In [1]:

```python
import pandas as pd
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}
print(Seasons)

#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}
print(Players)

#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_Salary, Kohli_Salary, Sky_Salary])
print(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])
print(Games)

#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])
print(Points)
```

```
['2010', '2011', '2012', '2013', '2014', '2015', '2016', '2017', '2018', '2019']
['Sachin', 'Rahul', 'Smith', 'Sami', 'Pollard', 'Morris', 'Samson', 'Dhoni', 'Kohli', 'Sky']
[[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]]
[[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]]
[[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 [2]:

```python
len(Seasons)
len(Players)
len(Salary)
len(Games)
len(Points)
```

Out[2]: 10

In [3]:

```python
Salary[Pdict["Sky"]][Sdict["2019"]]
```

Out[3]: 15000000

In [4]:

```python
Salary/Games
```

```
C:\Users\sirius\AppData\Local\Temp\ipykernel_11048\3709746658.py:1: RuntimeWarning: divide by zero encountered in divide
  Salary/Games
```

Out[4]:

```
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 [5]:

```python
np.round(Salary/Games)
```

```
C:\Users\sirius\AppData\Local\Temp\ipykernel_11048\3232172828.py:1: RuntimeWarning: divide by zero encountered in divide
  np.round(Salary/Games)
```

Out[5]:

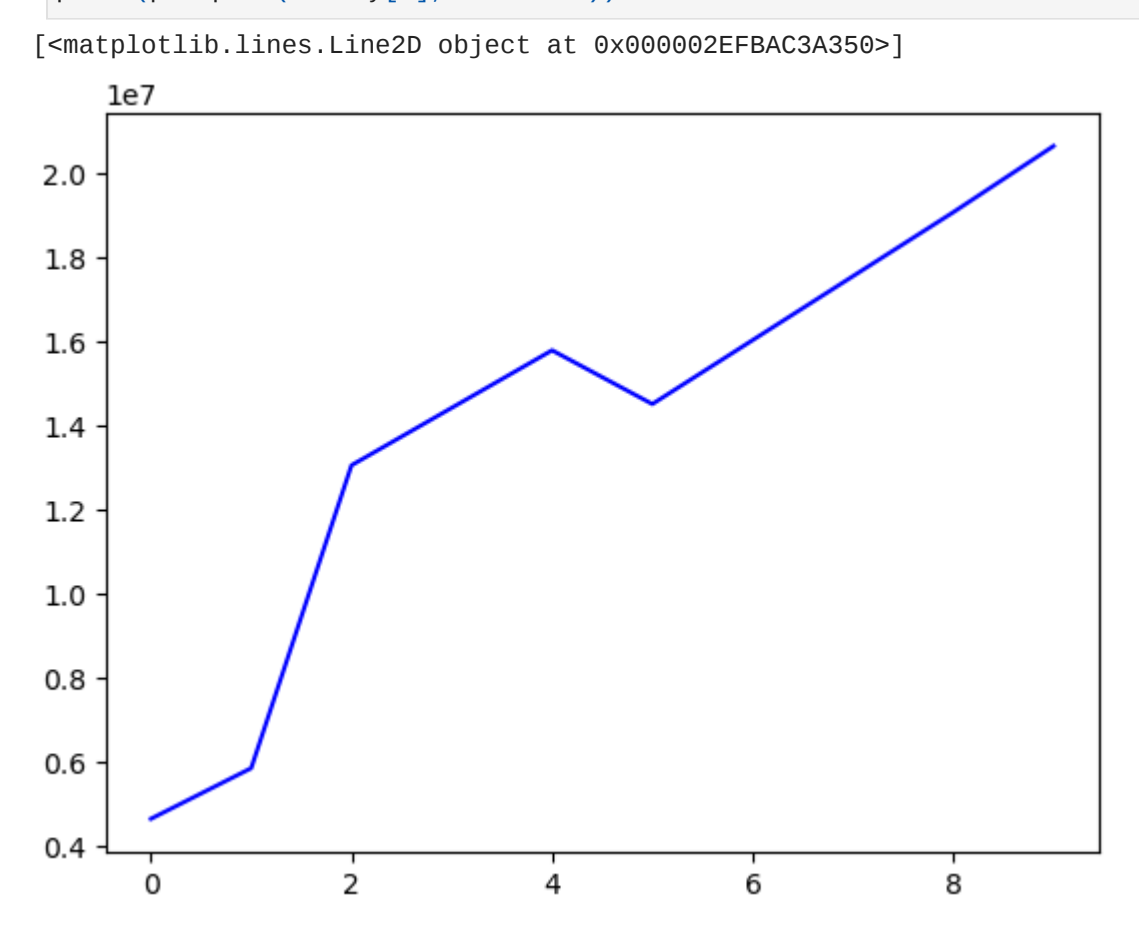
```
array([[ 199336.,  230114.,  237691.,  259299.,  315539.,  302515.,
         435250.,  357040., 5075634.,  671429.],
       [ 146341.,  223582.,  164492.,  180159.,  197063.,  226729.,
         300643.,  274342.,  271731.,  289760.],
       [  58504.,   74719.,  173883.,  177908.,  207630.,  183544.,
         258427.,  230855.,  247630.,  299194.],
       [  46420.,   72216.,  169367.,  218342.,  228694.,  222717.,
         336701.,  290299.,  291006.,  561450.],
       [  54795.,   58619.,   73918.,  174152.,  185397.,  213425.,
         335033.,  257057.,  288918.,  522836.],
       [  47829.,   61380.,  185896.,  187150.,  225427.,  188312.,
         281096.,  237095.,  241361.,  469191.],
       [  40311.,   52815.,   45200.,   58643.,  300456.,  186752.,
         272663.,  253992.,  301104.,  244739.],
       [      0.,       0.,   52140.,   60595.,   58499.,   77611.,
         234949.,  205798.,  220156.,  703542.],
       [      0.,       0.,       0.,   59541.,   66468.,   68471.,
         179326.,      inf, 1763269.,  369860.],
       [  40426.,   75322.,  255711.,  182412.,  204934.,  186842.,
         320224.,  249014.,  345796.,  241935.]])
```

In [6]:

```python
import numpy as np
import matplotlib.pyplot as plt

%matplotlib inline
print(plt.plot(Salary[2], c='blue'))
```

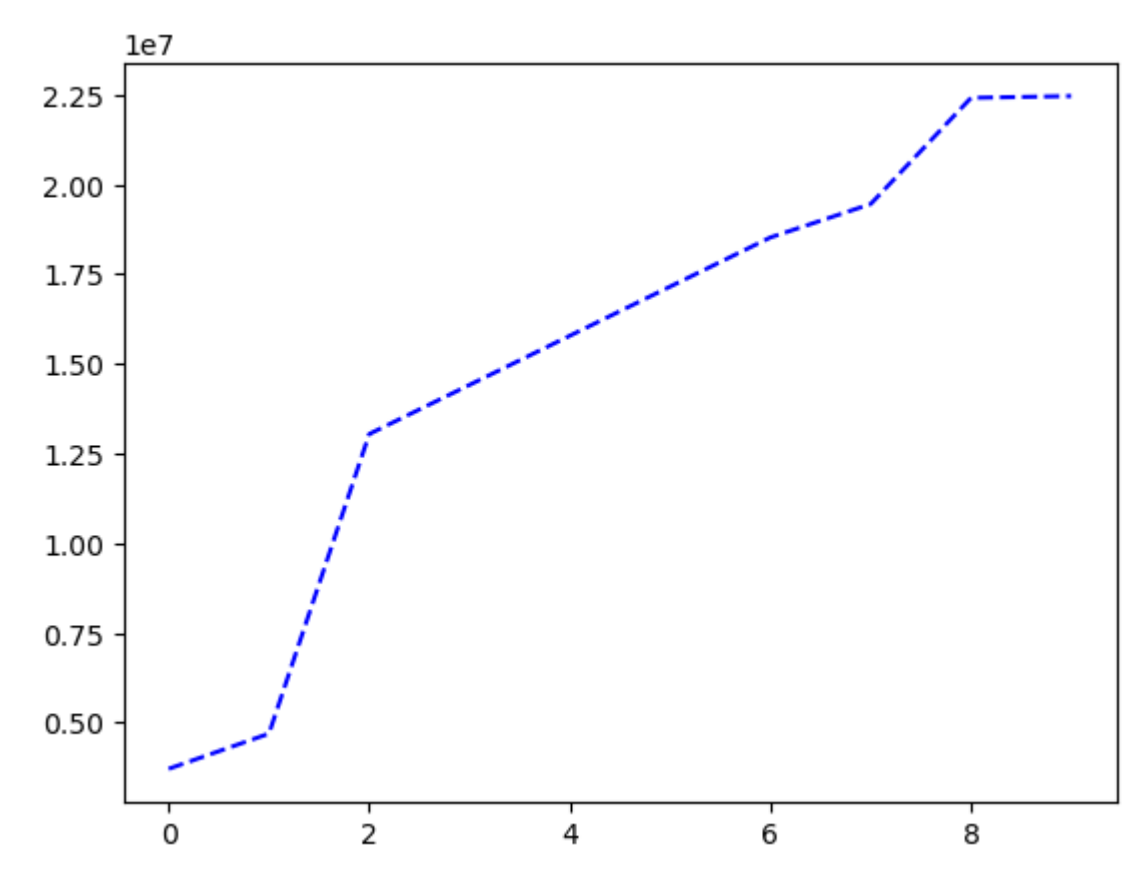
```
[<matplotlib.lines.Line2D object at 0x000002EFBAC3A350>]
```



In [7]:

```python
plt.plot(Salary[3], c='blue', ls='dashed')
```

Out[7]: [<matplotlib.lines.Line2D at 0x2efbae73e80>]



In [8]:

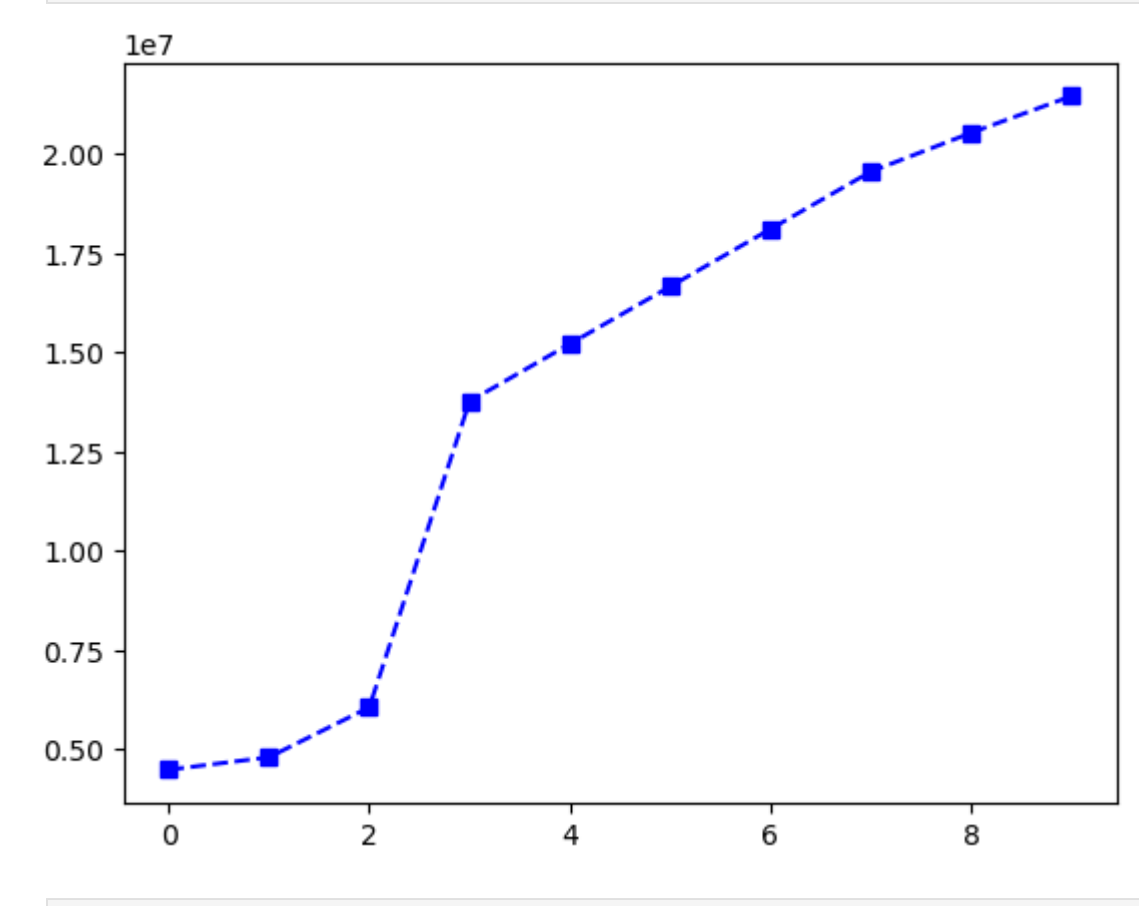
```python
print(plt.plot(Salary[0], c='blue', ls=offset))
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[8], line 1
----> 1 print(plt.plot(Salary[0], c='blue', ls=offset))

NameError: name 'offset' is not defined
```

In [9]:

```python
plt.plot(Salary[4], c='blue',ls='dashed',marker='s')
plt.show()
```



In [10]:

```python
%matplotlib inline
plt.rcParams['figure.figsize']=(10,8)
plt.show()
```

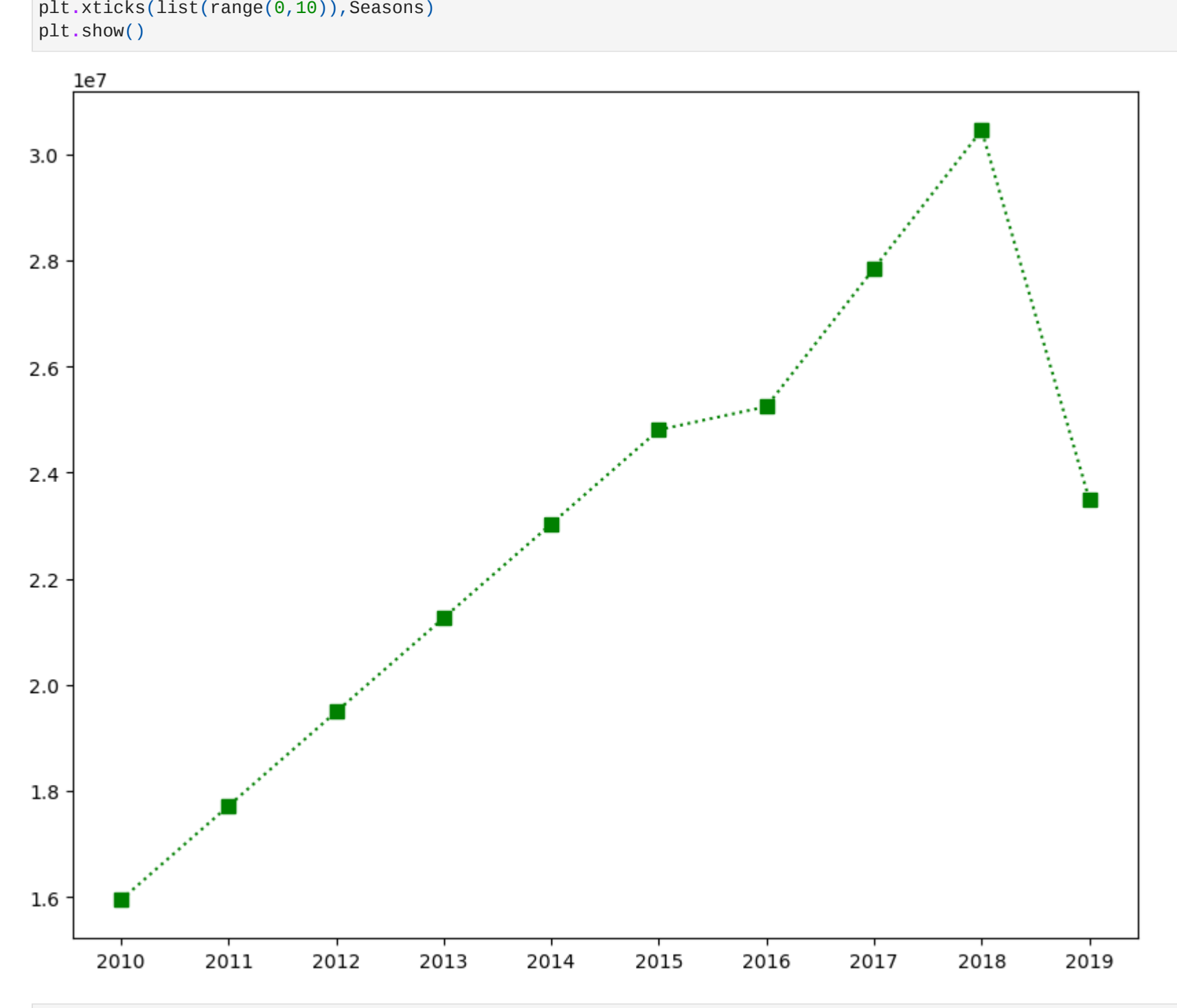
In [12]:

```python
print(list(range(0,10)))
print(Sdict)
print(Pdict)
```

```
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
{'2010': 0, '2011': 1, '2012': 2, '2013': 3, '2014': 4, '2015': 5, '2016': 6, '2017': 7, '2018': 8, '2019': 9}
{'Sachin': 0, 'Rahul': 1, 'Smith': 2, 'Sami': 3, 'Pollard': 4, 'Morris': 5, 'Samson': 6, 'Dhoni': 7, 'Kohli': 8, 'Sky': 9}
```

