In [2]:
```
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,"2

#Players
Players = ["Sachin","Rahul","Smith","Sami","Pollard","Morris","Samson","Dhoni","Koh
Pdict = {"Sachin":0,"Rahul":1,"Smith":2,"Sami":3,"Pollard":4,"Morris":5,"Samson":6,

#Salaries
Sachin_Salary = [15946875,17718750,19490625,21262500,23034375,24806250,25244493,278
Rahul_Salary = [12000000,12744189,13488377,14232567,14976754,16324500,18038573,1975
Smith_Salary = [4621800,5828090,13041250,14410581,15779912,14500000,16022500,175450
Sami_Salary = [3713640,4694041,13041250,14410581,15779912,17149243,18518574,1945000
Pollard_Salary = [4493160,4806720,6061274,13758000,15202590,16647180,18091770,19536
Morris_Salary = [3348000,4235220,12455000,14410581,15779912,14500000,16022500,17545
Samson_Salary = [3144240,3380160,3615960,4574189,13520500,14940153,16359805,1777945
Dhoni_Salary = [0,0,4171200,4484040,4796880,6053663,15506632,16669630,17832627,1899
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_

#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

#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 [4]:
```
Salary
```

Out[4]:
```
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]:
```
Points
```

Out[6]:
```
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 [7]:
```
Pdict
```

Out[7]:
```
{'Sachin': 0,
 'Rahul': 1,
 'Smith': 2,
 'Sami': 3,
 'Pollard': 4,
 'Morris': 5,
 'Samson': 6,
 'Dhoni': 7,
 'Kohli': 8,
 'Sky': 9}
```

In [8]:
```
Salary//Games
```

```
C:\Users\admin\AppData\Local\Temp\ipykernel_7852\1634212085.py:1: RuntimeWarning: di
vide by zero encountered in floor_divide
  Salary//Games
```

Out[8]:
```
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 [9]:
```
np.round(Salary//Games)
```

```
C:\Users\admin\AppData\Local\Temp\ipykernel_7852\3663165759.py:1: RuntimeWarning: di
vide by zero encountered in floor_divide
  np.round(Salary//Games)
```

Out[9]:
```
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 [10]:
```
import warnings
warnings.filterwarnings('ignore')
```

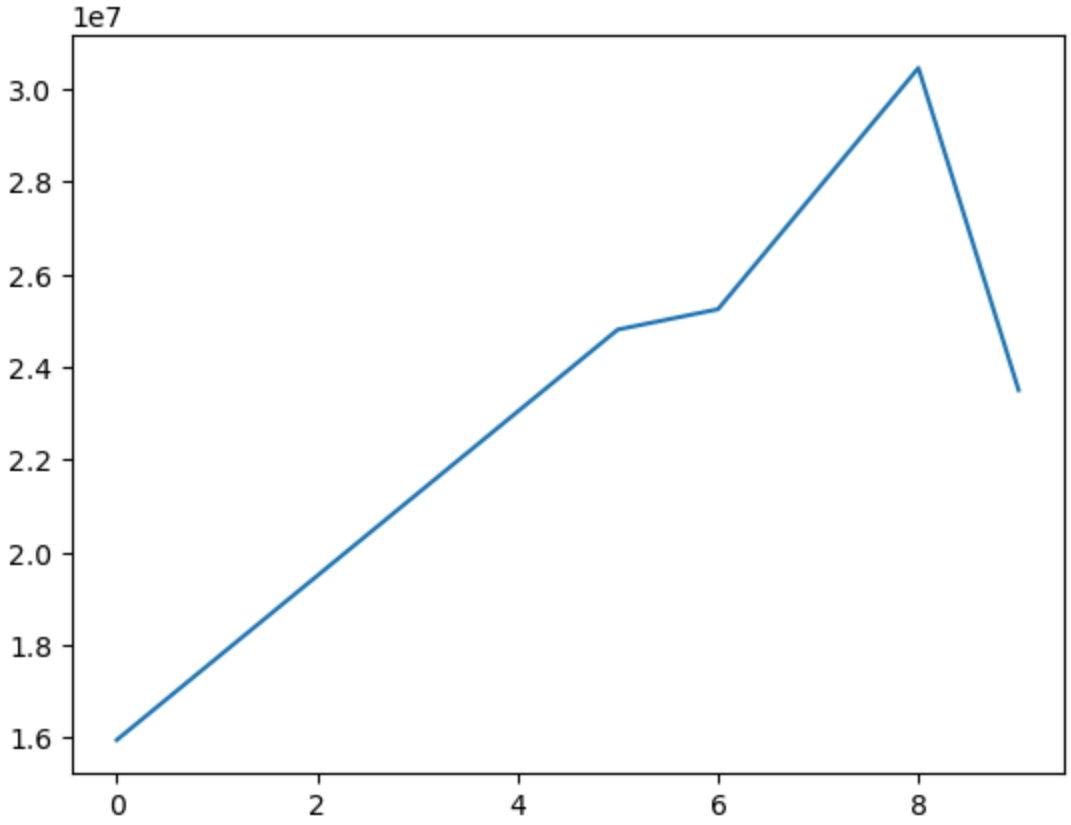
In [11]:
```
import matplotlib.pyplot as plt
```

In [12]:
```
Salary[0]
```

Out[12]:
```
array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
       25244493, 27849149, 30453805, 23500000])
```

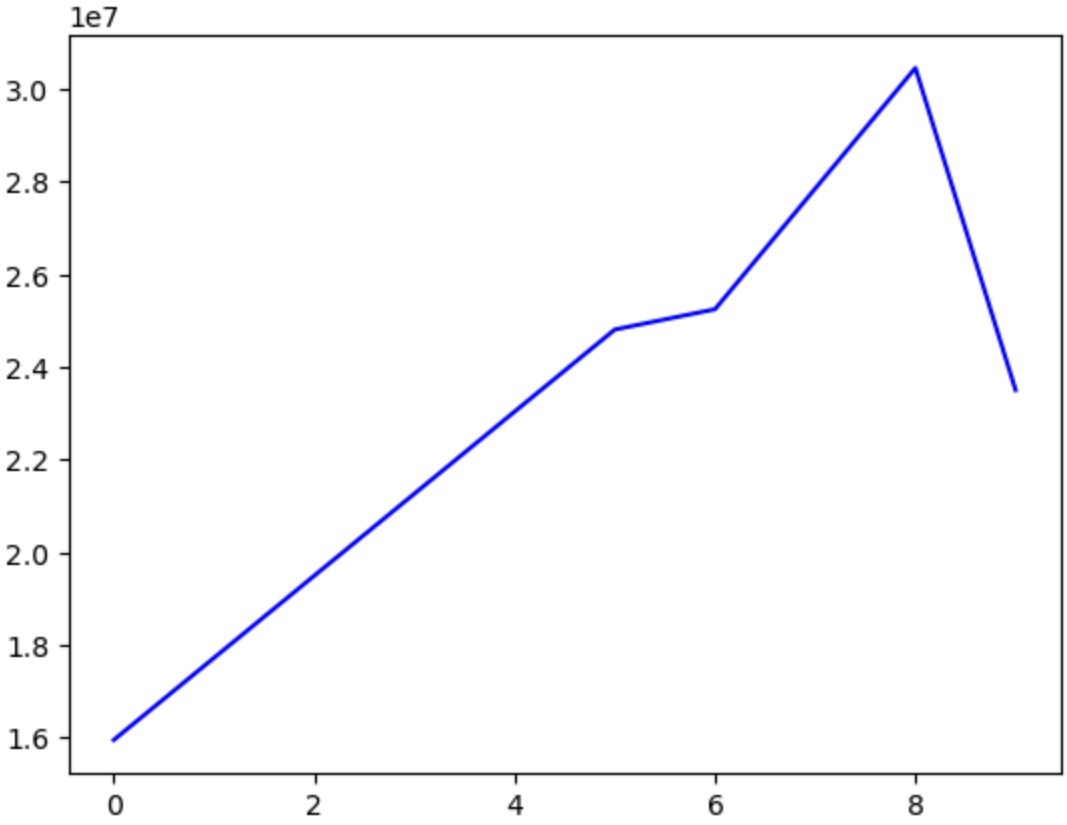
In [13]:
```
plt.plot(Salary[0])
```

Out[13]:
```
[<matplotlib.lines.Line2D at 0x1f6b26e2990>]
```



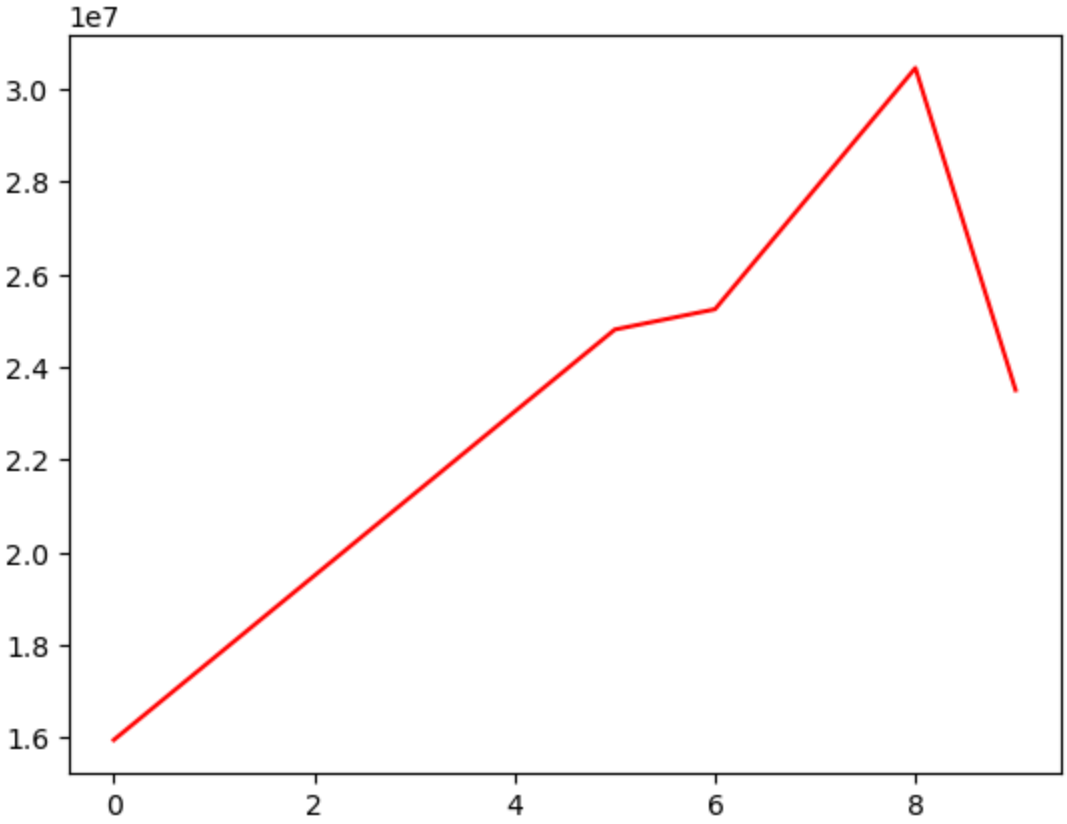
In [14]:
```
plt.plot(Salary[0],c='b')
```

Out[14]:
```
[<matplotlib.lines.Line2D at 0x1f6b3996fd0>]
