

```
In [1]: #Import numpy
import numpy as np

#Seasons
Seasons = ["2015", "2016", "2017", "2018", "2019", "2020", "2021", "2022", "2023", "2024"]
Sdict = {"2015":0,"2016":1,"2017":2,"2018":3,"2019":4,"2020":5,"2021":6,"2022":7,"2023":8,"2024":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, 278100000, 305180000, 341180000, 377180000, 413180000, 449180000, 485180000, 521180000, 557180000, 593180000, 629180000, 665180000, 701180000, 737180000, 773180000, 809180000, 845180000, 881180000, 917180000, 953180000, 989180000, 1025180000, 1061180000, 1097180000, 1133180000, 1169180000, 1205180000, 1241180000, 1277180000, 1313180000, 1349180000, 1385180000, 1421180000, 1457180000, 1493180000, 1529180000, 1565180000, 1601180000, 1637180000, 1673180000, 1709180000, 1745180000, 1781180000, 1817180000, 1853180000, 1889180000, 1925180000, 1961180000, 1997180000, 2033180000, 2069180000, 2105180000, 2141180000, 2177180000, 2213180000, 2249180000, 2285180000, 2321180000, 2357180000, 2393180000, 2429180000, 2465180000, 2501180000, 2537180000, 2573180000, 2609180000, 2645180000, 2681180000, 2717180000, 2753180000, 2789180000, 2825180000, 2861180000, 2897180000, 2933180000, 2969180000, 3005180000, 3041180000, 3077180000, 3113180000, 3149180000, 3185180000, 3221180000, 3257180000, 3293180000, 3329180000, 3365180000, 3401180000, 3437180000, 3473180000, 3509180000, 3545180000, 3581180000, 3617180000, 3653180000, 3689180000, 3725180000, 3761180000, 3797180000, 3833180000, 3869180000, 3905180000, 3941180000, 3977180000, 4013180000, 4049180000, 4085180000, 4121180000, 4157180000, 4193180000, 4229180000, 4265180000, 4301180000, 4337180000, 4373180000, 4409180000, 4445180000, 4481180000, 4517180000, 4553180000, 4589180000, 4625180000, 4661180000, 4697180000, 4733180000, 4769180000, 4805180000, 4841180000, 4877180000, 4913180000, 4949180000, 4985180000, 5021180000, 5057180000, 5093180000, 5129180000, 5165180000, 5201180000, 5237180000, 5273180000, 5309180000, 5345180000, 5381180000, 5417180000, 5453180000, 5489180000, 5525180000, 5561180000, 5607180000, 5643180000, 5679180000, 5715180000, 5751180000, 5787180000, 5823180000, 5859180000, 5895180000, 5931180000, 5967180000, 6003180000, 6039180000, 6075180000, 6111180000, 6147180000, 6183180000, 6219180000, 6255180000, 6291180000, 6327180000, 6363180000, 6400180000, 6436180000, 6472180000, 6508180000, 6544180000, 6580180000, 6616180000, 6652180000, 6688180000, 6724180000, 6760180000, 6796180000, 6832180000, 6868180000, 6904180000, 6940180000, 6976180000, 7012180000, 7048180000, 7084180000, 7120180000, 7156180000, 7192180000, 7228180000, 7264180000, 7300180000, 7336180000, 7372180000, 7408180000, 7444180000, 7480180000, 7516180000, 7552180000, 7588180000, 7624180000, 7660180000, 7696180000, 7732180000, 7768180000, 7804180000, 7840180000, 7876180000, 7912180000, 7948180000, 7984180000, 8020180000, 8056180000, 8092180000, 8128180000, 8164180000, 8200180000, 8236180000, 8272180000, 8308180000, 8344180000, 8380180000, 8416180000, 8452180000, 8488180000, 8524180000, 8560180000, 8596180000, 8632180000, 8668180000, 8704180000, 8740180000, 8776180000, 8812180000, 8848180000, 8884180000, 8920180000, 8956180000, 8992180000, 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31268180000, 31304180000, 31340180000, 31376
```

```
Out[2]: 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 [3]: Games

```
Out[3]: 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 [4]: Points

```
Out[4]: 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 [5]: Sdict

```
Out[5]: {'2015': 0,  
         '2016': 1,  
         '2017': 2,  
         '2018': 3,  
         '2019': 4,  
         '2020': 5,  
         '2021': 6,  
         '2022': 7,  
         '2023': 8,  
         '2024': 9}
```

```
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 [7]: Games[5]
```

```
Out[7]: array([70, 69, 67, 77, 70, 77, 57, 74, 79, 44])
```

```
In [8]: Games[5,3]
```

```
Out[8]: 77
```

```
In [9]: Salary
```

```
Out[9]: 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 [10]: Salary[0]
```

```
Out[10]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,  
25244493, 27849149, 30453805, 23500000])
```

```
In [11]: Games[0]
```

```
Out[11]: array([80, 77, 82, 82, 73, 82, 58, 78, 6, 35])
```

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

```
Out[12]: array([ 199335.9375 , 230113.63636364, 237690.54878049,  
259298.7804878 , 315539.38356164, 302515.24390244,  
435249.87931034, 357040.37179487, 5075634.16666667,  
671428.57142857])
```

```
In [13]: np.round(Salary[0]/Games[0])
```

```
Out[13]: array([ 199336., 230114., 237691., 259299., 315539., 302515.,  
435250., 357040., 5075634., 671429.])
```

lets visualize the data

```
In [15]: import warnings  
warnings.filterwarnings('ignore')
```

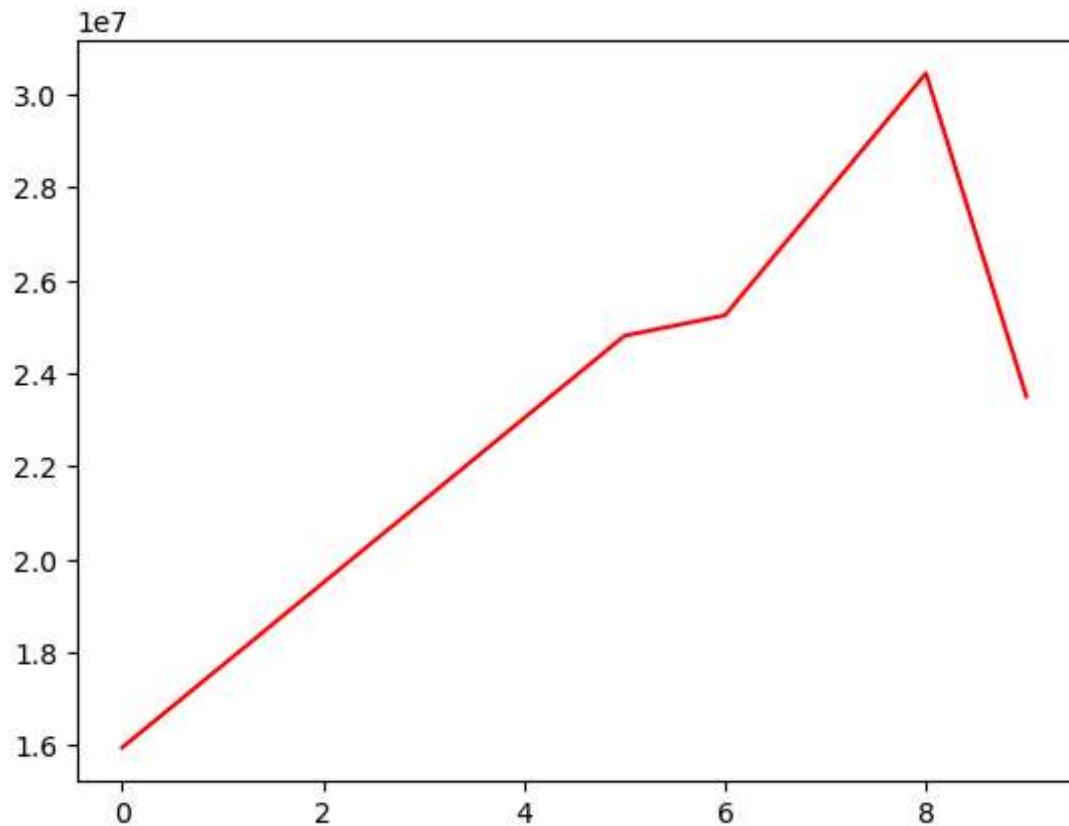
```
#to ignore as unwanted error write the code as ignore all
```

```
In [16]: import matplotlib.pyplot as plt  
Salary[0]
```

```
Out[16]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,  
25244493, 27849149, 30453805, 23500000])
```

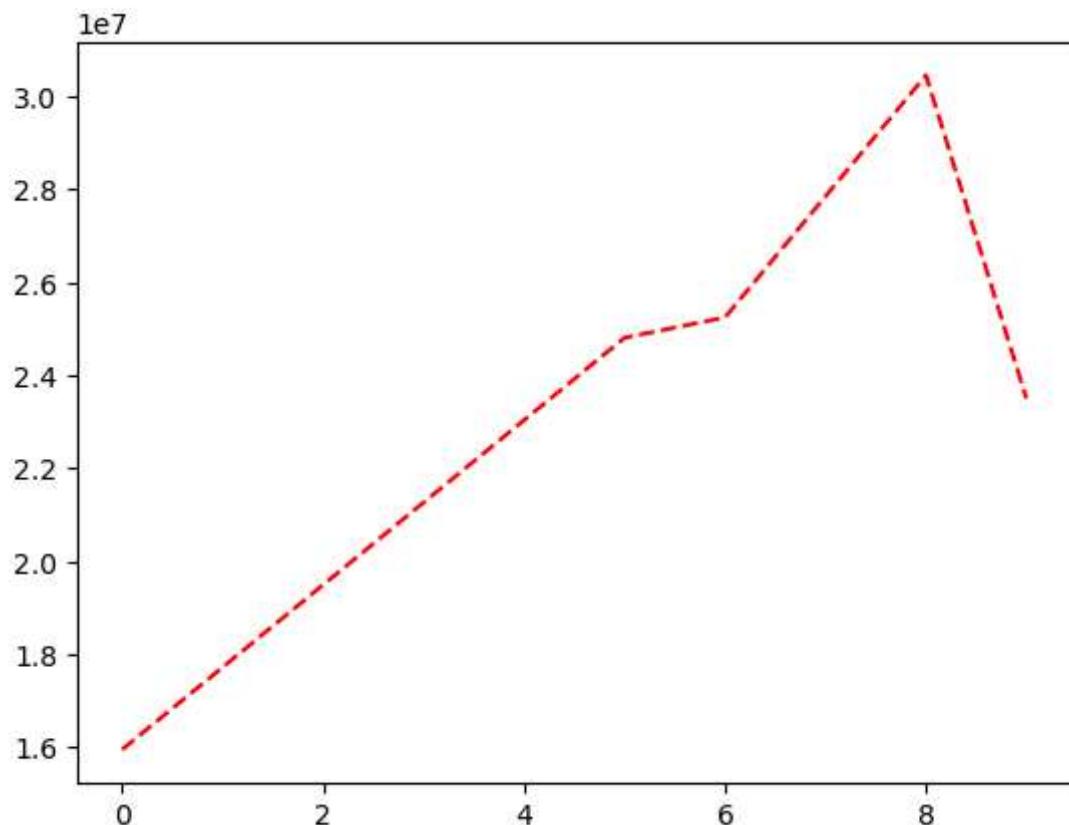
```
In [17]: plt.plot(Salary[0],color='Red')
```

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



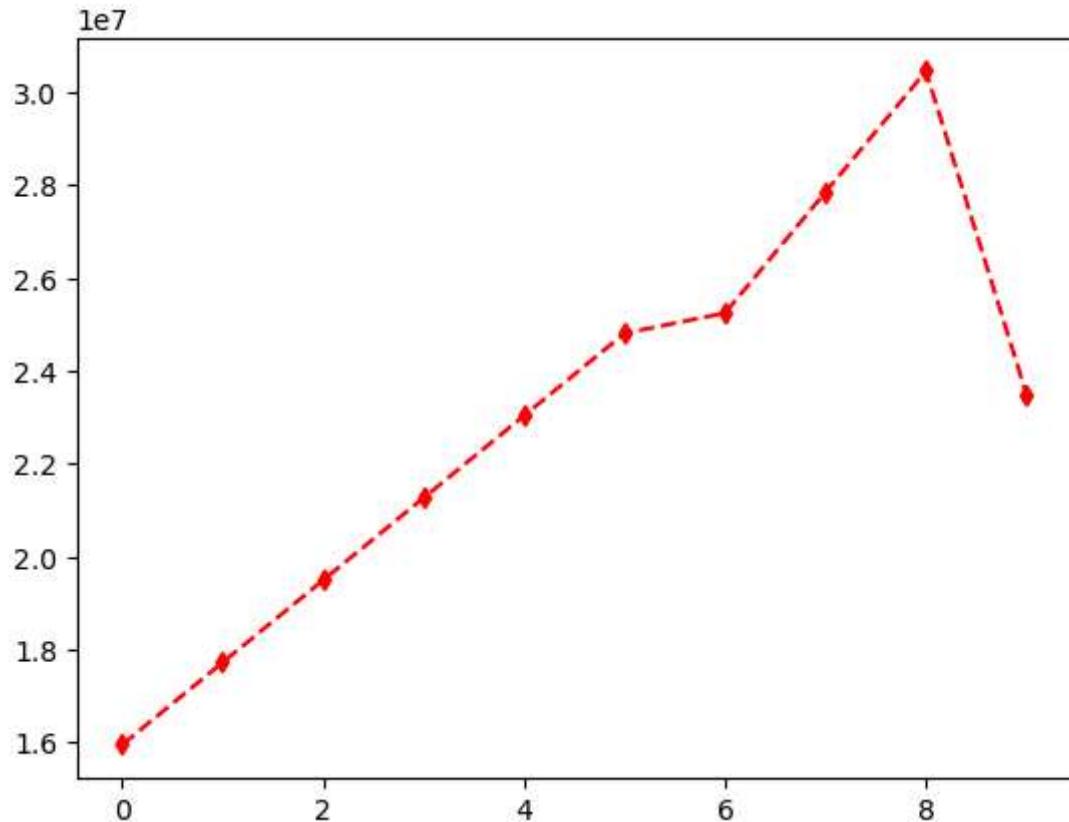
```
In [18]: plt.plot(Salary[0], color ='Red', ls='--')
```

```
Out[18]: [<matplotlib.lines.Line2D at 0x27c3e984320>]
```



```
In [23]: plt.plot(Salary[0],color='Red',ls='--',marker='d', ms=5)
```

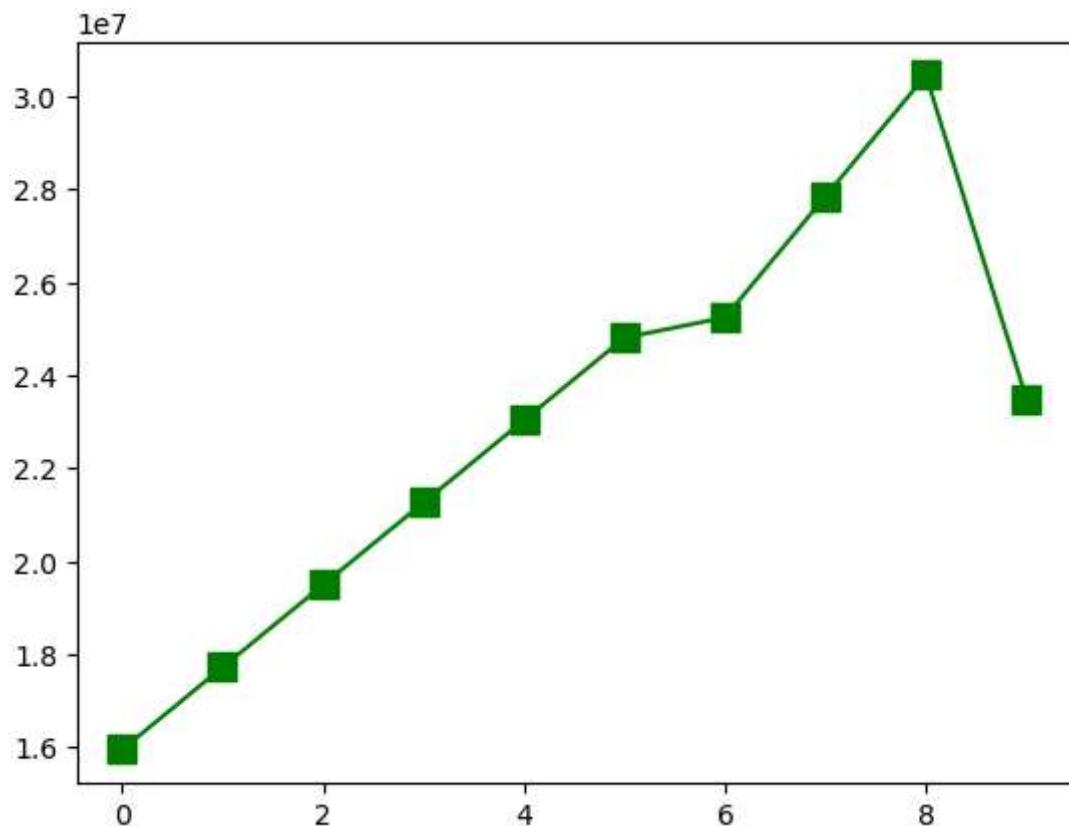
```
Out[23]: [<matplotlib.lines.Line2D at 0x27c3f42e600>]
```



```
In [ ]: matplotlib inline  
plt.rcParams['figure.figsize']=10,8
```

```
In [27]: plt.plot(Salary[0],c='g',ls='-',marker='s',ms=10)
```

```
Out[27]: [<matplotlib.lines.Line2D at 0x27c3f43eb40>]
```



```
In [29]: Sdict
```

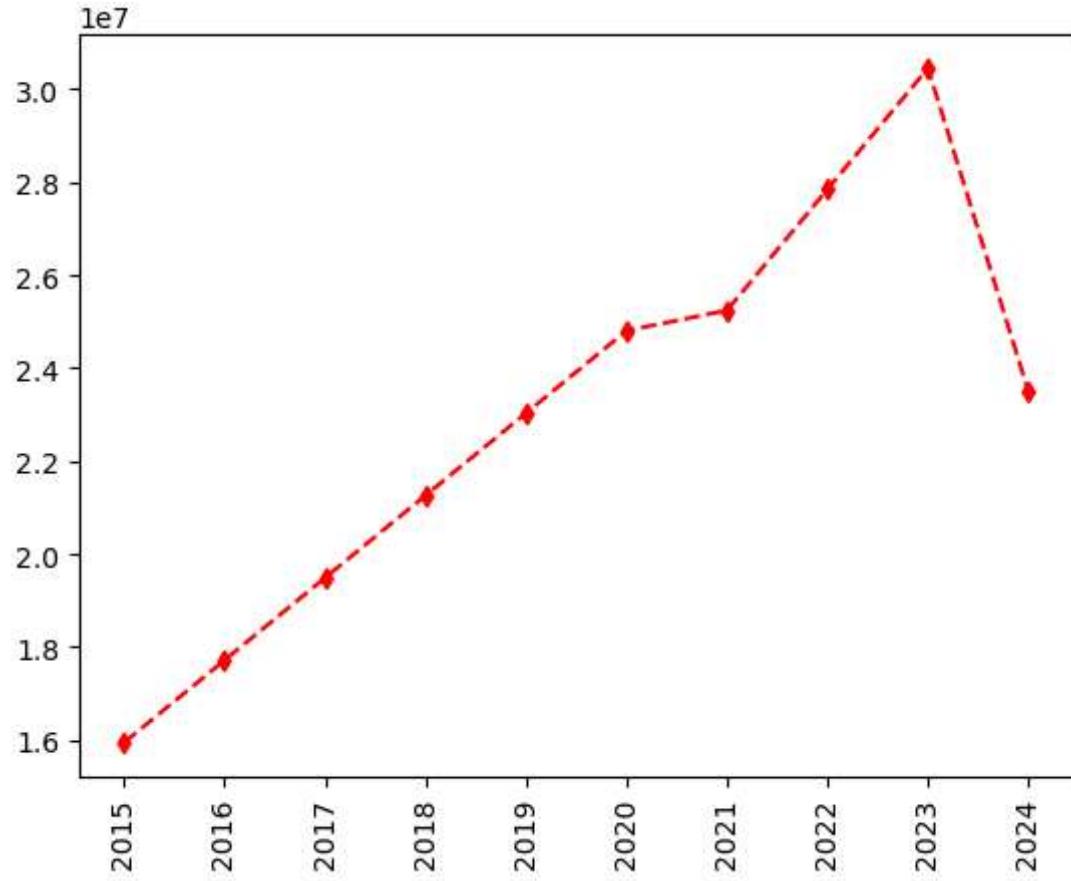
```
Out[29]: {'2015': 0,
           '2016': 1,
           '2017': 2,
           '2018': 3,
           '2019': 4,
           '2020': 5,
           '2021': 6,
           '2022': 7,
           '2023': 8,
           '2024': 9}
```

```
In [31]: list(range(0,10))
```

```
Out[31]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

```
In [43]: plt.plot(Salary[0],color='Red',ls='--',marker='d', ms=5)
plt.xticks(list(range(0,10)),Seasons,rotation='vertical')
```

```
Out[43]: ([<matplotlib.axis.XTick at 0x27c41189af0>,
<matplotlib.axis.XTick at 0x27c41189bb0>,
<matplotlib.axis.XTick at 0x27c4118a450>,
<matplotlib.axis.XTick at 0x27c3f43e6c0>,
<matplotlib.axis.XTick at 0x27c3f439850>,
<matplotlib.axis.XTick at 0x27c3f439eb0>,
<matplotlib.axis.XTick at 0x27c3f442e70>,
<matplotlib.axis.XTick at 0x27c4114a900>,
<matplotlib.axis.XTick at 0x27c40faafc0>,
<matplotlib.axis.XTick at 0x27c4114b6e0>],
[Text(0, 0, '2015'),
Text(1, 0, '2016'),
Text(2, 0, '2017'),
Text(3, 0, '2018'),
Text(4, 0, '2019'),
Text(5, 0, '2020'),
Text(6, 0, '2021'),
Text(7, 0, '2022'),
Text(8, 0, '2023'),
Text(9, 0, '2024')])
```

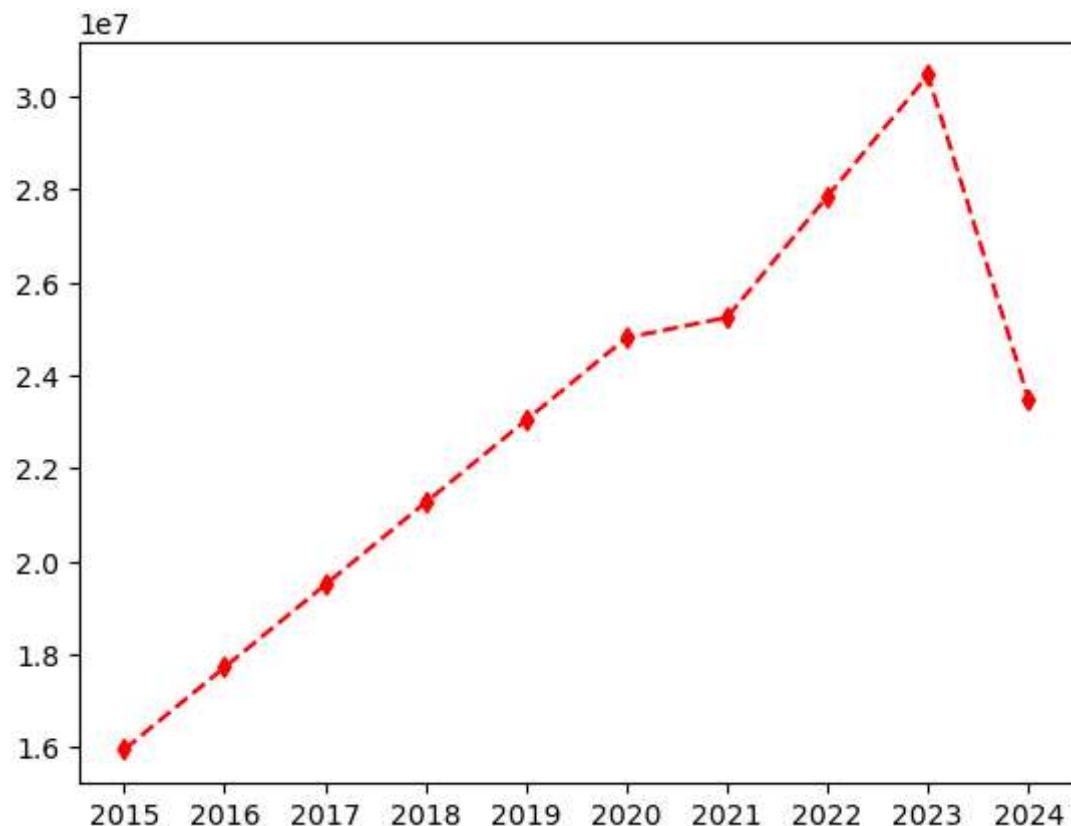


```
In [45]: Games
```

```
Out[45]: 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 [47]: plt.plot(Salary[0], color='Red', ls='--', marker='d', ms=5)  
plt.xticks(list(range(0,10)), Seasons, rotation='horizontal')
```

```
Out[47]: ([<matplotlib.axis.XTick at 0x27c40fc86b0>,  
 <matplotlib.axis.XTick at 0x27c40fcbec0>,  
 <matplotlib.axis.XTick at 0x27c40fb31a0>,  
 <matplotlib.axis.XTick at 0x27c4100c1d0>,  
 <matplotlib.axis.XTick at 0x27c40fabc50>,  
 <matplotlib.axis.XTick at 0x27c4100ce00>,  
 <matplotlib.axis.XTick at 0x27c4100d730>,  
 <matplotlib.axis.XTick at 0x27c4100e0c0>,  
 <matplotlib.axis.XTick at 0x27c4100ea20>,  
 <matplotlib.axis.XTick at 0x27c4100e2a0>],  
 [Text(0, 0, '2015'),  
 Text(1, 0, '2016'),  
 Text(2, 0, '2017'),  
 Text(3, 0, '2018'),  
 Text(4, 0, '2019'),  
 Text(5, 0, '2020'),  
 Text(6, 0, '2021'),  
 Text(7, 0, '2022'),  
 Text(8, 0, '2023'),  
 Text(9, 0, '2024')])
```



In []: