visualize_roamm

October 2, 2020

[217]:
```
import pandas as pd
import numpy as np
import datetime
import os
import re
import matplotlib.pyplot as plt
```

[245]:
```
dir = "./../data/mock study/"
files = os.listdir(dir)
files_needed = []
```

[246]:
```
for file in files:
    if 'sensor' in file:
        files_needed.append(file)
files_needed = sorted(files_needed)
```

[247]:
```
# read all files and add them to one dataframe
data_list = []
for file in files_needed:
    data = pd.read_json("./../data/mock study/"+file)
    data_list.append(data)
data = pd.concat(data_list)
```

[248]:
```
# read time
# participant data
pData = pd.read_csv("./../data/participant.txt")
```

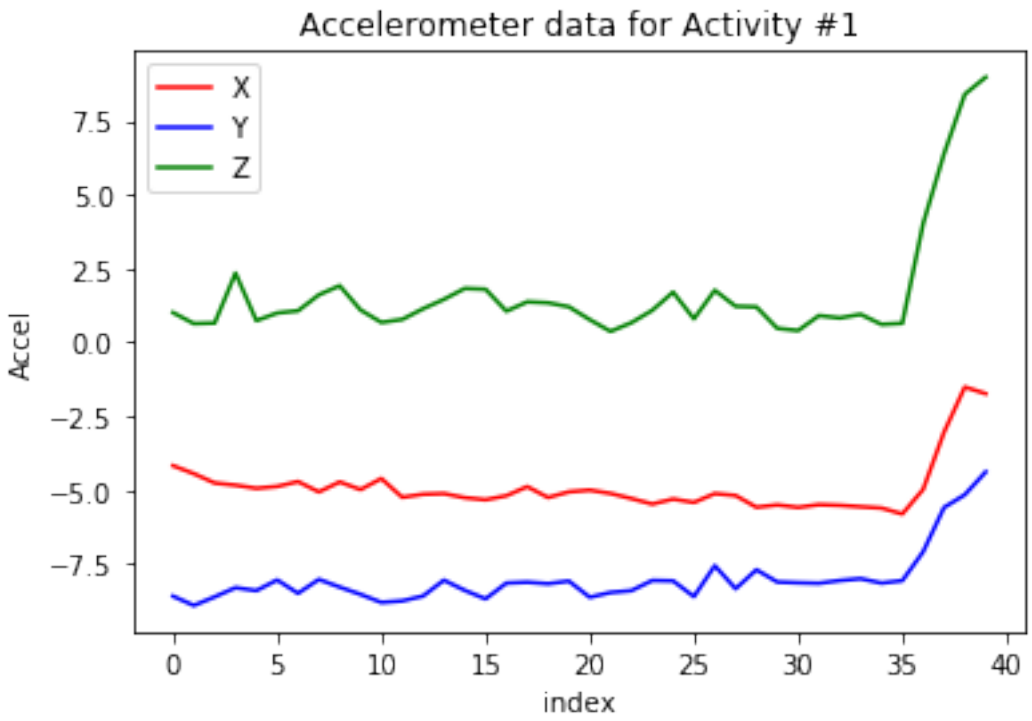
[249]:
```
# Given the input data, select certain period of data using start time and end␣
 ↪time
def selectPeriod(start, end, input):
    start = pd.to_datetime(start, format="%d/%m/%Y %H:%M:%S%z")
    end = pd.to_datetime(end, format="%d/%m/%Y %H:%M:%S%z")
    return input[(input['timestamp'] > start) & (input['timestamp'] <= end)].
 ↪copy()
```

[250]:
```
# create patient data by cropping time
data_list = []
```

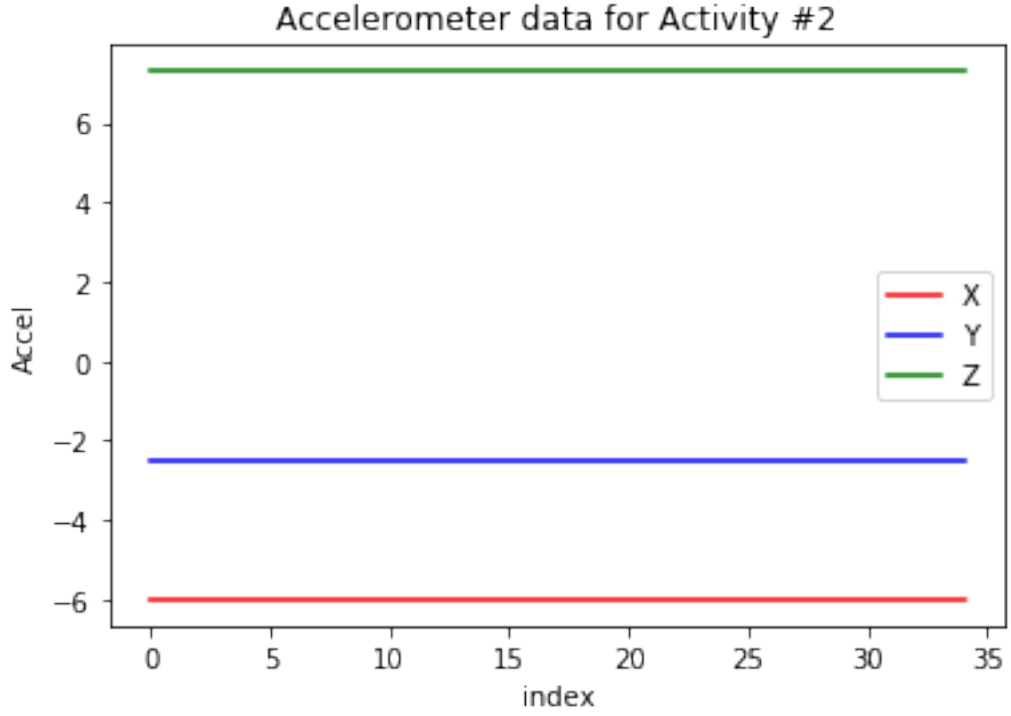
```
for i in range(pData.shape[0]):
    startTime = pData.iloc[i, 0]
    endTime = pData.iloc[i, 1]
    newData = selectPeriod(startTime, endTime, data)
    newData['ActivityNumber'] = pData.iloc[i, 2]
    data_list.append(newData)
# selected participant data
patData = pd.concat(data_list)
```

[251]:
```
def draw_plot(activity):
    x = patData.query("ActivityNumber == %d"%activity)['accelX']
    y = patData.query("ActivityNumber == %d"%activity)['accelY']
    z = patData.query("ActivityNumber == %d"%activity)['accelZ']

    index = [i for i in range(len(x))]

    plt.plot(index, x, 'r-', label='X')
    plt.plot(index, y, 'b-', label='Y')
    plt.plot(index, z, 'g-', label='Z')

    plt.title('Accelerometer data for Activity #%d'%activity)
    plt.xlabel('index')
    plt.ylabel('Accel')

    plt.legend()

    plt.show()
```

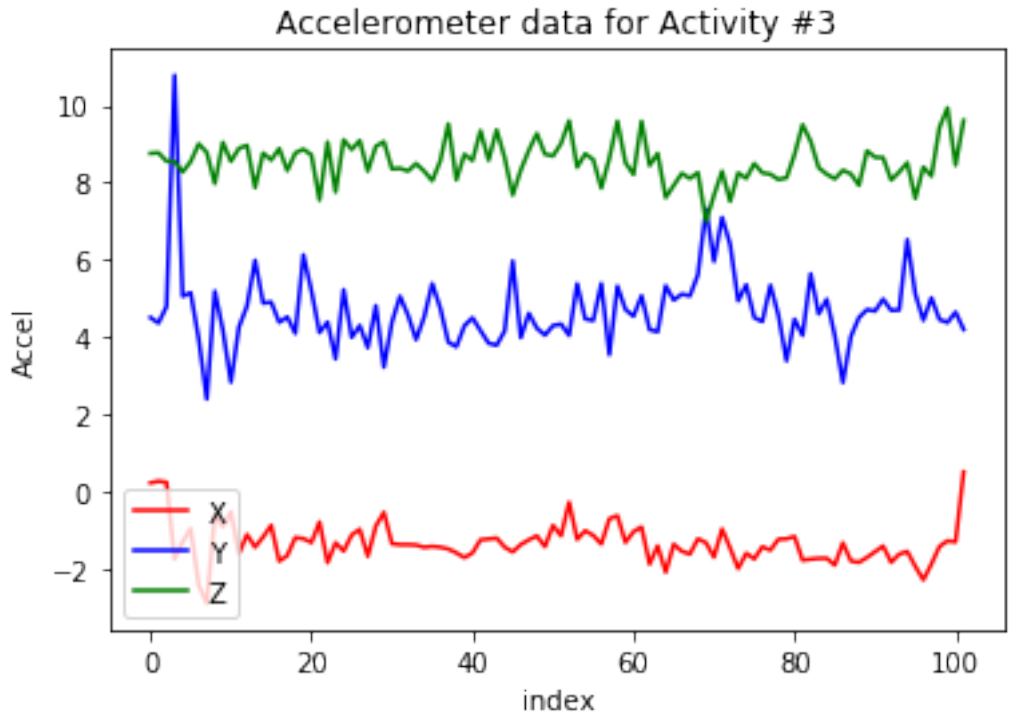
[252]:
```
draw_plot(1)
```



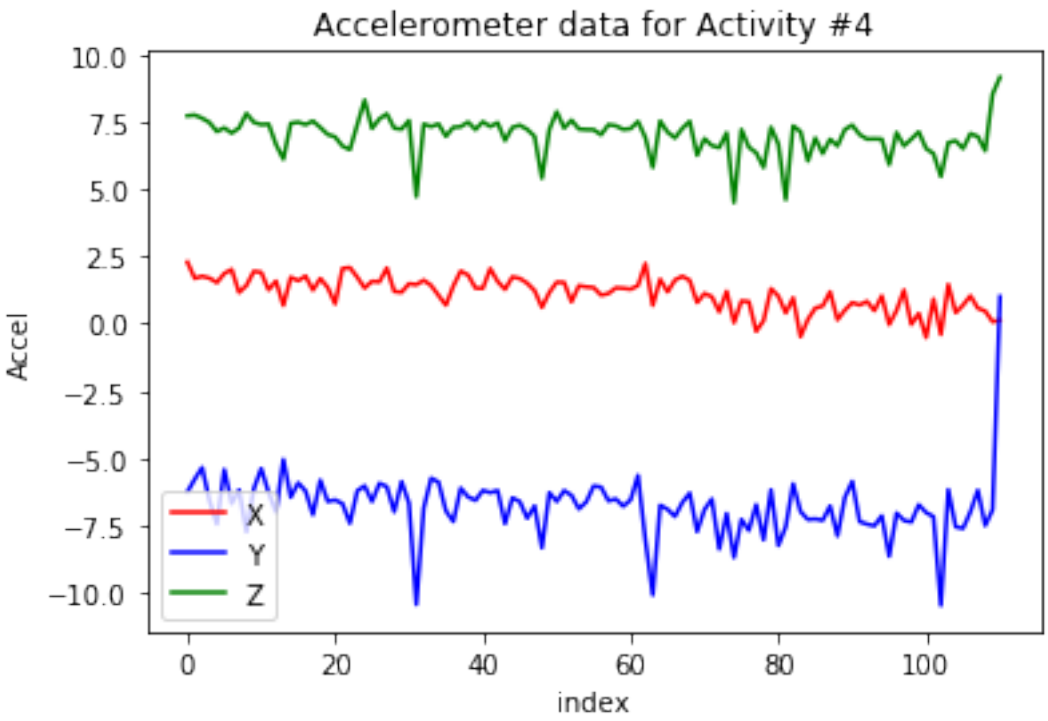
[253]:
```
draw_plot(2)
```



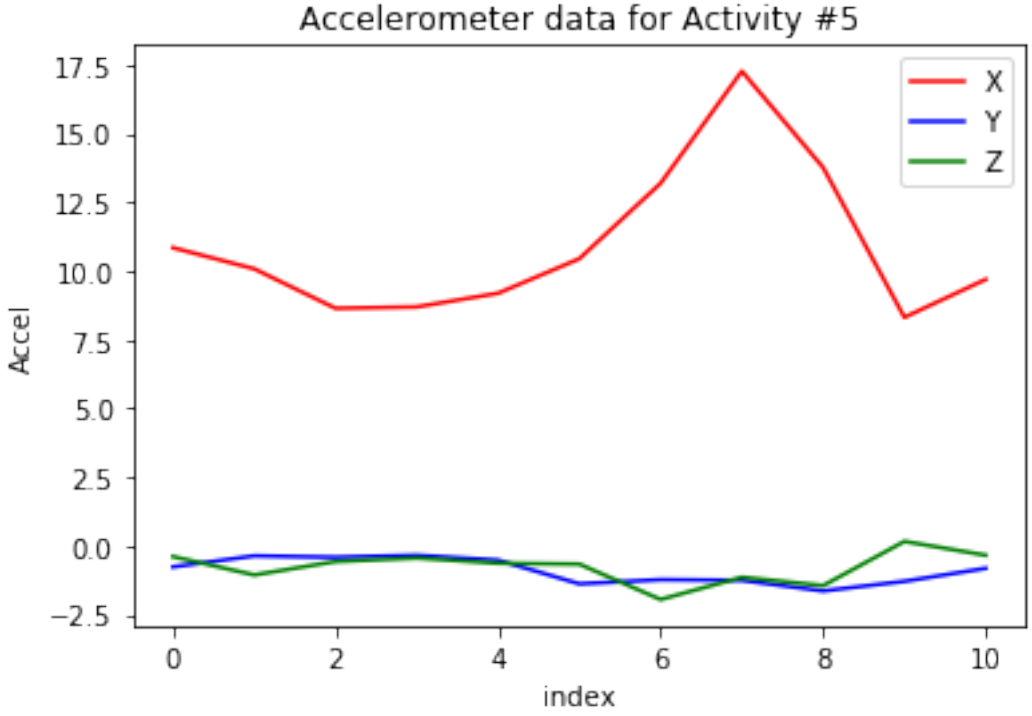
[254]:
```
draw_plot(3)
```



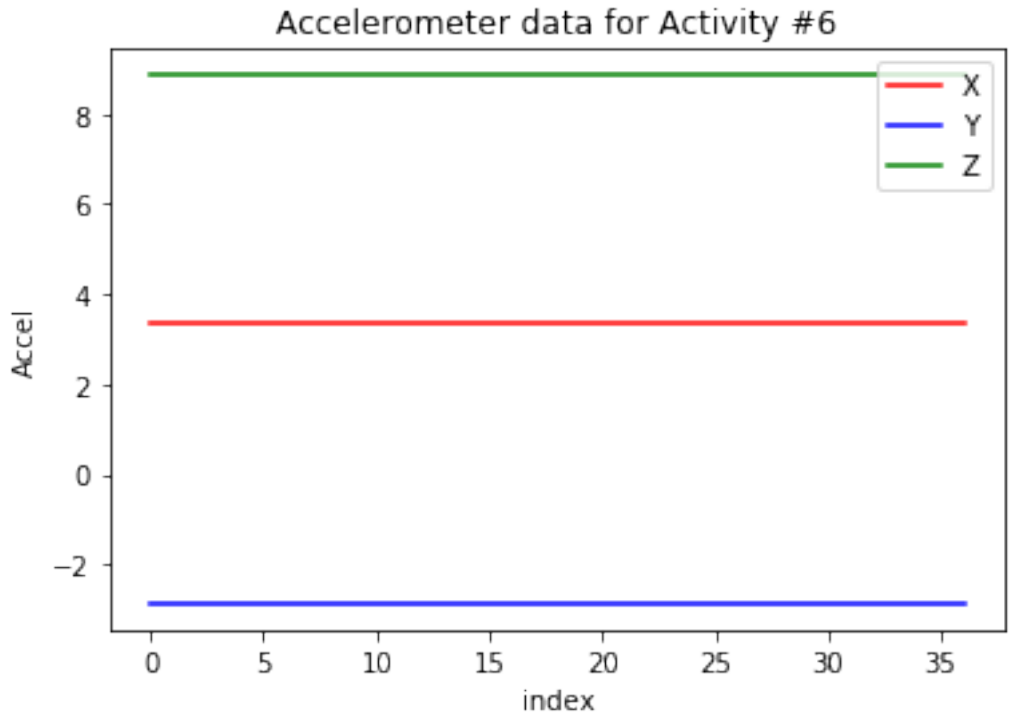
[255]:
```
draw_plot(4)
```



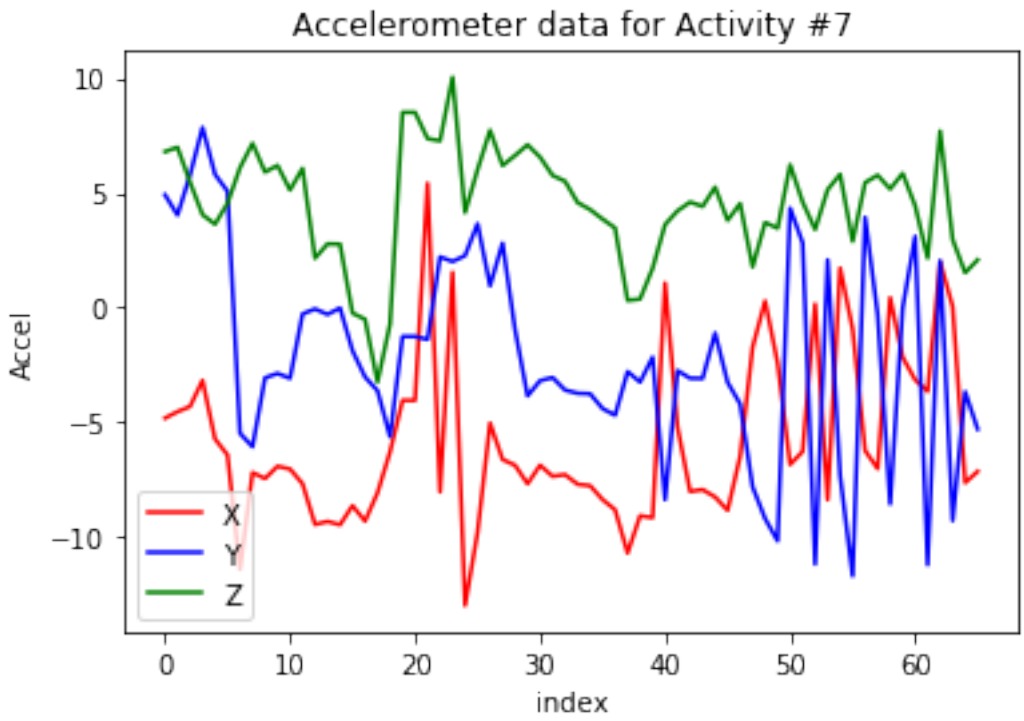
[256]:
```
draw_plot(5)
```



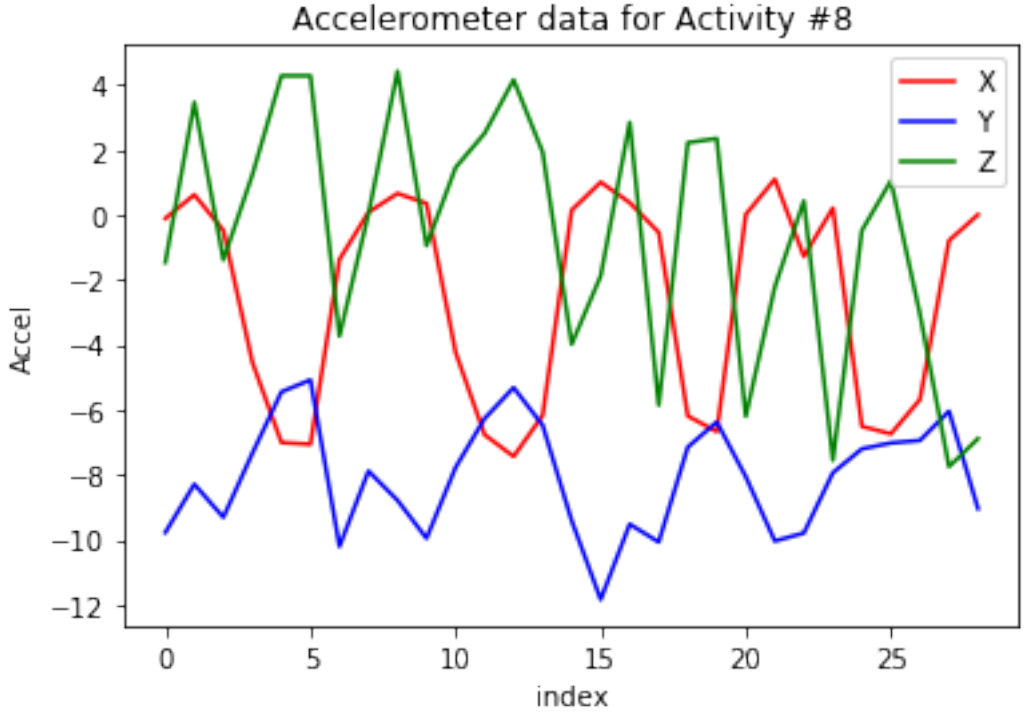
[257]:
```
draw_plot(6)
```



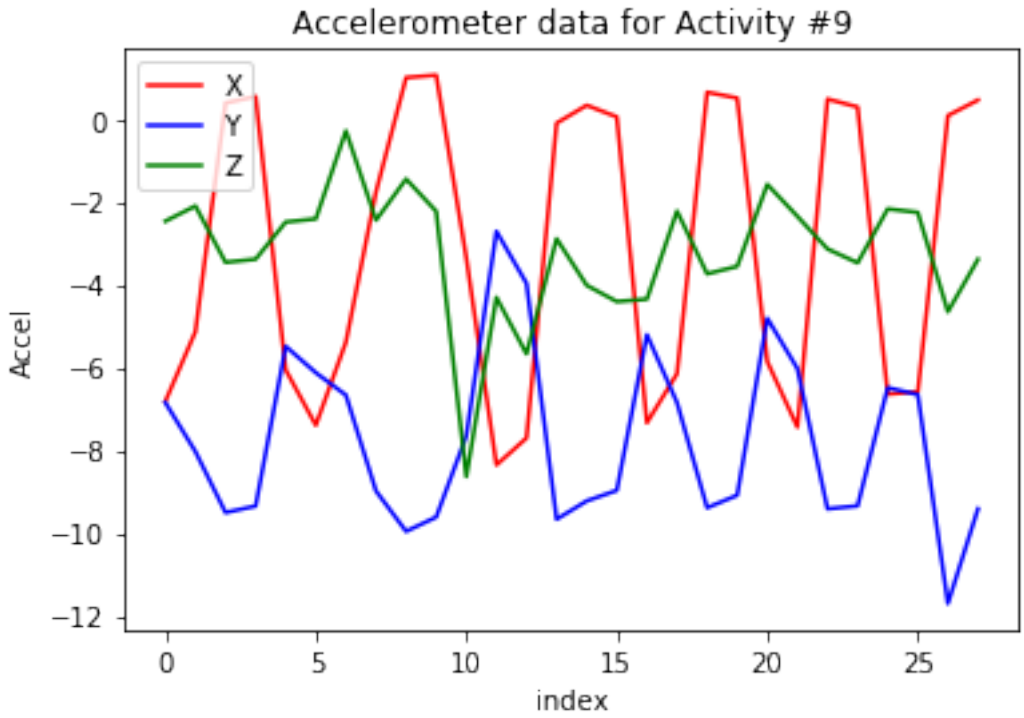
[258]:
```
draw_plot(7)
```



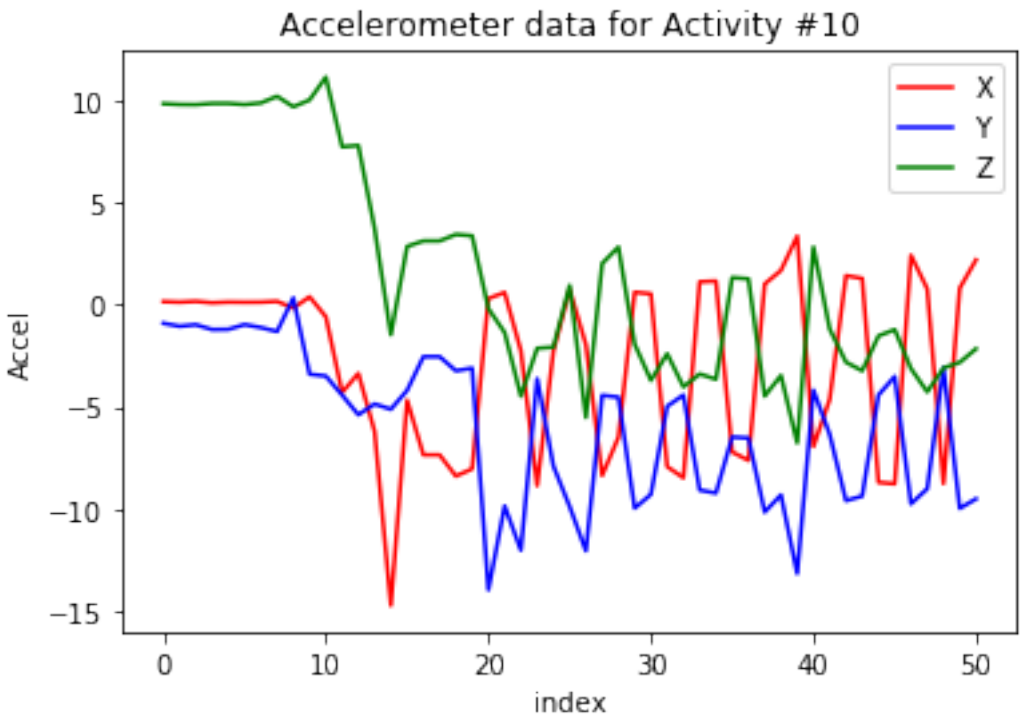
[259]:
```
draw_plot(8)
```



[260]:
```
draw_plot(9)
```



[261]:
```
draw_plot(10)
```


Accelerometer data for Activity #10
X
Y
Z
Accel
index
10
5
0
−5
−10
−15
0
10
20
30
40
50

[ ]: