In [1]:
```python
#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,"2

#Players
Players = ["Sachin","Rahul","Smith","Sami","Pollard","Morris","Samson","Dhoni","Koh
Pdict = {"Sachin":0,"Rahul":1,"Smith":2,"Sami":3,"Pollard":4,"Morris":5,"Samson":6,

#Salaries
Sachin_Salary = [15946875,17718750,19490625,21262500,23034375,24806250,25244493,278
Rahul_Salary = [12000000,12744189,13488377,14232567,14976754,16324500,18038573,1975
Smith_Salary = [4621800,5828090,13041250,14410581,15779912,14500000,16022500,175450
Sami_Salary = [3713640,4694041,13041250,14410581,15779912,17149243,18518574,1945000
Pollard_Salary = [4493160,4806720,6061274,13758000,15202590,16647180,18091770,19536
Morris_Salary = [3348000,4235220,12455000,14410581,15779912,14500000,16022500,17545
Samson_Salary = [3144240,3380160,3615960,4574189,13520500,14940153,16359805,1777945
Dhoni_Salary = [0,0,4171200,4484040,4796880,6053663,15506632,16669630,17832627,1899
Kohli_Salary = [0,0,0,4822800,5184480,5546160,6993708,16402500,17632688,18862875]
Sky_Salary = [3031920,3841443,13041250,14410581,15779912,14200000,15691000,17182000
#Matrix
Salary = np.array([Sachin_Salary, Rahul_Salary, Smith_Salary, Sami_Salary, Pollard_

#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

#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_
```

In [2]:
```python
Salary
```

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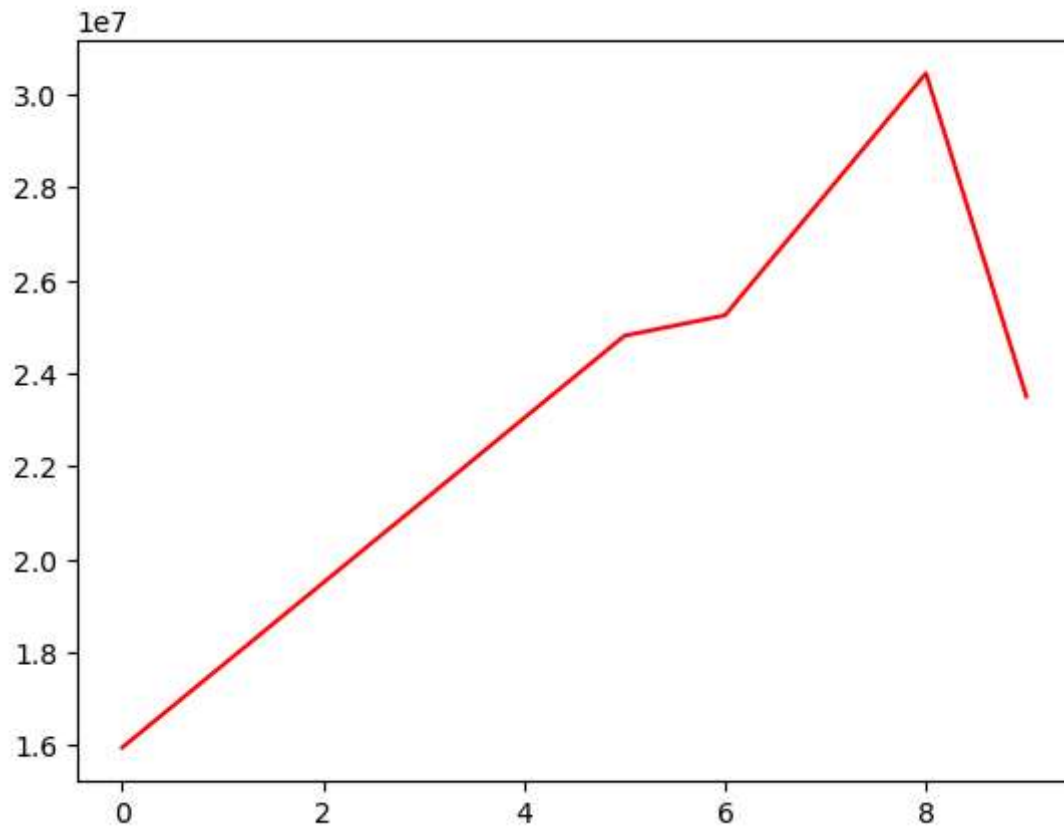
In [15]:
```python
import warnings
warnings.filterwarnings('ignore')

