For Accelerometer Data

In [1]:
```
from google.colab import files
uploaded=files.upload()
```

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```
Saving Raw Data.xlsx to Raw Data.xlsx
```

In [2]:
```
import pandas as pd
import io
df=pd.read_excel(io.BytesIO(uploaded['Raw Data.xlsx']))
print(df.head())
```

```
   Time (s)  Acceleration x (m/s^2)  Acceleration y (m/s^2)  \
0  0.038497               -1.477269                3.164209
1  0.040981               -1.501197                3.202494
2  0.043465               -1.551746                3.178566
3  0.045949               -1.578067                3.200101
4  0.048433               -1.590031                3.188137

   Acceleration z (m/s^2)  Absolute acceleration (m/s^2)
0                8.006085                       8.734526
1                8.109276                       8.847029
2                8.183454                       8.915162
3                8.271988                       9.008703
4                8.303095                       9.035142
```

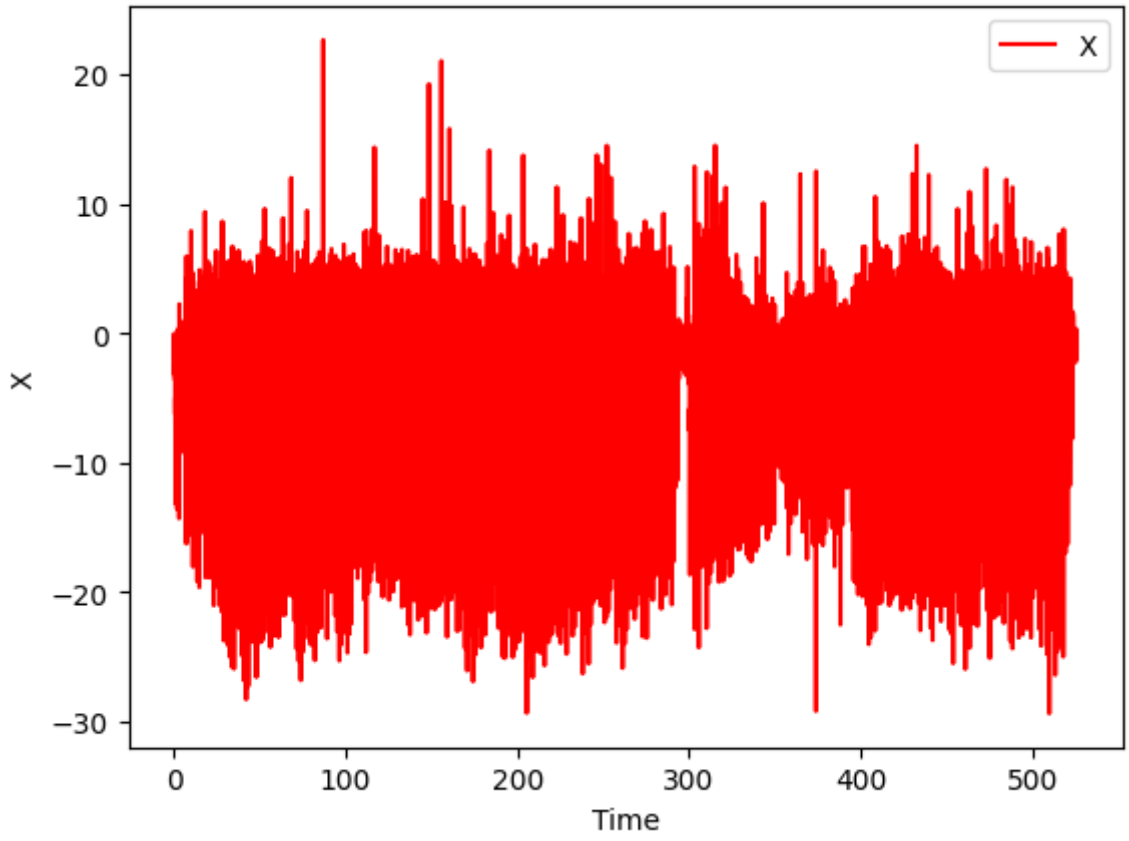
In [3]:
```
d=pd.DataFrame(df)
t=d.iloc[:,0].values
x=d.iloc[:,1].values
y=d.iloc[:,2].values
z=d.iloc[:,3].values
print(t,"\n",x,"\n",y,"\n",z)
```

```
[3.84973030e-02 4.09812090e-02 4.34652200e-02 ... 5.25508741e+02
 5.25511203e+02 5.25513664e+02]
 [-1.47726893 -1.5011971  -1.55174553 ... -0.94546407 -1.00289178
 -1.04865456]
 [3.16420889 3.20249391 3.17856574 ... 5.64586496 5.60279417 5.53818798]
 [8.0060854  8.10927582 8.18345356 ... 5.94107962 6.07298374 6.22851753]
```

In [5]:
```
import numpy as np
import matplotlib.pyplot as pl
```

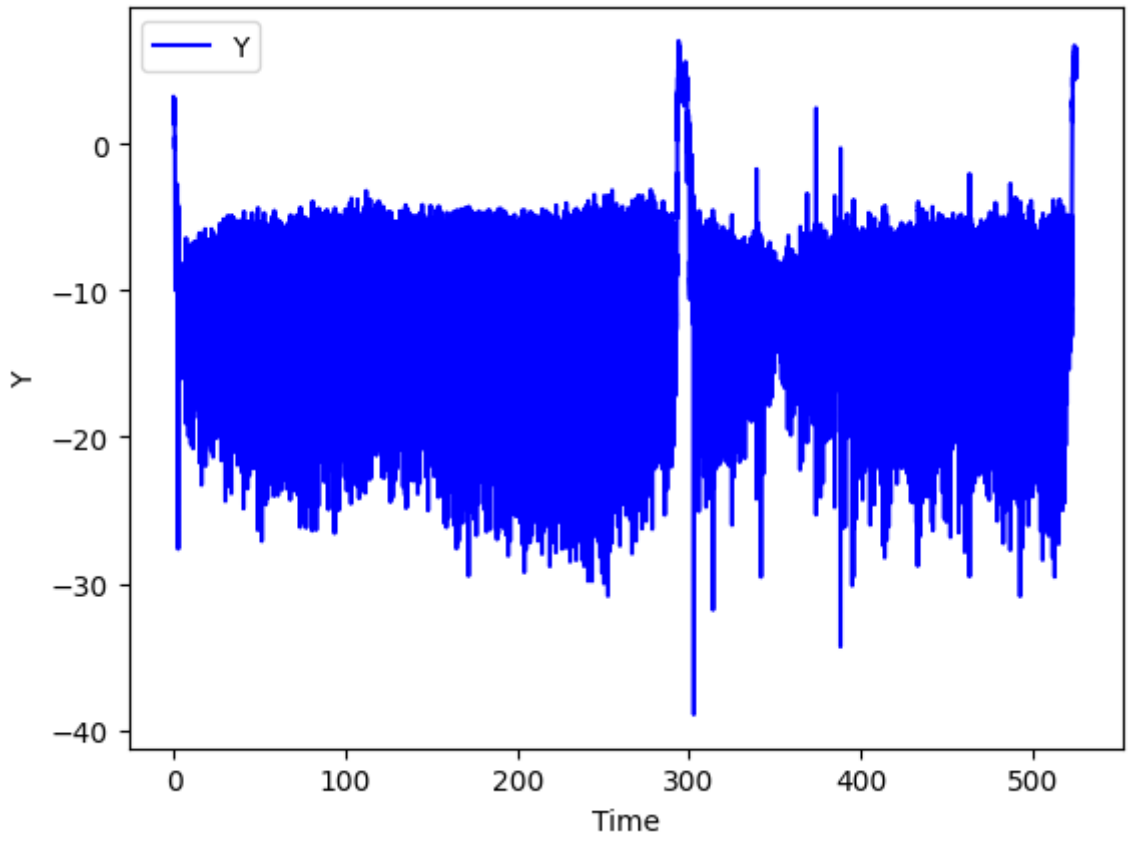
In [15]:
```
pl.plot(t,x,c='red')
pl.legend("X wrt Time")
pl.xlabel("Time")
pl.ylabel("X")
```

Out[15]:
```
Text(0, 0.5, 'X')
```



In [17]:
```
pl.plot(t,y,c='blue')
pl.legend("Y wrt Time")
pl.xlabel("Time")
pl.ylabel("Y")
```

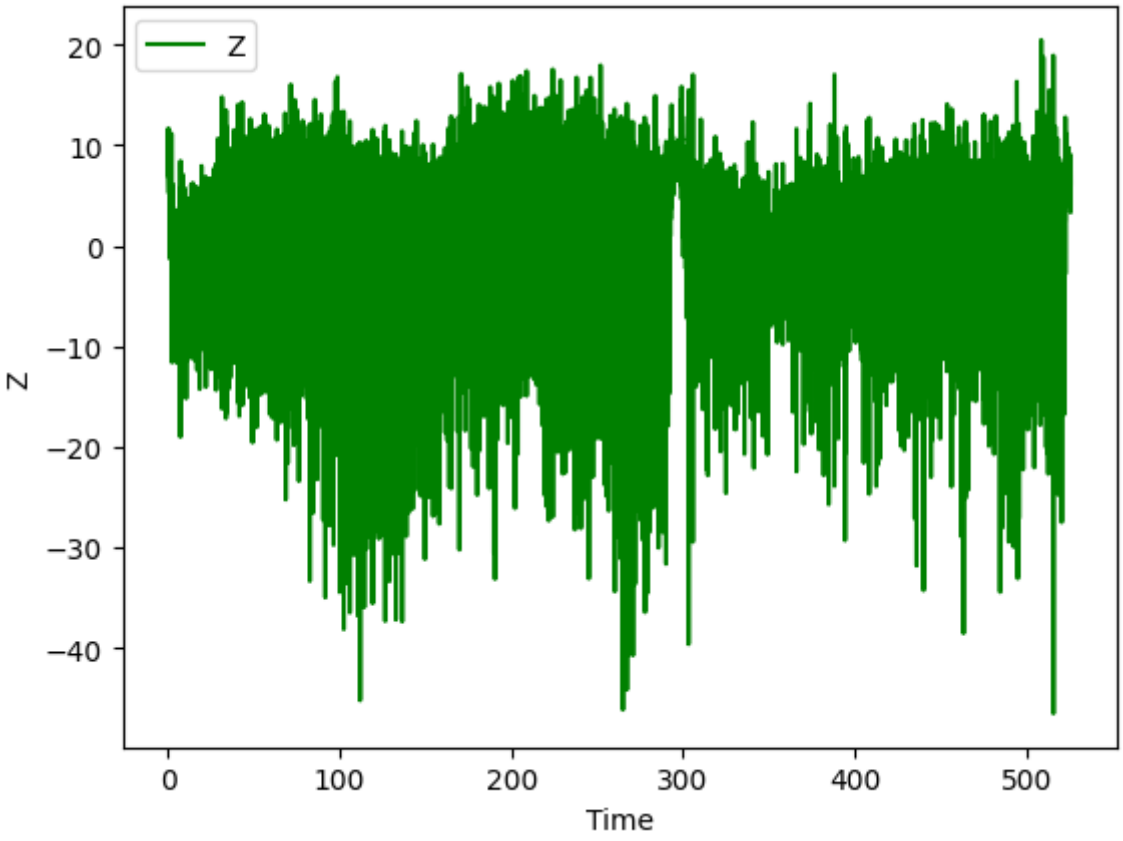
Out[17]:
```
Text(0, 0.5, 'Y')
```



In [18]:
```
pl.plot(t,z,c='green')
pl.legend("Z wrt Time")
```

```
pl.xlabel("Time")
pl.ylabel("Z")
```

Out[18]:
```
Text(0, 0.5, 'Z')
```



For Gyrometer Data

In [19]:
```
from google.colab import files
uploaded=files.upload()
```

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```
Saving Raw Data_gyroscope.xlsx to Raw Data_gyroscope.xlsx
```

In [21]:
```
df=pd.read_excel(io.BytesIO(uploaded['Raw Data_gyroscope.xlsx']))
print(df.head())
```

```
   Time (s)  Gyroscope x (rad/s)  Gyroscope y (rad/s)  Gyroscope z (rad/s)  \
0  0.048774             0.335682            -0.408384            -1.172023
1  0.051250             0.286681            -0.368970            -1.160305
2  0.053726             0.249531            -0.350861            -1.159240
3  0.056203             0.216509            -0.347665            -1.162436
4  0.058673             0.180291            -0.341274            -1.157109

   Absolute (rad/s)
0          1.285728
1          1.250853
2          1.236611
3          1.232479
4          1.219785
```

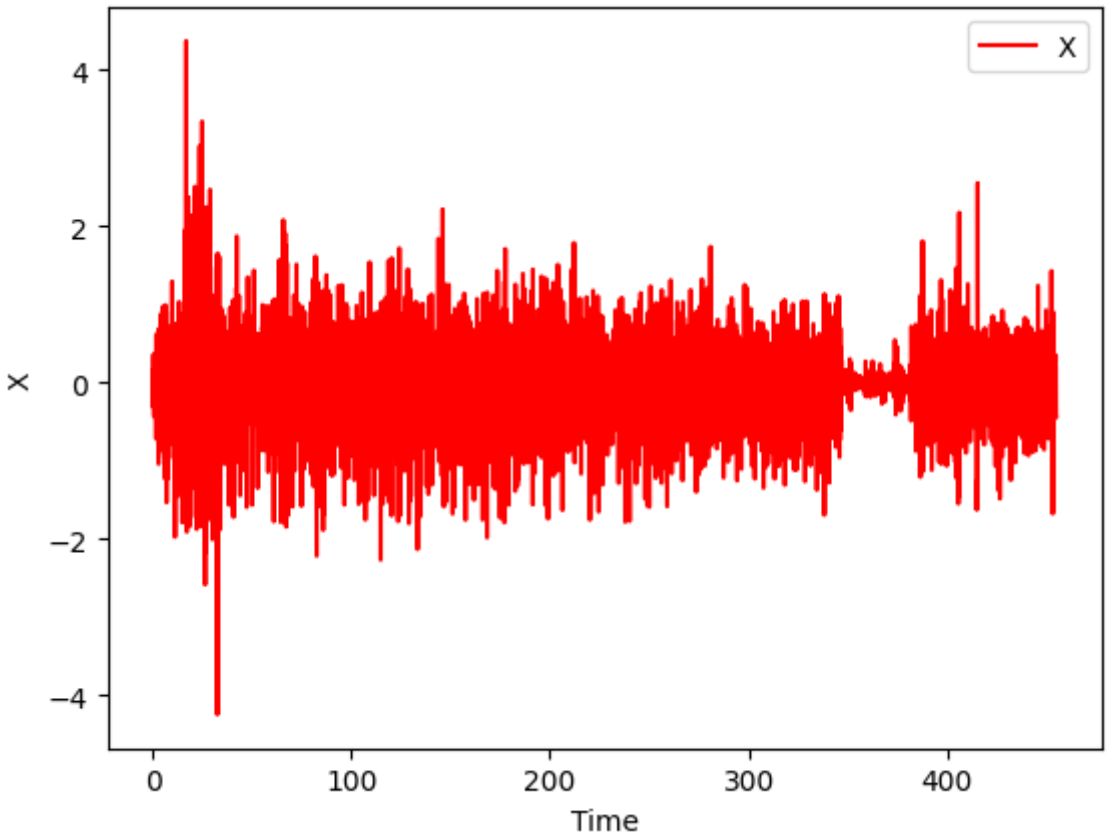
In [22]:
```
d=pd.DataFrame(df)
t=d.iloc[:,0].values
x=d.iloc[:,1].values
y=d.iloc[:,2].values
```

```
z=d.iloc[:,3].values
print(t,"\n",x,"\n",y,"\n",z)
```

```
[4.87735950e-02 5.12500530e-02 5.37264600e-02 ... 4.54705872e+02
 4.54708349e+02 4.54710828e+02]
 [ 0.33568156  0.28668085  0.24953084 ... -0.45019412 -0.44912887
 -0.44167224]
 [-0.4083837  -0.3689701  -0.35086113 ... -0.70877939 -0.73221457
 -0.75245398]
 [-1.17202258 -1.16030502 -1.15923989 ... -0.48081955 -0.48401526
 -0.48721096]
```

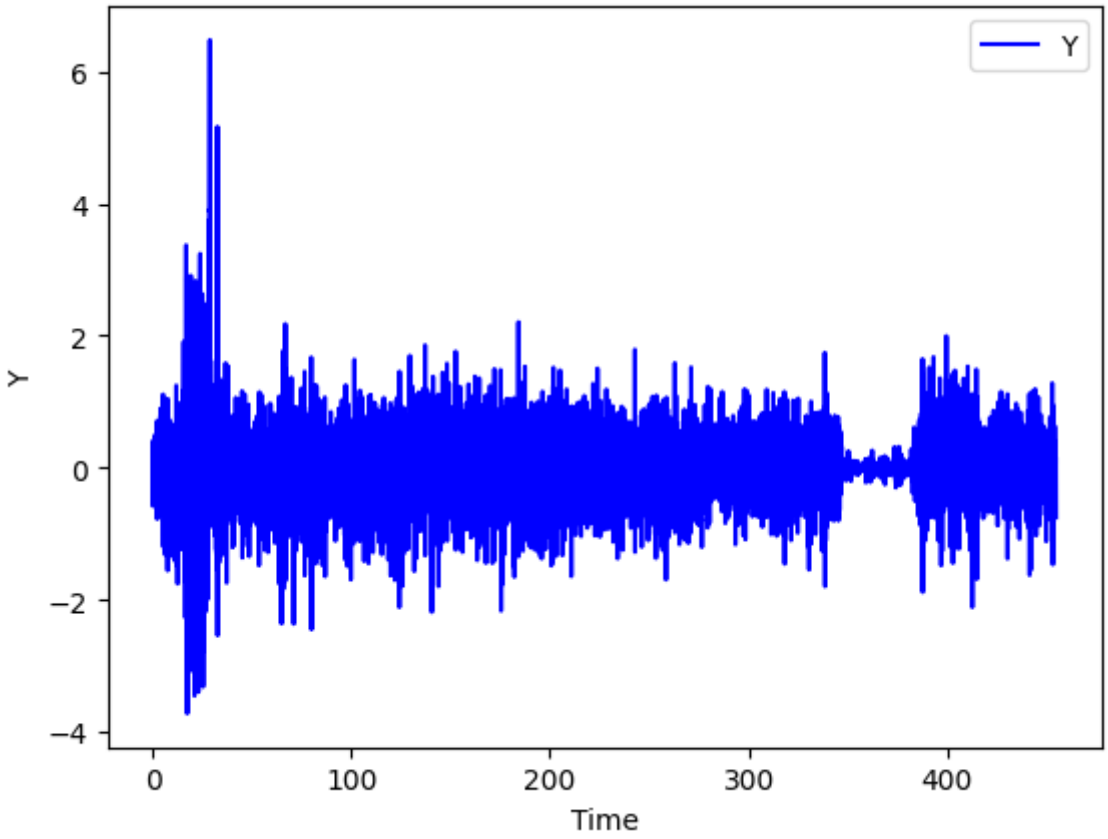
In [23]:
```
pl.plot(t,x,c='red')
pl.legend("X wrt Time")
pl.xlabel("Time")
pl.ylabel("X")
```

Out[23]:
```
Text(0, 0.5, 'X')
```



In [24]:
```
pl.plot(t,y,c='blue')
pl.legend("Y wrt Time")
pl.xlabel("Time")
pl.ylabel("Y")
```

Out[24]:
```
Text(0, 0.5, 'Y')
```



In [25]:
```
pl.plot(t,z,c='green')
pl.legend("Z wrt Time")
pl.xlabel("Time")
pl.ylabel("Z")
```

Out[25]:
```
Text(0, 0.5, 'Z')
```