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c-3
import pandas as pd
df=pd.read_csv("iris.csv")
import matplotlib.pyplot as pg
v=df['variety'].value_counts()
v=dict(v)
k=['iris setosa', 'iris versicolor','iris virginica']
j=v.values()
fig=pg.figure(figsize=(10,10))
pg.pie(x=j,labels=k, explode=[0.1,0.1,0.1],autopct='%1.1f%%',shadow=True,)
pg.title('iris.species%')

pg.legend()
pg.show()
import itertools
l1=df['sepal.length']
l2=df['variety']
l3=df['sepal.width']
setosal=[]
setosaw=[]
Virginical=[]
Virginicaw=[]
Versicolorl=[]
Versicolorw=[]


for (i,j,k) in zip(l1,l2,l3):
    if j=="Setosa":
        setosal.append(i)
        setosaw.append(k)
    elif j=="Virginica":
        Virginical.append(i)
        Virginicaw.append(k)
    else:
        Versicolorl.append(i)
        Versicolorw.append(k)
#print(setosal)
#print(Versicolorl)
#print(Virginical)
fig=pg.figure(figsize=(7,5))
pg.title("The Iris Data Set")
u=pg.scatter(setosal,setosaw,color='red')
v=pg.scatter(Virginical,Virginicaw,color='blue')
z=pg.scatter(Versicolorl,Versicolorw,color='green')
```

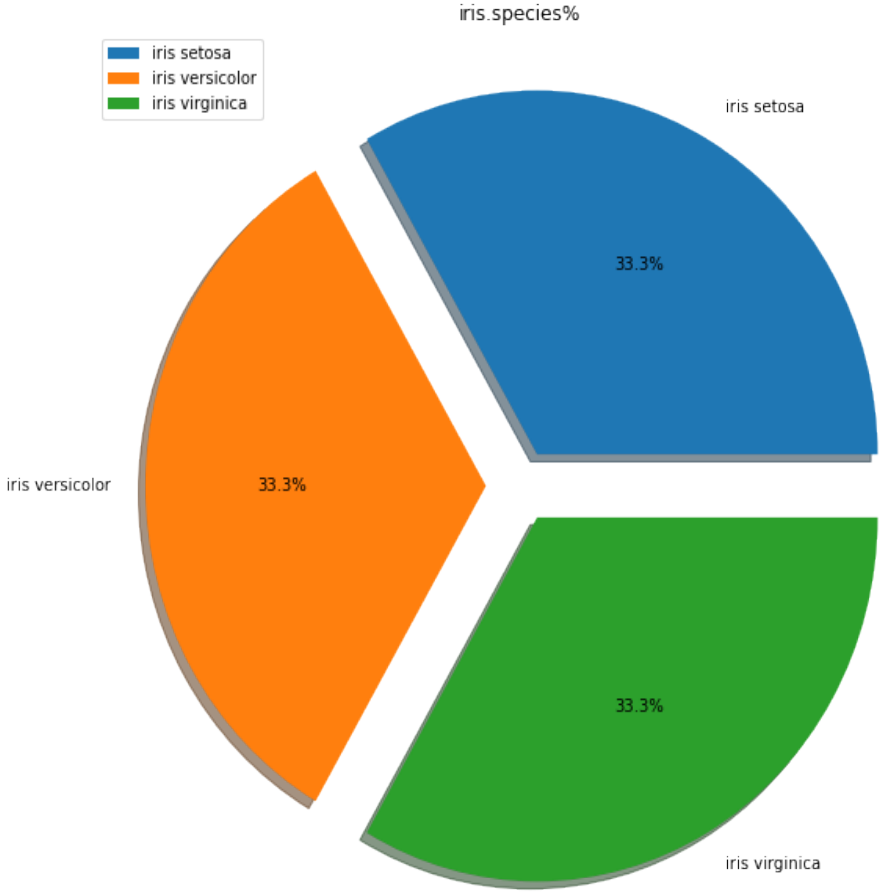
```
pg.ylabel('sepal.width')
pg.xlabel('sepal.length')
pg.grid(linestyle = '--')
pg.legend([u,v,z], ['Setosa','Virginica','Versicolor'])
pg.show()
import itertools
l1=df['petal.length']
l2=df['variety']
l3=df['petal.width']
setosapl=[]
setosapw=[]
Virginicapl=[]
Virginicapw=[]
Versicolorpl=[]
Versicolorpw=[]

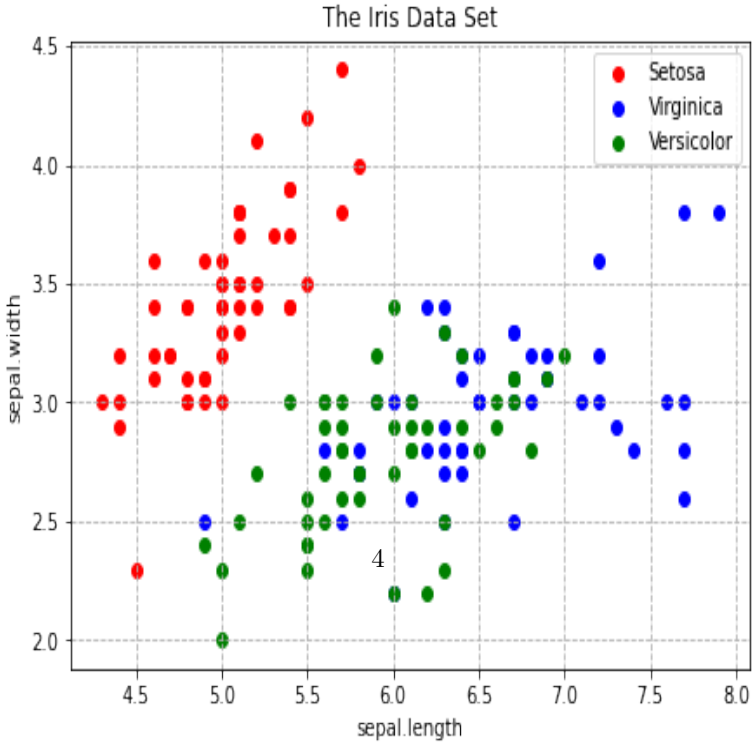

for (i,j,k) in zip(l1,l2,l3):
    if j=="Setosa":
        setosapl.append(i)
        setosapw.append(k)
    elif j=="Virginica":
        Virginicapl.append(i)
        Virginicapw.append(k)
    else:
        Versicolorpl.append(i)
        Versicolorpw.append(k)
#print(setosapl)
#print(Versicolorpl)
#print(Virginicapl)
y=['sepal.length','sepal.width','petal.length','petal.width']
x=["Setosa","Virgincia","Versicolor"]
df2=df.groupby('variety').agg('mean')
df2.head()

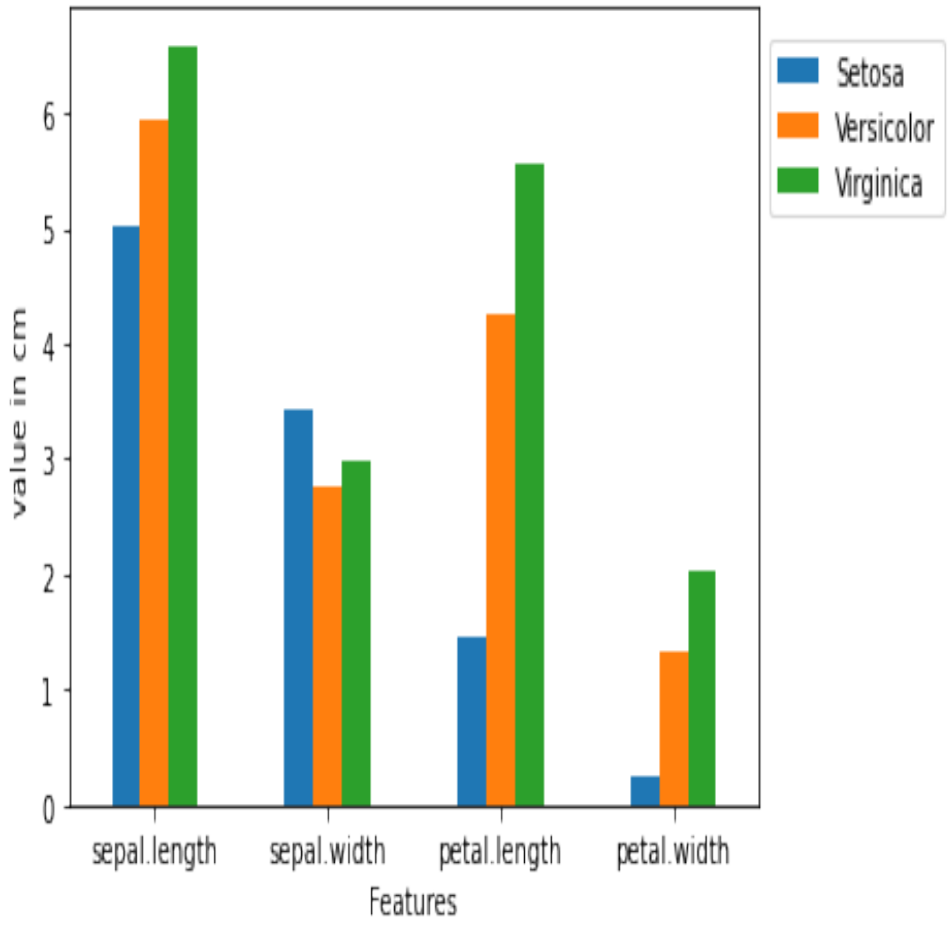

df2.T.plot(kind='bar')

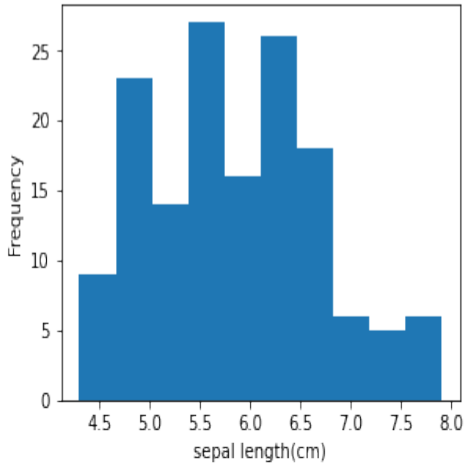
pg.xticks(rotation='horizontal')
pg.legend(loc='center left', bbox_to_anchor=(1, 0.85))
pg.xlabel("Features")
pg.ylabel('value in cm')
fig=pg.figure(figsize=(10,8))
pg.title("Iris Histograms")
pg.subplot(2,2,1)
pg.hist(df['sepal.length'])
```

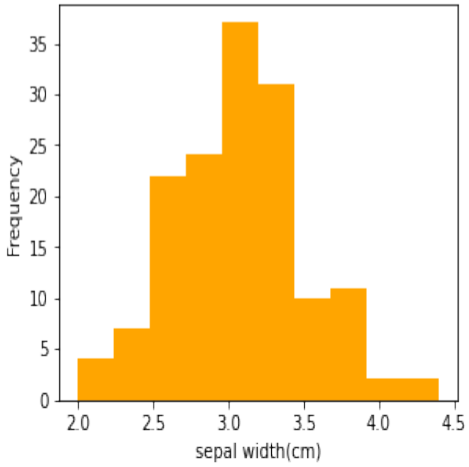
```
pg.xlabel('sepal length(cm)')
pg.ylabel('Frequency')
#pg.tight_layout()
pg.subplot(2,2,2)
pg.hist(df['sepal.width'],color = "orange")
pg.xlabel('sepal width(cm)')
pg.ylabel('Frequency')
pg.subplot(2,2,3)
pg.hist(df['petal.length'],color = "Green")
pg.xlabel('petal length(cm)')
pg.ylabel('Frequency')
pg.subplot(2,2,4)
pg.hist(df['petal.width'],color = "Red")
pg.xlabel('petal width(cm)')
pg.ylabel('Frequency')
```

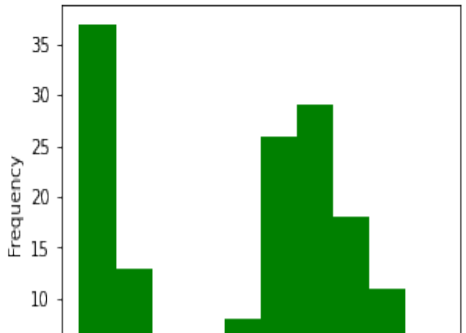

iris.species%
iris setosa
iris versicolor
iris virginica
iris setosa
33.3%
iris versicolor
33.3%
33.3%
iris virginica

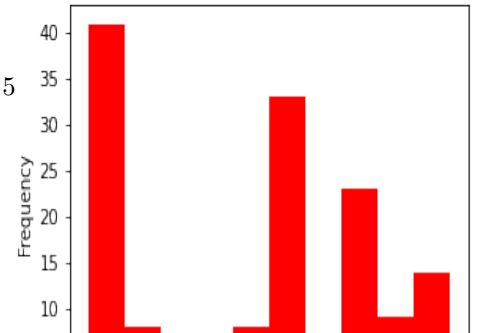

The Iris Data Set
Setosa
Virginica
Versicolor
sepal.width
sepal.length
4.5
4.0
3.5
3.0
2.5
2.0
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0


Setosa
Versicolor
Virginica
value in cm
0
1
2
3
4
5
6
sepal.length
sepal.width
petal.length
petal.width
Features


Frequency
0
5
10
15
20
25
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0
sepal length(cm)


Frequency
0
5
10
15
20
25
30
35
2.0
2.5
3.0
3.5
4.0
4.5
sepal width(cm)


Frequency
10
15
20
25
30
35


Frequency
10
15
20
25
30
35
40