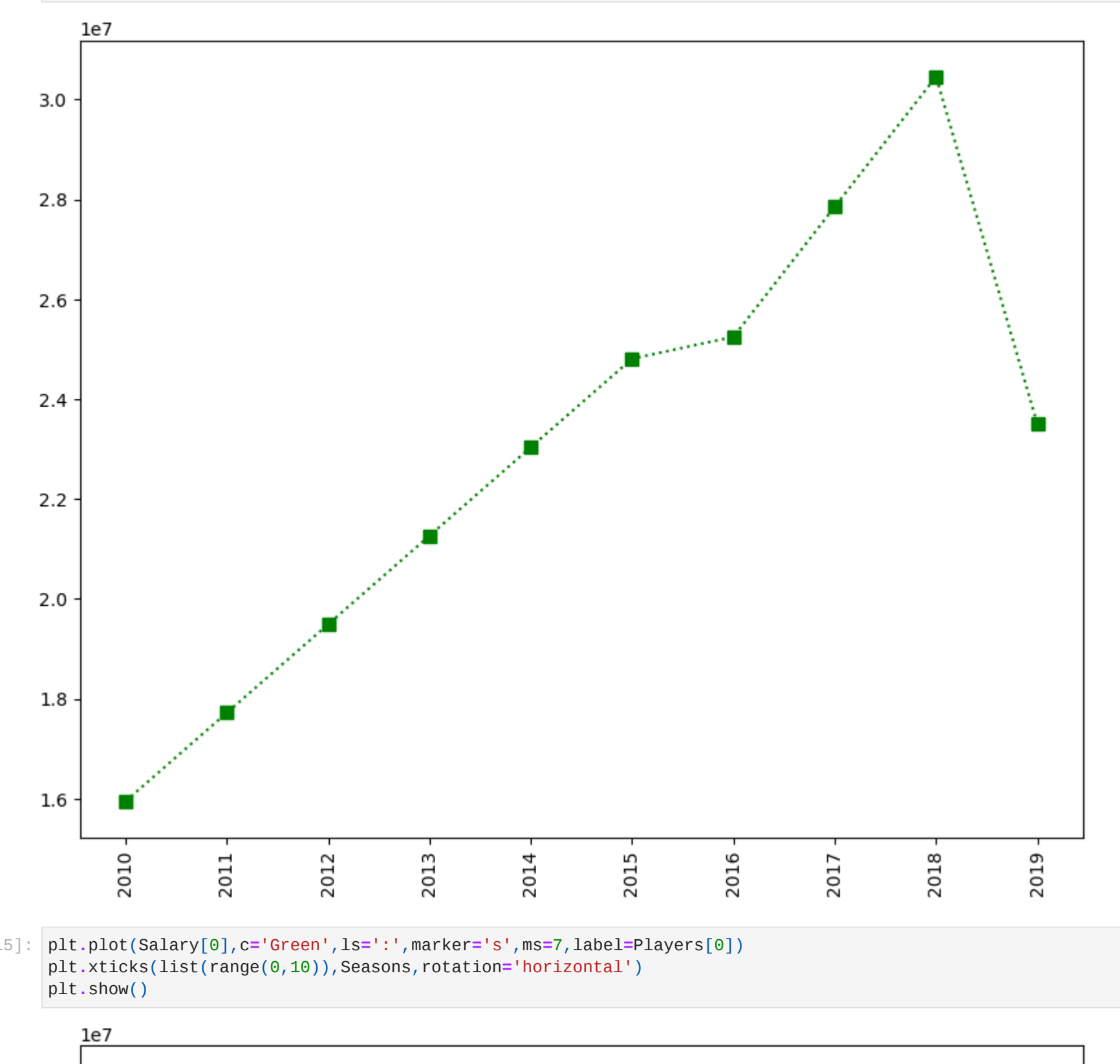
In [13]:

```python
plt.plot(Salary[0],c='Green',ls=':',marker='s',ms=7)
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



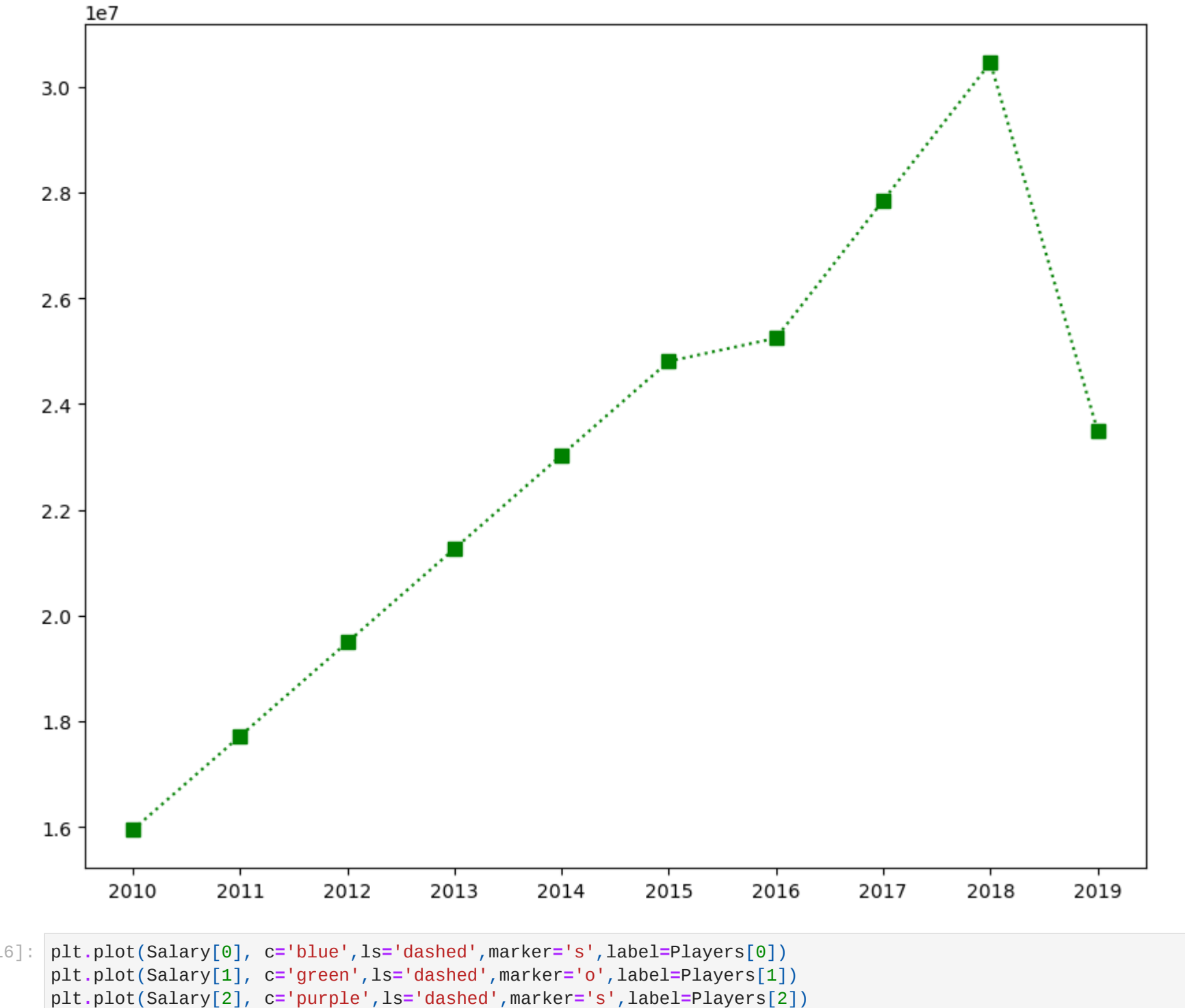
In [14]:

```python
plt.plot(Salary[0],c='Green',ls=':',marker='s',ms=7,label=Players[0])
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



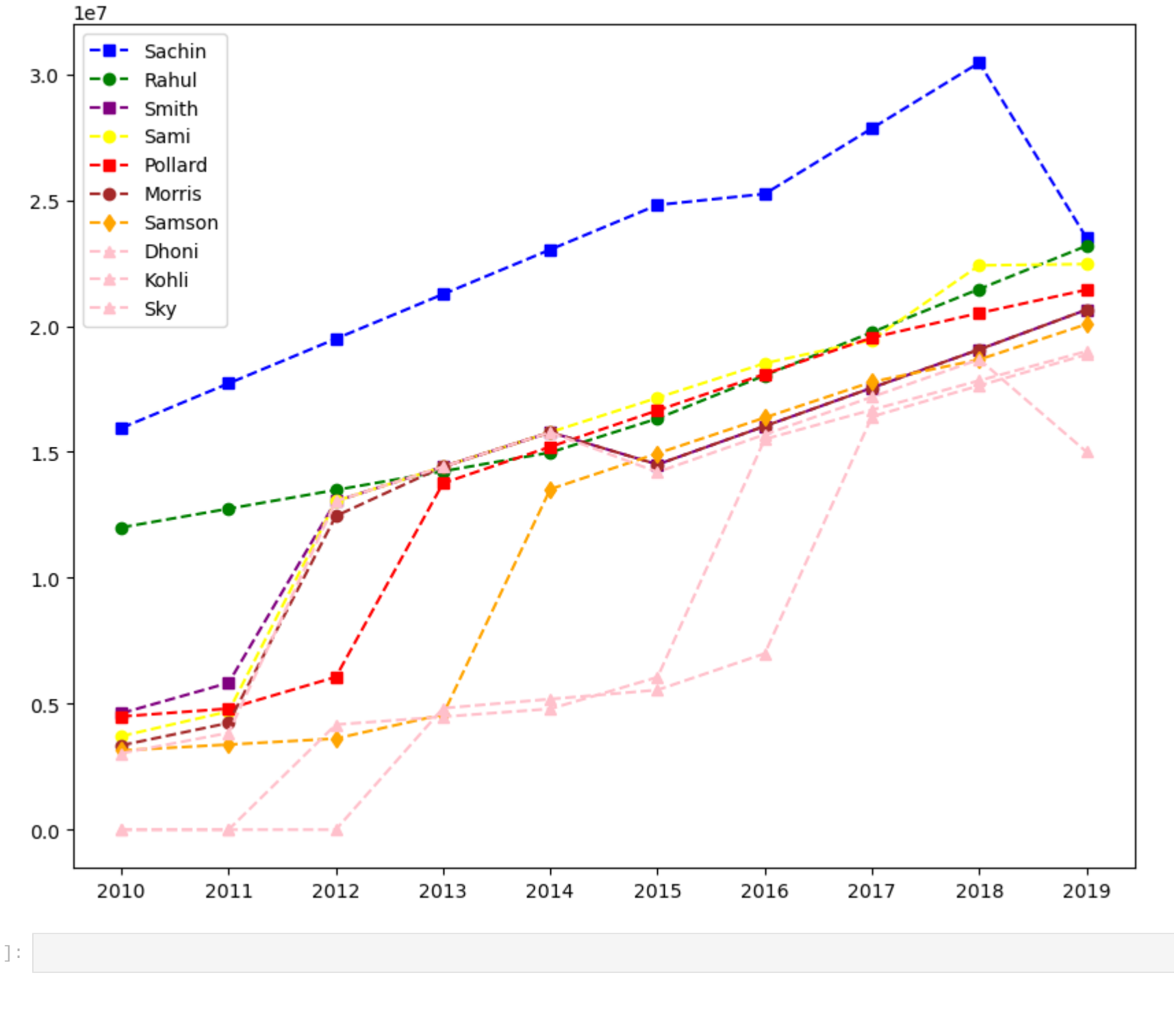
In [15]:

```python
plt.plot(Salary[0],c='Green',ls=':',marker='s',ms=7,label=Players[0])
plt.xticks(list(range(0,10)),Seasons,rotation='horizontal')
plt.show()
```



In [16]:

```python
plt.plot(Salary[0], c='blue',ls='dashed',marker='s',label=Players[0])
plt.plot(Salary[1], c='green',ls='dashed',marker='o',label=Players[1])
plt.plot(Salary[2], c='purple',ls='dashed',marker='s',label=Players[2])
plt.plot(Salary[3], c='yellow',ls='dashed',marker='o',label=Players[3])
plt.plot(Salary[4], c='red',ls='dashed',marker='s',label=Players[4])
plt.plot(Salary[5], c='brown',ls='dashed',marker='o',label=Players[5])
plt.plot(Salary[6], c='orange',ls='dashed',marker='d',label=Players[6])
plt.plot(Salary[7], c='pink',ls='dashed',marker='^',label=Players[7])
plt.plot(Salary[8], c='pink',ls='dashed',marker='^',label=Players[8])
plt.plot(Salary[9], c='pink',ls='dashed',marker='^',label=Players[9])
plt.legend()
plt.xticks(list(range(0,10)),Seasons,rotation='horizontal')
plt.show()
```



In [ ]: