

WORKSHOP ON 19 AUG

```
In [2]: #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"]
Pdict = {"Sachin":0,"Rahul":1,"Smith":2,"Sami":3,"Pollard":4,"Morris":5,"Samson":6,"Dhoni":7,"Kohli":8}

#Salaries
Sachin_Salary = [15946875,17718750,19490625,21262500,23034375,24806250,25244493,278500000,30521800,33348000,36218000,39148000,42052200,4493160,4784040,5074160,5364240,5654440,5944640,6234840,6525220,6815600,7105980,7396360,7686740,7977120,8267500,8557880,8848260,9138640,9429020,9719400,10009780,10299160,10589540,10879920,11169300,11459680,11749060,12039440,12329820,12619200,12909580,13199960,13489340,13779720,14069100,14359480,14649860,14939240,15229620,15519000,15809380,16098760,16388140,16678520,16967900,17257280,17546660,17836040,18125420,18414800,18704180,19093560,19382940,19672320,19961700,20251080,20540460,20829840,21119220,21408600,21698080,21987460,22276840,22566220,22855600,23145080,23434460,23723840,24013220,24302600,24592080,24881460,25170840,25460220,25749600,26039080,26328460,26617840,26907220,27196600,27486080,27775460,28064840,28354220,28643600,28933080,29222460,29511840,29801220,30090600,30380080,30669460,30958840,31248220,31537600,31826980,32116360,32405740,32695120,32984500,33273880,33563260,33852640,34142020,34431400,34720780,35010160,35300000,35589380,35878760,36168140,36457520,36746900,37036280,37325660,37615040,37904420,38193800,38483180,38772560,39061940,39351320,39640700,39930080,40219460,40508840,40798220,41087600,41377080,41666460,41955840,42245220,42534600,42823980,43113360,43402740,43692120,43981500,44270880,44560260,44849640,45139020,45428400,45717780,46007160,46296540,46585920,46875300,47164680,47454060,47743440,48032820,48322200,48611580,48900960,49189340,49478720,49768100,50057480,50346860,50636240,50925620,51215000,51504380,51793760,52083140,52372520,52661900,52951280,53240660,53530040,53819420,54108800,54398180,54687560,54976940,55266320,55555700,55845080,56134460,56423840,56713220,57002600,57292080,57581460,57870840,58160220,58449600,58738980,59028360,59317740,59607120,59896500,60185880,60475260,60764640,61054020,61343400,61632780,61922160,62211540,62500920,62789300,63078680,63368060,63657440,63946820,64236200,64525580,64814960,65104340,65393720,65683100,65972480,66261860,66551240,66840620,67130000,67419380,67708760,68098140,68387520,68676900,68966280,69255660,69545040,69834420,70123800,70413180,70702560,71091940,71381320,71670700,71960080,72249460,72538840,72828220,73117600,73407080,73696460,73985840,74275220,74564600,74854080,75143460,75432840,75722220,76011600,76301080,76590460,76880000,77169380,77458760,77748140,78037520,78326900,78616280,78905660,79195040,79484420,79773800,79963180,80252560,80541940,80831320,81120700,81410080,81709460,81998840,82288220,82577600,82867080,83156460,83445840,83735220,84024600,84314080,84603460,84892840,85182220,85471600,85761080,86050460,86340000,86629380,86918760,87208140,87497520,87786900,88076280,88365660,88655040,88944420,89233800,89523180,89812560,90101940,90391320,90680700,90970080,91259460,91548840,91838220,92127600,92417080,92706460,93005840,93295220,93584600,93874080,94163460,94452840,94742220,95031600,95321080,95610460,95909840,96199220,96488600,96778080,97067460,97356840,97646220,97935600,98225080,98514460,98803840,99093220,99382600,99672080,99961460,100250840,100540220,100830600,101120080,101410460,101700840,102000220,102299600,102599080,102898460,103197840,103497220,103796600,104096080,104395460,104694840,104994220,105293600,105593080,105892460,106191840,106491220,106790600,107090080,107390460,107689840,107989220,108288600,108588080,108887460,109186840,109486220,109785600,109995080,110294460,110593840,110893220,111192600,111492080,111791460,112090840,112390220,112690600,112990080,113290460,113590840,113890220,114190600,114490080,114790460,115090840,115390220,115690600,115990080,116290460,116590840,116890220,117190600,117490080,117790460,118090840,118390220,118690600,118990080,119290460,119590840,119890220,120190600,120490080,120790460,121090840,121390220,121690600,121990080,122290460,122590840,122890220,123190600,123490080,123790460,124090840,124390220,124690600,124990080,125290460,125590840,125890220,126190600,126490080,126790460,127090840,127390220,127690600,127990080,128290460,128590840,128890220,129190600,129490080,129790460,129990840,130290220,130590600,130890080,131190460,131490840,131790220,132090600,132390080,132690460,132990840,133290220,133590600,133890080,134190460,134490840,134790220,135090600,135390080,135690460,135990840,136290220,136590600,136890080,137190460,137490840,137790220,138090600,138390080,138690460,138990840,139290220,139590600,139890080,140190460,140490840,140790220,141090600,141390080,141690460,141990840,142290220,142590600,142890080,143190460,143490840,143790220,144090600,144390080,144690460,144990840,145290220,145590600,145890080,146190460,146490840,146790220,147090600,147390080,147690460,147990840,148290220,148590600,148890080,149190460,149490840,149790220,150090600,150390080,150690460,150990840,151290220,151590600,151890080,152190460,152490840,152790220,153090600,153390080,153690460,153990840,154290220,154590600,154890080,155190460,155490840,155790220,156090600,156390080,156690460,156990840,157290220,157590600,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307890080,308190460,308490840,308790220,309090600,309390080,309690460,309990840,310290220,310590600,310890080,311190460,311490840,311790220,312090600,312390080,312690460,312990840,313290220,313590600,313890080,314190460,314490840,314790220,315090600,315390080,315690460,315990840,316290220,316590600,316890080,317190460,317490840,317790220,318090600,318390080,318690460,318990840,319290220,319590600,319890080,320190460,320490840,320790220,321090600,321390080,321690460,321990840,322290220,322590600,322890080,323190460,323490840,323790220,324090600,324390080,324690460,324990840,325290220,325590600,325890080,326190460,326490840,326790220,327090600,327390080,327690460,327990840,328290220,328590600,328890080,329190460,329490840,329790220,330090600,330390080,330690460,330990840,331290220,331590600,331890080,332190460,332490840,332790220,333090600,333390080,333690460,333990840,334290220,334590600,334890080,335190460,335490840,335790220,336090600,336390080,336690460,336990840,337290220,337590600,337890080,338190460,338490840,33879
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Out[3]: 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 [4]: Games

```
Out[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]])
```

In [5]: Points

```
Out[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]])
```

In [6]: Games[5]

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Out[6]: array([70, 69, 67, 77, 70, 77, 57, 74, 79, 44])
```

In [7]: Games[0:5]

```
Out[7]: 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]])
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```
In [8]: Games[0,5]
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Out[8]: 82
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In [9]: Games[-3:-1]
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```
Out[9]: array([[35, 35, 80, 74, 82, 78, 66, 81, 81, 27],  
               [40, 40, 40, 81, 78, 81, 39, 0, 10, 51]])
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```
In [10]: Games
```

```
Out[10]: 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]])
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```
In [14]: Games[-3,-1]
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Out[14]: 27
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In [21]: Points
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```
Out[21]: 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 [23]: Games
```

```
Out[23]: 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 [26]: Pdict
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```
Out[26]: {'Sachin': 0,  
          'Rahul': 1,  
          'Smith': 2,  
          'Sami': 3,  
          'Pollard': 4,  
          'Morris': 5,  
          'Samson': 6,  
          'Dhoni': 7,  
          'Kohli': 8,  
          'Sky': 9}
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In [28]: Pdict['Sachin']
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Out[28]: 0
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```
In [30]: Games[0]
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```
Out[30]: array([80, 77, 82, 82, 73, 82, 58, 78, 6, 35])
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```
In [32]: Games[Pdict['Sachin']]
```

```
Out[32]: array([80, 77, 82, 82, 73, 82, 58, 78, 6, 35])
```

```
In [34]: Games
```

```
Out[34]: 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 [36]: Games[Pdict['Rahul']]
```

```
Out[36]: array([82, 57, 82, 79, 76, 72, 60, 72, 79, 80])
```

In [39]: Points

```
Out[39]: 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 [41]: Games

```
Out[41]: 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 [43]: Salary

```
Out[43]: 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 [45]: Salary/Games

```
C:\Users\arsha_4tjdyqj\AppData\Local\Temp\ipykernel_6928\3709746658.py:1: RuntimeWarning: divide by zero encountered in divide
Salary/Games
```

```
Out[45]: 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 [47]: np.round(Salary/Games)
```

```
C:\Users\arsha_4tjdyqj\AppData\Local\Temp\ipykernel_6928\3232172828.py:1: RuntimeWarning: divide by zero encountered in divide
np.round(Salary/Games)
```

```
Out[47]: array([[ 199336.,  230114.,  237691.,  259299.,  315539.,  302515.,
   435250.,  357040.,  5075634.,  671429.],
   [ 146341.,  223582.,  164492.,  180159.,  197063.,  226729.,
   300643.,  274342.,  271731.,  289760.],
   [ 58504.,  74719.,  173883.,  177908.,  207630.,  183544.,
   258427.,  230855.,  247630.,  299194.],
   [ 46420.,  72216.,  169367.,  218342.,  228694.,  222717.,
   336701.,  290299.,  291006.,  561450.],
   [ 54795.,  58619.,  73918.,  174152.,  185397.,  213425.,
   335033.,  257057.,  288918.,  522836.],
   [ 47829.,  61380.,  185896.,  187150.,  225427.,  188312.,
   281096.,  237095.,  241361.,  469191.],
   [ 40311.,  52815.,  45200.,  58643.,  300456.,  186752.,
   272663.,  253992.,  301104.,  244739.],
   [ 0.,  0.,  52140.,  60595.,  58499.,  77611.,
   234949.,  205798.,  220156.,  703542.],
   [ 0.,  0.,  0.,  59541.,  66468.,  68471.,
   179326.,  inf,  1763269.,  369860.],
   [ 40426.,  75322.,  255711.,  182412.,  204934.,  186842.,
   320224.,  249014.,  345796.,  241935.]])
```

```
In [49]: import warnings
warnings.filterwarnings('ignore')
```

```
In [51]: import matplotlib.pyplot as plt
```

```
In [52]: %matplotlib inline
```

```
In [53]: Salary
```

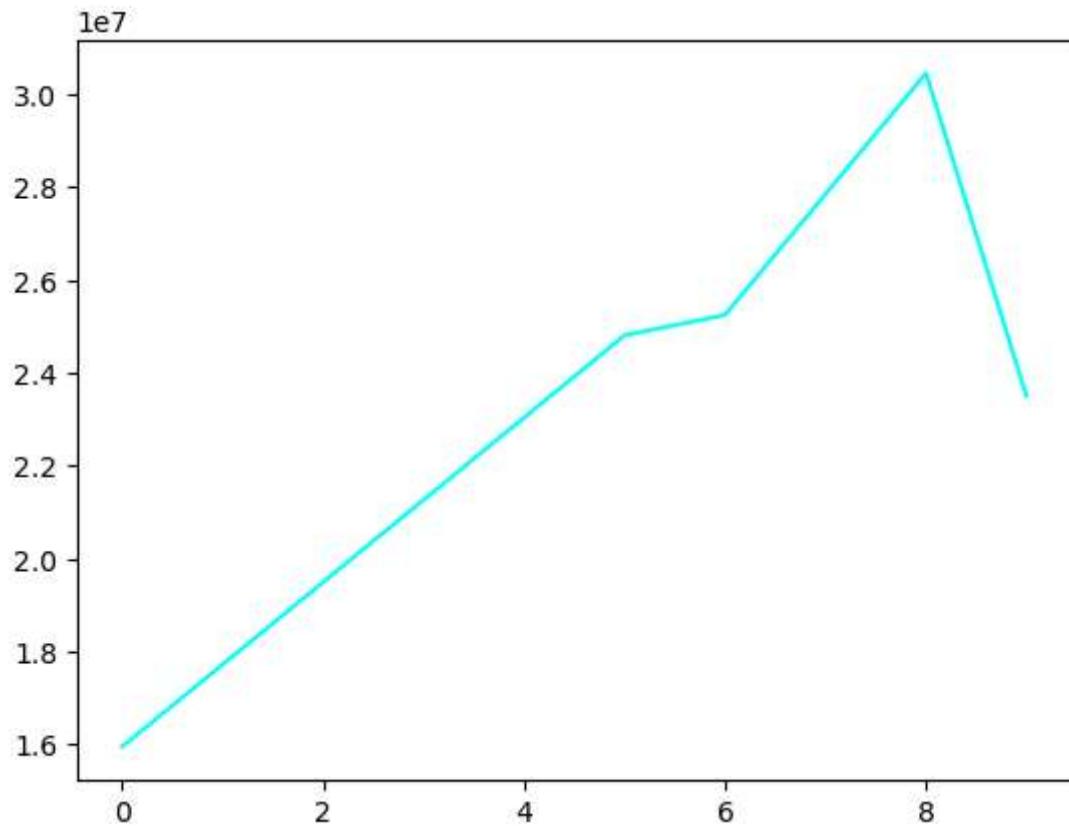
```
Out[53]: array([[15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
   25244493, 27849149, 30453805, 23500000],
   [12000000, 12744189, 13488377, 14232567, 14976754, 16324500,
   18038573, 19752645, 21466718, 23180790],
   [4621800, 5828090, 13041250, 14410581, 15779912, 14500000,
   16022500, 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 [54]: Salary[0]
```

```
Out[54]: array([15946875, 17718750, 19490625, 21262500, 23034375, 24806250,
   25244493, 27849149, 30453805, 23500000])
```

```
In [55]: plt.plot(Salary[0], color='cyan')
```

```
Out[55]: [<matplotlib.lines.Line2D at 0x1bf757e99a0>]
```

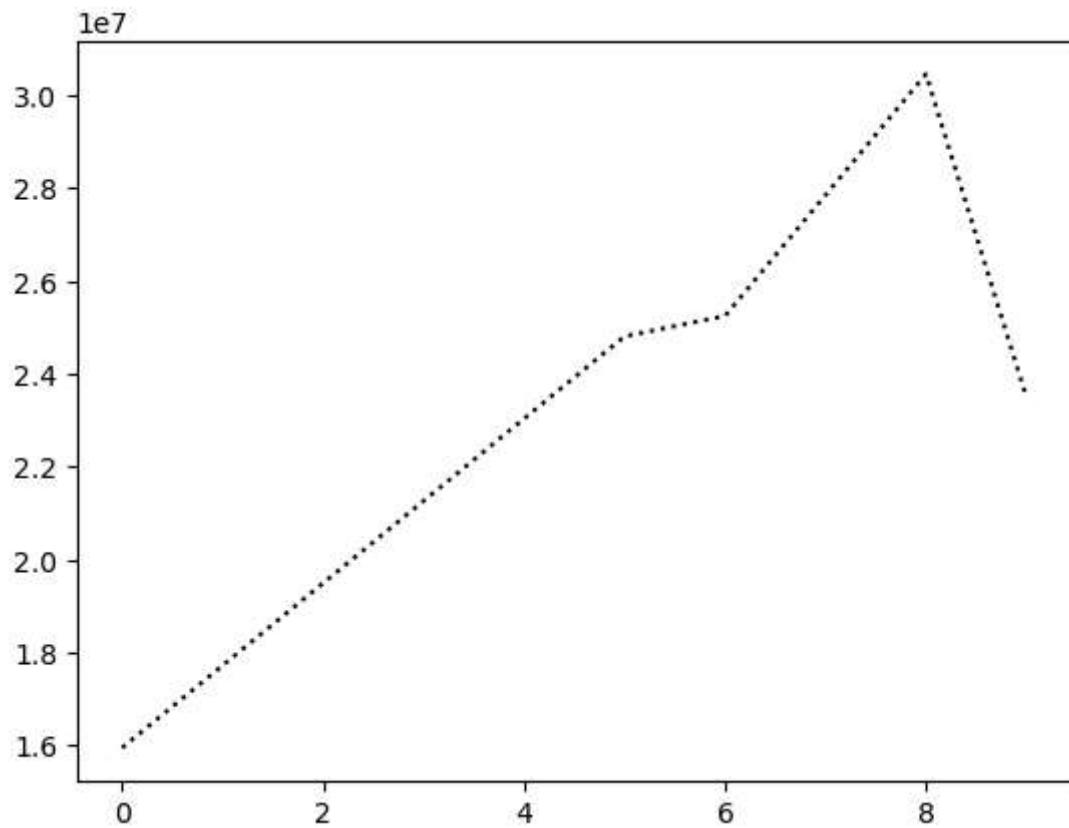


```
In [57]: Games
```

```
Out[57]: 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, 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]])
```

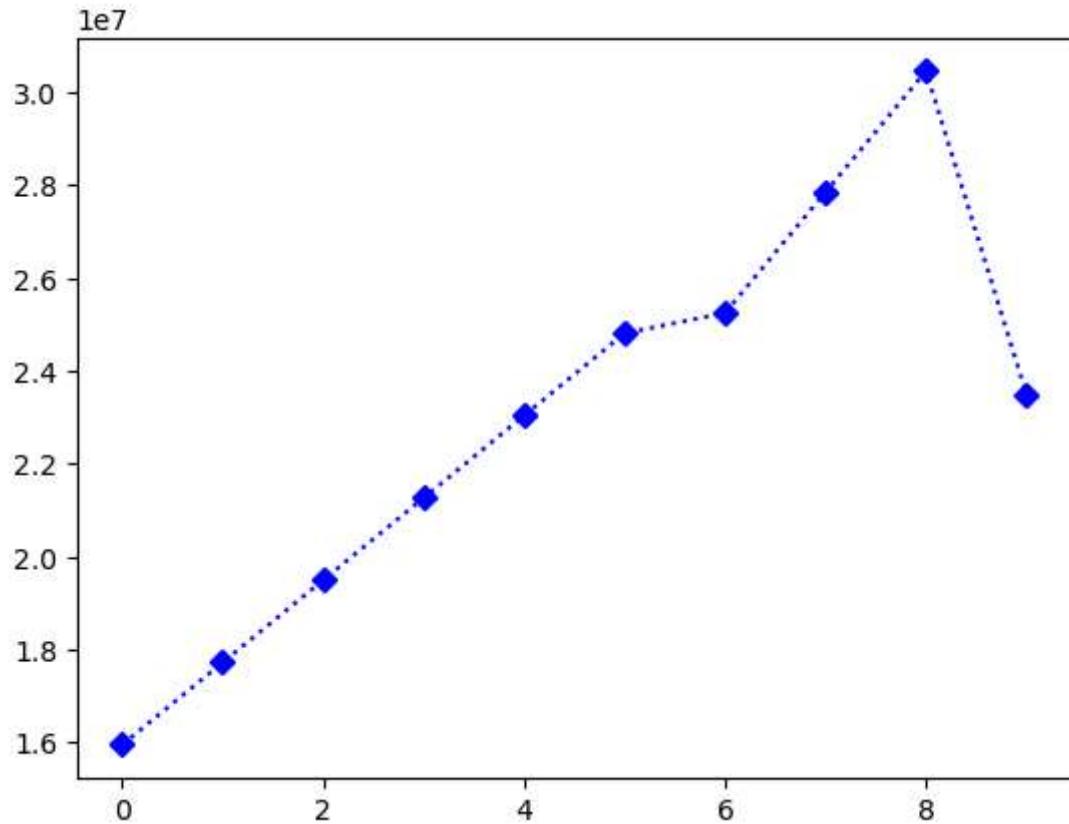
```
In [61]: plt.plot(Salary[0],color='k',ls=':')
```

```
Out[61]: [<matplotlib.lines.Line2D at 0x1bf7587c320>]
```



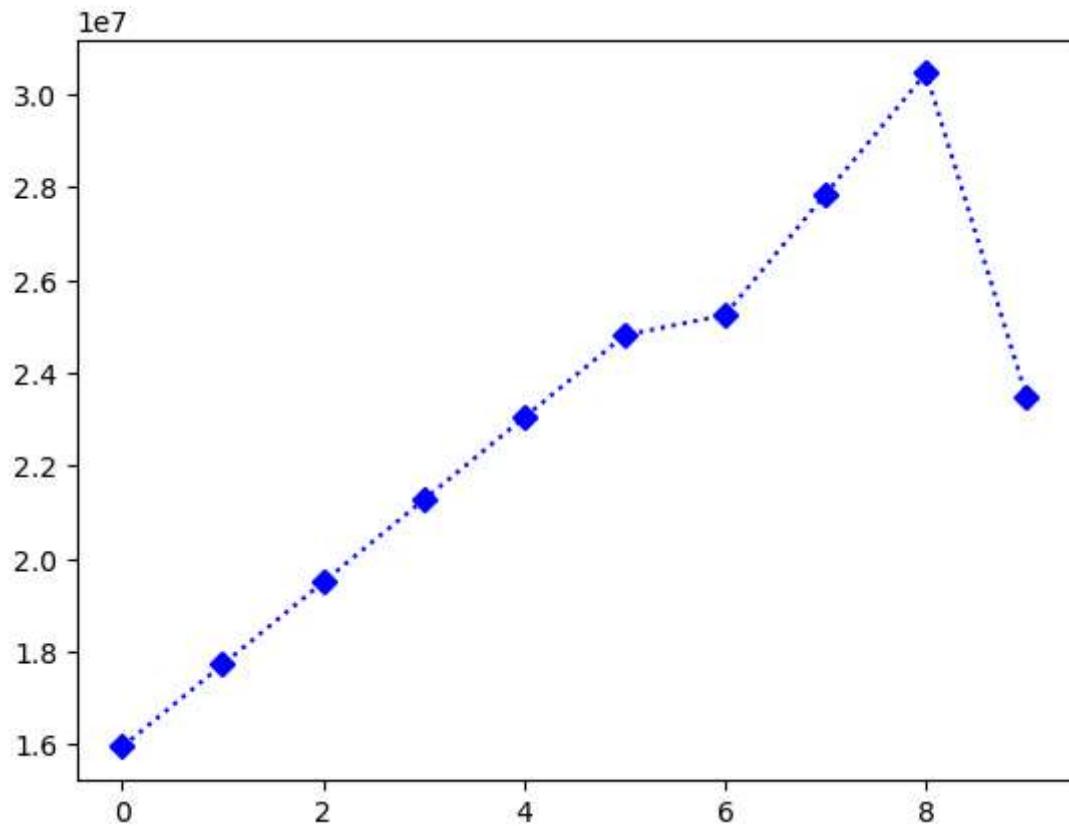
```
In [62]: plt.plot(Salary[0], color='blue', ls=':', marker='D')
```

```
Out[62]: [<matplotlib.lines.Line2D at 0x1bf7587cf0>]
```



```
In [65]: plt.plot(Salary[0],c='b',ls=':', marker='D')
```

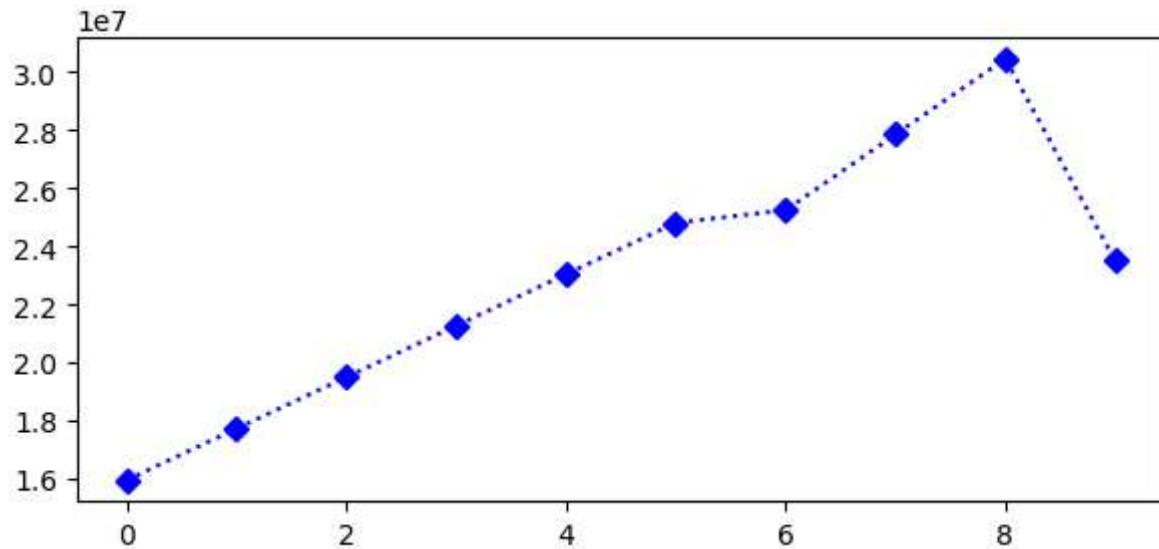
```
Out[65]: [<matplotlib.lines.Line2D at 0x1bf7618e210>]
```



```
In [66]: %matplotlib inline  
plt.rcParams['figure.figsize']=7,3
```

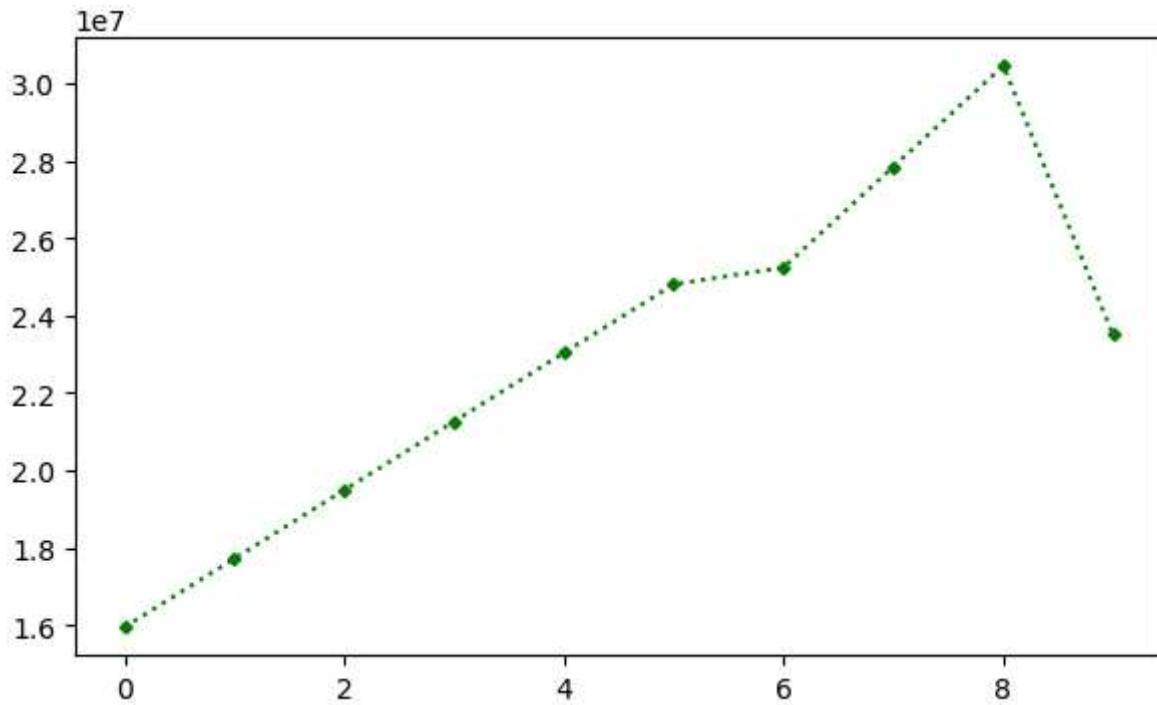
```
In [68]: plt.plot(Salary[0],c='b',ls=':', marker='D')
```

```
Out[68]: [<matplotlib.lines.Line2D at 0x1bf7622b050>]
```



```
In [70]: %matplotlib inline  
plt.rcParams['figure.figsize']=7,4
```

```
In [71]: plt.plot(Salary[0],c='g',ls=':', marker='D',ms=3)  
plt.show()
```



```
In [74]: list(range(0,10))
```

```
Out[74]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

```
In [77]: Sdict
```

```
Out[77]: {'2015': 0,  
          '2016': 1,  
          '2017': 2,  
          '2018': 3,  
          '2019': 4,  
          '2020': 5,  
          '2021': 6,  
          '2022': 7,  
          '2023': 8,  
          '2024': 9}
```

```
In [79]: Pdict
```

```
Out[79]: {'Sachin': 0,
          'Rahul': 1,
          'Smith': 2,
          'Sami': 3,
          'Pollard': 4,
          'Morris': 5,
          'Samson': 6,
          'Dhoni': 7,
          'Kohli': 8,
          'Sky': 9}
```

```
In [83]: Pdict['Sachin']
```

```
Out[83]: 0
```

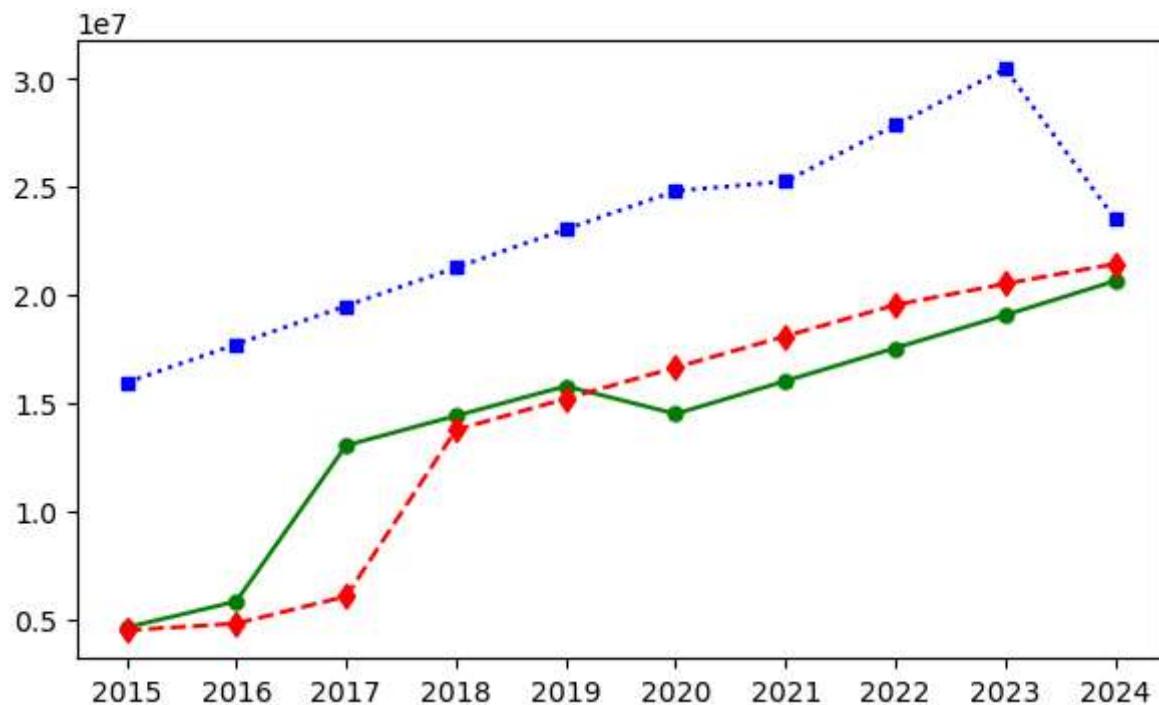
```
In [85]: Salary[Pdict['Smith']][Sdict['2018']]
```

```
Out[85]: 14410581
```

```
In [87]: list(range(0,10))
```

```
Out[87]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

```
In [89]: plt.plot(Salary[0],c='b',ls=':',marker='s',ms=4)
plt.plot(Salary[2],c='g',ls='--',marker='o',ms=5)
plt.plot(Salary[4],c='r',ls='--',marker='d',ms=6)
plt.xticks(list(range(0,10)),Seasons)
plt.show()
```



```
In [90]: Points
```

```
Out[90]: 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 [93]: plt.plot(Points[1],c='g',marker='o',ls='--')  
plt.xticks(range(0,10),Seasons,rotation='horizontal')  
plt.show()
```

