We have the min and max temperatures in a city In India for each months of the year. We would like to find a function to describe this and show it graphically, the dataset given below. Task:

1. fitting it to the periodic function
2. plot the fit Data Max = 39, 41, 43, 47, 49, 51, 45, 38, 37, 29, 27, 25 Min = 21, 23, 27, 28, 32, 35, 31, 28, 21, 19, 17, 18

In [1]:
```
import numpy as np
import matplotlib.pyplot as plt

max = [ 39, 41, 43, 47, 49, 51, 45, 38, 37, 29, 27, 25]
min = [ 21, 23, 27, 28, 32, 35, 31, 28, 21, 19, 17, 18 ]

temp_max = np.array(max)
temp_min = np.array(min)

months = np.arange(12)
plt.plot(months, temp_max, 'ro' , months, temp_max, 'r')
plt.plot(months, temp_min, 'bo' , months, temp_min, 'b')
plt.xlabel('Month')
plt.ylabel('Min and max temperature')
plt.show()
```

```
<Figure size 640x480 with 1 Axes>
```

This assignment is for visualization using matplotlib: data to use: url= https://raw.githubusercontent.com/Geoyi/Cleaning-Titanic-Data/master/titanic_original.csv (https://raw.githubusercontent.com/Geoyi/Cleaning-Titanic-Data/master/titanic_original.csv) titanic = pd.read_csv(url) Charts to plot:

1. Create a pie chart presenting the male/female proportion
2. Create a scatterplot with the Fare paid and the Age, differ the plot color by gender

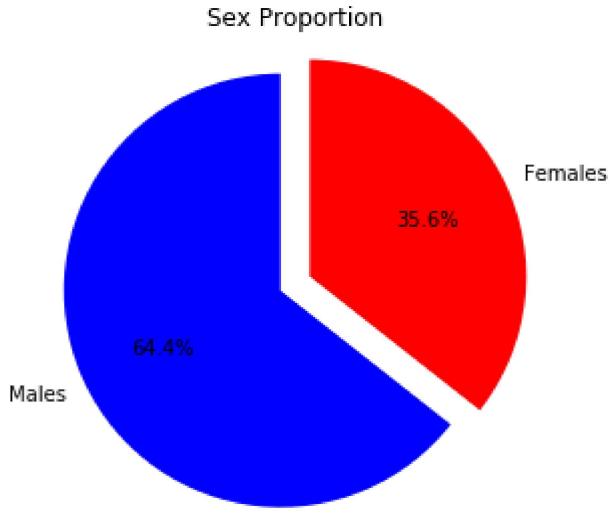
In [2]:
```
#Import the necessary libraries

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

%matplotlib inline
```

In [3]:
```
#Import the dataset from this address and Assign it to a variable titanic

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

Out[3]:

	pclass	survived	name	sex	age	sibsp	parch	ticket	fare	cabin	embarked	boat	body	home.dest
0	1.0	1.0	Allen, Miss. Elisabeth Walton	female	29.0000	0.0	0.0	24160	211.3375	B5	S	2	NaN	St Louis, MO
1	1.0	1.0	Allison, Master. Hudson Trevor	male	0.9167	1.0	2.0	113781	151.5500	C22 C26	S	11	NaN	Montreal, PQ / Chesterville, ON
2	1.0	0.0	Allison, Miss. Helen Loraine	female	2.0000	1.0	2.0	113781	151.5500	C22 C26	S	NaN	NaN	Montreal, PQ / Chesterville, ON
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	Montreal, PQ / Chesterville, ON
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	Montreal, PQ / Chesterville, ON

In [4]:
```
#Create a pie chart presenting the male/female proportion

# sum the instances of males and females
males = (titanic['sex'] == 'male').sum()
females = (titanic['sex'] == 'female').sum()

# put them into a list called proportions
proportions = [males, females]

# Create a pie chart
plt.pie(
    # using proportions
    proportions,

    # with the labels being officer names
    labels = ['Males', 'Females'],

    # with no shadows
    shadow = False,

    # with colors
    colors = ['blue','red'],

    # with one slide exploded out
    explode = (0.15 , 0),

    # with the start angle at 90%
    startangle = 90,

    # with the percent listed as a fraction
    autopct = '%1.1f%%'
    )

# View the plot drop above
plt.axis('equal')

# Set labels
plt.title("Sex Proportion")

# View the plot
plt.tight_layout()
plt.show()
```


Sex Proportion
Females
35.6%
64.4%
Males

In [5]:
```
#Create a scatterplot with the Fare payed and the Age, differ the plot color by gender

lm = sns.lmplot(x = 'age', y = 'fare', data = titanic, hue = 'sex', fit_reg=False)

# set title
lm.set(title = 'Fare vs Age')

# get the axes object and tweak it
axes = lm.axes
axes[0,0].set_ylim(0,)
axes[0,0].set_xlim(0, 100)
```

Out[5]: (0, 100)