In [10]:

```
import numpy as np
import scipy as sp
import pandas as pd
import matplotlib.pyplot as plt
import io
import urllib

url="https://earthquake.usgs.gov/fdsnws/event/1/query?format=csv&starttime=2016-01-01&endtime=2017-01-02&minmagnitude=4"
url_open = urllib.request.urlopen(url)
df=pd.read_csv(io.StringIO(url_open.read().decode('utf-8')), delimiter=',')

url2="https://earthquake.usgs.gov/fdsnws/event/1/query?format=csv&starttime=2017-01-02&endtime=2018-01-02&minmagnitude=4"
url_open2 = urllib.request.urlopen(url2)
df2=pd.read_csv(io.StringIO(url_open2.read().decode('utf-8')), delimiter=',')

url3="https://earthquake.usgs.gov/fdsnws/event/1/query?format=csv&starttime=2018-01-02&endtime=2019-01-02&minmagnitude=4"
url_open3 = urllib.request.urlopen(url3)
df3=pd.read_csv(io.StringIO(url_open3.read().decode('utf-8')), delimiter=',')
new_csv=pd.concat([df, df2,df3])

url4="https://earthquake.usgs.gov/fdsnws/event/1/query?format=csv&starttime=2019-01-02&endtime=2019-10-02&minmagnitude=4"
url_open4 = urllib.request.urlopen(url4)
df4=pd.read_csv(io.StringIO(url_open4.read().decode('utf-8')), delimiter=',')
new_csv=pd.concat([df, df2,df3,df4])

new_csv['year']= new_csv['time'].str.split('-').str[0]#not using yey
new_csv_1= new_csv[new_csv['year'] == '2016']
s=new_csv_1['mag']
m_max=new_csv_1['mag'].max()
bins=[4,4.5,5,6,7,m_max]
out = pd.cut(s, bins=bins, include_lowest=True)
ax = out.value_counts(sort=False).plot.bar(rot=0, color="b")
plt.ylabel("Magnitude range")
plt.xlabel("frequency")
plt.title("2016")
plt.show()

new_csv['year']= new_csv['time'].str.split('-').str[0]#not using yey
new_csv_2= new_csv[new_csv['year'] == '2017']
s=new_csv_2['mag']
m_max=new_csv_2['mag'].max()
bins=[4,4.5,5,6,7,m_max]
out = pd.cut(s, bins=bins, include_lowest=True)
ax = out.value_counts(sort=False).plot.bar(rot=0, color="r")
plt.ylabel("Magnitude range")
plt.xlabel("frequency")
plt.title("2017")
plt.show()

new_csv['year']= new_csv['time'].str.split('-').str[0]#not using yey
new_csv_3= new_csv[new_csv['year'] == '2018']
s=new_csv_3['mag']
m_max=new_csv_3['mag'].max()
bins=[4,4.5,5,6,7,m_max]
out = pd.cut(s, bins=bins, include_lowest=True)
ax = out.value_counts(sort=False).plot.bar(rot=0, color="b")
plt.ylabel("Magnitude range")
plt.xlabel("frequency")
plt.title("2018")
plt.show()

new_csv['year']= new_csv['time'].str.split('-').str[0]#not using yey
new_csv_4= new_csv[new_csv['year'] == '2019']
s=new_csv_4['mag']
m_max=new_csv_4['mag'].max()
bins=[4,4.5,5,6,7,m_max]
out = pd.cut(s, bins=bins, include_lowest=True)
ax = out.value_counts(sort=False).plot.bar(rot=0, color="r")
plt.ylabel("Magnitude range")
plt.xlabel("frequency")
plt.title("2019")
plt.show()
```