

In [1]: `import numpy as np`

In [2]: `#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`

In [3]: `#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}`

In [4]: `#Salaries`
`Sachin_Salary = [15946875, 17718750, 19490625, 21262500, 23034375, 24806250, 25244493, 26000000, 27000000, 28000000]`
`Rahul_Salary = [12000000, 12744189, 13488377, 14232567, 14976754, 16324500, 18038573, 19000000, 20000000, 21000000]`
`Smith_Salary = [4621800, 5828090, 13041250, 14410581, 15779912, 14500000, 16022500, 17000000, 18000000, 19000000]`
`Sami_Salary = [3713640, 4694041, 13041250, 14410581, 15779912, 17149243, 18518574, 19450000, 20000000, 21000000]`
`Pollard_Salary = [4493160, 4806720, 6061274, 13758000, 15202590, 16647180, 18091770, 19000000, 20000000, 21000000]`
`Morris_Salary = [3348000, 4235220, 12455000, 14410581, 15779912, 14500000, 16022500, 17000000, 18000000, 19000000]`
`Samson_Salary = [3144240, 3380160, 3615960, 4574189, 13520500, 14940153, 16359805, 17700000, 19000000, 20000000]`
`Dhoni_Salary = [0, 0, 4171200, 4484040, 4796880, 6053663, 15506632, 16669630, 17832627, 19000000]`
`Kohli_Salary = [0, 0, 0, 4822800, 5184480, 5546160, 6993708, 16402500, 17632688, 18862875]`
`Sky_Salary = [3031920, 3841443, 13041250, 14410581, 15779912, 14200000, 15691000, 17182000, 18000000, 19000000]`

In [6]: `#Matrix`
`Salary = np.array([Sachin_Salary, Rahul_Salary, Smith_Salary, Sami_Salary, Pollard_Salary, Morris_Salary, Samson_Salary, Dhoni_Salary, Kohli_Salary, Sky_Salary])`

In [7]: `#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])`

In [12]: `#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]`

In [9]: `#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 [11]: `Points`

```
Out[11]: 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 [13]: Games[0,5]
```

```
Out[13]: 82
```

```
In [14]: Games[2]
```

```
Out[14]: array([79, 78, 75, 81, 76, 79, 62, 76, 77, 69])
```

```
In [15]: Points
```

```
Out[15]: 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 [16]: Points[0]
```

```
Out[16]: array([2832, 2430, 2323, 2201, 1970, 2078, 1616, 2133, 83, 782])
```

```
In [17]: Points[6,1]
```

```
Out[17]: 1104
```

```
In [18]: Points[-6,-1]
```

```
Out[18]: 646
```

```
In [19]: Pdict
```

```
Out[19]: {'Sachin': 0,
          'Rahul': 1,
          'Smith': 2,
          'Sami': 3,
          'Pollard': 4,
          'Morris': 5,
          'Samson': 6,
          'Dhoni': 7,
          'Kohli': 8,
          'Sky': 9}
```

```
In [20]: Pdict['Rahul']
```

Out[20]: 1

In [21]: Games[1]

Out[21]: array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])

In [22]: Games[Pdict['Rahul']]

Out[22]: array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])

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]: Salary

Out[24]: 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 [25]: Salary/Games

C:\Users\Dell\AppData\Local\Temp\ipykernel_6140\3709746658.py:1: RuntimeWarning:
divide by zero encountered in divide
Salary/Games

```
Out[25]: 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 [27]: np.round(Salary//Games)
```

```
C:\Users\Dell\AppData\Local\Temp\ipykernel_6140\3663165759.py:1: RuntimeWarning:
divide by zero encountered in floor_divide
  np.round(Salary//Games)
```

```
Out[27]: 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]])
```

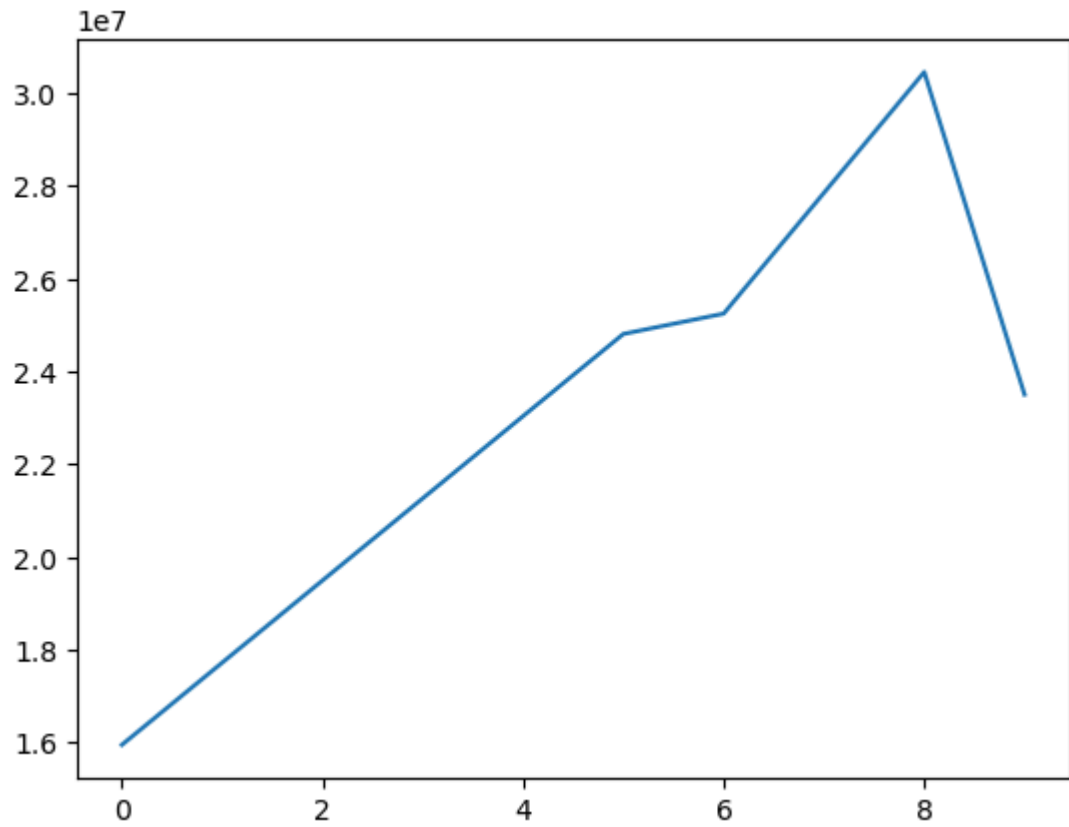
```
In [28]: import warnings
         warnings.filterwarnings('ignore')
```

```
In [30]: import matplotlib.pyplot as plt
```

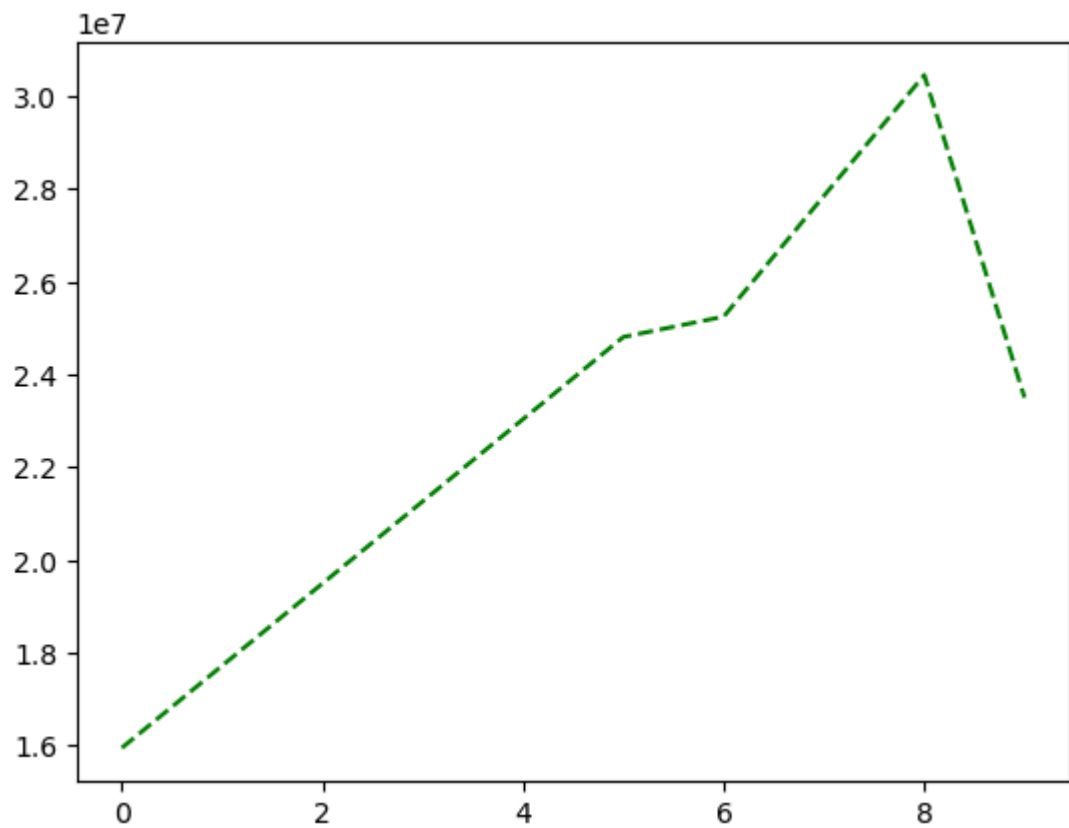
```
In [31]: Salary
```

```
Out[31]: 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]])
```

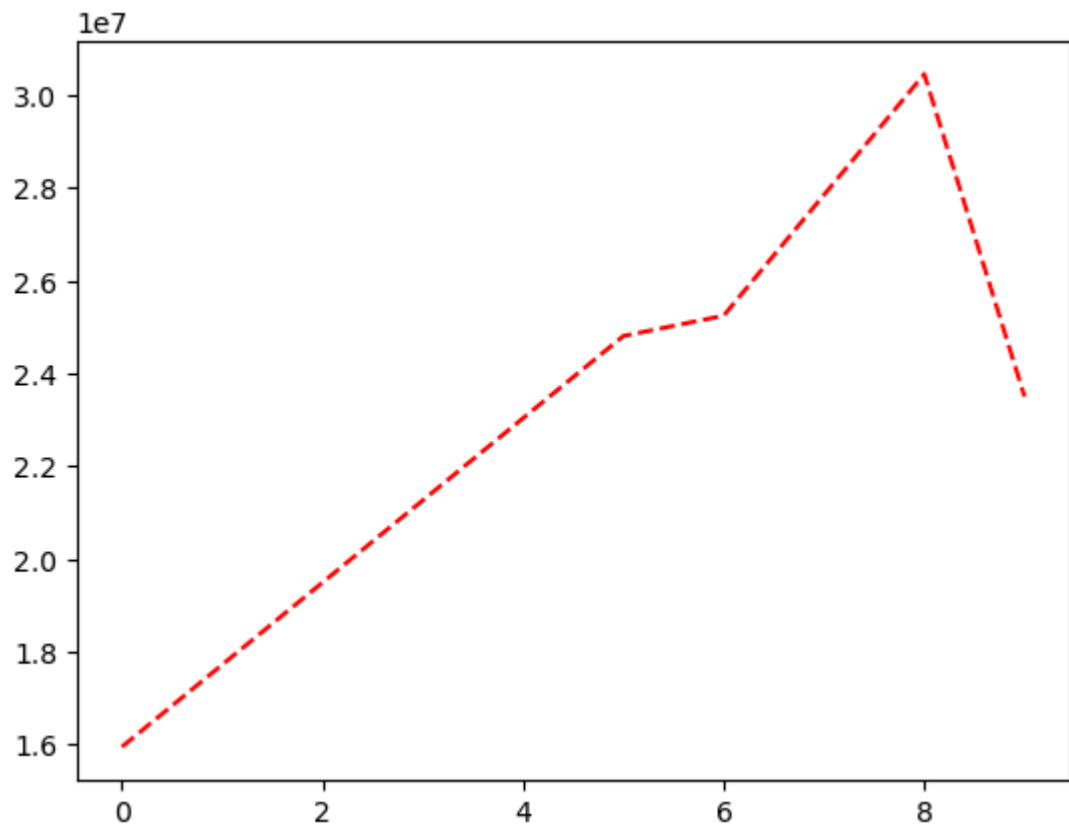
```
In [33]: plt.plot(Salary[0])
         plt.show()
```



```
In [37]: plt.plot(Salary[0],ls="--",color='g')  
plt.show()
```



```
In [40]: plt.plot(Salary[0],c='r',ls="--")  
plt.show()
```



```
In [44]: %matplotlib inline
plt.p['figure.figsize']=7,3
```

```
In [ ]:
```