Question for Lab 4:

1. Instead of Image Noise Question you can solve the below two questions and given some example for how to use the required libraries.

Q1. Plot the Sine Wave and Fourier amplitude Spectrum of frequency 50Hz, sampled at 1ms.
Q2. Plot the Square Wave and Fourier amplitude Spectrum of frequency 50Hz, sampled at 1ms.

Note:
You can make use of the scipy.fftpack and numpy, Please check the below code for your refernce.
Good luck.

The example plots the FFT of the sum of two sines.

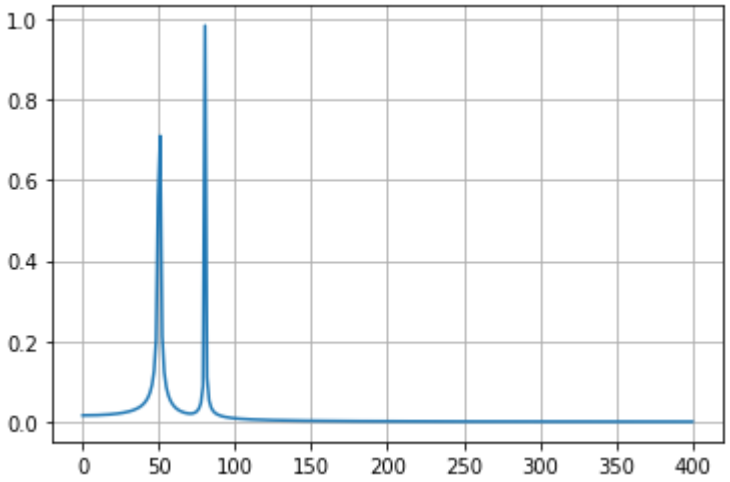
In [74]:
```
# The library required for plotting the FFT is scipy.fftpack, numpy.
# please go via the following code, use the tutorial for understanding t
from scipy.fftpack import fft
import matplotlib.pyplot as plt
import numpy as np
```

In [75]:
```
# Number of sample points
N = 600
# sample spacing
T = 1.0 / 800.0
```

In [76]:
```
x = np.linspace(0.0, N*T, N)
#print (x)
#numpy.linspace: Returns num evenly spaced samples, calculated over the
y = np.sin(50.0 * 2.0*np.pi*x) + np.sin(80.0 * 2.0*np.pi*x)
```

In [77]:
```
yf = fft(y)
xf = np.linspace(0.0, 1.0/(2.0*T), N//2)
```

In [78]:
```
plt.plot(xf, 2.0/N * np.abs(yf[0:N//2]))
plt.grid()
plt.show()
```



In [ ]:
```

```