```



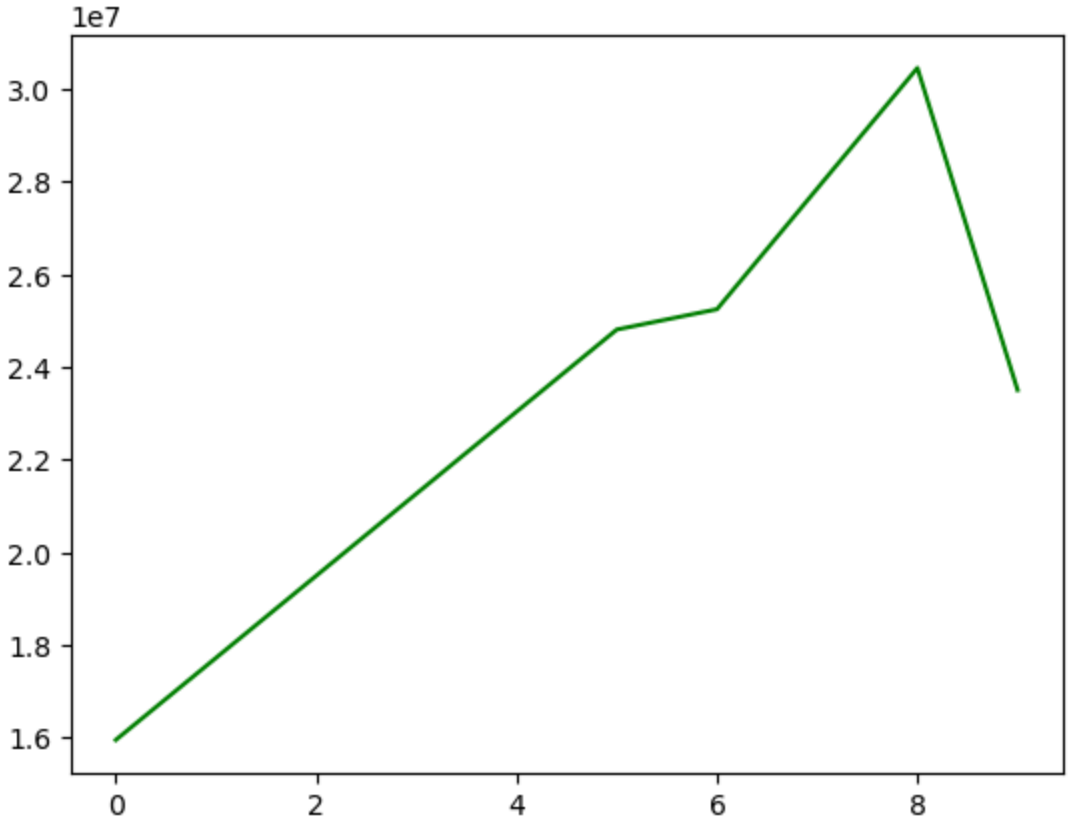
In [15]:
```
plt.plot(Salary[0],c='r')
```

Out[15]:
```
[<matplotlib.lines.Line2D at 0x1f6b3a25f90>]
```



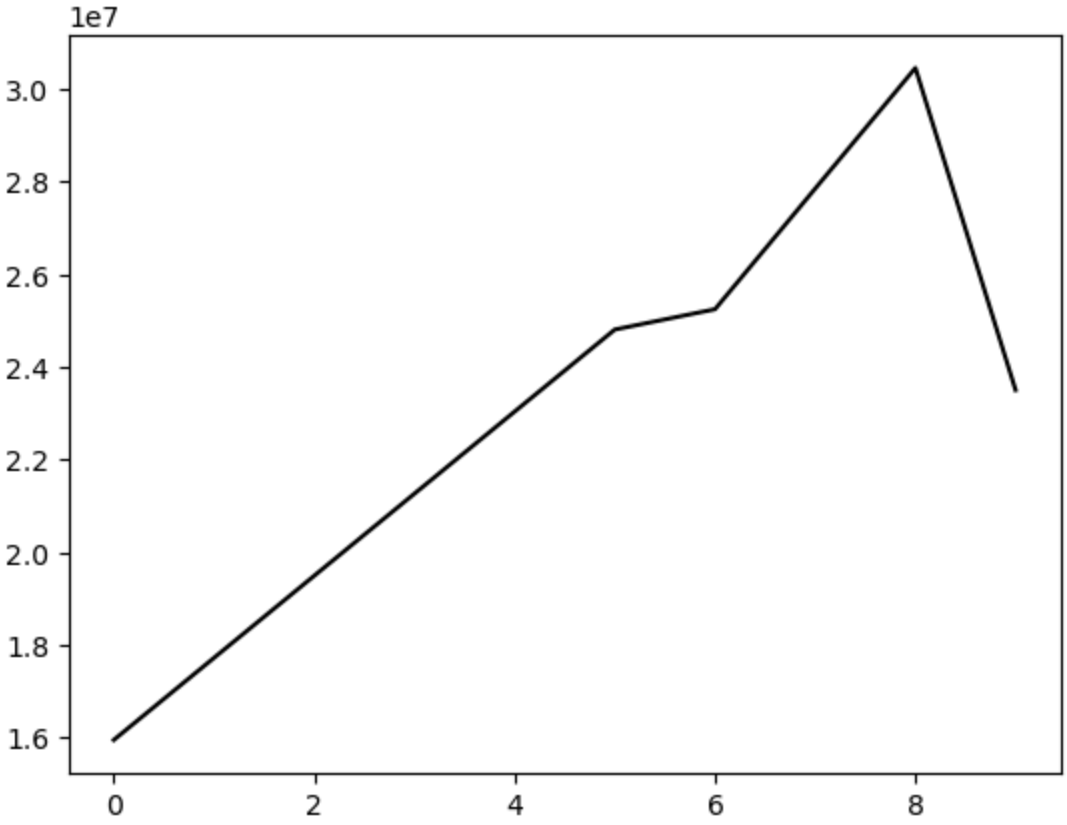
In [16]:
```
plt.plot(Salary[0],c='g')
```

Out[16]:
```
[<matplotlib.lines.Line2D at 0x1f6b3ab0550>]
```



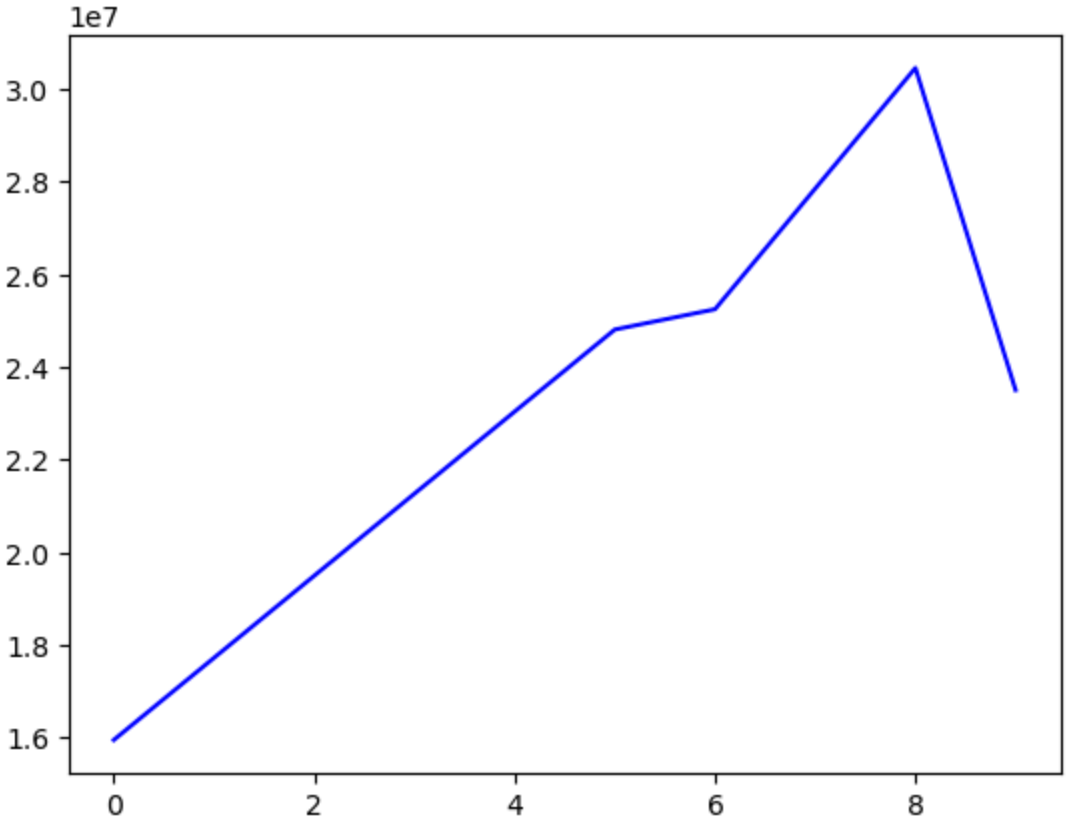
In [17]:
```
plt.plot(Salary[0],c='k')
```

Out[17]:
```
[<matplotlib.lines.Line2D at 0x1f6b37b6ad0>]
```



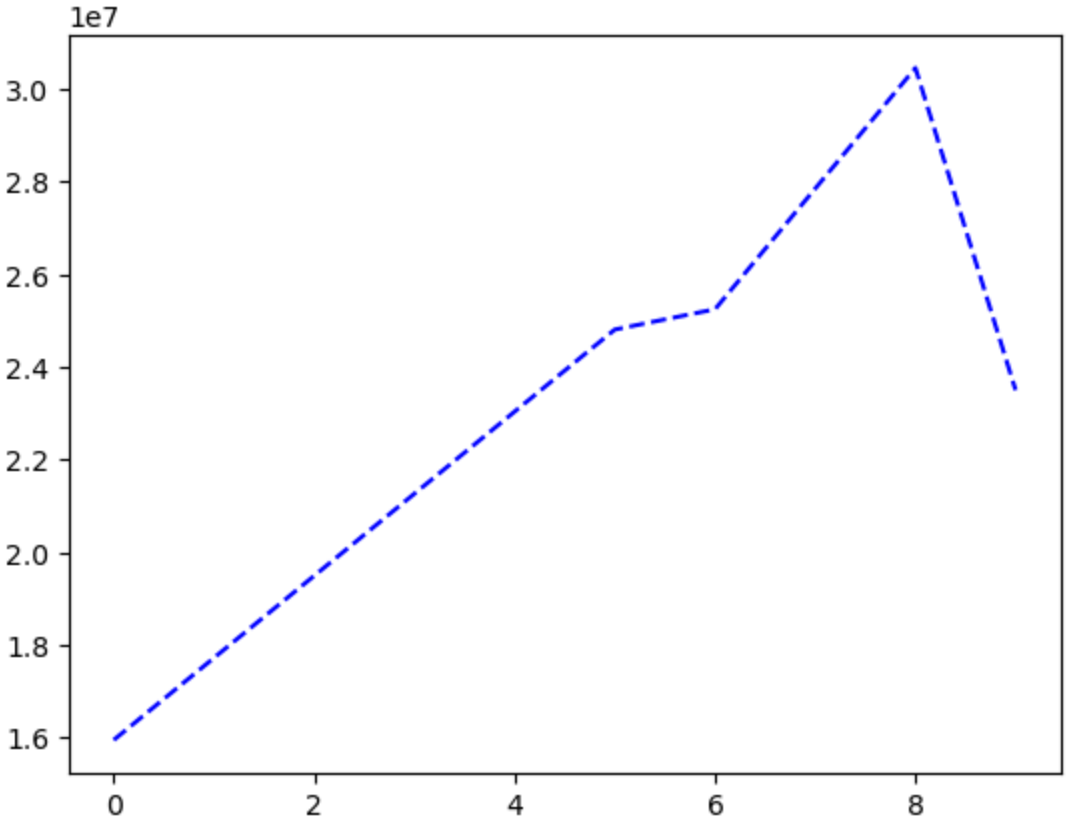
In [18]:
```
plt.plot(Salary[0],c='b')
```

Out[18]:
```
[<matplotlib.lines.Line2D at 0x1f6b383d090>]
```



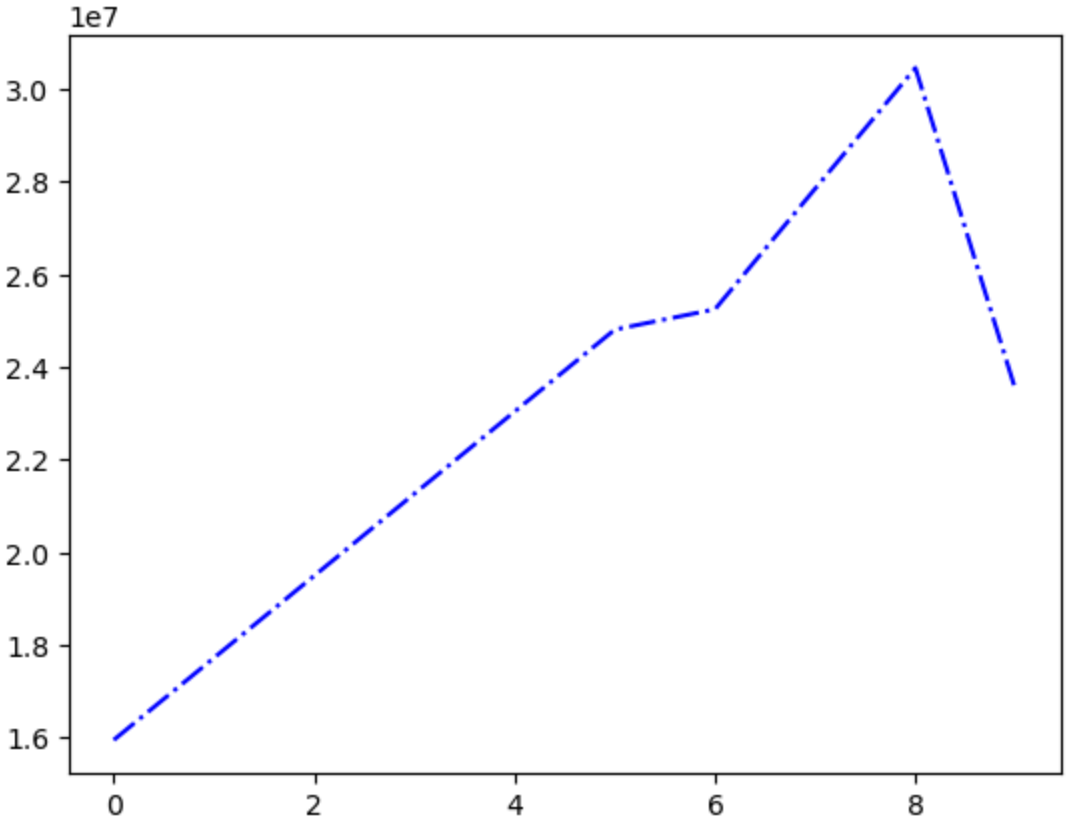
In [20]:
```
plt.plot(Salary[0],c='b',ls='--')
```

Out[20]:
```
[<matplotlib.lines.Line2D at 0x1f6b389bb10>]
```



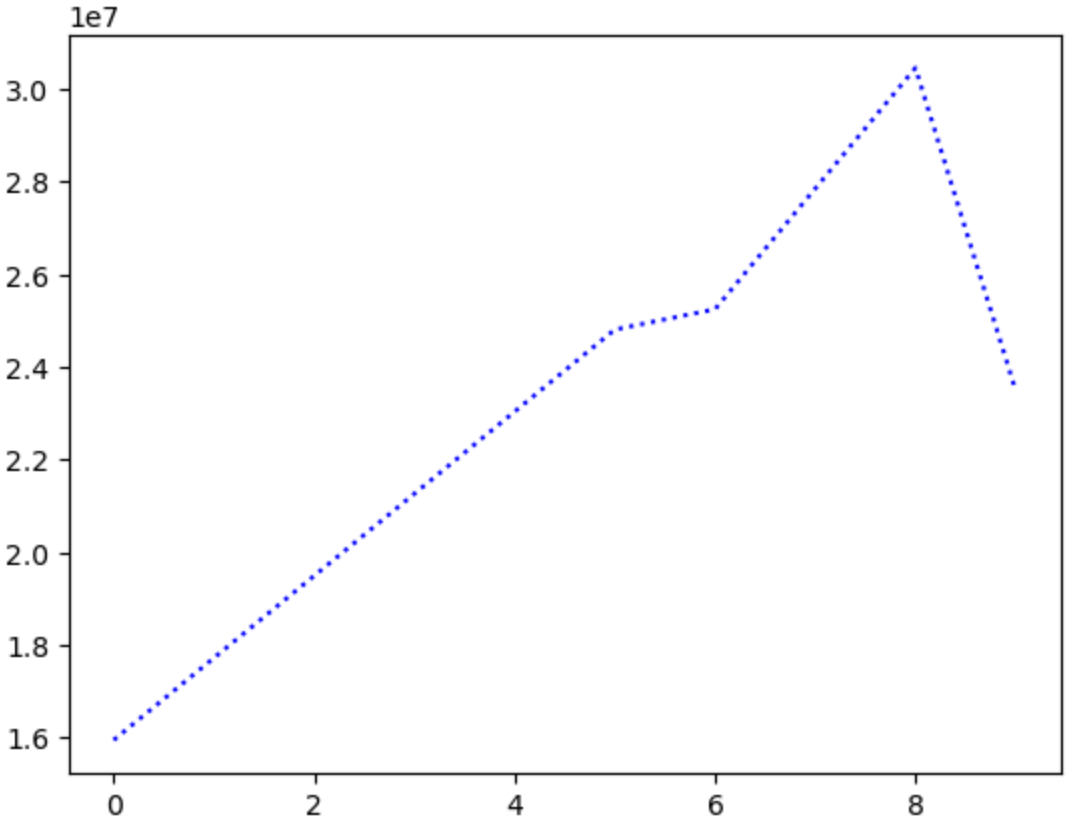
In [22]:
```
plt.plot(Salary[0],c='b',ls='-.')
