Answer for coding assignment using Python

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In [1]:

```
# libraries used
import pandas as pd  # a library I used to read the xlsx file and more
import numpy as np    # to create array
import matplotlib.pyplot as plt   # I used it to create barplots
```

In [3]:

```
# Reading the excel file
mydata= pd.read_excel("Ganesh.xlsx", sheetname= "Sheet1")
```

In [5]:

```
arry_data=np.array(mydata) # convert the data frame in to array
```

In [5]:

```
# to see the graph inline while using Jupyternotebook or use plt.show() in shell
%matplotlib inline
```

In [7]:

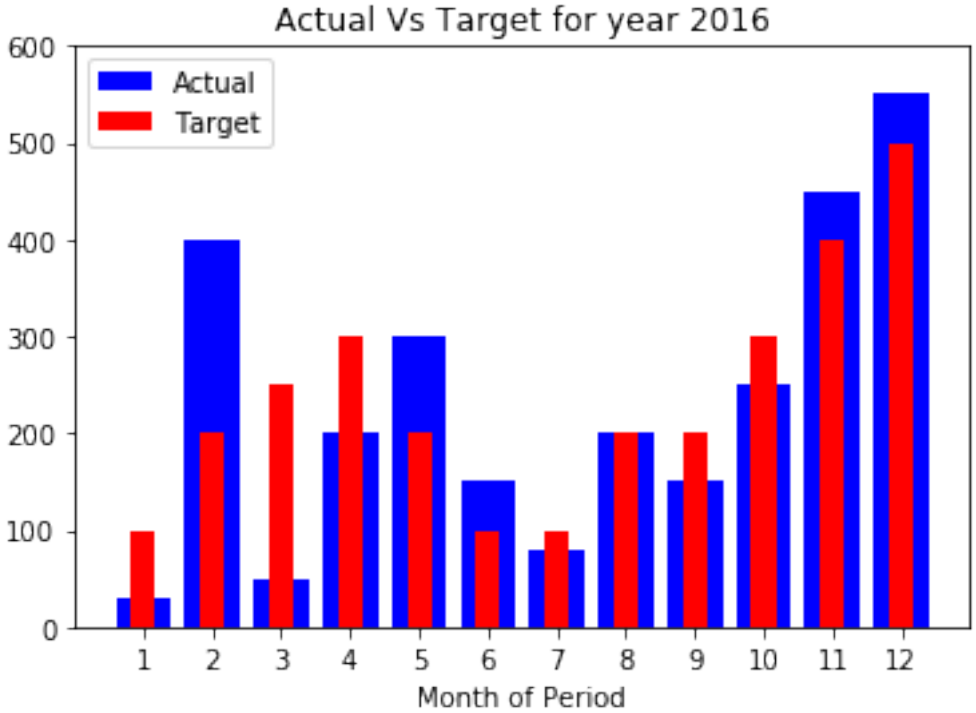
```
arry_data=np.array(mydata) # convert the data frame in to array
Period=arry_data[:, 1:2]   # Extract Period
Actual= arry_data[:, 2:3]   # Extract Actual Values
Target= arry_data[:, 3:4]   # Extract Target Values

fig= plt.figure() # create a figure
loc = np.arange(len(Period))
loc=loc+1 # to assign the range of numbers to the corresponding months

# bar plot
p1 = plt.bar(loc, Actual, width=0.8, bottom= None, color='b')
p2 = plt.bar(loc, Target, width=0.35, bottom= None,  color= "r")

plt.title('Actual Vs Target for year 2016')
plt.xticks(loc)
plt.yticks(np.arange(0, 601, 100)) # Y ticks with 100 increament
plt.xlabel("Month of Period")
plt.legend((p1[0], p2[0]), ('Actual', 'Target'))

plt.show()
fig.savefig("barplot.png") # to save the figure as png formate
```



In [11]:

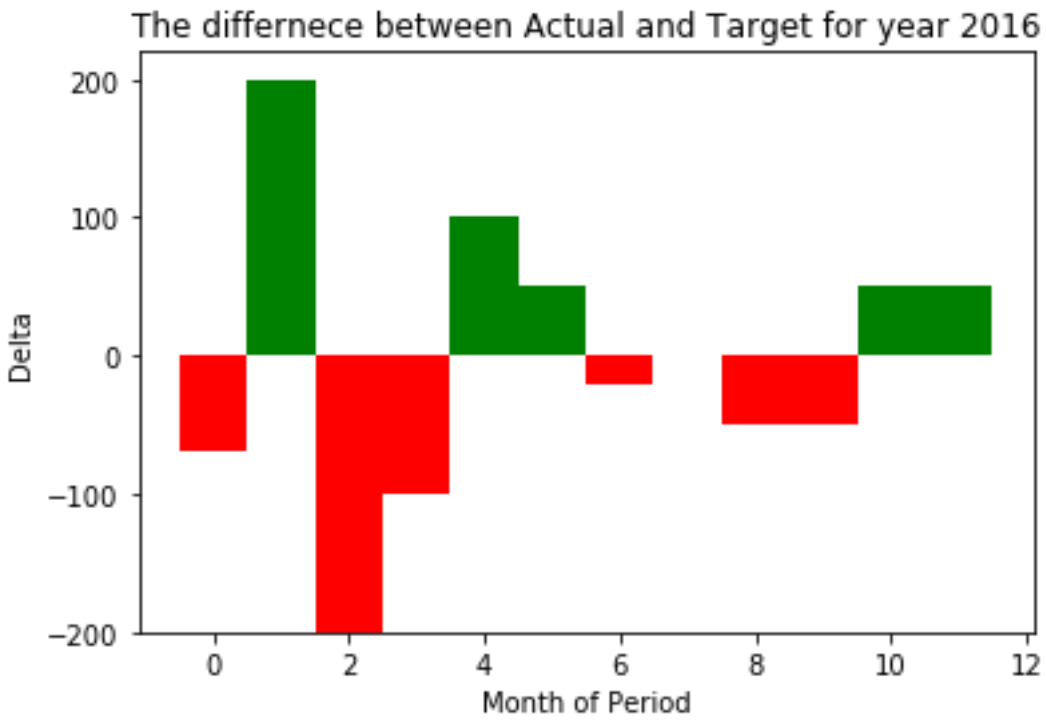
```
delta= Actual-Target # the differnce between the actual and target value
pos= delta[delta>=0]
neg=delta[delta<0]

index_pos= list(set(np.where(delta== pos)[0])) # the index of positive delta valu
index_neg= list(set(np.where(delta== neg)[0]))  # the index of negative values

fig =plt.figure()
plt.bar(index_pos, pos, width=1, color='g')  # bar plot for positive delta
plt.bar(index_neg, neg, width=1, color='r')  #bar plot for negative delta

plt.title('The differnece between Actual and Target for year 2016')
plt.yticks(np.arange(-200, 201, 100)) # y ticks with inreament of 100
plt.ylabel("Delta")
plt.xlabel("Month of Period")

plt.show()
fig.savefig("Delta.png", format= "png")  # to save the figure in png format
```



In [47]:

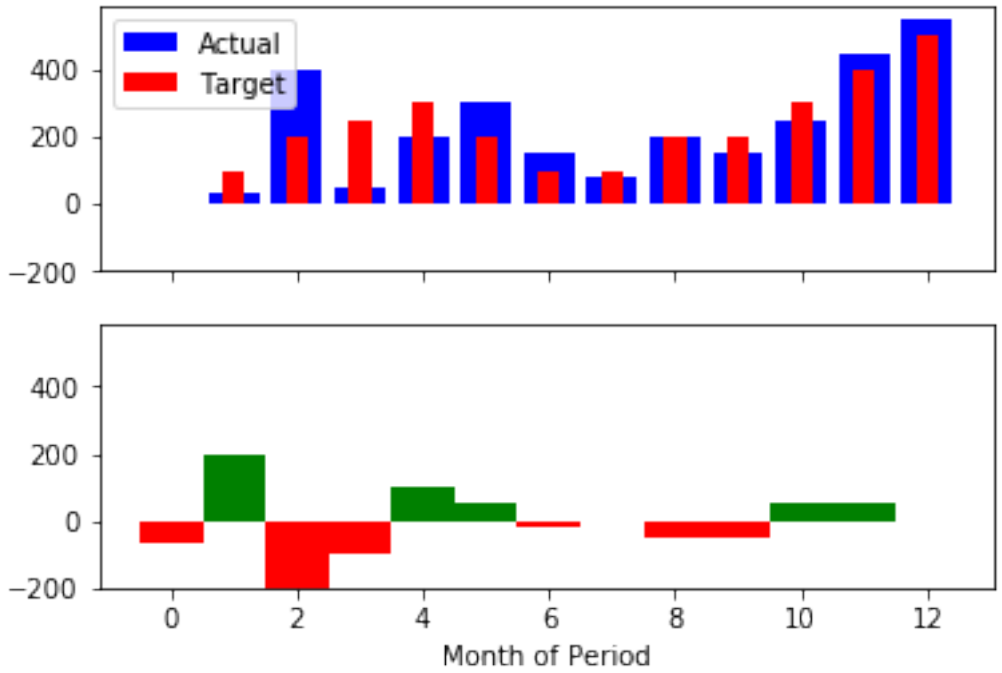
```
# to draw the above plots in the same figure
f, (a,b)= plt.subplots(2,1, sharex=True, sharey=True)

a.bar(loc, Actual, width=0.8, bottom= None, color='b')
a.bar(loc, Target, width=0.35, bottom= None,  color= "r")


b.bar(index_pos, pos, width=1, color='g')  # bar plot for positive delta
b.bar(index_neg, neg, width=1, color='r')  #bar plot for negative delta

a.legend(("Actual","Target"))
b.set_ylabel("Delta")
b.set_xlabel("Month of Period")

plt.show()
```



In [ ]: