In [1]:
```python
import numpy as np
```

In [3]:
```python
#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, Samso

#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 [5]:
```python
Salary
```

```
Out[5]:  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 [15]: `Games`

```
Out[15]:  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 [19]: `Games[5]`

```
Out[19]:  array([70, 69, 67, 77, 70, 77, 57, 74, 79, 44])
```

In [21]: `Games[0:5]`

```
Out[21]:  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]])
```

In [23]: `Games[0,5]`

Out[23]: 82

In [7]: `np.round(Salary//Games)`

```
C:\Users\azharalam\AppData\Local\Temp\ipykernel_4724\3663165759.py:1: RuntimeWarn
ing: divide by zero encountered in floor_divide
  np.round(Salary//Games)
```

```
Out[7]:  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 [17]: Points

```
Out[17]:  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 [25]: Points[0]

```
Out[25]:  array([2832, 2430, 2323, 2201, 1970, 2078, 1616, 2133,   83,  782])
```

In [27]: Points[0:5]

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

In [29]: Points[-6,-1]

Out[29]: 646

In [32]: Pdict

```
Out[32]:  {'Sachin': 0,
           'Rahul': 1,
           'Smith': 2,
           'Sami': 3,
           'Pollard': 4,
           'Morris': 5,
           'Samson': 6,
           'Dhoni': 7,
           'Kohli': 8,
           'Sky': 9}
```

In [34]: `Pdict['Rahul']`

Out[34]: `1`

In [36]: `Pdict['Sachin']`

Out[36]: `0`

In [38]: `Games[1]`

Out[38]: `array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])`

In [42]: `Games[Pdict['Rahul']]`

Out[42]: `array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])`

In [44]: `Games`

```
Out[44]:  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 [46]: `Games[1]`

Out[46]: `array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])`

In [5]:
```python
import warnings
warnings.filterwarnings('ignore')
```

In [7]:
```python
import matplotlib.pyplot as plt
```
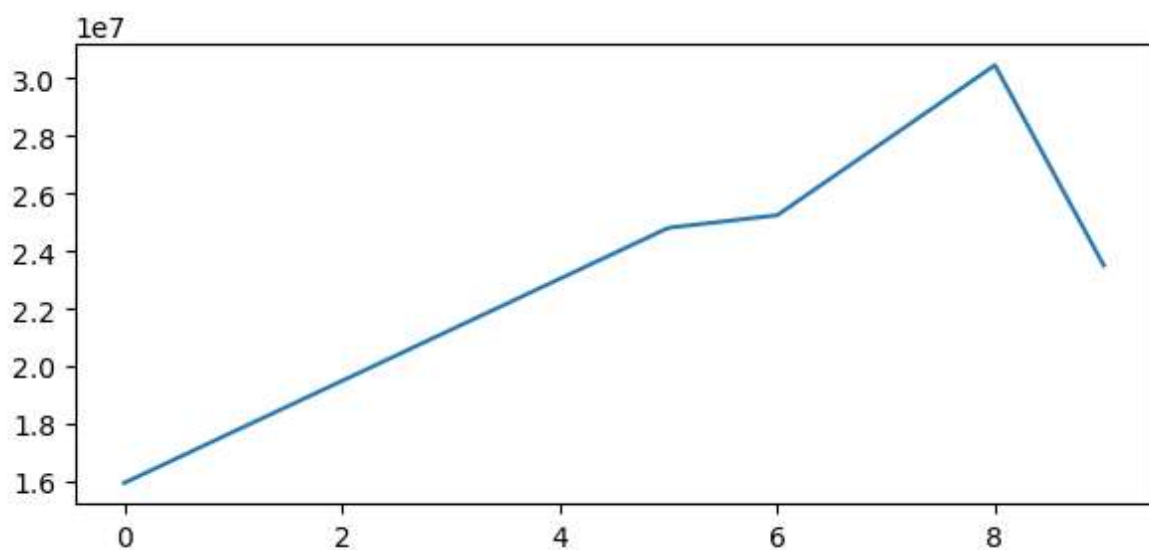
In [13]: `Salary`

```
Out[13]:  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]])
```
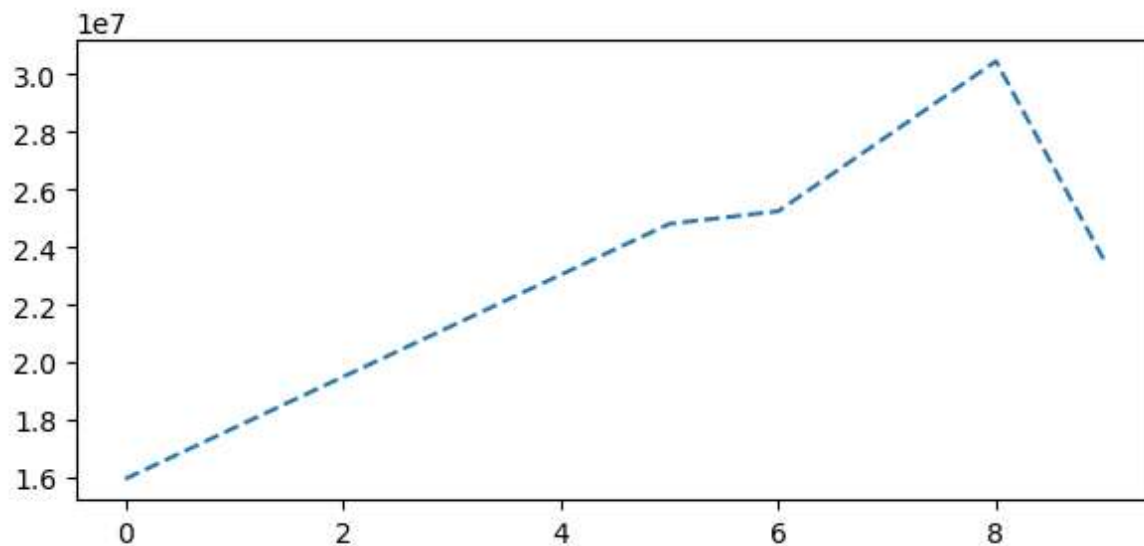
```
In [15]:  Salary[0]
```

```
Out[15]:  array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
                 25244493, 27849149, 30453805, 23500000])
```
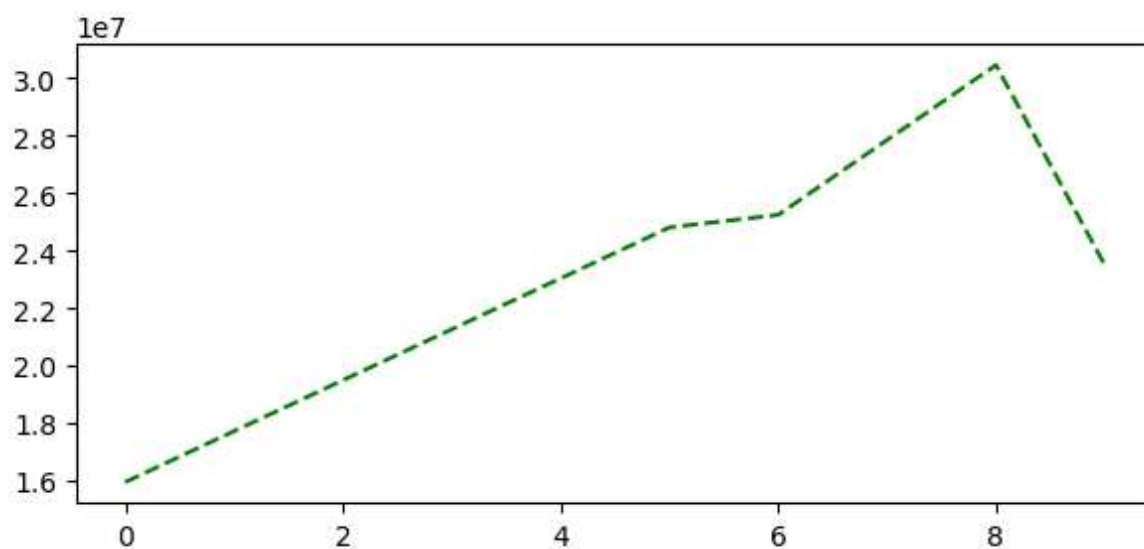
```
In [54]:  plt.plot(Salary[0])
          plt.show()
```
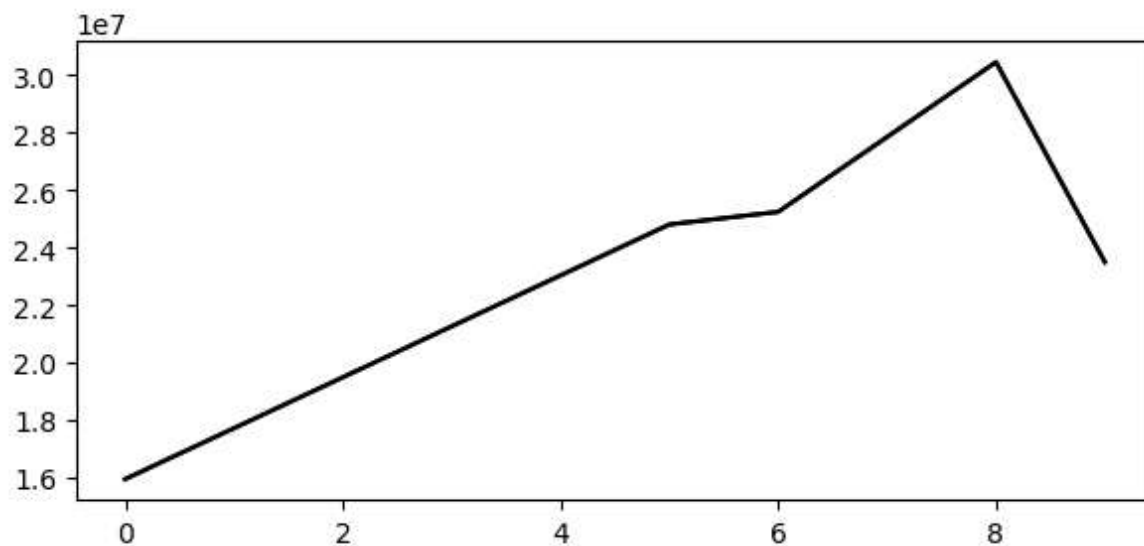


```
In [56]:  plt.plot(Salary[0], ls = '--')
          plt.show()
```
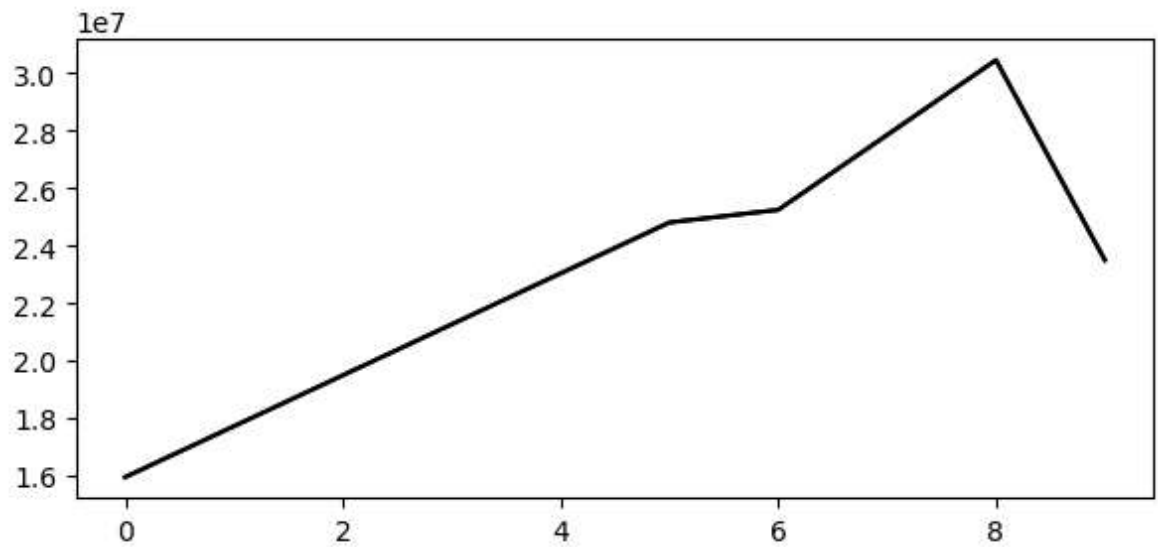
```
In [58]:  plt.plot(Salary[0], color='green', ls = '--')
          plt.show()
```
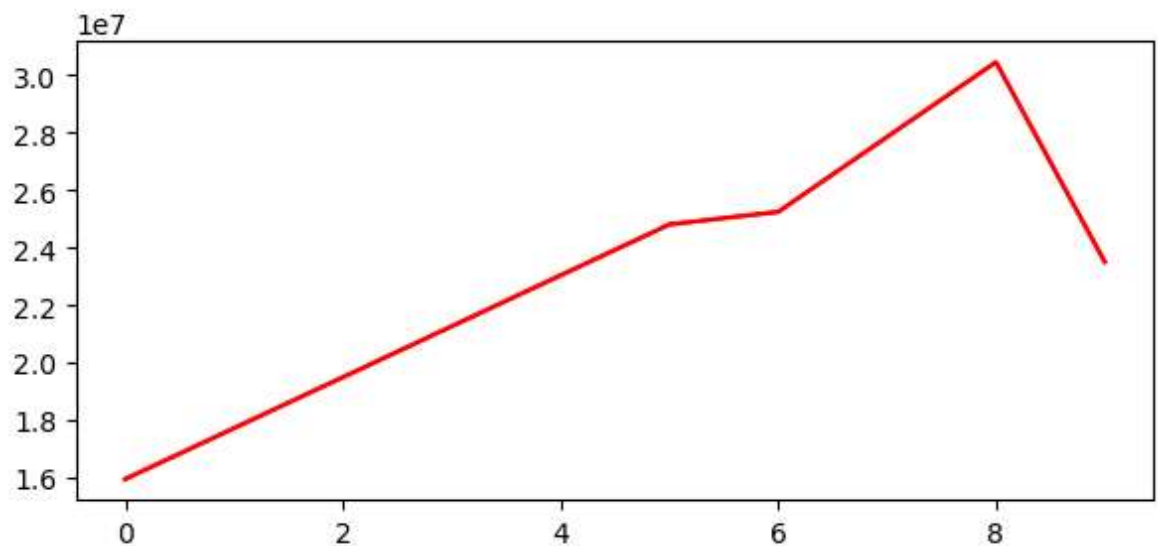


```
In [62]:  plt.plot(Salary[0], color = 'black')
          plt.show()
```

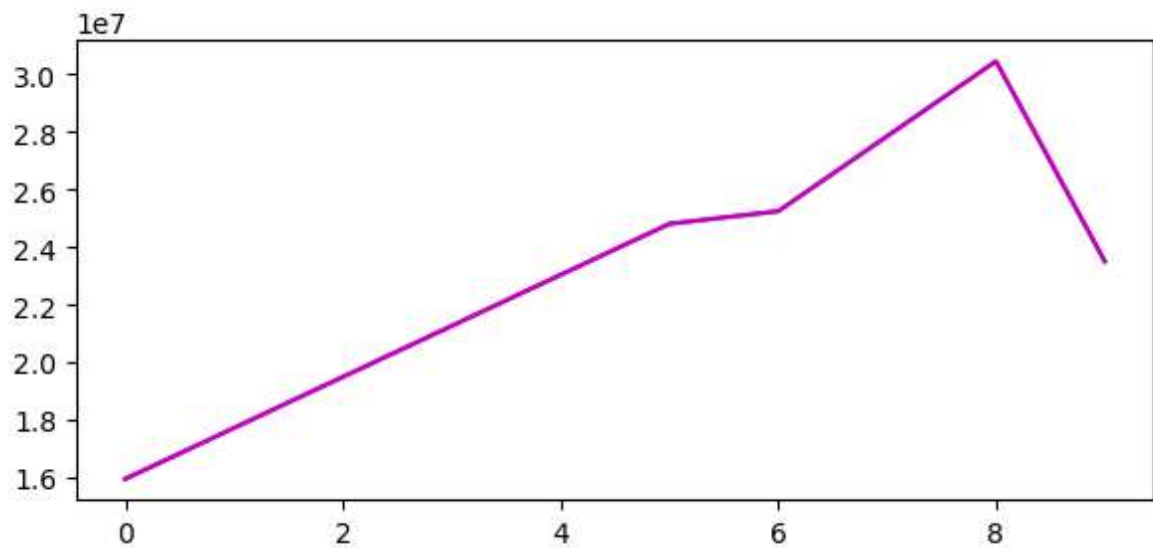In [66]:
```python
plt.plot(Salary[0], c = 'k')
plt.show()
```


In [71]:
```python
plt.plot(Salary[0], c='r')
plt.show()
```
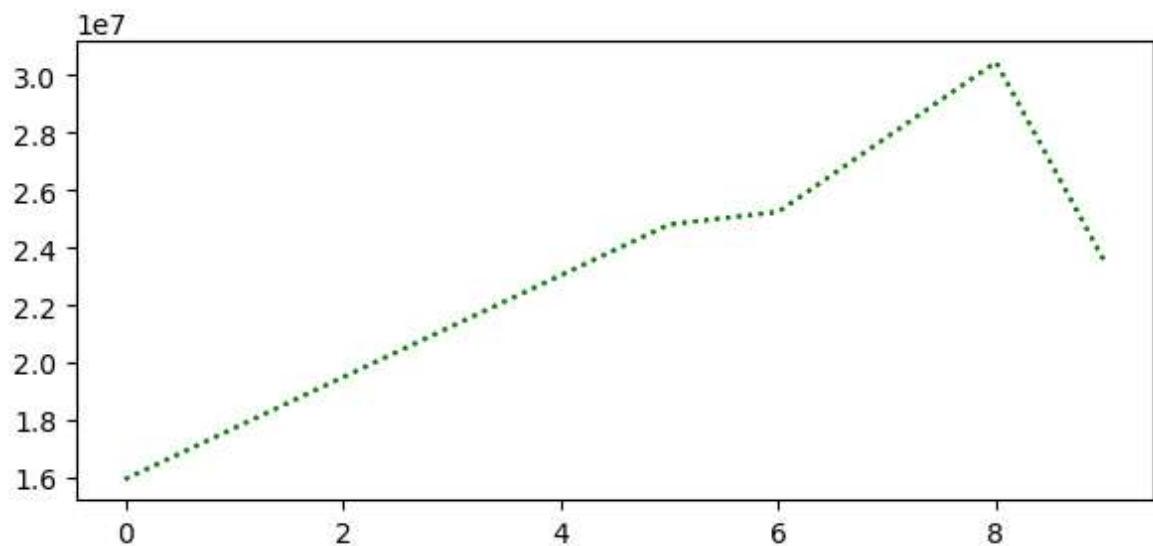

In [75]:
```python
plt.plot(Salary[0], c='m')
plt.show()
```

```
In [79]:  plt.plot(Salary[0], c = 'g', ls='dotted')
          plt.show()
```
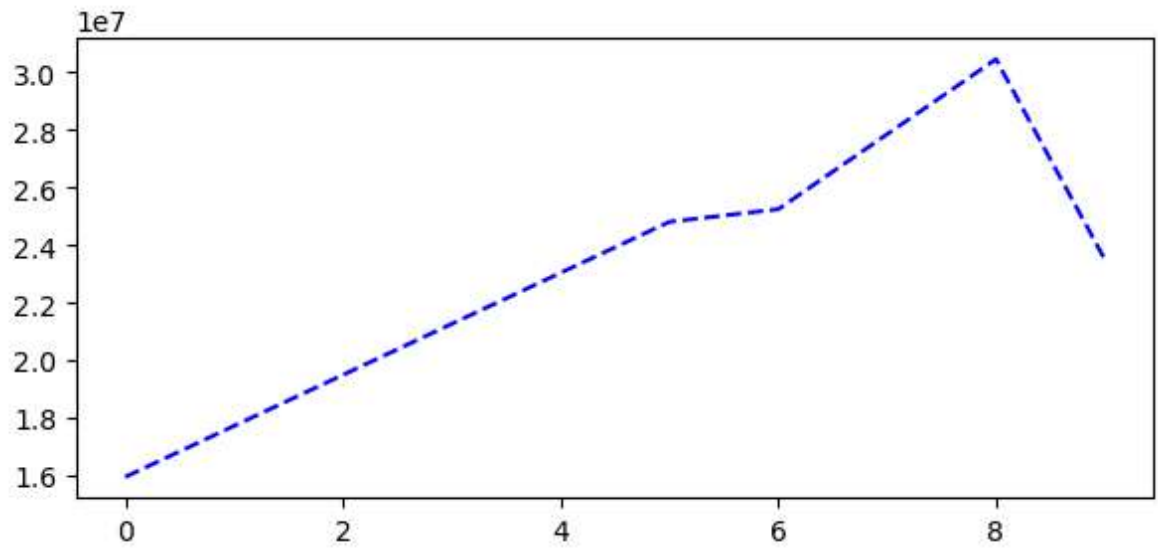


```
In [48]:  %matplotlib inline
          plt.rcParams['figure.figsize']=7,3
```

```
In [50]:  plt.plot(Salary[0],c='b',ls='--')
```

```
Out[50]:  [<matplotlib.lines.Line2D at 0x28daeb036e0>]
```

```
In [52]:  plt.show()
```

In [ ]:

localhost:8888/doc/tree/Working folder 2/Numpy-2 Project Practice.ipynb?

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