```

Out[22]:
```
[<matplotlib.lines.Line2D at 0x1f6b3b99e50>]
```



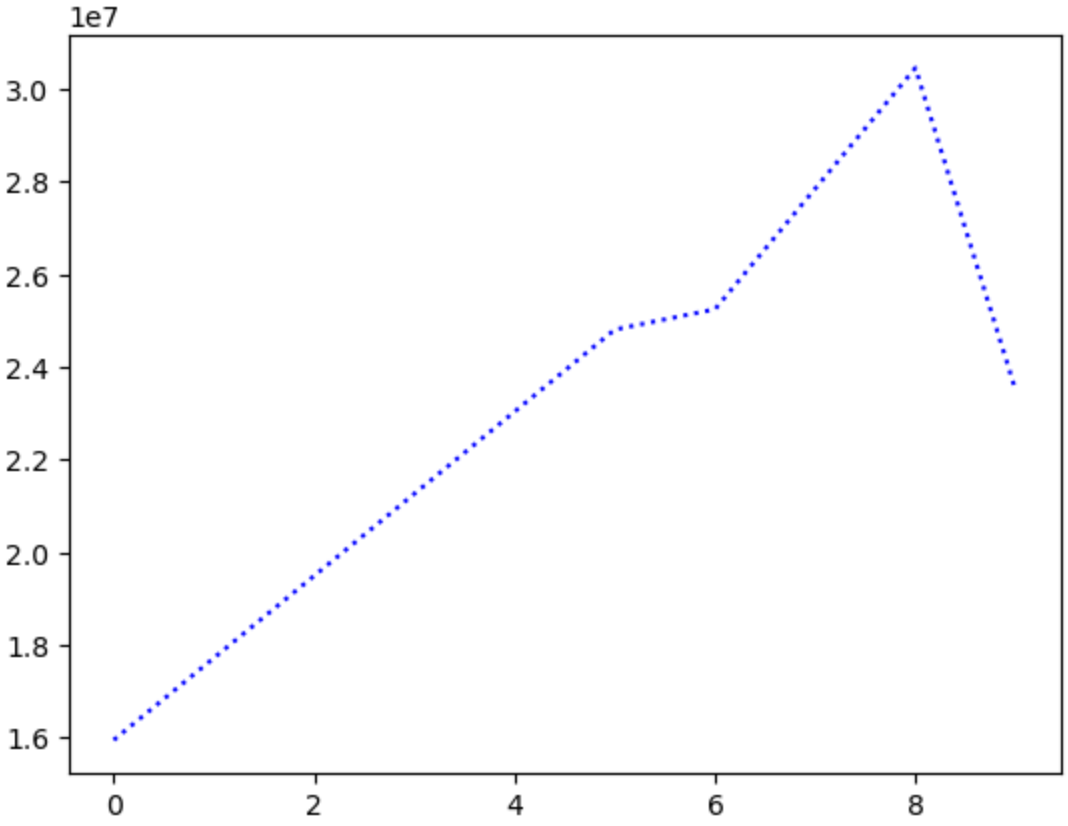
In [24]:
```
plt.plot(Salary[0],c='b',ls=':')
```

Out[24]:
```
[<matplotlib.lines.Line2D at 0x1f6b3d5c410>]
```



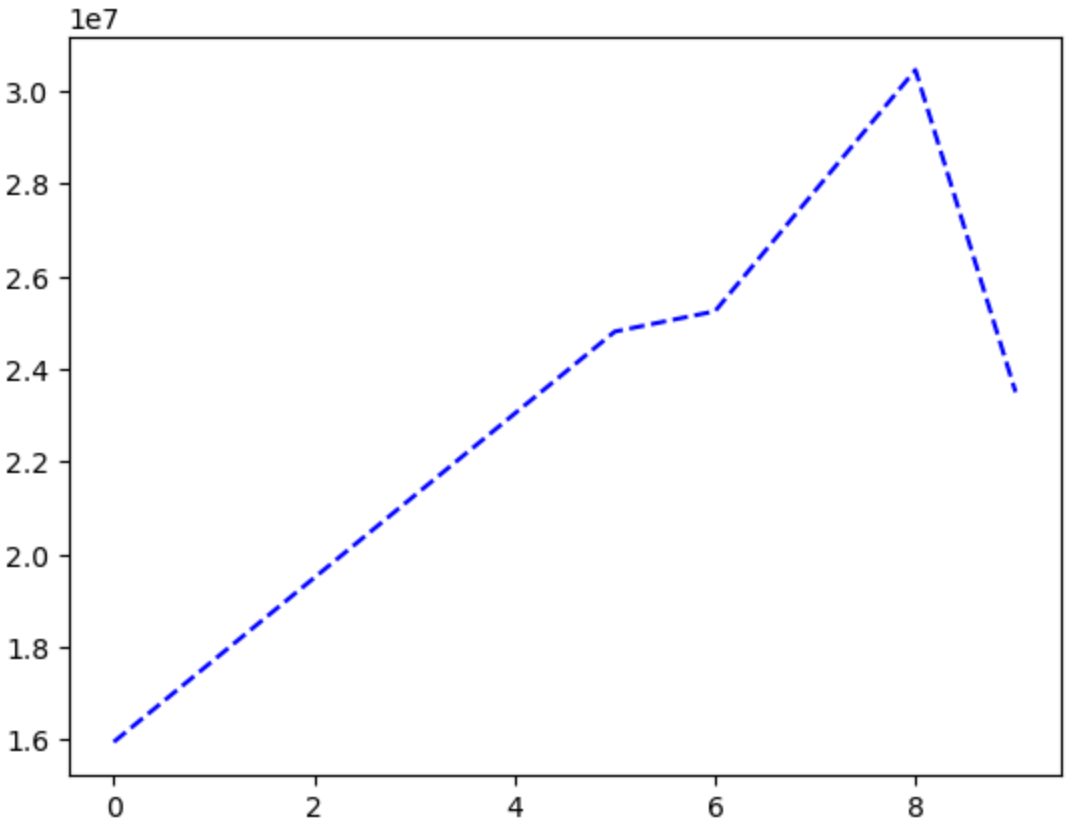
In [25]:
```
plt.plot(Salary[0],c='b',ls=':')
```

Out[25]:
```
[<matplotlib.lines.Line2D at 0x1f6b3dba990>]
```



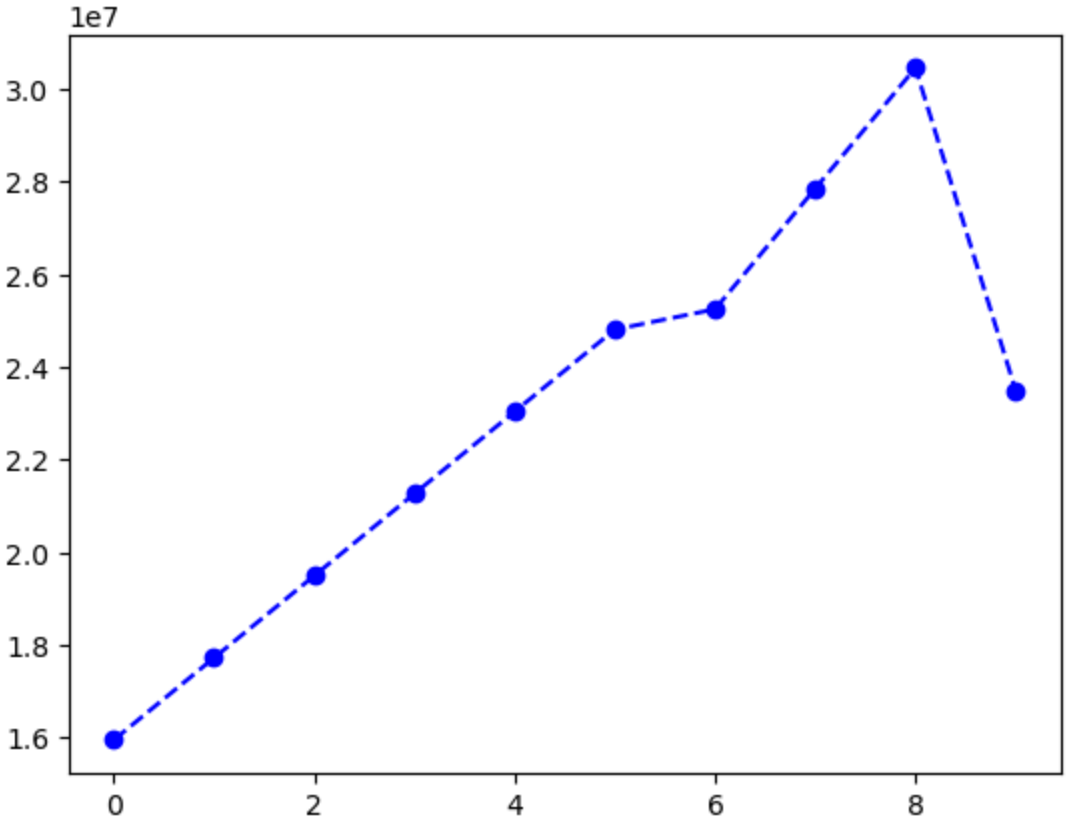
In [26]:
```
plt.plot(Salary[0],c='b',ls='--')
```

Out[26]:
```
[<matplotlib.lines.Line2D at 0x1f6b3c08f50>]
```



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

Out[27]:
```
[<matplotlib.lines.Line2D at 0x1f6b3c5b4d0>]
```

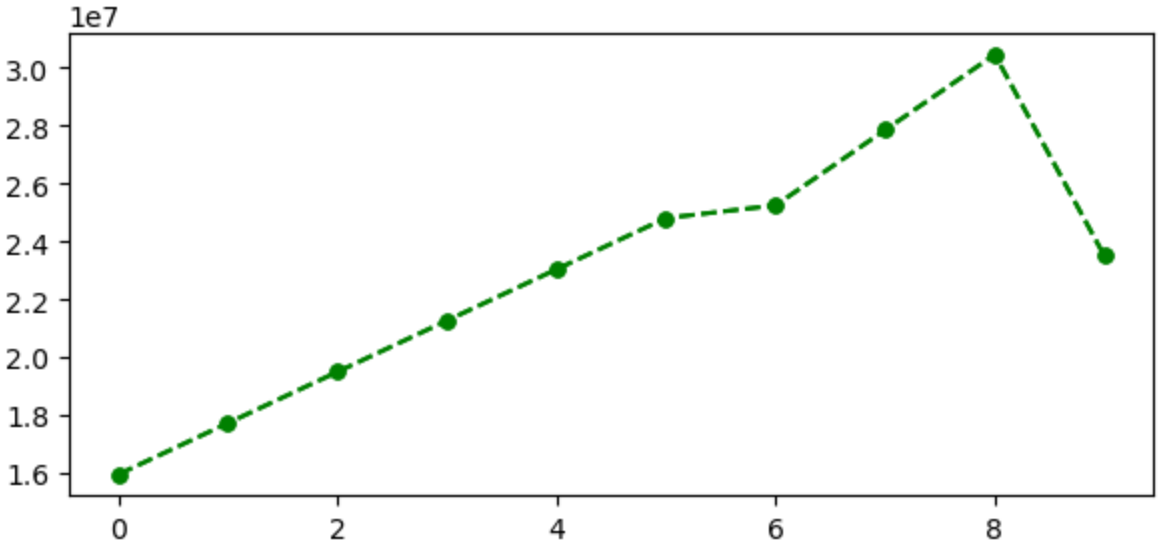


In [28]:
```
Games[0]
```

Out[28]:
```
array([80, 77, 82, 82, 73, 82, 58, 78,  6, 35])
```

In [32]:
```
%matplotlib inline
plt.rcParams['figure.figsize']=7,3
```

In [34]:
```
plt.plot(Salary[0],c='g',ls='--',marker='o',ms=5)
plt.show()
```



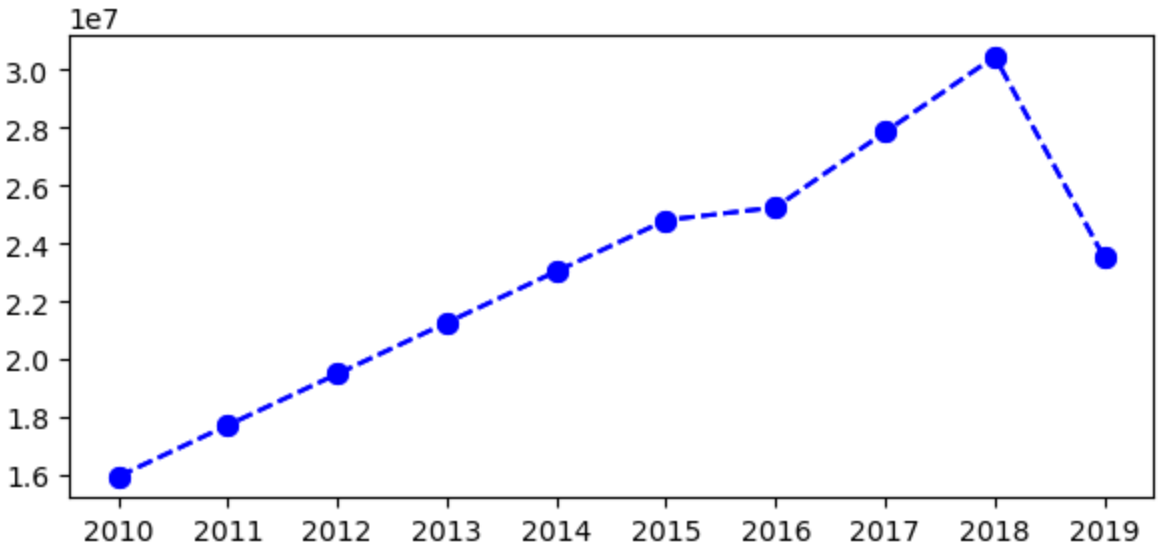
In [35]:
```
Sdict
```

Out[35]:
```
{'2010': 0,
 '2011': 1,
 '2012': 2,
 '2013': 3,
 '2014': 4,
 '2015': 5,
 '2016': 6,
 '2017': 7,
 '2018': 8,
 '2019': 9}
```

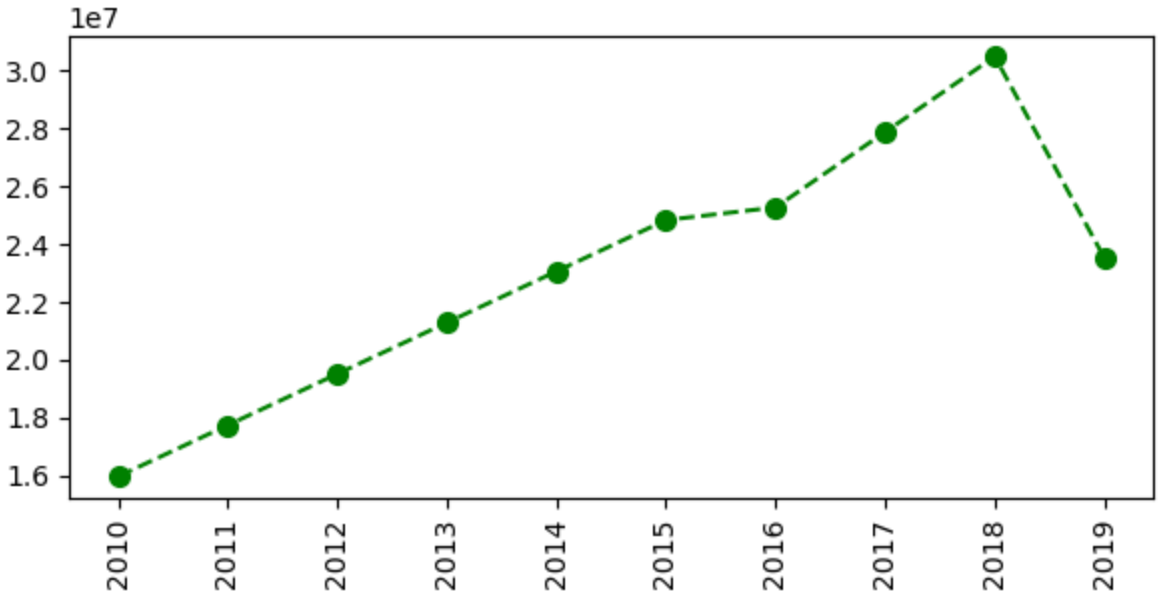
In [36]:
```
Pdict
```

Out[36]:
```
{'Sachin': 0,
 'Rahul': 1,
 'Smith': 2,
 'Sami': 3,
 'Pollard': 4,
 'Morris': 5,
 'Samson': 6,
 'Dhoni': 7,
 'Kohli': 8,
 'Sky': 9}
```

In [40]:
```
plt.plot(Salary[0],c='b',ls='--',marker='o',ms=7)
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



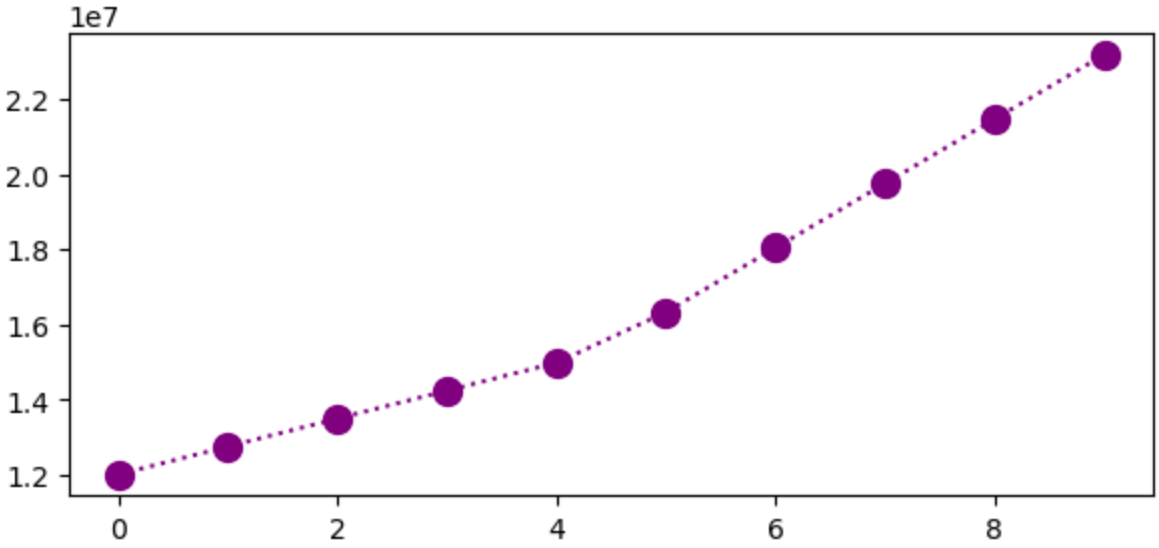
In [41]:
```
plt.plot(Salary[0],c='g',ls='--',marker='o',ms=7)
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



In [42]:
```
Salary[1]
```

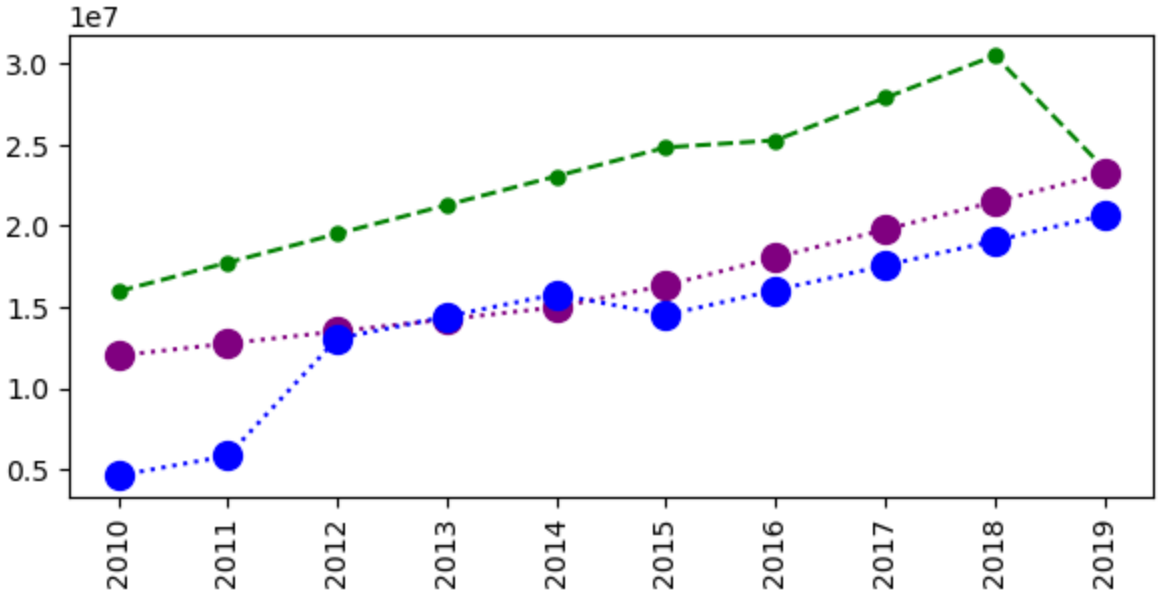
Out[42]:
```
array([12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
       18038573, 19752645, 21466718, 23180790])
```

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

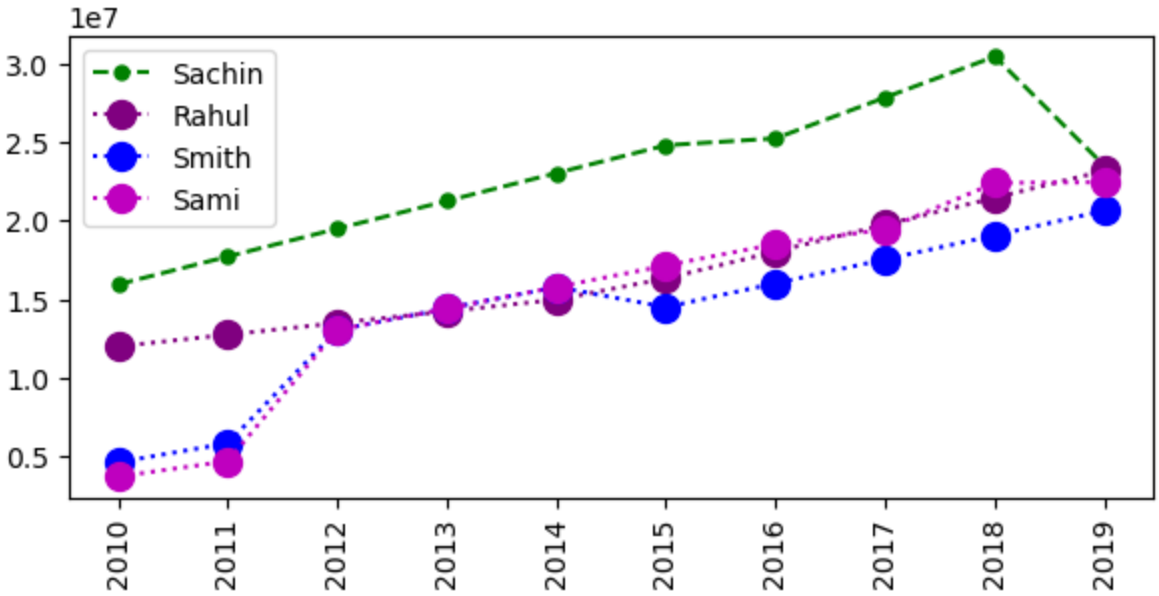


In [44]:
```
plt.plot(Salary[0], c = 'g', ls = '--', marker = 'o', ms = 5)
plt.plot(Salary[1], c = 'purple', ls = ':', marker = 'o', ms = 10)
plt.xticks(list(range(0,10)), Seasons, rotation = 'vertical')
plt.show()
```

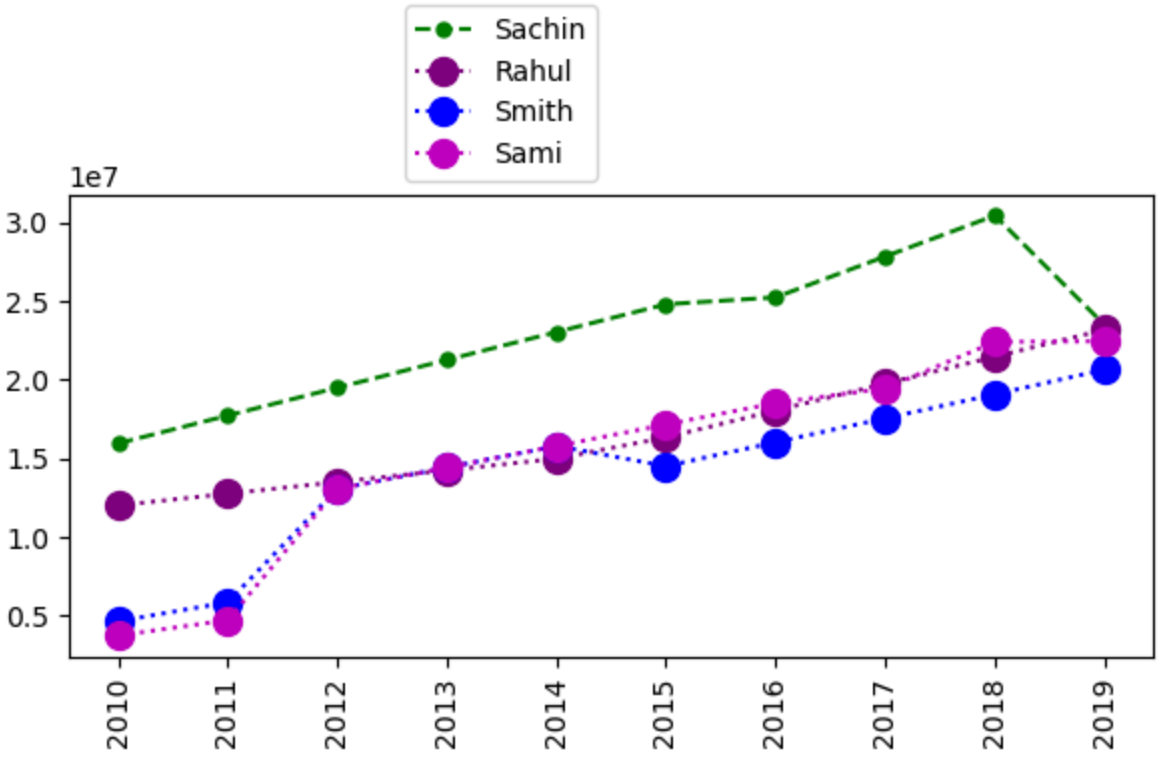
In [47]:
```
plt.plot(Salary[0], c = 'g', ls = '--', marker = 'o', ms = 5)
plt.plot(Salary[1], c = 'purple', ls = ':', marker = 'o', ms = 10)
plt.plot(Salary[2], c = 'b', ls = ':', marker = 'o', ms = 10)
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



In [49]:
```
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()
```

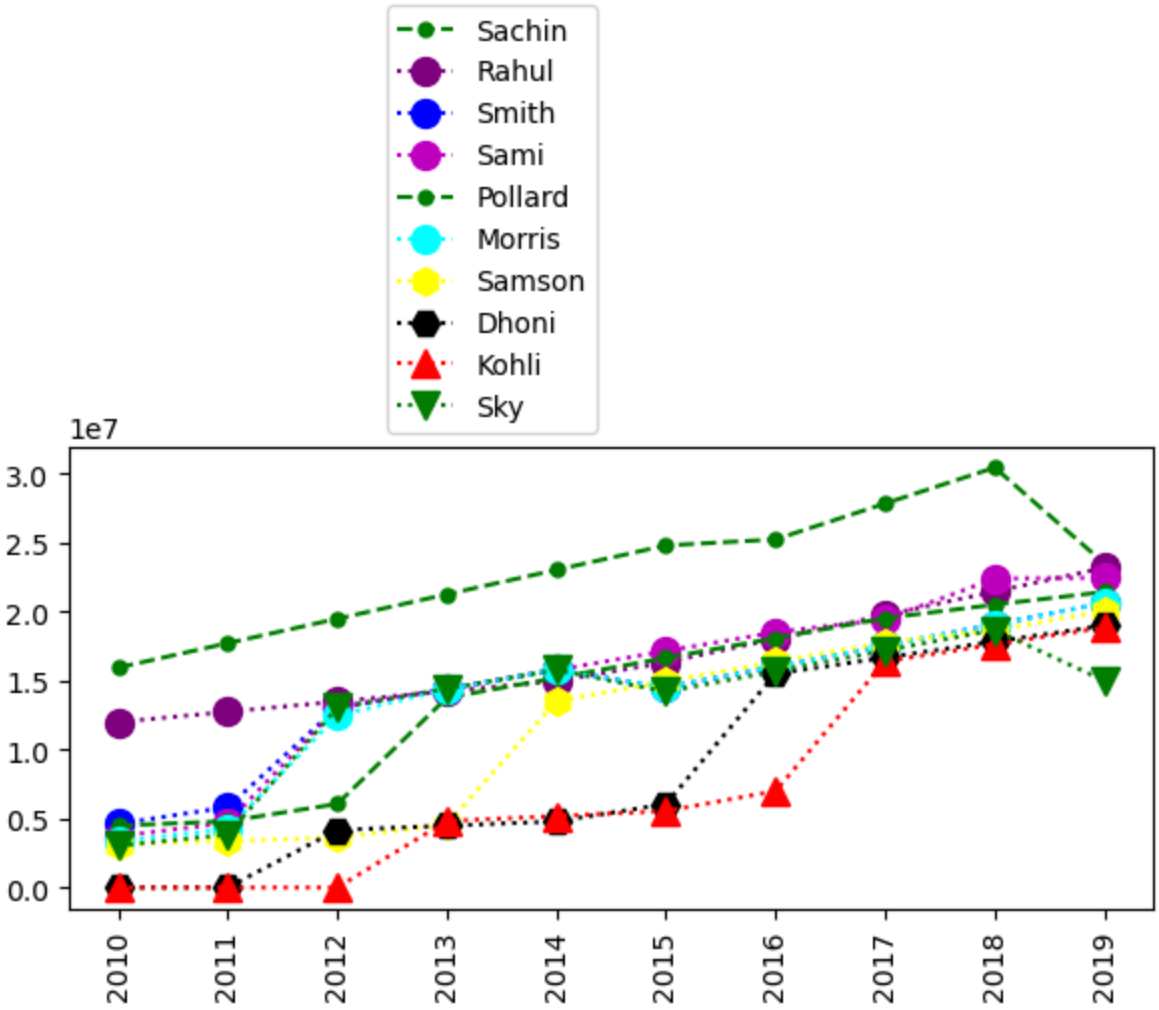


In [61]:
```
plt.plot(Salary[0], c = 'g', ls = '--', marker = 'o', ms = 5, label= Players[0])
plt.plot(Salary[1], c = 'purple', ls = ':', marker = 'o', ms = 10, label= Players[1
plt.plot(Salary[2], c = 'b', ls = ':', marker = 'o', ms = 10, label= Players[2])
plt.plot(Salary[3], c = 'm', ls = ':', marker = 'o', ms = 10, label= Players[3])
plt.legend(loc='lower right',bbox_to_anchor=(0.5,1))
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



In [64]:
```
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 = '^', 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')
plt.show()
```


Sachin
Rahul
Smith
Sami
Pollard
Morris
Samson
Dhoni
Kohli
Sky
1e7
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019