

## IPL Data Analysis

```
#IPL DataSet Analysis

import numpy as np
import matplotlib.pyplot as plt

#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}

#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}

#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])
```

```
#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])
```

```
Seasons
[2] Python

... ['2010',
      '2011',
      '2012',
      '2013',
      '2014',
      '2015',
      '2016',
      '2017',
      '2018',
      '2019']

Salary
[3] Python

... 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],
```

	Games	Python
[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]])	
	Points	Python
[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]])	

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

```
Salary/Games
[7] Python
... C:\Users\91965\AppData\Local\Temp\ipykernel_30296\3709746658.py:1: RuntimeWarning: divide
Salary/Games

... 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,
            369860.29411765],
          [ 40425.6, 75322.41176471, 255710.78431373,
            182412.41772152, 204933.92207792, 186842.10526316.]])
```

```
Salary//Games
[10] Python
... C:\Users\91965\AppData\Local\Temp\ipykernel_30296\1634212085.py:1: RuntimeWarning: divide
Salary//Games

... 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]])
```

```
np.round(Salary//Games)
[11] Python
... C:\Users\91965\AppData\Local\Temp\ipykernel_30296\3663165759.py:1: RuntimeWarning: divide
np.round(Salary//Games)

... 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]])
```

```
import warnings
warnings.filterwarnings('ignore')
```

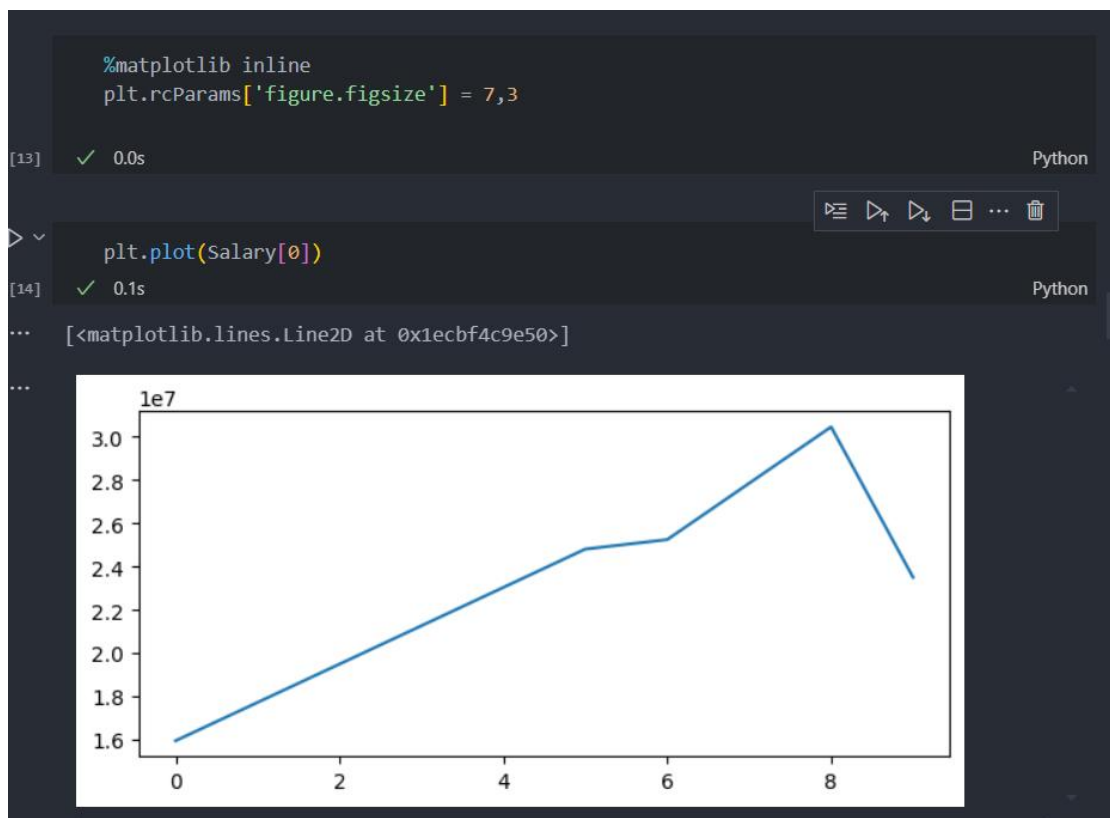
[11] ✓ 0.0s Python

```
Salary[0]
```

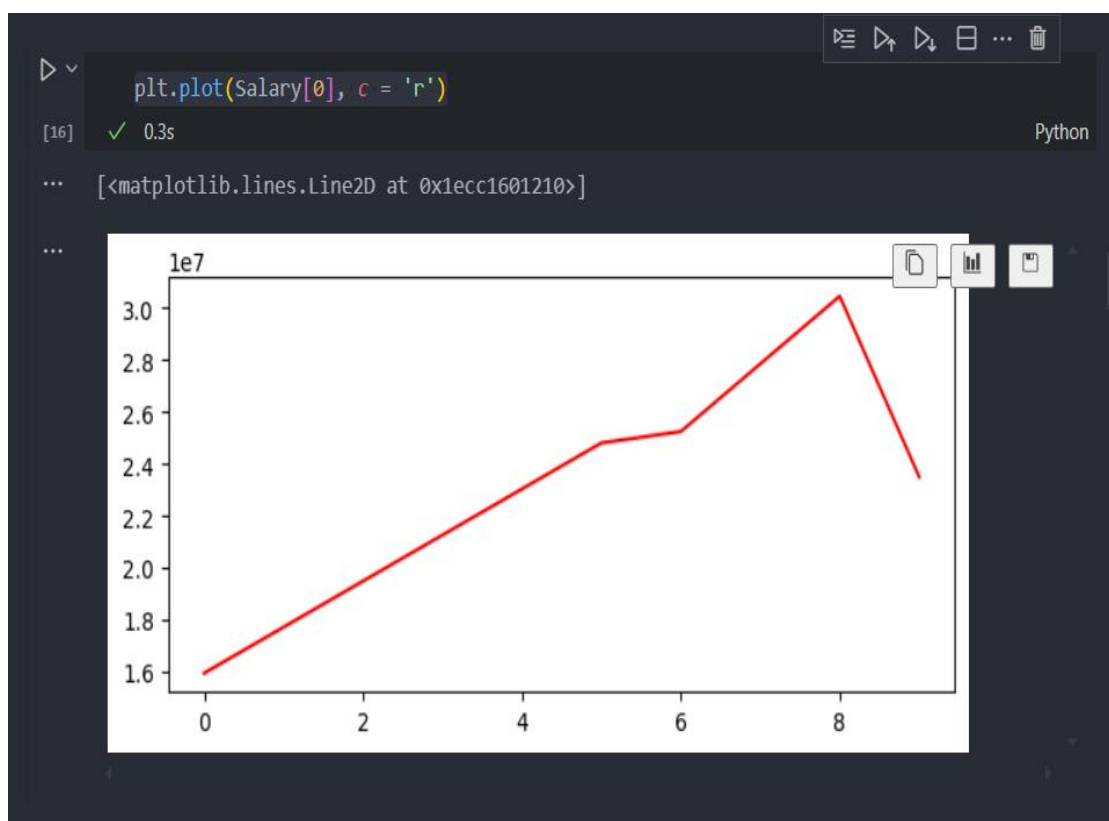
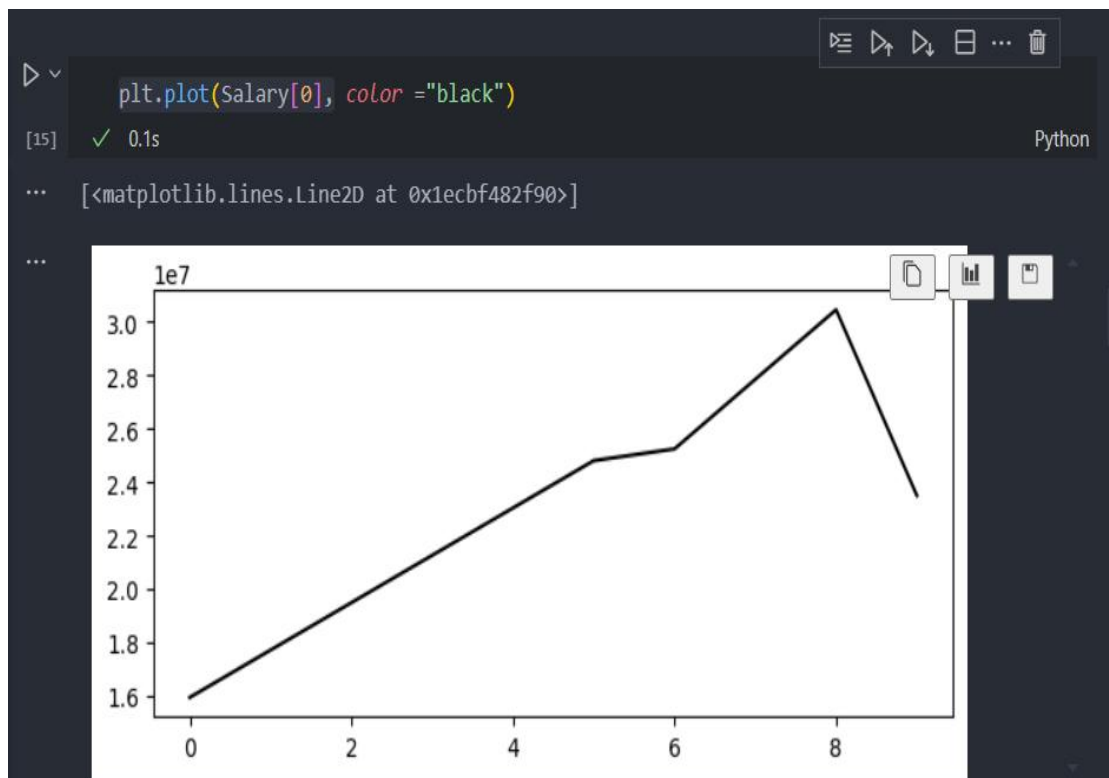
[12] ✓ 0.0s Python

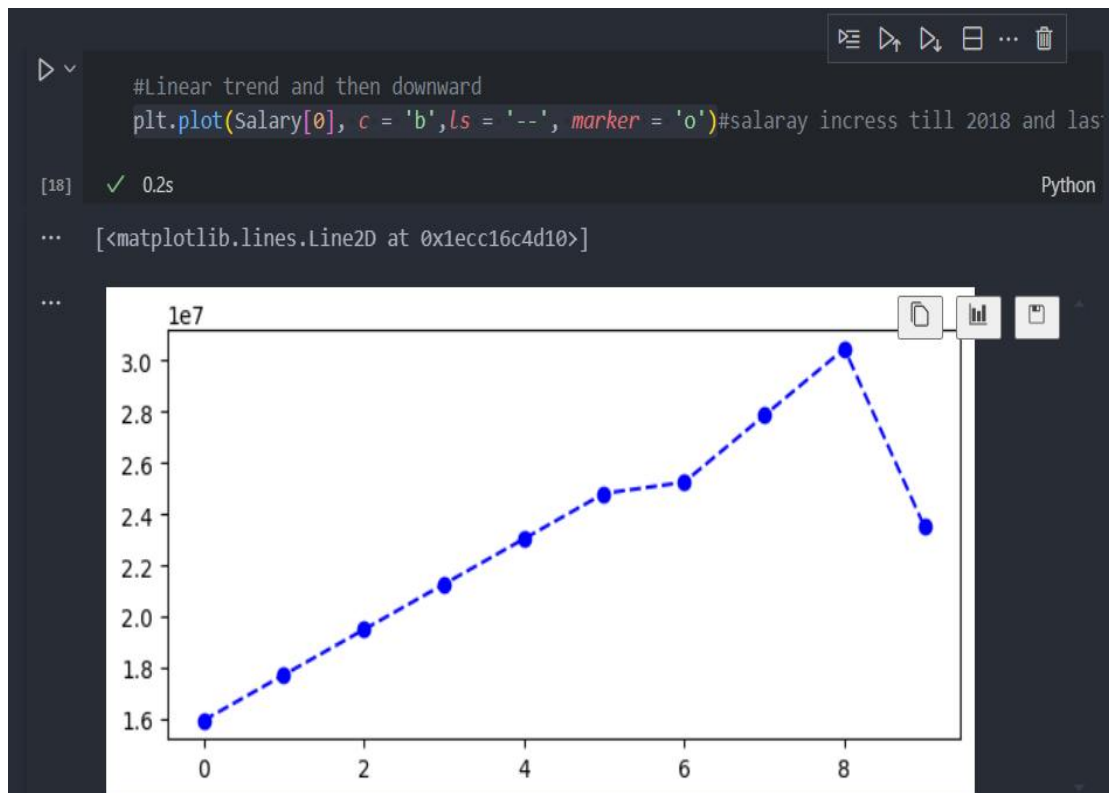
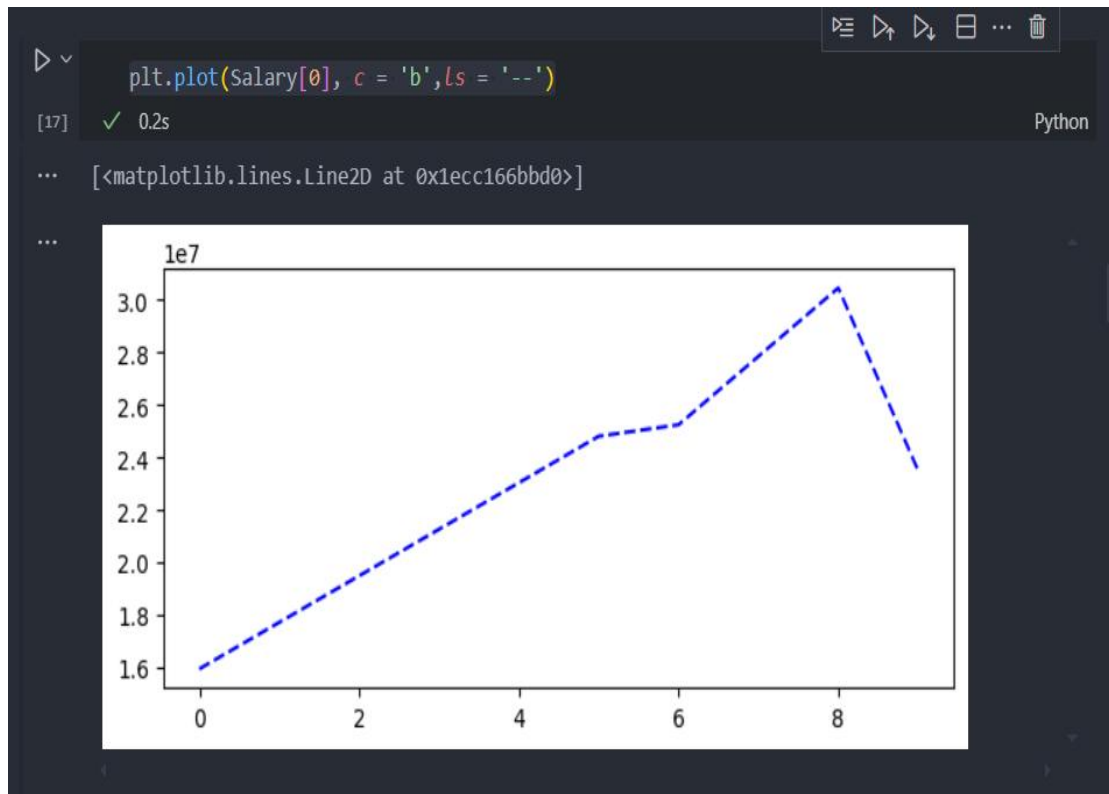
```
array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
       25244493, 27849149, 30453805, 23500000])
```

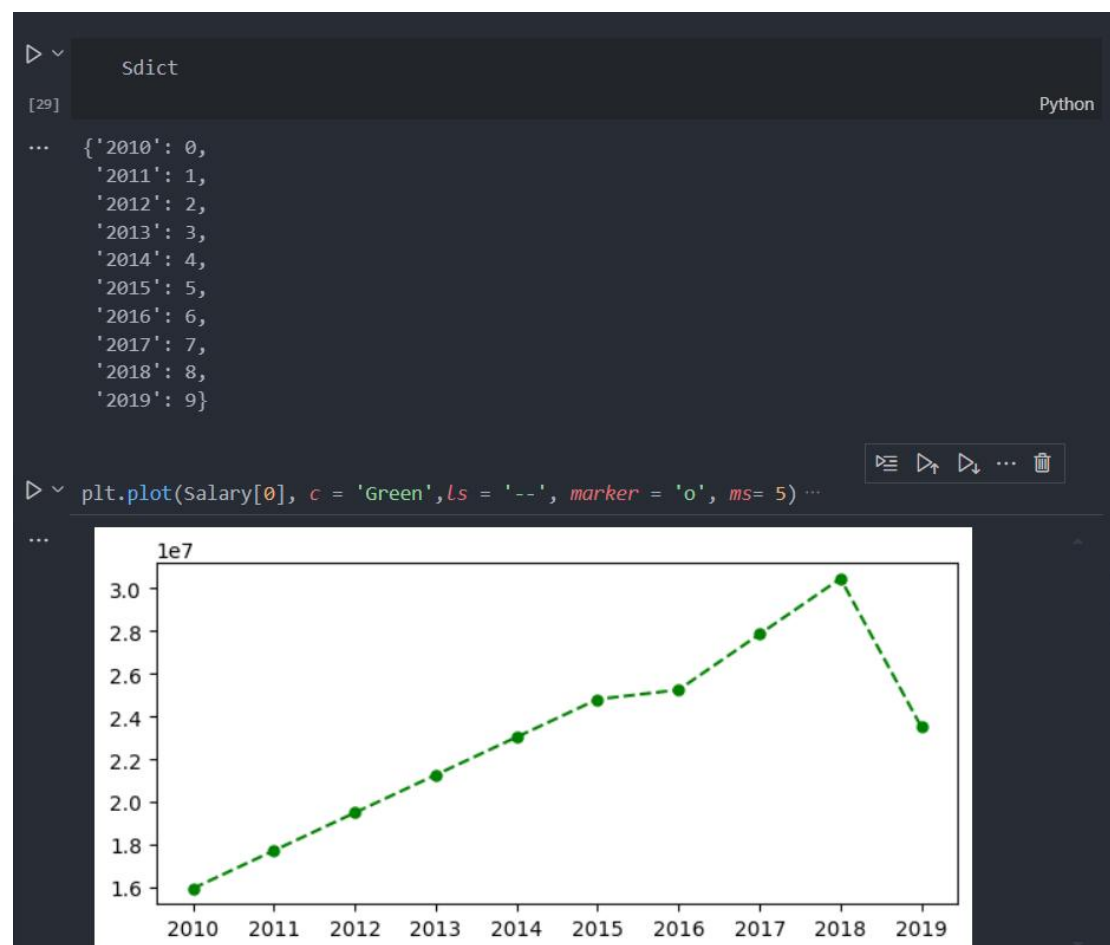
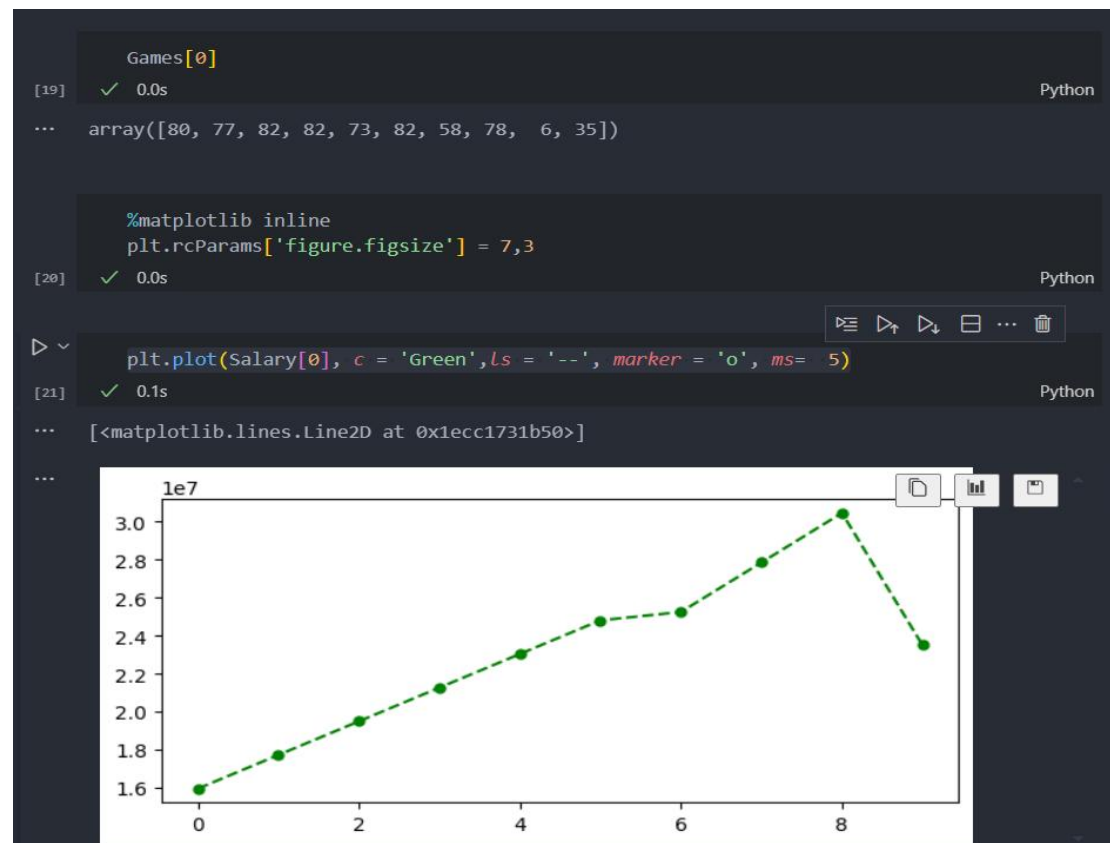
Generate Code Markdown













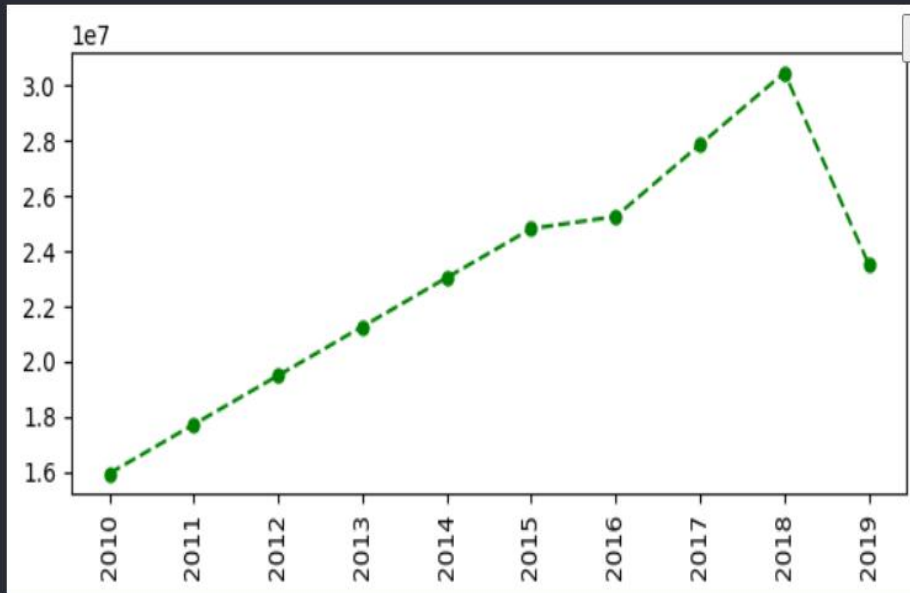


```
plt.plot(Salary[0], c = 'Green', ls = '--', marker = 'o', ms= 5)  
plt.xticks(list(range(0,10)), Seasons, rotation = 'vertical')  
plt.show()
```

[31]

Pyt

...

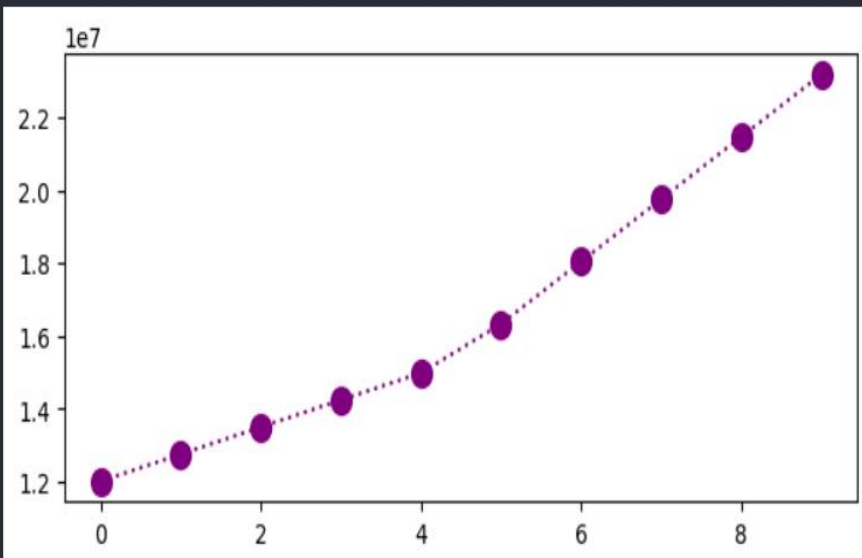


```
plt.plot(Salary[1], c='purple', ls = ':', marker = 'o', ms = 10)  
plt.show()  
#, label = Players[1]
```

[33]

Python

...



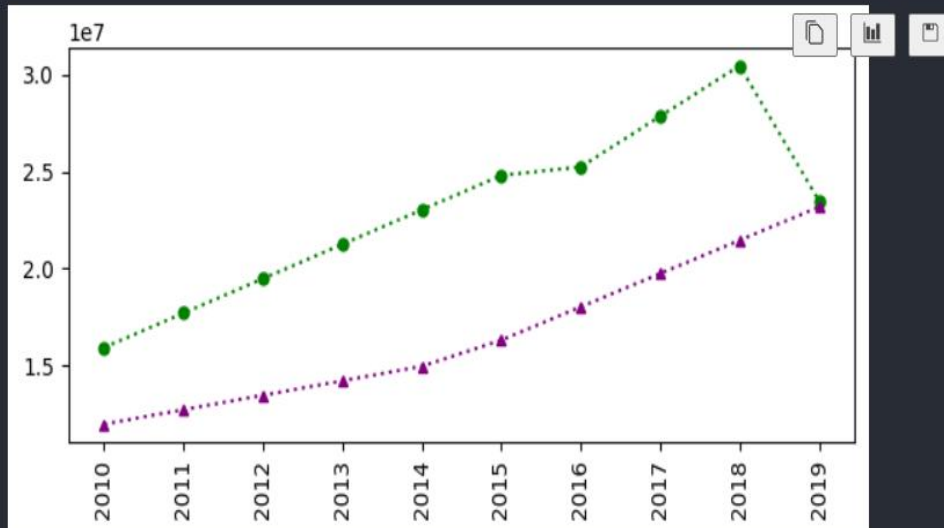


```
plt.plot(Salary[0], c='Green', ls=':', marker='o', ms=5, label=Players[0])
plt.plot(Salary[1], c='purple', ls=':', marker='^', ms=5, label=Players[1])
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.show()
```

[23] ✓ 0.1s

Python

...

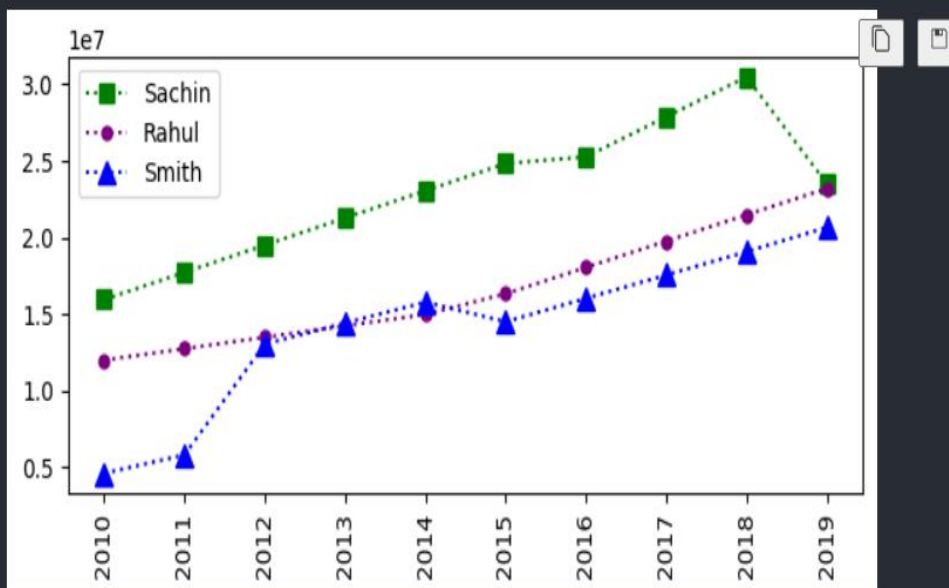


```
plt.plot(Salary[0], c='Green', ls=':', marker='s', ms=7, label=Players[0])
plt.plot(Salary[1], c='purple', ls=':', marker='o', ms=5, label=Players[1])
plt.plot(Salary[2], c='blue', ls=':', marker='^', ms=8, label=Players[2])
plt.xticks(list(range(0,10)), Seasons, rotation='vertical')
plt.legend()
plt.show()
```

[41]

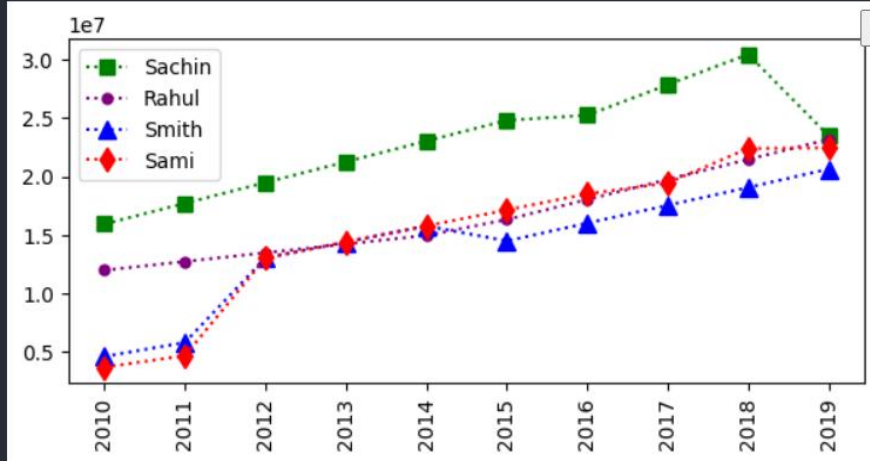
Python

...



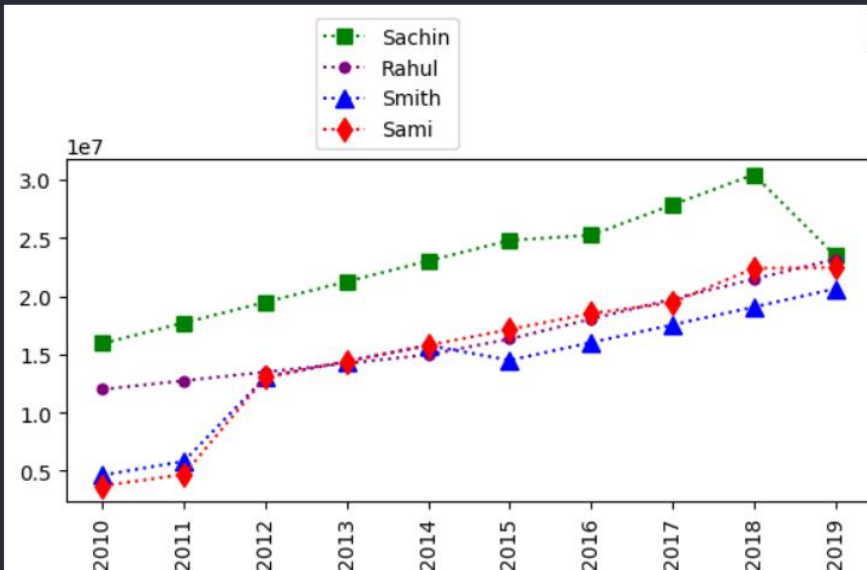
```
plt.plot(Salary[0], c='Green', ls=':', marker='s', ms=7, label=Players[0])
plt.plot(Salary[1], c='purple', ls=':', marker='o', ms=5, label=Players[1])
plt.plot(Salary[2], c='blue', ls=':', marker='^', ms=8, label=Players[2])
plt.plot(Salary[3], c='red', ls=':', marker='d', ms=8, label=Players[3])
plt.xticks(list(range(0,10)),Seasons, rotation='vertical')
plt.legend()#autometric detect the color info
plt.show()
```

Python



```
plt.plot(Salary[0], c='Green', ls=':', marker='s', ms=7, label=Players[0])
plt.plot(Salary[1], c='purple', ls=':', marker='o', ms=5, label=Players[1])
plt.plot(Salary[2], c='blue', ls=':', marker='^', ms=8, label=Players[2])
plt.plot(Salary[3], c='red', ls=':', marker='d', ms=8, label=Players[3])
plt.xticks(list(range(0,10)),Seasons, rotation='vertical')
plt.legend(loc='lower right',bbox_to_anchor=(0.5,1))#autometric detect the color in
plt.show()
```

Python



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

[24] ✓ 0.0s Python
```

```
plt.plot(Salary[0], c='Green', ls=':', marker='s', ms=7, label=Players[0])
plt.plot(Salary[1], c='purple', ls=':', marker='o', ms=5, label=Players[1])
plt.plot(Salary[2], c='blue', ls=':', marker='^', ms=8, label=Players[2])
plt.plot(Salary[3], c='red', ls=':', marker='d', ms=7, label=Players[3])
plt.plot(Salary[4], c='black', ls=':', marker='d', ms=5, label=Players[4])
plt.plot(Salary[5], c='blue', ls=':', marker='s', ms=7, label=Players[5])
plt.plot(Salary[6], c='green', ls=':', marker='o', ms=6, label=Players[6])
plt.plot(Salary[7], c='purple', ls=':', marker='^', ms=5, label=Players[7])
plt.plot(Salary[8], c='black', ls=':', marker='o', ms=5, label=Players[8])
plt.plot(Salary[9], c='red', ls=':', marker='d', ms=5, label=Players[9])
plt.xticks(list(range(0,10)),Seasons, rotation='vertical')
plt.legend(loc='lower right',bbox_to_anchor=(0.5,1))#automatic detect the color in
plt.show()
```

```
[25] ✓ 0.2s Python
```