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

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

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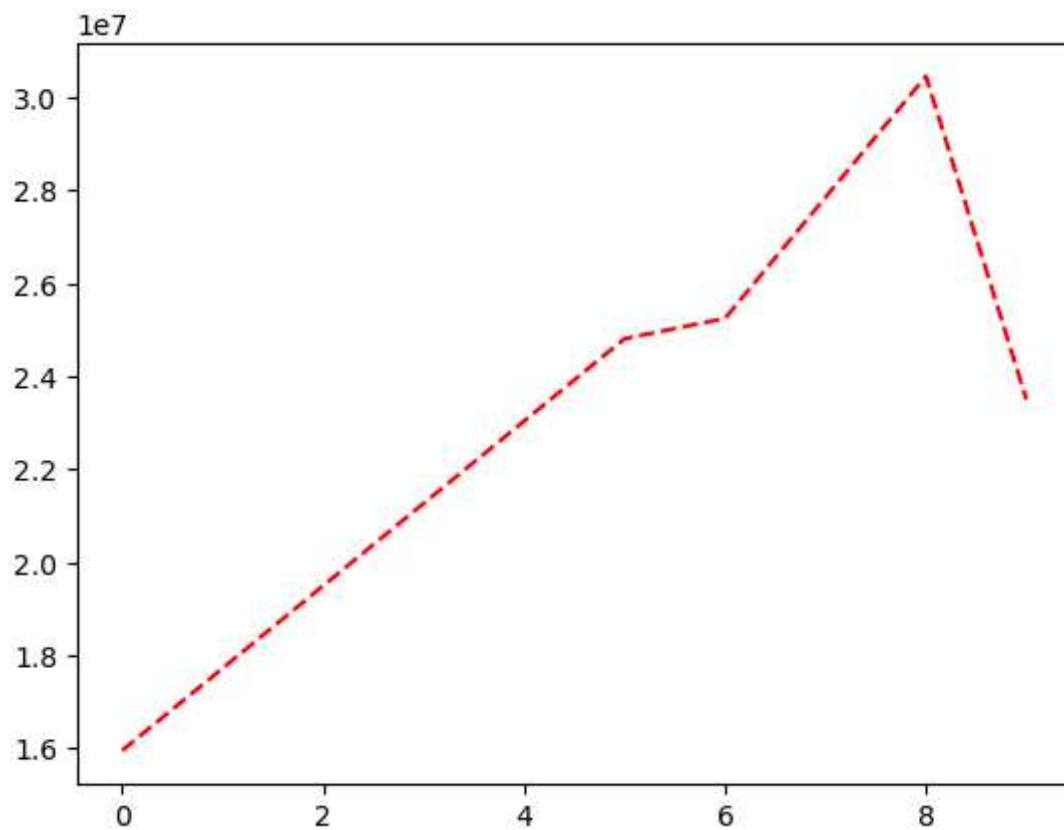`         25244493, 27849149, 30453805, 23500000])`

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

Out[17]: `[<matplotlib.lines.Line2D at 0x27c3e9379e0>]`
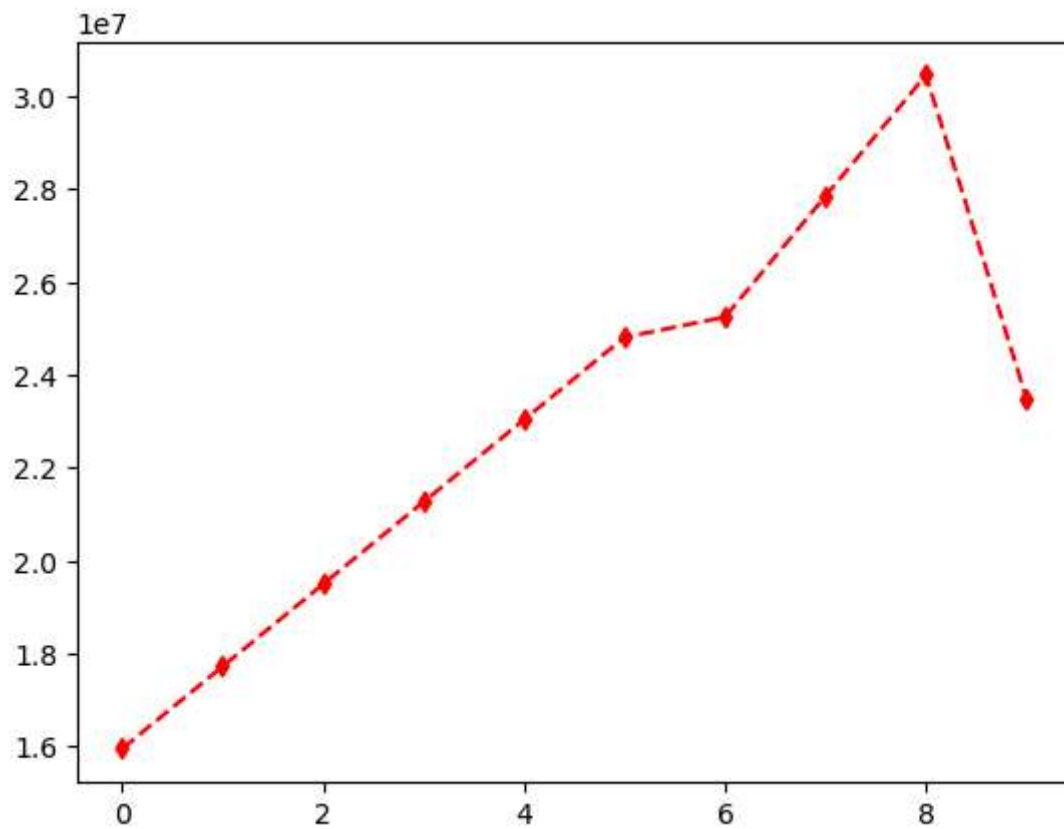
```
In [18]:  plt.plot(Salary[0],color ='Red',ls='--')
```

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

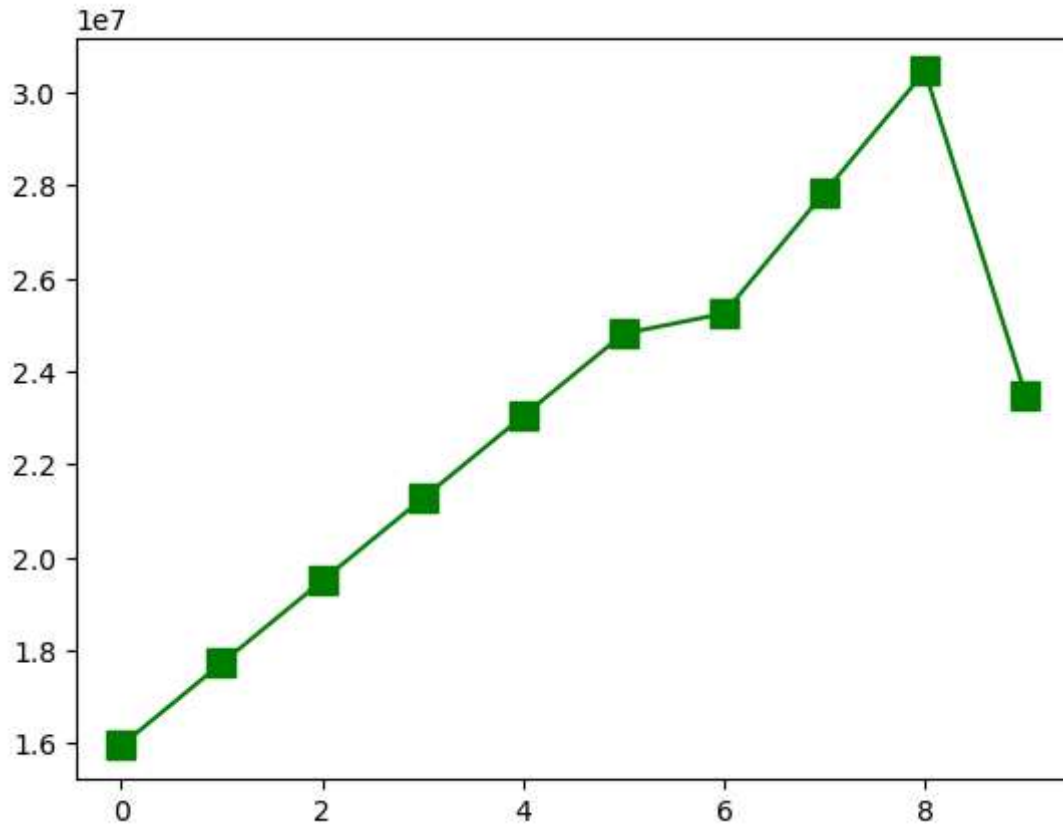In [23]: `plt.plot(Salary[0],color='Red',ls='--',marker='d', ms=5)`

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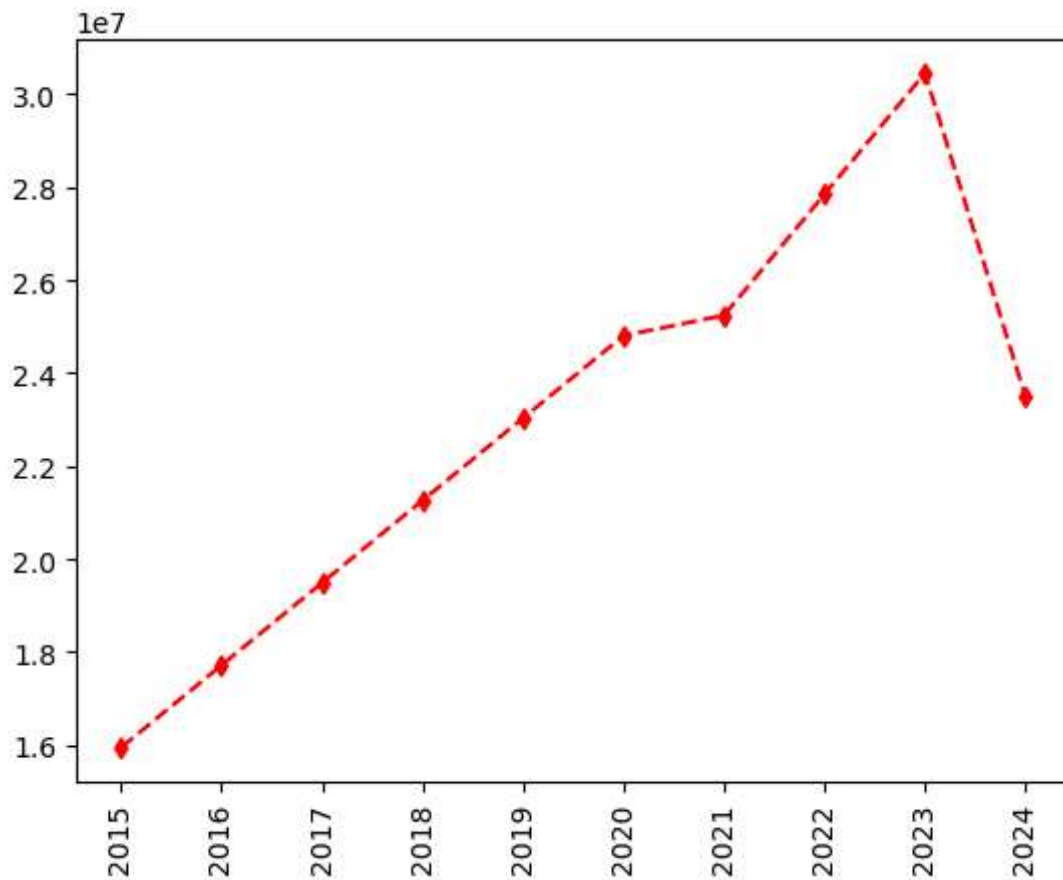
```
In [31]: list(range(0,10))
```

```
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'),
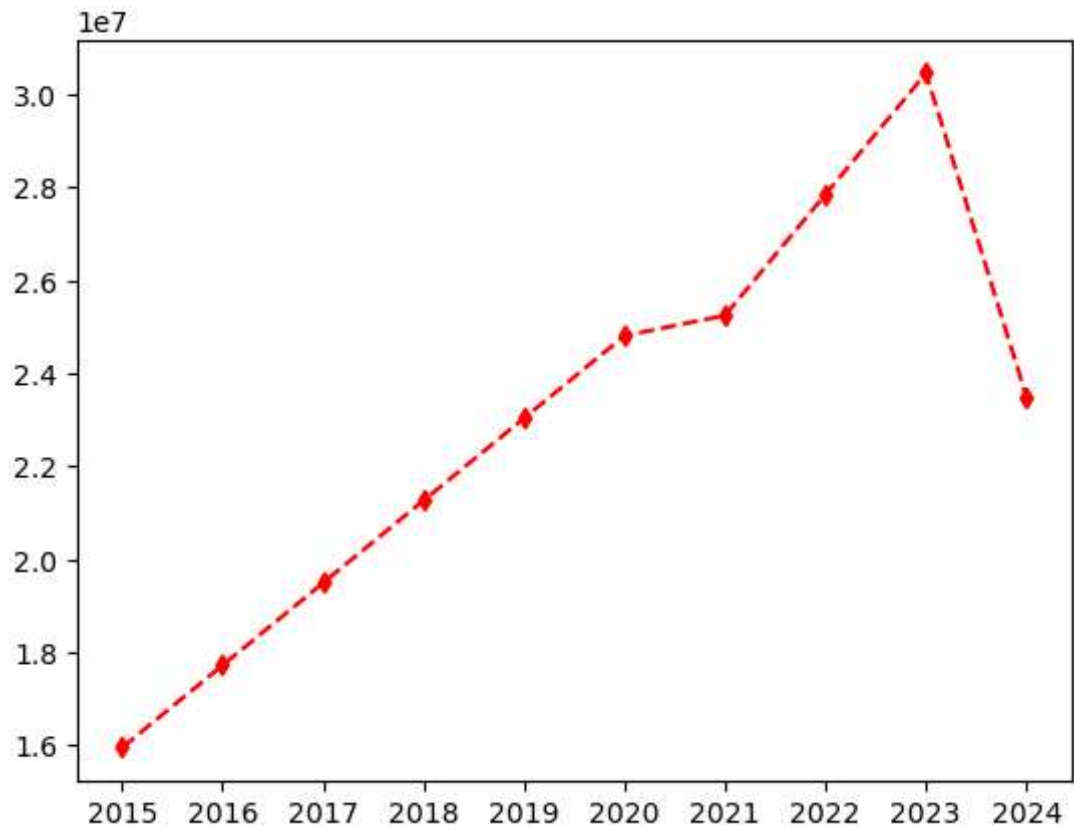   Text(8, 0, '2023'),
            Text(9, 0, '2024')])

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]:
```python
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 [ ]: