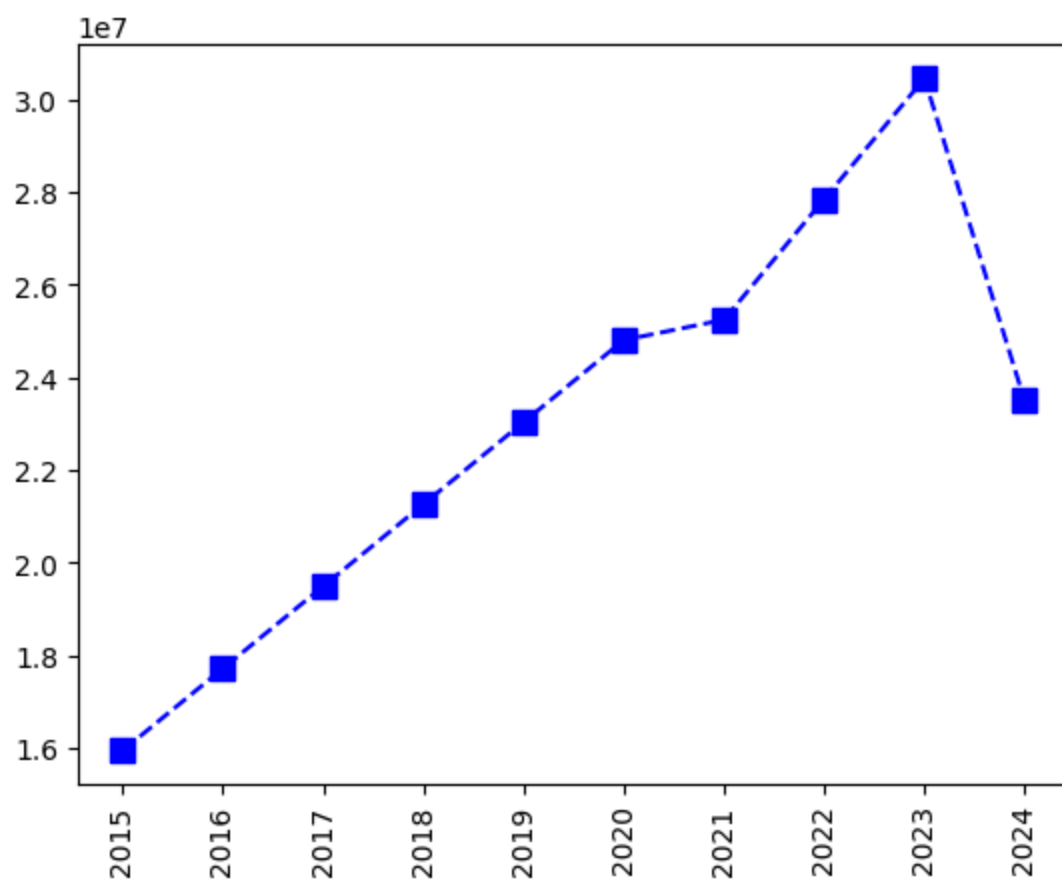
```
Out[38]: [<matplotlib.lines.Line2D at 0x165b4faf890>]
```



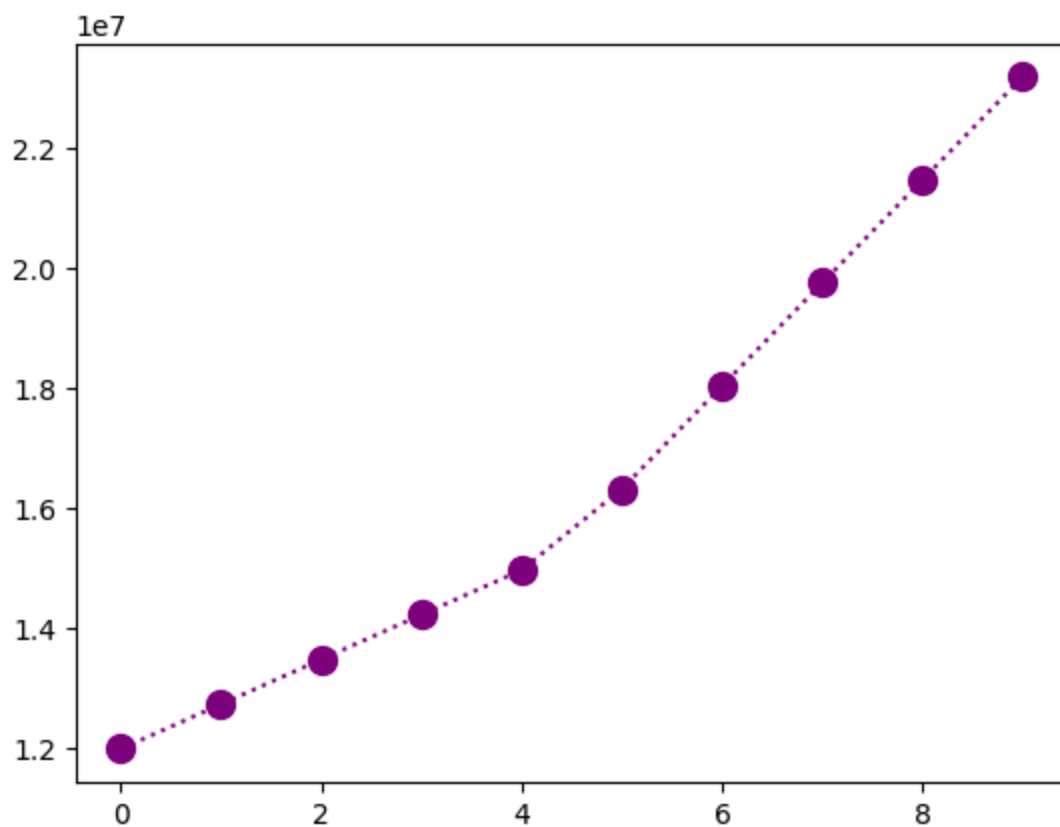
```
In [41]: plt.plot(Salary[0],ls='--',color='blue',marker='s',ms=8)
plt.xticks(list(range(0,10)), Seasons)
plt.show()
```



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



```
In [43]: plt.plot(Salary[1],ls=':',c='purple',marker='o',ms=10,label=Players[1])  
plt.show()
```

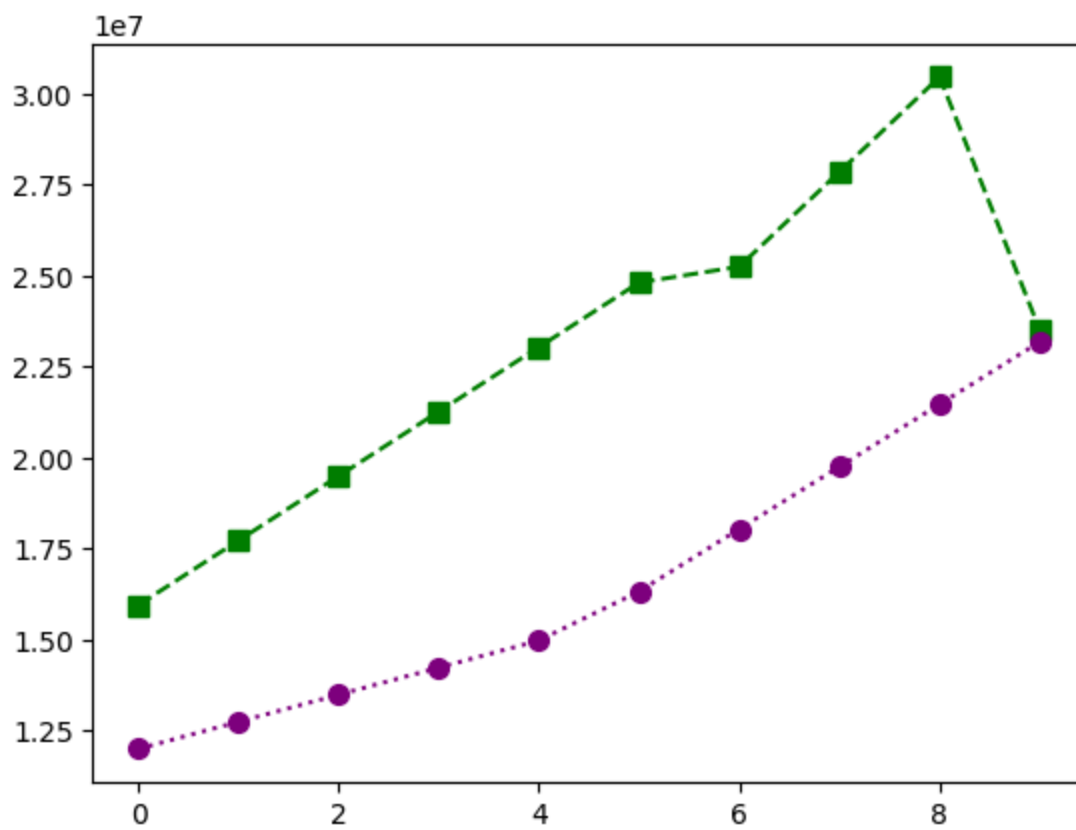


```
In [44]: Salary[1]
```

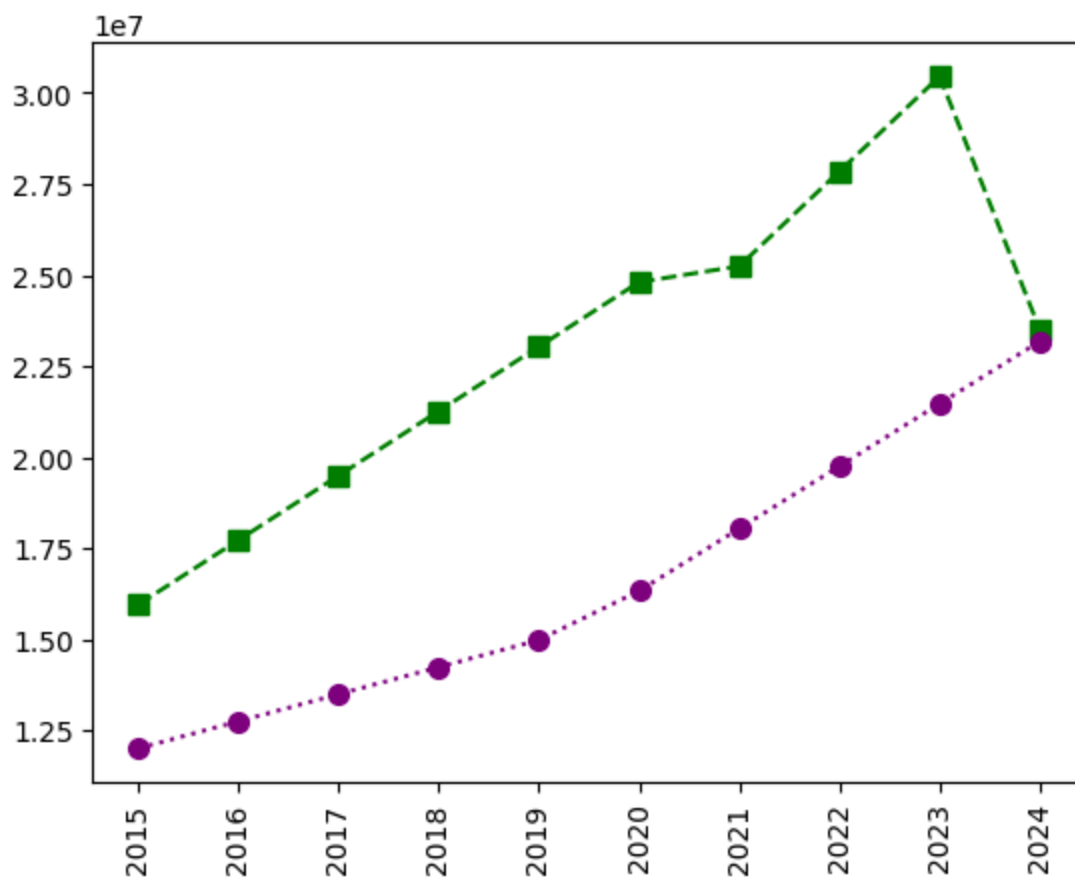
```
Out[44]: array([12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
                18038573, 19752645, 21466718, 23180790])
```

```
In [47]: plt.plot(Salary[0],ls='--',c='green',marker='s',ms=7,label=Players[0])
plt.plot(Salary[1],ls=':',c='purple',marker='o',ms=7,label=Players[1])
plt.show()
```

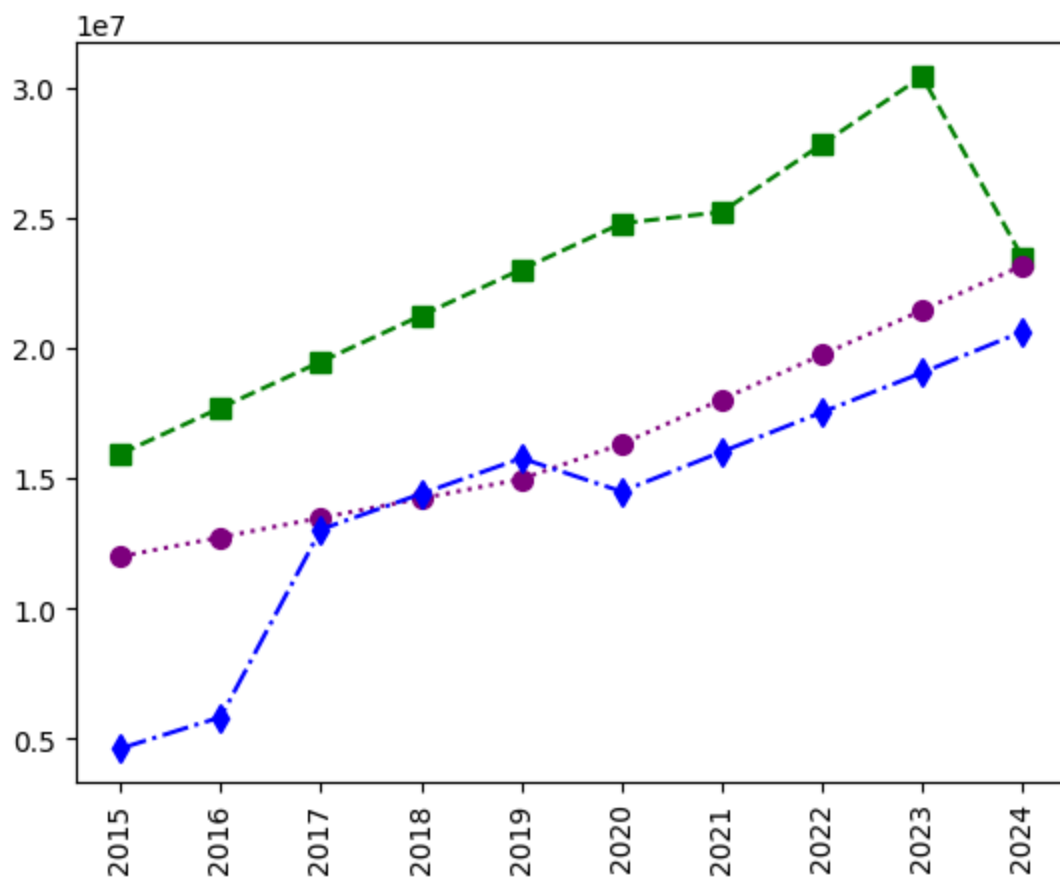




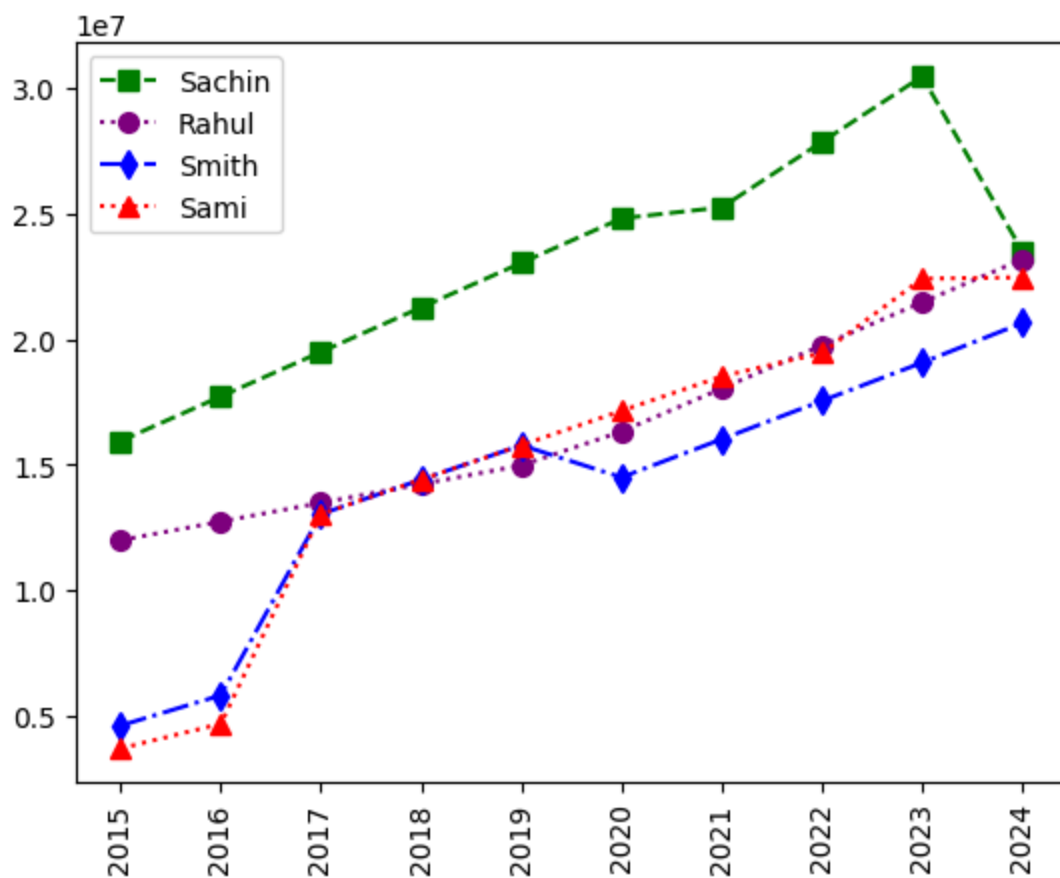
```
In [49]: plt.plot(Salary[0],ls='--',c='green',marker='s',ms=7,label=Players[0])
plt.plot(Salary[1],ls=':',c='purple',marker='o',ms=7,label=Players[1])
plt.xticks(list(range(0,10)), Seasons,rotation='vertical')
plt.show()
```



```
In [53]: plt.plot(Salary[0],ls='--',c='green',marker='s',ms=7,label=Players[0])
plt.plot(Salary[1],ls=':',c='purple',marker='o',ms=7,label=Players[1])
plt.plot(Salary[2],ls='-.',c='blue',marker='d',ms=7,label=Players[2])
plt.xticks(list(range(0,10)), Seasons,rotation='vertical')
plt.show()
```



```
In [59]: plt.plot(Salary[0],ls='--',c='green',marker='s',ms=7,label=Players[0])
plt.plot(Salary[1],ls=':',c='purple',marker='o',ms=7,label=Players[1])
plt.plot(Salary[2],ls='-.',c='blue',marker='d',ms=7,label=Players[2])
plt.plot(Salary[3],ls=':',c='red',marker='^',ms=7,label=Players[3])
plt.legend()
plt.xticks(list(range(0,10)), Seasons,rotation='vertical')
plt.show()
```



```
In [60]: plt.plot(Salary[0],ls='--',c='green',marker='s',ms=7,label=Players[0])
plt.plot(Salary[1],ls=':',c='purple',marker='o',ms=7,label=Players[1])
plt.plot(Salary[2],ls='-.',c='blue',marker='d',ms=7,label=Players[2])
plt.plot(Salary[3],ls=':',c='red',marker='^',ms=7,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()
```

