In [1]:
```
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

#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, Samsc

#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]:
```
Seasons
```

Out[2]:
```
['2010',
 '2011',
 '2012',
 '2013',
 '2014',
 '2015',
 '2016',
 '2017',
 '2018',
 '2019']
```

In [3]:
```
Salary
```

Out[3]:
```
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 [4]:
```
Games
```

Out[4]:
```
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 [5]:
```
Points
```

Out[5]:
```
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 [6]:
```
Pdict
```

Out[6]:
```
{'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\IPL4\AppData\Local\Temp\ipykernel_13464\1634212085.py:1: RuntimeWarning:
divide 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\IPL4\AppData\Local\Temp\ipykernel_13464\3663165759.py:1: RuntimeWarning:
divide 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')
```

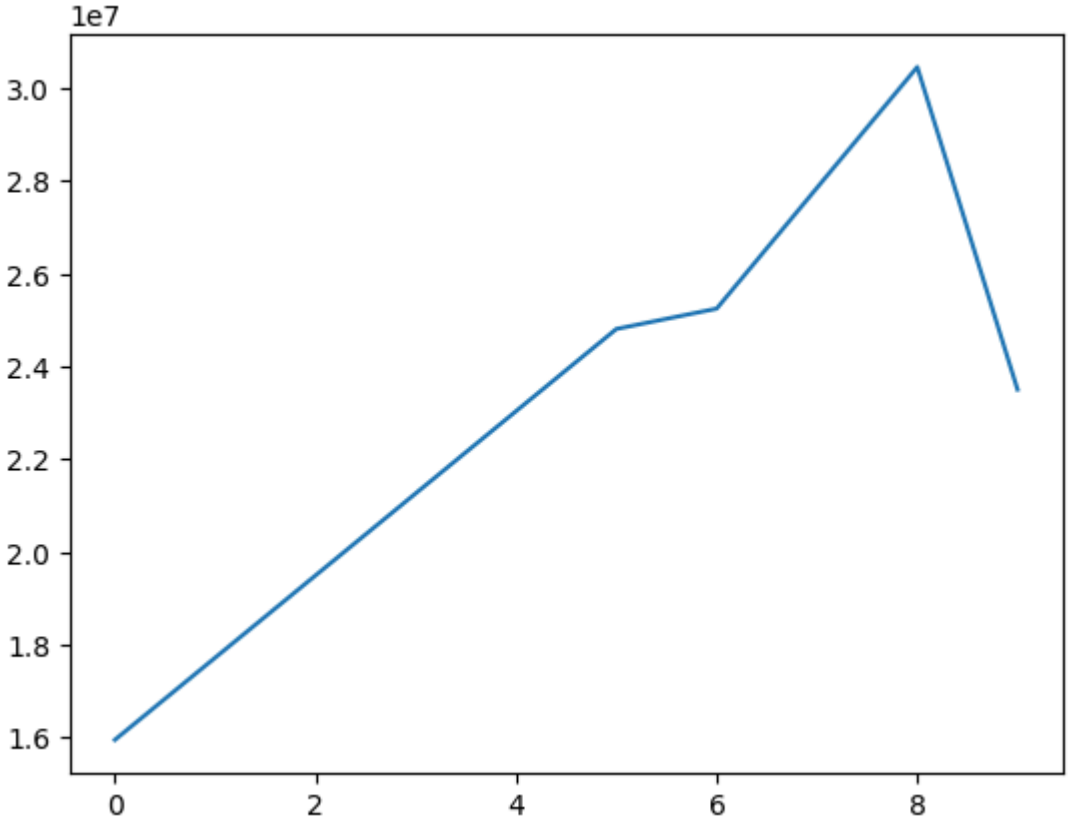
In [12]:
```
import matplotlib.pyplot as plt  #used for data visualization
```

In [13]:
```
Salary[0]
```

Out[13]:
```
array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
       25244493, 27849149, 30453805, 23500000])
```

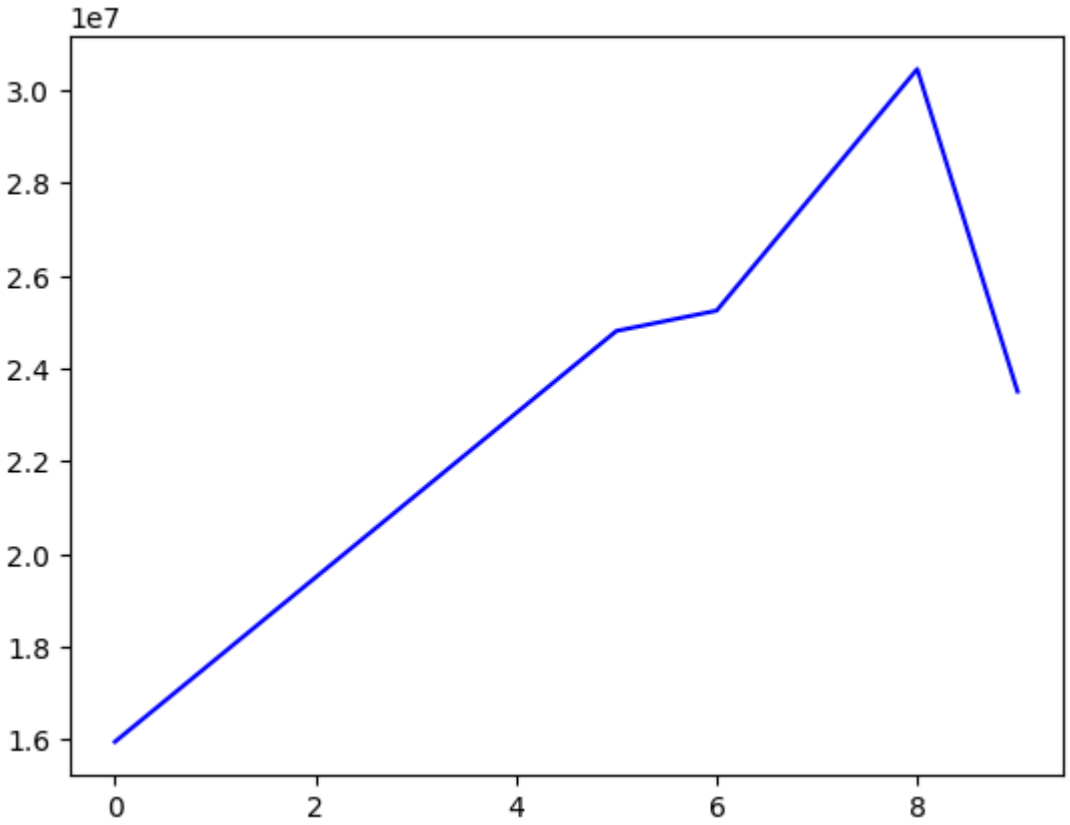
In [14]:
```
plt.plot(Salary[0])
```

Out[14]:
```
[<matplotlib.lines.Line2D at 0x1cb06a94460>]
```



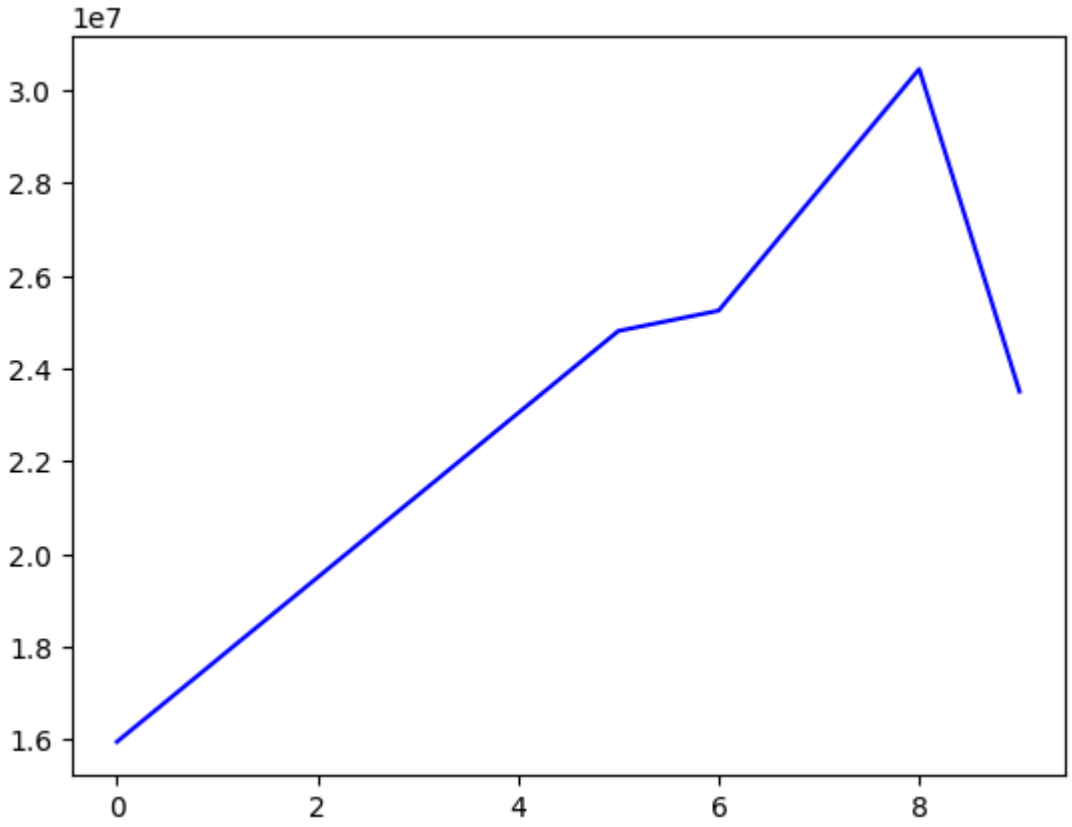
In [15]:
```
plt.plot(Salary[0], c='b')
```

Out[15]:
```
[<matplotlib.lines.Line2D at 0x1cb06bb7cd0>]
```



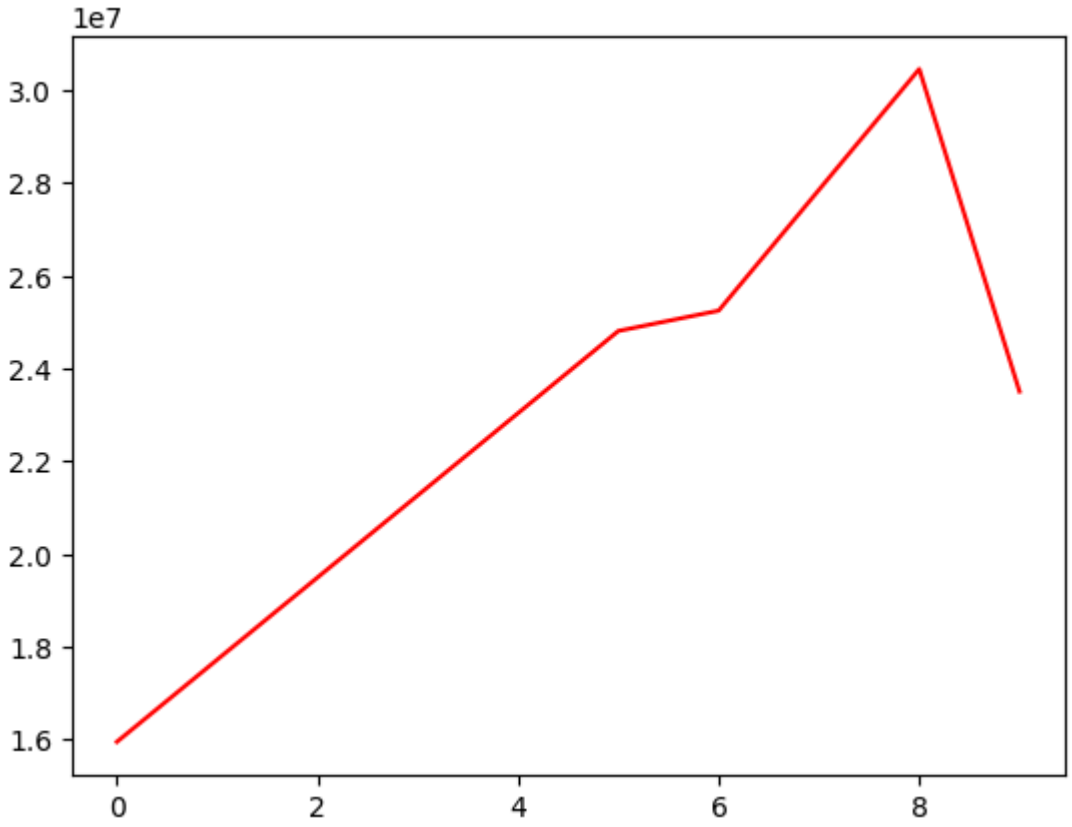
In [16]:
```
plt.plot(Salary[0], color='blue')
```

Out[16]:
```
[<matplotlib.lines.Line2D at 0x1cb06c34ac0>]
```



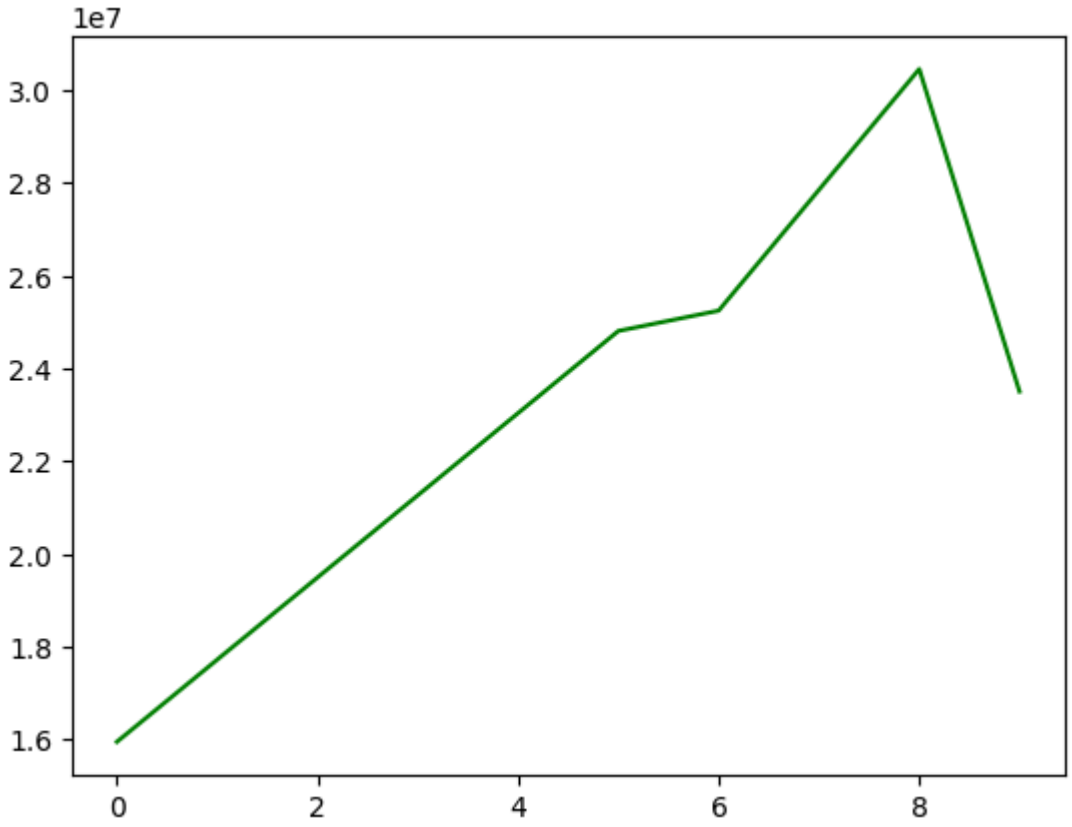
In [17]:
```
plt.plot(Salary[0], c='r')
```

Out[17]:
```
[<matplotlib.lines.Line2D at 0x1cb08cecca0>]
```



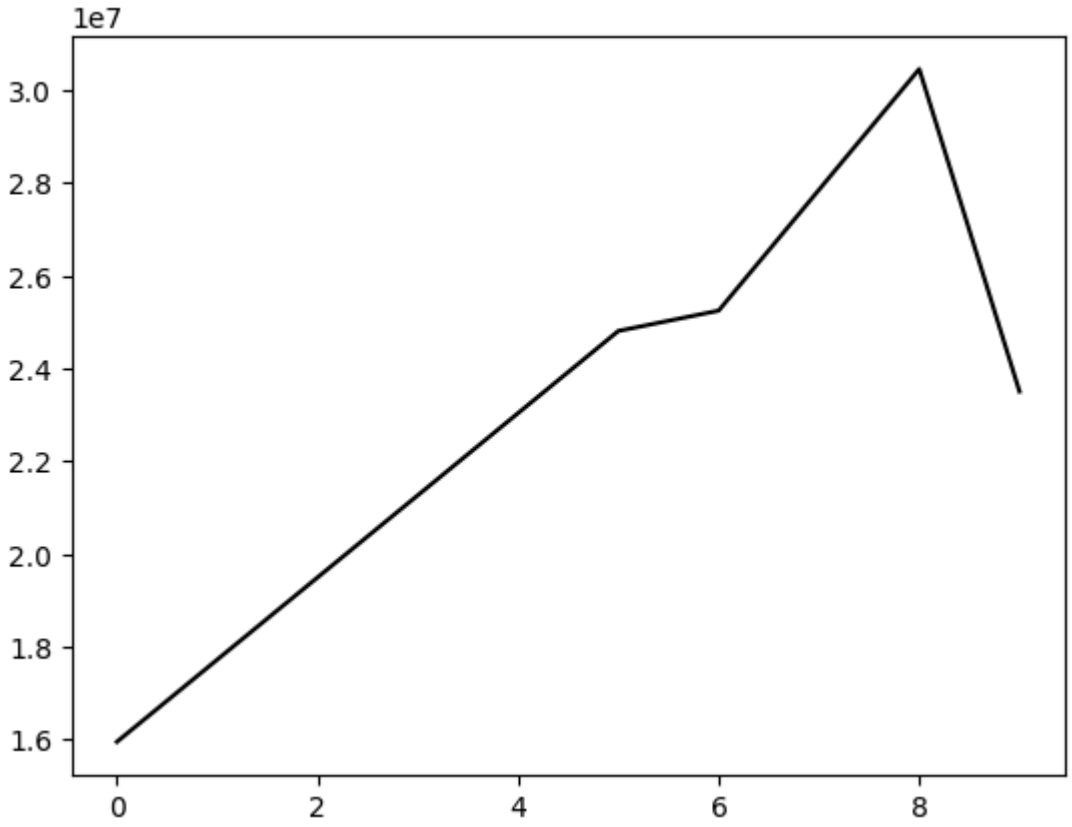
In [18]:
```
plt.plot(Salary[0], c='g')
```

Out[18]:
```
[<matplotlib.lines.Line2D at 0x1cb08d5dc30>]
```



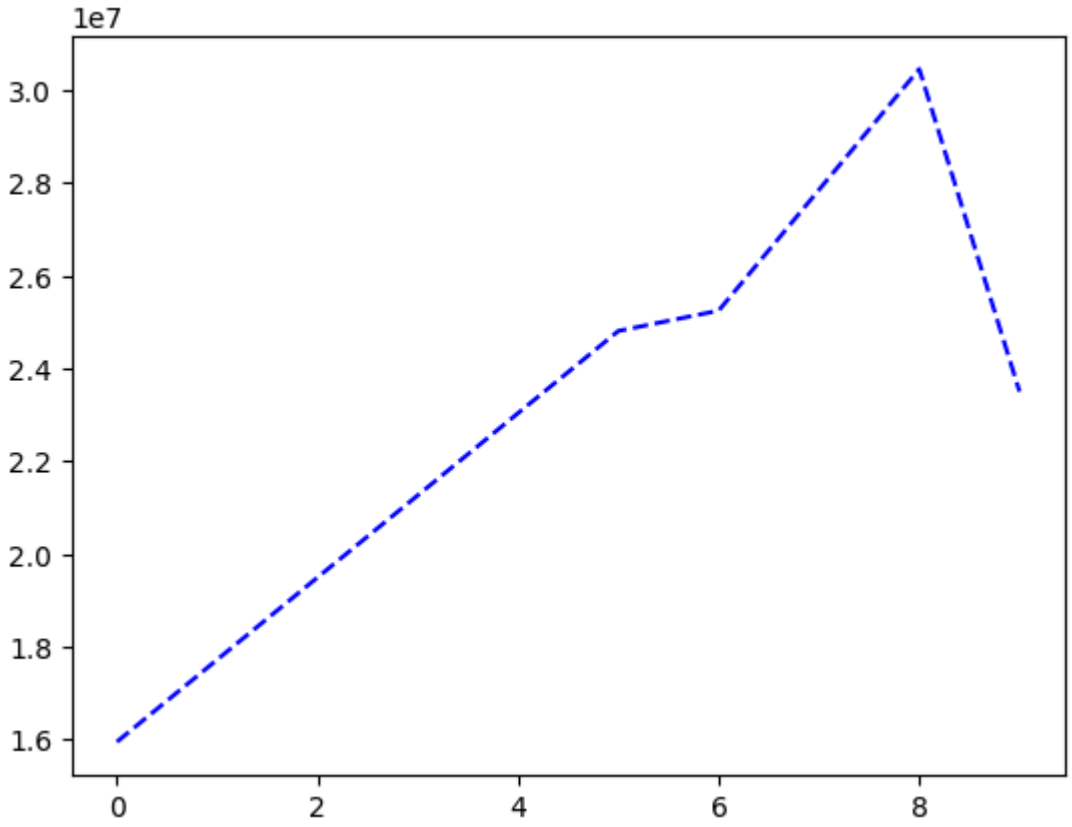
In [19]:
```
plt.plot(Salary[0], c='black')
```

Out[19]:
```
[<matplotlib.lines.Line2D at 0x1cb08dce350>]
```



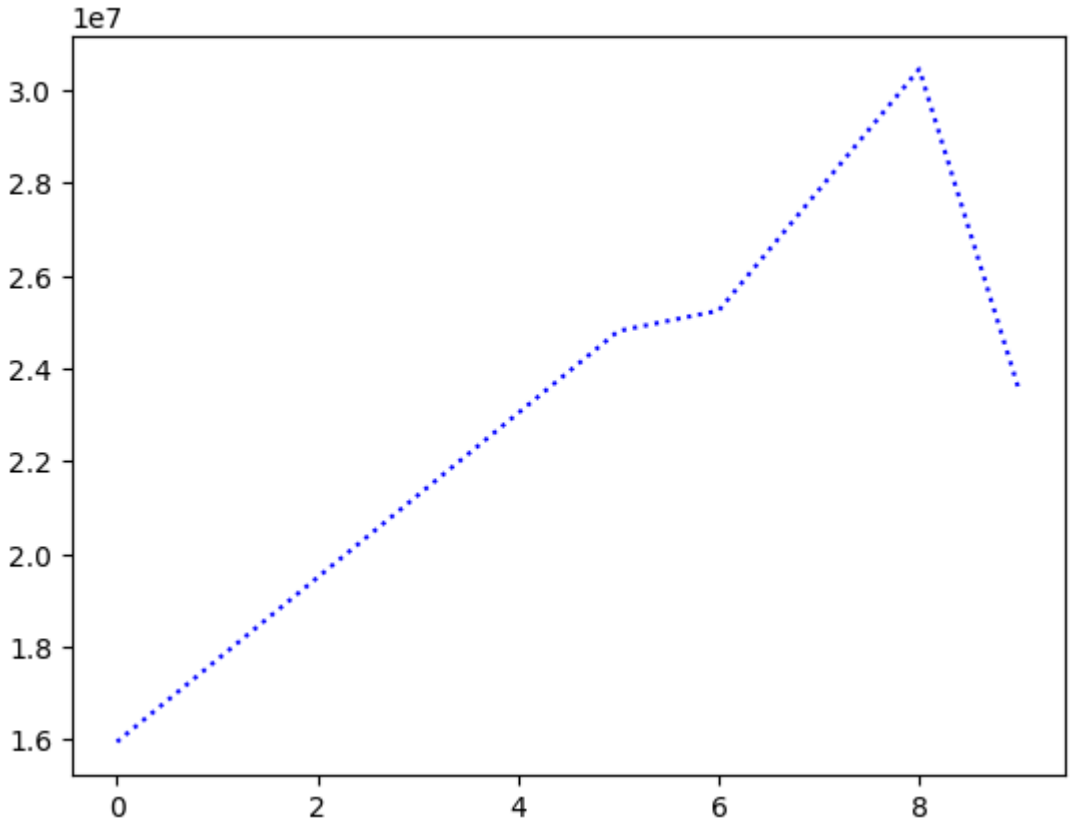
In [20]:
```
plt.plot(Salary[0], c='b',ls='--')
```

Out[20]:
```
[<matplotlib.lines.Line2D at 0x1cb08e3e830>]
```



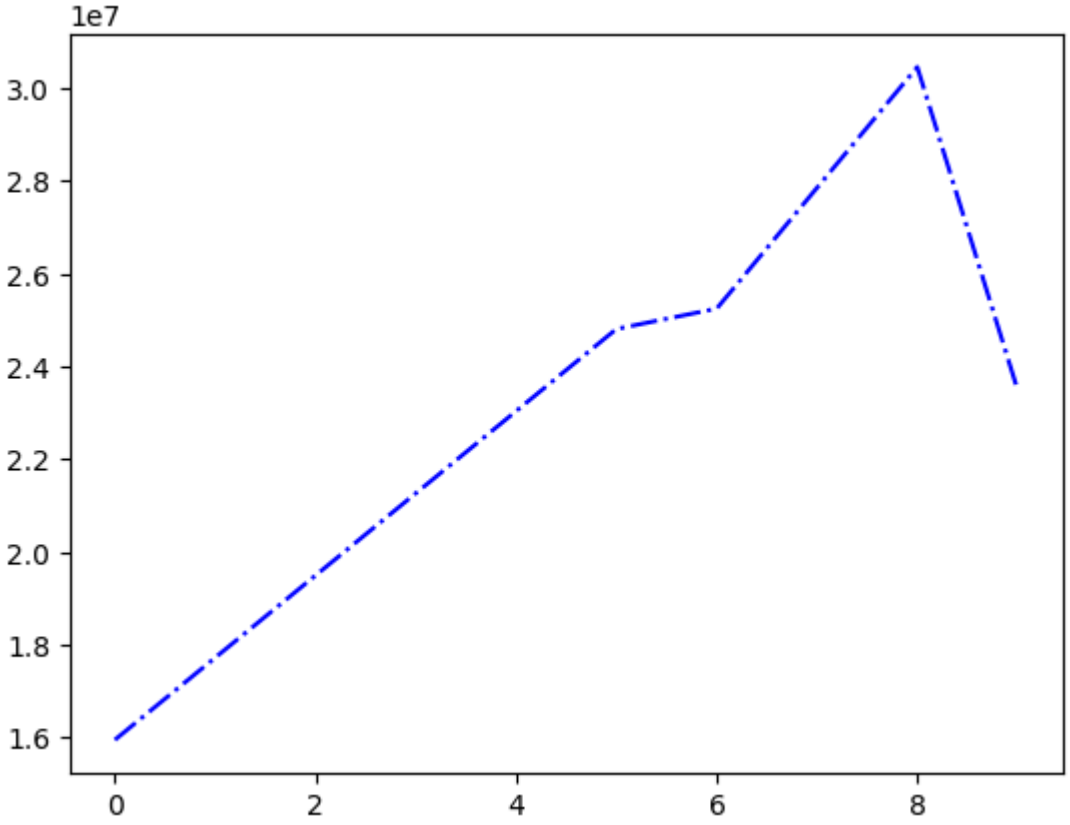
In [21]:
```
plt.plot(Salary[0], c='b',ls=':')
```

Out[21]:
```
[<matplotlib.lines.Line2D at 0x1cb08eb76a0>]
```



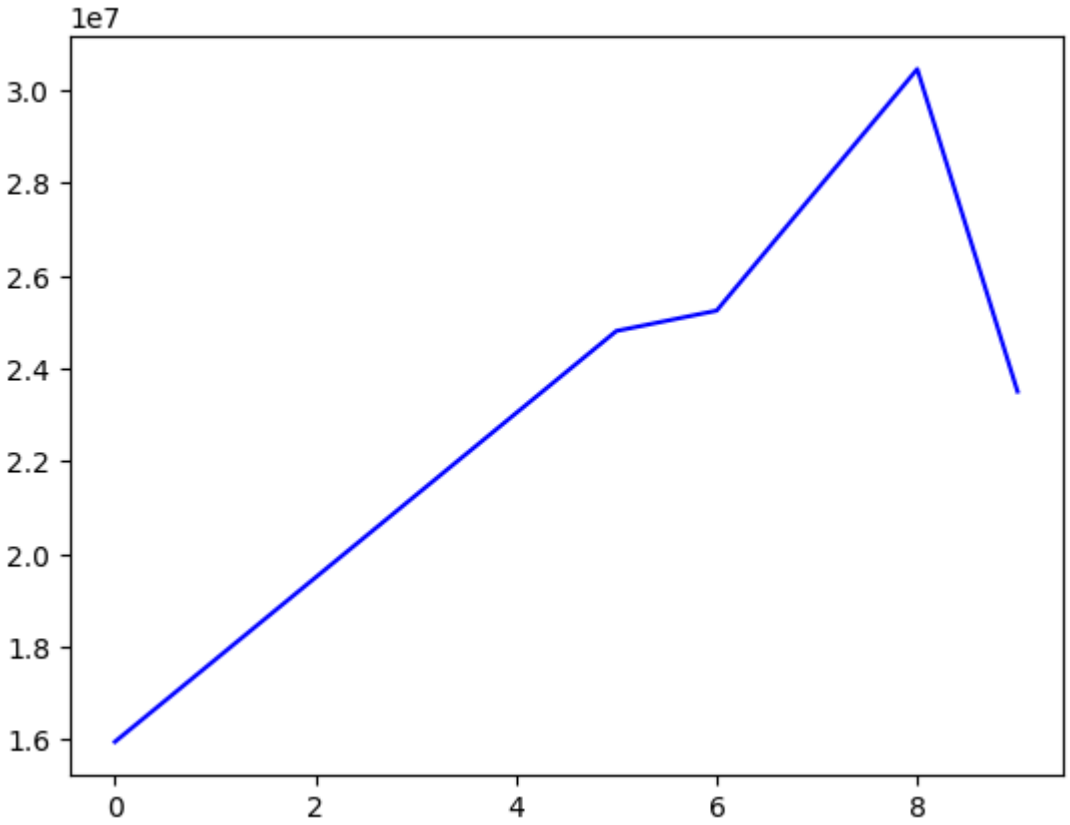
In [22]:
```
plt.plot(Salary[0], c='b',ls='-.')
```

Out[22]:
```
[<matplotlib.lines.Line2D at 0x1cb06c36050>]
```



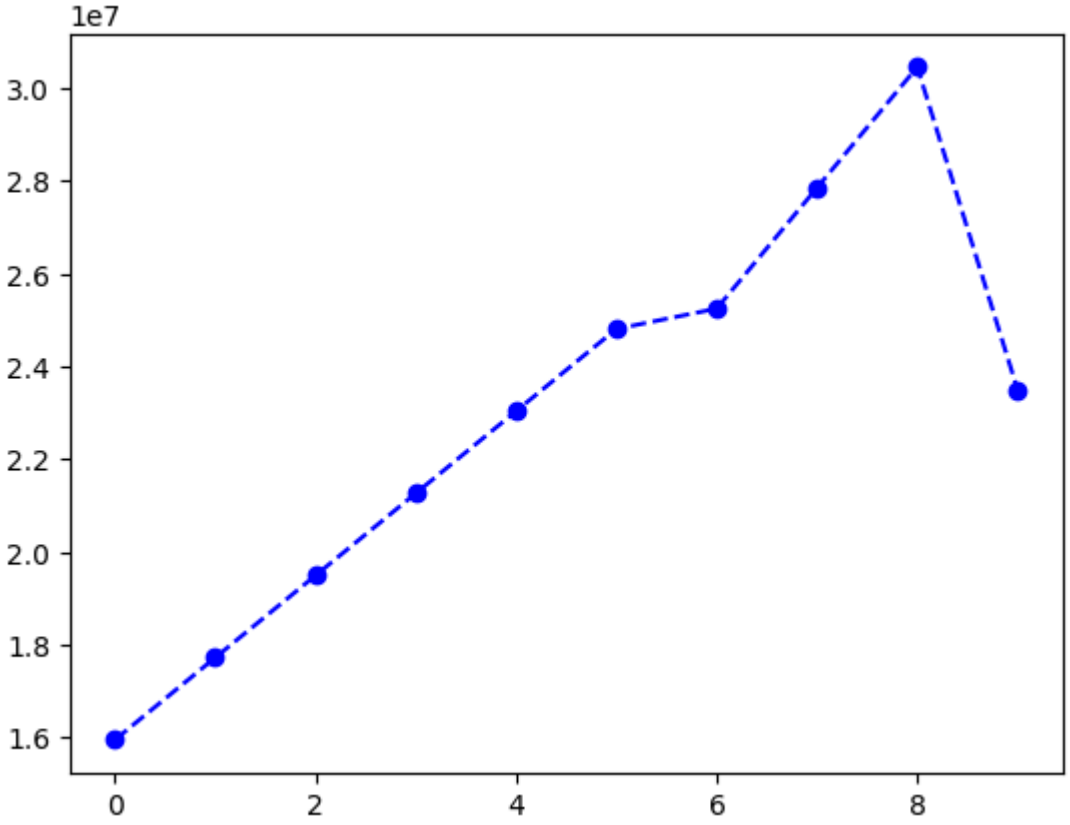
In [23]:
```
plt.plot(Salary[0], c='b',ls='-')
```

Out[23]:
```
[<matplotlib.lines.Line2D at 0x1cb09fa9a50>]
```



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

Out[26]:
```
[<matplotlib.lines.Line2D at 0x1cb0f9f77c0>]
```

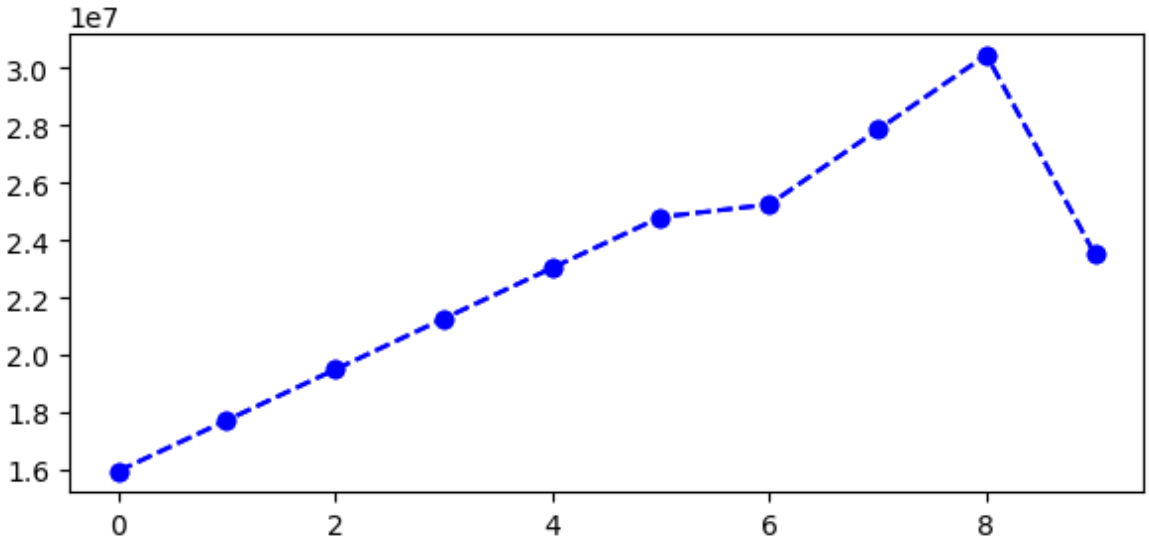


In [27]:
```
Games[0]
```

Out[27]:
```
array([80, 77, 82, 82, 73, 82, 58, 78,  6, 35])
```

In [30]:
```
%matplotlib inline
plt.rcParams['figure.figsize']=7,3  #7 is
```

In [32]:
```
plt.plot(Salary[0], c='b',ls='--',marker='o')
plt.show()
```



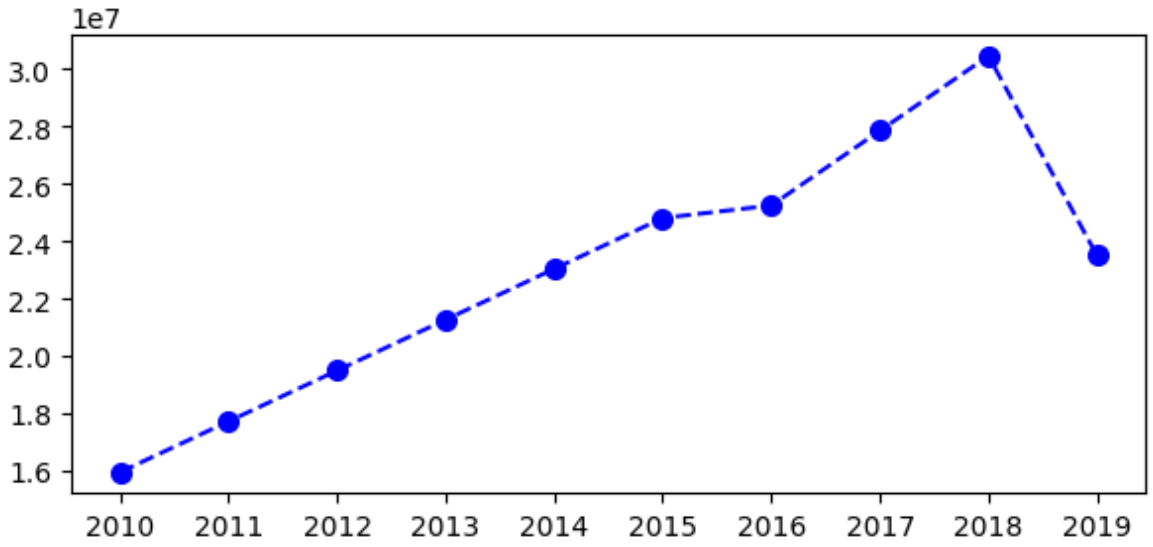
In [33]:
```
Sdict
```

Out[33]:
```
{'2010': 0,
 '2011': 1,
 '2012': 2,
 '2013': 3,
 '2014': 4,
 '2015': 5,
 '2016': 6,
 '2017': 7,
 '2018': 8,
 '2019': 9}
```

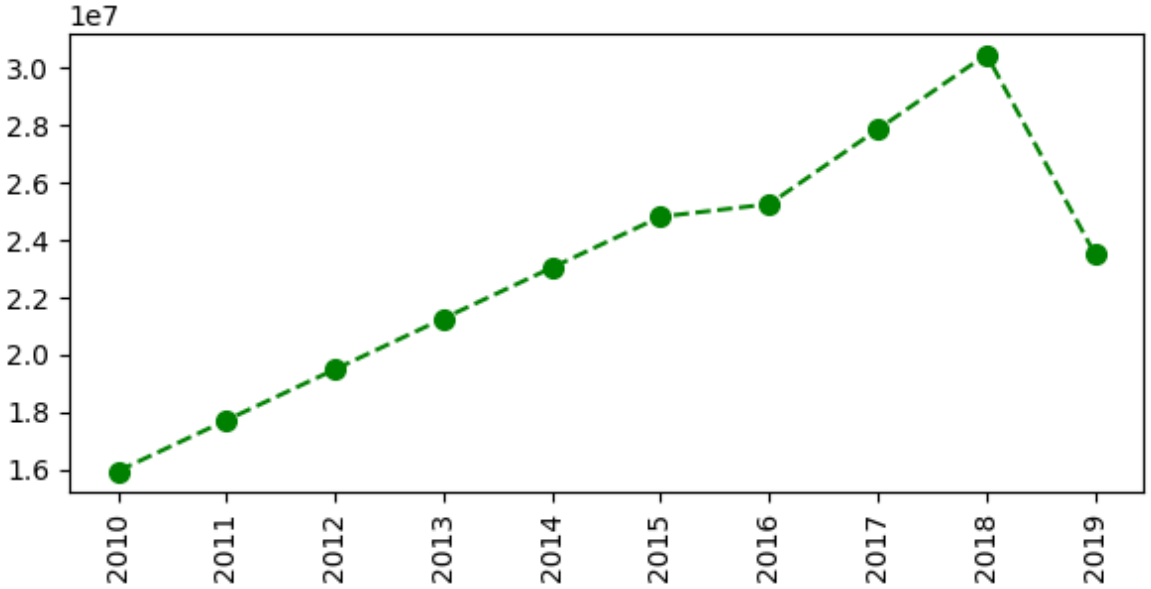
In [34]:
```
Pdict
```

Out[34]:
```
{'Sachin': 0,
 'Rahul': 1,
 'Smith': 2,
 'Sami': 3,
 'Pollard': 4,
 'Morris': 5,
 'Samson': 6,
 'Dhoni': 7,
 'Kohli': 8,
 'Sky': 9}
```

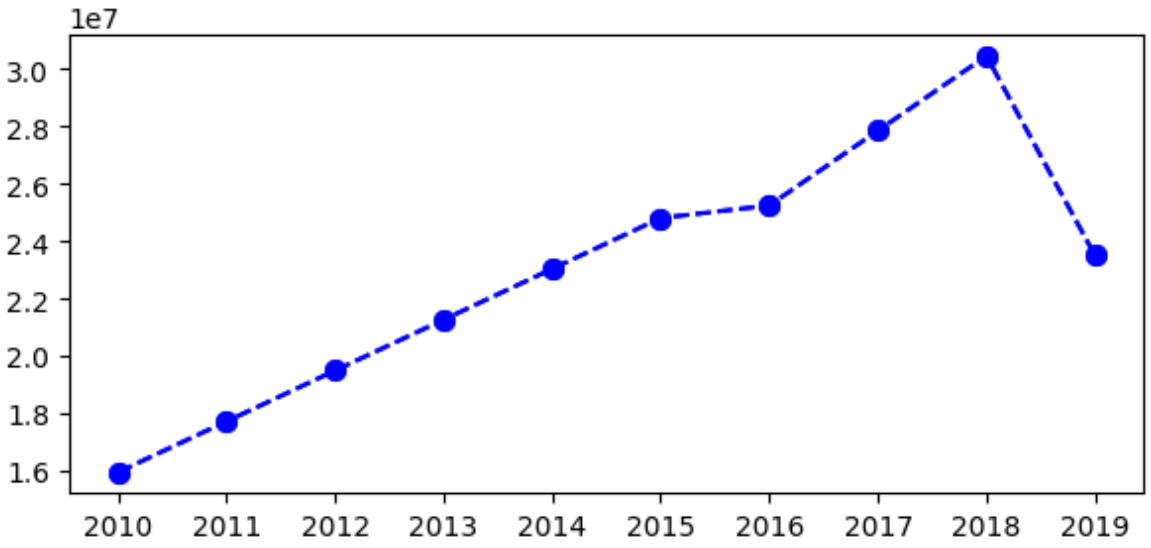
In [38]:
```
plt.plot(Salary[0], c='b',ls='--',marker='o' ,ms=7)
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



In [39]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=7)
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
plt.show()
```



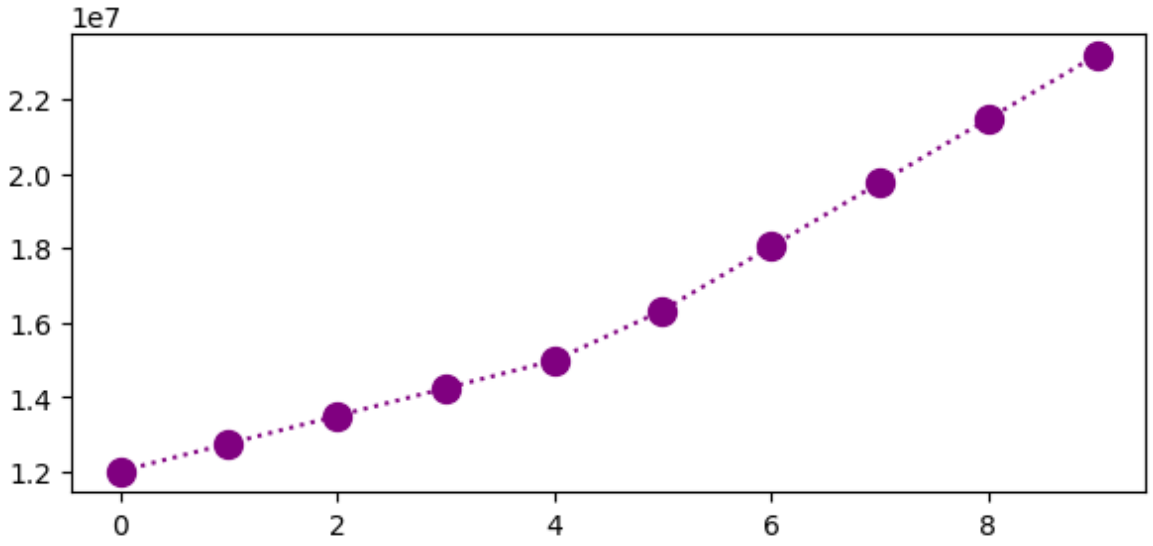
In [41]:
```
plt.plot(Salary[0], c='b',ls='--',marker='o' ,ms=7)
plt.xticks(list(range(0,10)),Seasons,rotation='horizontal')
plt.show()
```



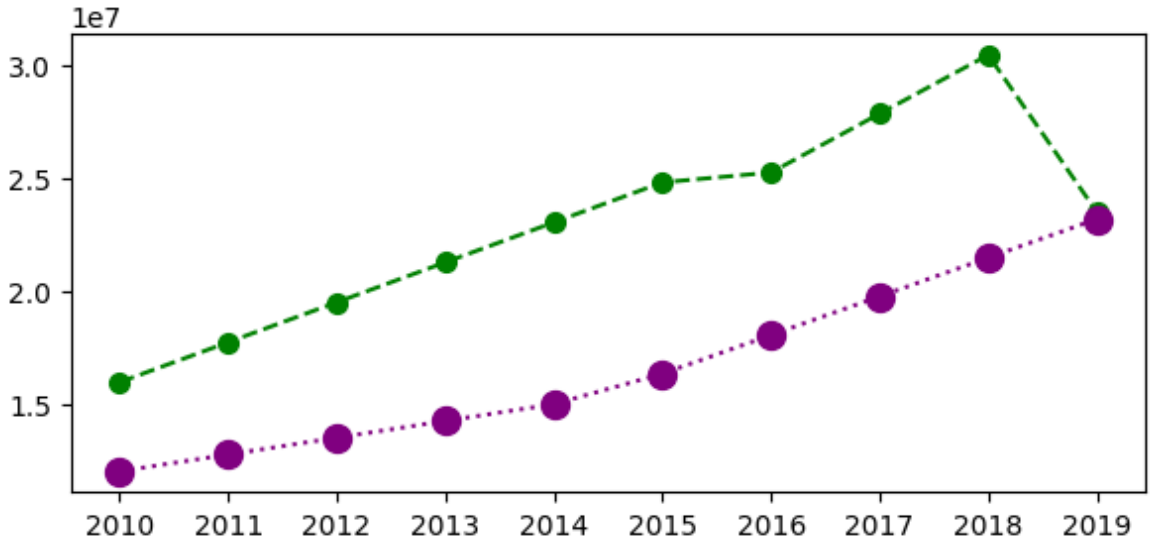
In [43]:
```
Salary[1]
```

Out[43]:
```
array([12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
       18038573, 19752645, 21466718, 23180790])
```

In [46]:
```
plt.plot(Salary[1], c='purple',ls=':',marker='o' ,ms=10)
plt.show()
```



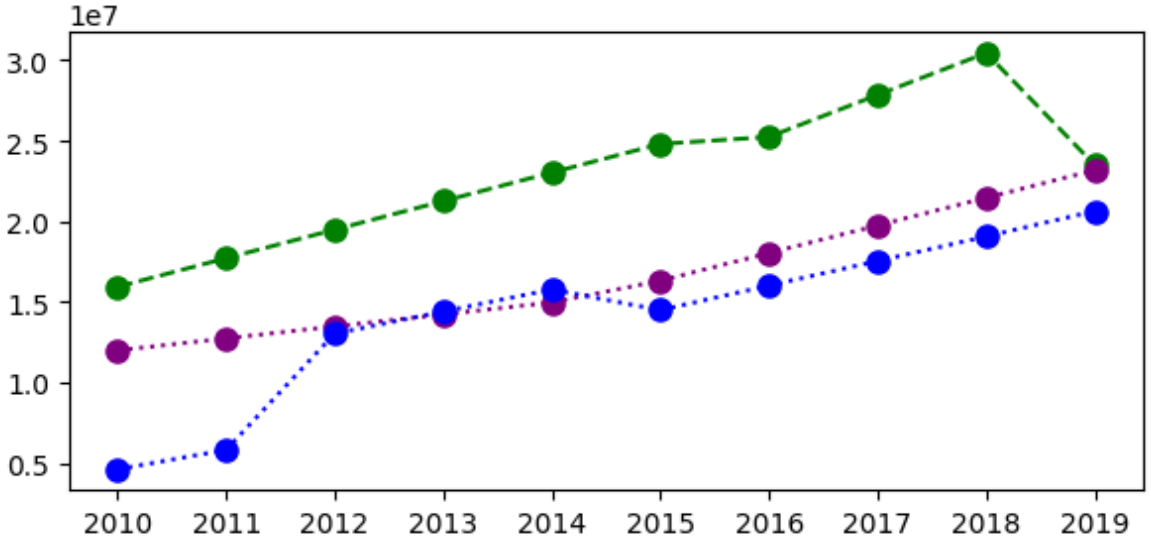
In [47]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=7)
plt.plot(Salary[1], c='purple',ls=':',marker='o' ,ms=10)

plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



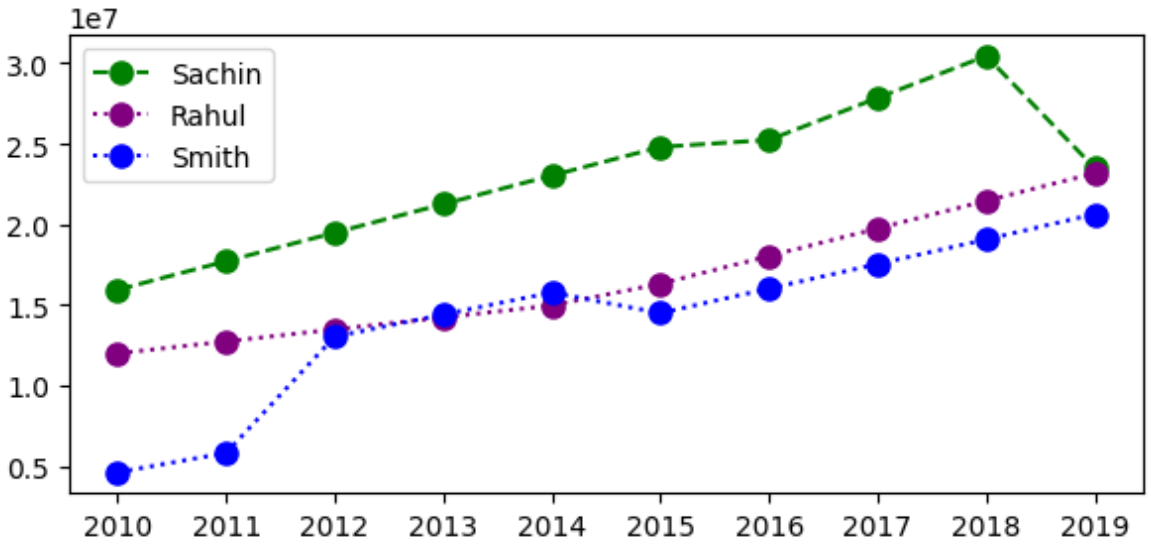
In [48]:
```
Salary[2]
```

Out[48]:
```
array([ 4621800,  5828090, 13041250, 14410581, 15779912, 14500000,
       16022500, 17545000, 19067500, 20644400])
```

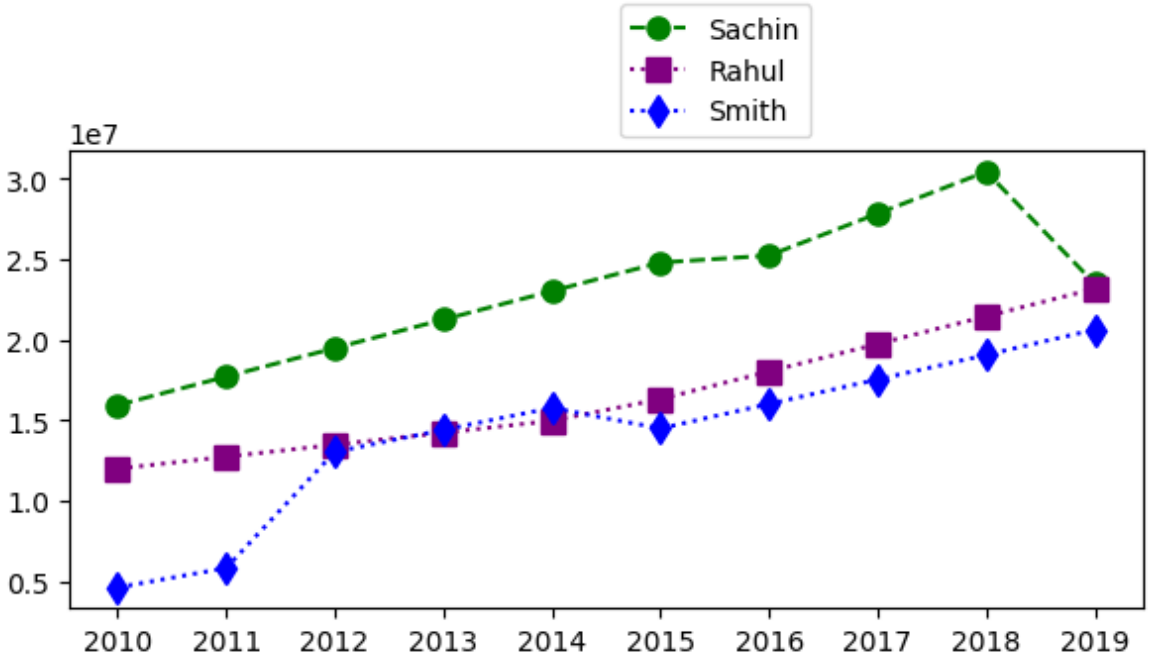
In [51]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=8)
plt.plot(Salary[1], c='purple',ls=':',marker='o' ,ms=8)
plt.plot(Salary[2], c='blue',ls=':',marker='o' ,ms=8)
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



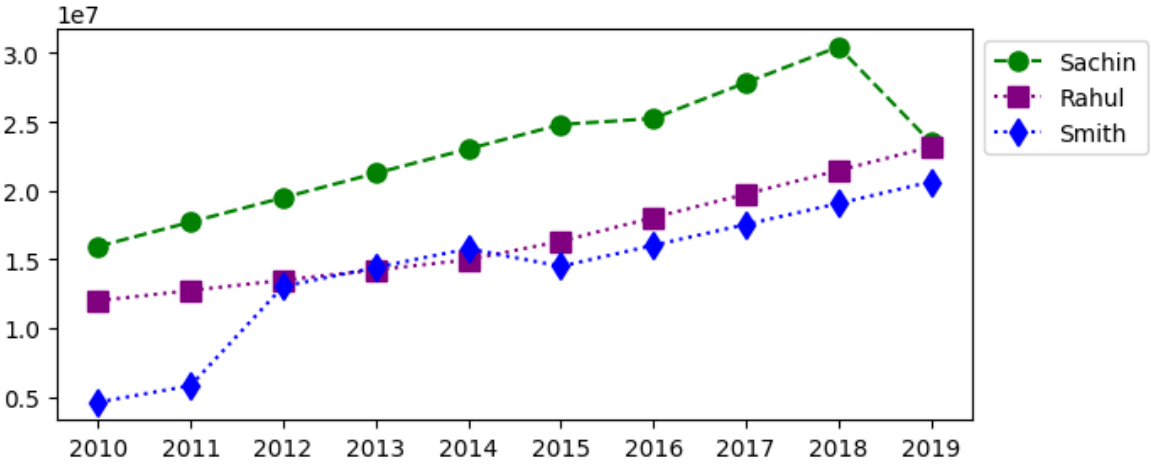
In [54]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=8,label=Players[0])
plt.plot(Salary[1], c='purple',ls=':',marker='o' ,ms=8,label=Players[1])
plt.plot(Salary[2], c='blue',ls=':',marker='o' ,ms=8,label=Players[2])
plt.legend()
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



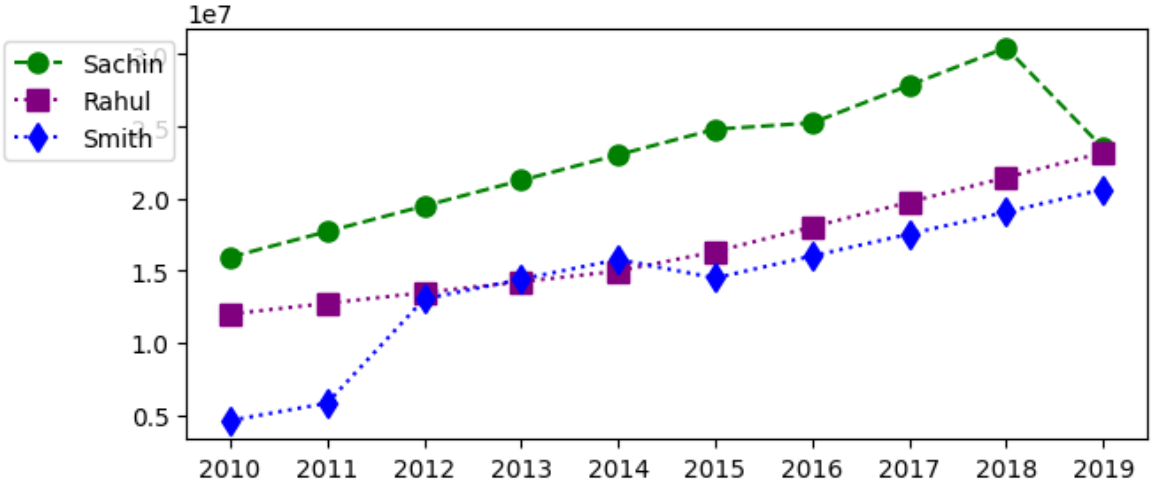
In [56]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=8,label=Players[0])
plt.plot(Salary[1], c='purple',ls=':',marker='s' ,ms=8,label=Players[1])
plt.plot(Salary[2], c='blue',ls=':',marker='d' ,ms=8,label=Players[2])
plt.legend(bbox_to_anchor=(0.5,1))
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



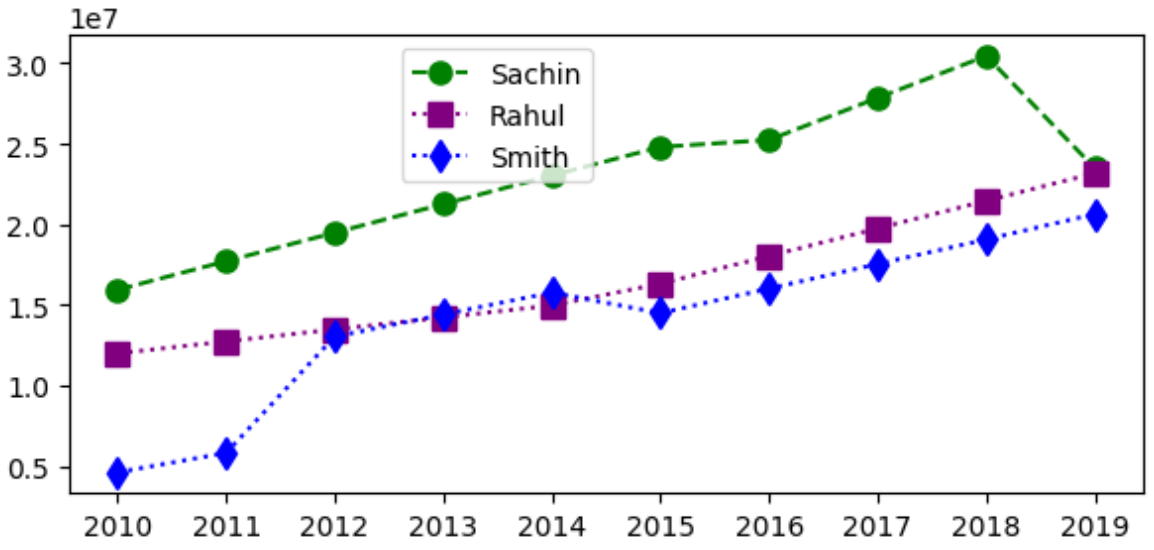
In [57]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=8,label=Players[0])
plt.plot(Salary[1], c='purple',ls=':',marker='s' ,ms=8,label=Players[1])
plt.plot(Salary[2], c='blue',ls=':',marker='d' ,ms=8,label=Players[2])
plt.legend(bbox_to_anchor=(1,1))
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



In [58]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=8,label=Players[0])
plt.plot(Salary[1], c='purple',ls=':',marker='s' ,ms=8,label=Players[1])
plt.plot(Salary[2], c='blue',ls=':',marker='d' ,ms=8,label=Players[2])
plt.legend(bbox_to_anchor=(0,1))
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



In [59]:
```
plt.plot(Salary[0], c='g',ls='--',marker='o' , ms=8,label=Players[0])
plt.plot(Salary[1], c='purple',ls=':',marker='s' ,ms=8,label=Players[1])
plt.plot(Salary[2], c='blue',ls=':',marker='d' ,ms=8,label=Players[2])
plt.legend(loc='upper right',bbox_to_anchor=(0.5,1))
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



In [ ]: