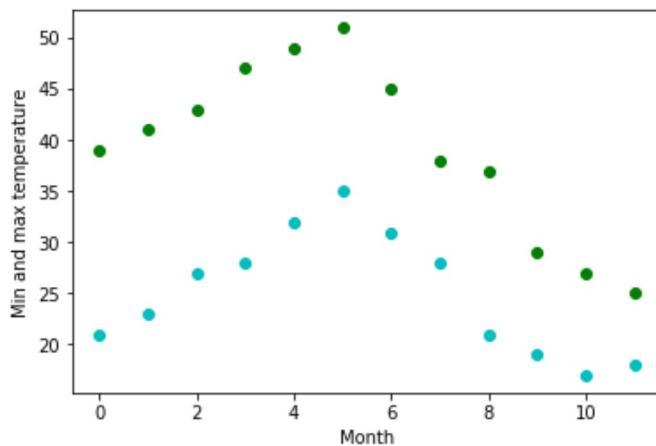


```
In [57]: #We have the min and max temperatures in a city In India for each months of the year.
import numpy as np

temp_max = np.array([39, 41, 43, 47, 49, 51, 45, 38, 37, 29, 27, 25])
temp_min = np.array([21, 23, 27, 28, 32, 35, 31, 28, 21, 19, 17, 18])

import matplotlib.pyplot as plt
months = np.arange(12)
plt.plot(months, temp_max, 'go')
plt.plot(months, temp_min, 'co')
plt.xlabel('Month')
plt.ylabel('Min and max temperature')
```

Out[57]: Text(0,0.5,'Min and max temperature')



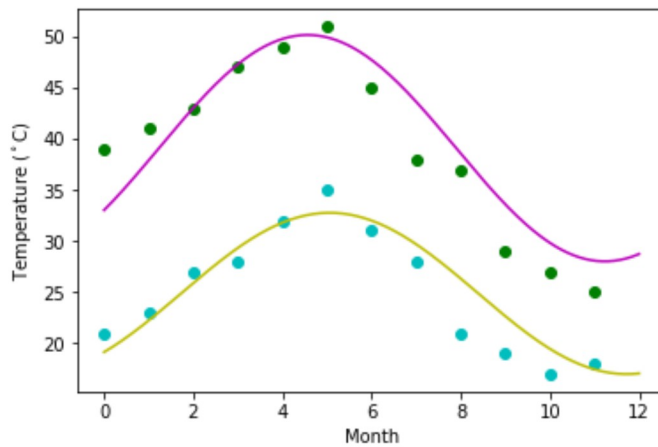
```
In [70]: #1.fitting it to the periodic function#
from scipy import optimize
def yearly_temps(times, avg, ampl, time_offset):
    return (avg
            + ampl * np.cos((times + time_offset) * 1.8 * np.pi / times.max()))

res_max, cov_max = optimize.curve_fit(yearly_temps, months,
                                       temp_max, [40, 20, 0])
res_min, cov_min = optimize.curve_fit(yearly_temps, months,
```

```
In [71]: #2.plot the fit#
days = np.linspace(0, 12, num=365)

plt.figure()
plt.plot(months, temp_max, 'go')
plt.plot(days, yearly_temps(days, *res_max), 'm-')
plt.plot(months, temp_min, 'co')
plt.plot(days, yearly_temps(days, *res_min), 'y-')
plt.xlabel('Month')
plt.ylabel('Temperature ( $^{\circ}\text{C}$ )')

plt.show()
```



```
In [58]: #This assignment is for visualization using matplotlib:data to use:url=https://raw.git

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

%matplotlib inline

filename = 'https://raw.githubusercontent.com/Geoyi/Cleaning-Titanic-Data/master/titanic.csv'
titanic_df = pd.read_csv(filename)
titanic_df.head()
```

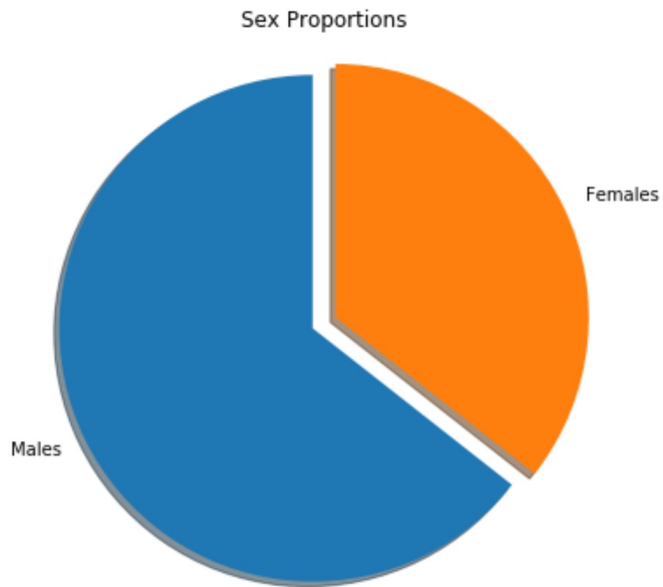
Out[58]:

	pclass	survived	name	sex	age	sibsp	parch	ticket	fare	cabin	embarked	boat	body	
0	1.0	1.0	Allen, Miss. Elisabeth Walton	female	29.0000	0.0	0.0	24160	211.3375	B5	S	2	NaN	
1	1.0	1.0	Allison, Master. Hudson Trevor	male	0.9167	1.0	2.0	113781	151.5500	C22 C26	S	11	NaN	C
2	1.0	0.0	Allison, Miss. Helen Loraine	female	2.0000	1.0	2.0	113781	151.5500	C22 C26	S	NaN	NaN	C
3	1.0	0.0	Allison, Mr. Hudson Joshua Creighton	male	30.0000	1.0	2.0	113781	151.5500	C22 C26	S	NaN	135.0	C
4	1.0	0.0	Allison, Mrs. Hudson J C (Bessie Waldo Daniels)	female	25.0000	1.0	2.0	113781	151.5500	C22 C26	S	NaN	NaN	C

In [59]:

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1310 entries, 0 to 1309
Data columns (total 14 columns):
pclass      1309 non-null float64
survived     1309 non-null float64
name        1309 non-null object
sex         1309 non-null object
age         1046 non-null float64
sibsp       1309 non-null float64
parch       1309 non-null float64
ticket      1309 non-null object
fare        1308 non-null float64
cabin       295 non-null object
embarked    1307 non-null object
boat        486 non-null object
body        121 non-null float64
home.dest   745 non-null object
dtypes: float64(7), object(7)
memory usage: 143.4+ KB
```

```
In [60]: #1.pie chart presenting the male/female proportion#
def draw_plot(titanic_df):
    proportions = []
    sum_instances = titanic_df['sex'].value_counts()
    length = len(titanic_df['sex'])
    proportions = list(sum_instances)
    labels = ['Males', 'Females']
    explode = (0,0.1)
    sizes = proportions
    fig, ax1 = plt.subplots(figsize = (6,6))
    ax1.pie(sizes, explode = explode, labels = labels, shadow = True, startangle=90)
    ax1.axis('equal')
    ax1.set_title("Sex Proportions")
    return plt.show()
```



```
In [61]: #2.scatter plot with the Fare paid and the Age, differ the plot color by gender#
```

```
Out[61]: <matplotlib.collections.PathCollection at 0x24a11d8e940>
```

