Chapter 4 - Practical Data Visualization

Segment 4 - Creating labels and annotations

```
import numpy as np
import pandas as pd
from pandas import Series, DataFrame

import matplotlib.pyplot as plt
from pylab import rcParams


%matplotlib inline
rcParams['figure.figsize'] = 8,4
```

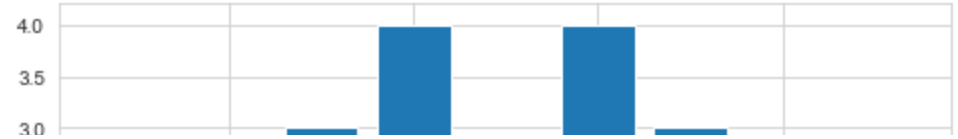
Labeling plot features

The functional method

```
x = range(1,10)
y = [1,2,3,4,.5,4,3,2,1]
plt.bar(x,y)

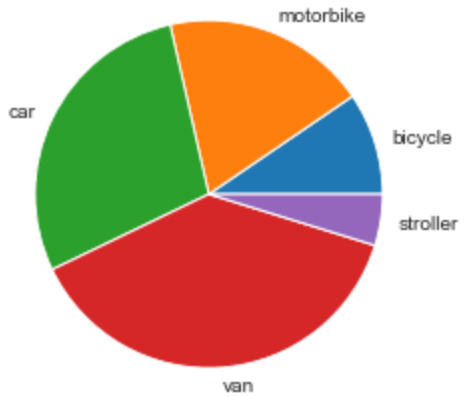
plt.xlabel('your x-axis label')
plt.ylabel('your y-axis label')
```

```
Text(0, 0.5, 'your y-axis label')
```




```
z = [1,2,3,4,.5]
veh_type = ['bicycle', 'motorbike', 'car', 'van', 'stroller']

plt.pie(z, labels=veh_type)
plt.show()
```



The object-oriented method

```
address = 'C:/Users/Lillian/Desktop/ExerciseFiles/Data/mtcars.csv'

cars = pd.read_csv(address)
cars.columns = ['car_names','mpg','cyl','disp', 'hp', 'drat', 'wt', 'qsec', 'vs', 'am', 'gear', 'carb']

mpg = cars.mpg

fig = plt.figure()
ax = fig.add_axes([.1,.1,1,1])

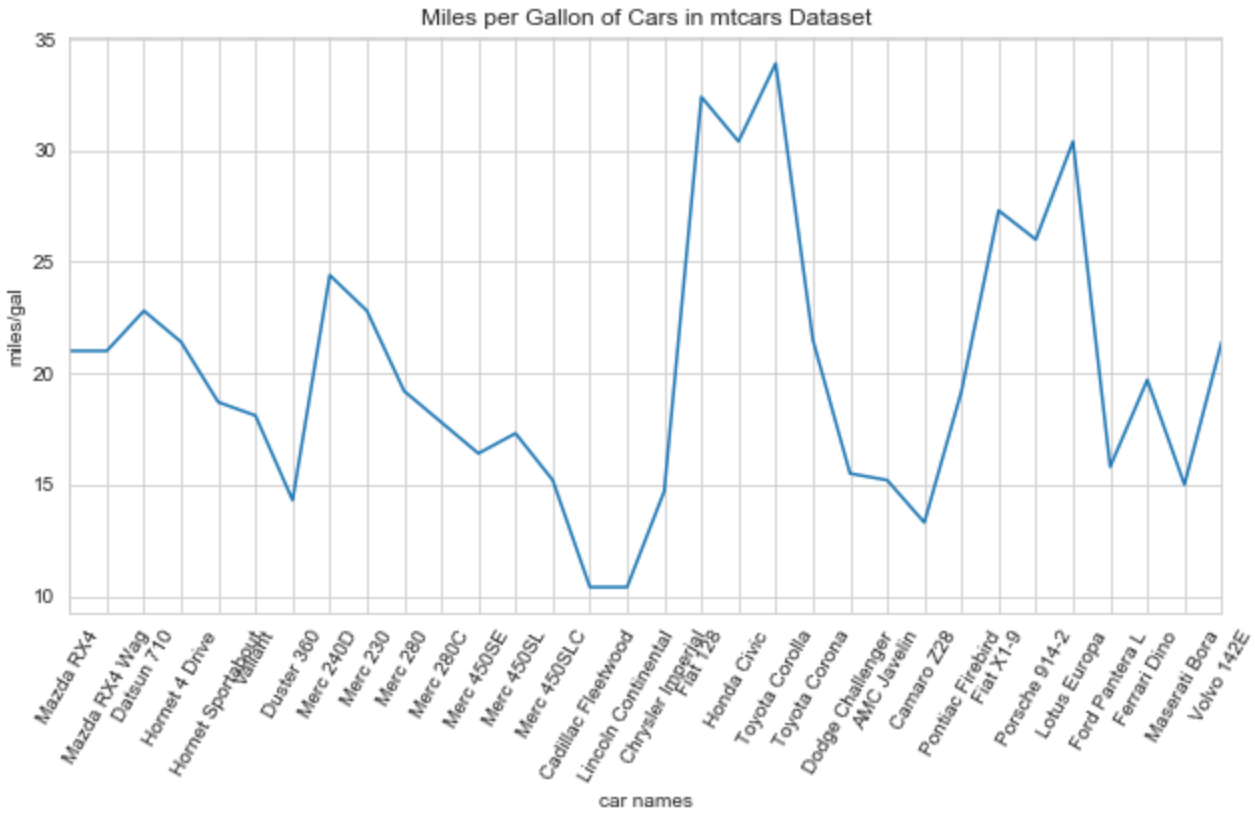
mpg.plot()

ax.set_xticks(range(32))
```

```
ax.set_xticklabels(cars.car_names, rotation=60, fontsize='medium')
ax.set_title('Miles per Gallon of Cars in mtcars Dataset')

ax.set_xlabel('car names')
ax.set_ylabel('miles/gal')
```

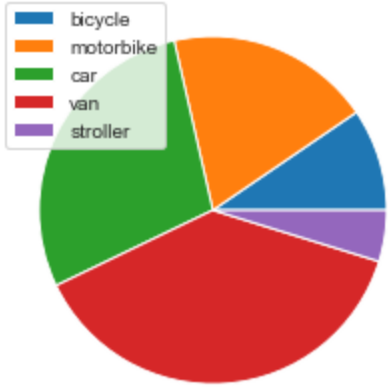
```
Text(0, 0.5, 'miles/gal')
```



Adding a legend to your plot

The functional method

```
plt.pie(z)
plt.legend(veh_type, loc='best')
plt.show()
```



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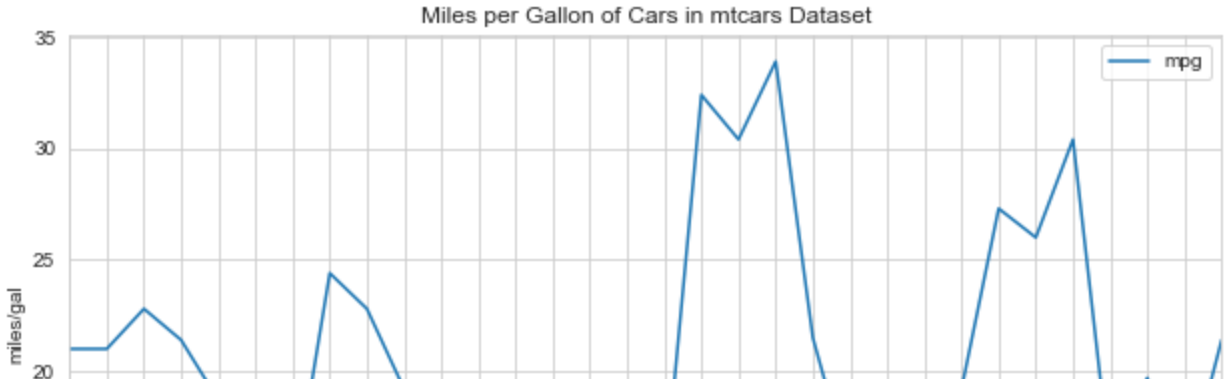
```

```
<matplotlib.legend.Legend at 0x26edc29c630>
```



Annotating your plot

```
mpg.max()
```

```
33.9
```

```
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ax = fig.add_axes([.1,.1,1,1])

mpg.plot()

ax.set_xticks(range(32))

ax.set_xticklabels(cars.car_names, rotation=60, fontsize='medium')
ax.set_title('Miles per Gallon of Cars in mtcars Dataset')

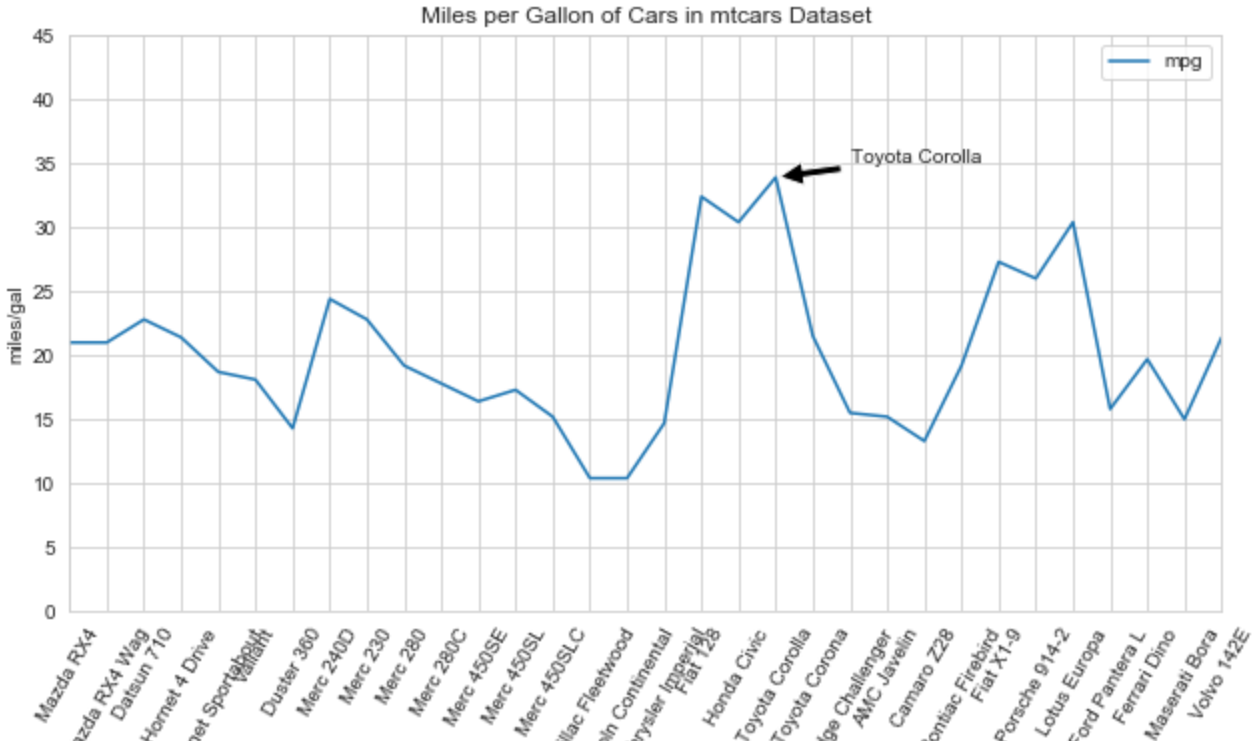
ax.set_xlabel('car names')
ax.set_ylabel('miles/gal')

ax.legend(loc='best')

ax.set_ylim([0,45])

ax.annotate('Toyota Corolla', xy= (19,33.9), xytext=(21,35),
           arrowprops=dict(facecolor='black', shrink=0.05))
```

```
Text(21, 35, 'Toyota Corolla')
```



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