In [ ]:
```
#Task 1
import json
```

In [ ]:
```
#Option1
with open("Files_for_HW/gz_2010_us_050_00_20m.json", 'r') as f:
    data = json.load(f)
print('Number of Counties in US: {}'.format(len(data['features'])))
print(data['features'][1]['properties']['NAME'])
```

```
Number of Counties in US: 3221
Blount
```

In [ ]:
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# Option2: May not run. Check the online source.
import requests, json
url = "https://eric.clst.org/assets/wiki/uploads/Stuff/gz_2010_us_050_00_5m.json"

with requests.get(url) as response:
    data = response.json()
print('Number of Counties in US: ' + str(len(data['features'])))
print('First entry is {}'.format(data['features'][1]['properties']['NAME']))
```

```
Number of Counties in US: 3221
First entry is Wade Hampton
```

In [ ]:
```
# Task 2: Find the 3 most common names of the counties. (COUNTY NAME & STATE CODE)
```

In [ ]:
```
# ANSWER 1: WORK

#Create a dictionary
featureList = data['features']
cntyDict = {}

for f in featureList:
    dict_name = f['properties']['NAME']

    if cntyDict.get(dict_name) is None:
        cntyDict.update({dict_name:1})
    else:
        pass

#Create a list
featureList = data['features']
namelist = []

for f in featureList:
    county_name = f['properties']['NAME']
    namelist.append(county_name)

#Compare dictionary and list
for new_name in namelist:
    if new_name in cntyDict:
        cntyDict[new_name] +=1
    else:
        cntyDict[new_name] = 1

#Sort
sorted_new_list = sorted(cntyDict.items(), key=lambda x:x[1], reverse=True)
top_new_list = sorted_new_list[0:3]
converted_newdict = dict(top_new_list)

#Answer
print(converted_newdict)


#Find state code
#Washington
Washington_List = []

for f in featureList:
    dict_name2 = f['properties']['NAME']
    WA_code = f['properties']['STATE']

    if dict_name2 == "Washington":
        Washington_List.append(WA_code)
    else:
        pass

print(Washington_List)


#Franklin
Franklin_List = []

for f in featureList:
    dict_name2 = f['properties']['NAME']
    Frank_code = f['properties']['STATE']
```

```
    if dict_name2 == "Franklin":
        Franklin_List.append(Frank_code)
    else:
        pass

print(Franklin_List)


#Jefferson
Jefferson_List = []

for f in featureList:
    dict_name2 = f['properties']['NAME']
    Jeff_code = f['properties']['STATE']

    if dict_name2 == "Jefferson":
        Jefferson_List.append(Jeff_code)
    else:
        pass

print(Jefferson_List)
len(Jefferson_List)
```

```
{'Washington': 32, 'Franklin': 27, 'Jefferson': 27}
['08', '12', '05', '17', '19', '23', '24', '29', '47', '40', '41', '55', '49', '50', '
20', '18', '21', '27', '13', '01', '22', '16', '36', '37', '31', '28', '42', '39', '44
', '51', '48']
['13', '01', '18', '16', '21', '19', '28', '36', '48', '05', '12', '22', '23', '25', '
17', '20', '29', '47', '31', '37', '42', '39', '51', '51', '53', '50']
['17', '13', '19', '41', '08', '05', '12', '20', '21', '01', '22', '28', '16', '18', '
29', '47', '48', '36', '40', '31', '30', '42', '39', '54', '55', '53']
26
```

Out[ ]:

In [ ]:
```
#ANSWER 1: Formated Final Answer
for county2 in converted_newdict.keys():
  print(f"One of the three most common county names is {county2.title()}.")

print(f"\nStates that have the county name of Washington: {sorted(Washington_List)}")
print(f"States that have the county name of Franklin: {sorted(Franklin_List)}")
print(f"States that have the county name of Jefferson: {sorted(Jefferson_List)}")
```

```
One of the three most common county names is Washington.
One of the three most common county names is Franklin.
One of the three most common county names is Jefferson.

States that have the county name of Washington: ['01', '05', '08', '12', '13', '16', '
17', '18', '19', '20', '21', '22', '23', '24', '27', '28', '29', '31', '36', '37', '39
', '40', '41', '42', '44', '47', '48', '49', '50', '51', '55']
States that have the county name of Franklin: ['01', '05', '12', '13', '16', '17', '18
', '19', '20', '21', '22', '23', '25', '28', '29', '31', '36', '37', '39', '42', '47',
'48', '50', '51', '51', '53']
States that have the county name of Jefferson: ['01', '05', '08', '12', '13', '16', '1
7', '18', '19', '20', '21', '22', '28', '29', '30', '31', '36', '39', '40', '41', '42
', '47', '48', '53', '54', '55']
```

In [ ]:
```
# NOTES
# ANSWER 2

#Create a list
featureList = data['features']
namelist = []

for f in featureList:
    county_name = f['properties']['NAME']
    namelist.append(county_name)

#Define & use function
def countOccurrence(a):
  k = {}
  for j in a:
    if j in k:
      k[j] +=1
    else:
      k[j] =1
  return k

repeats = countOccurrence(namelist)

#Sort
sorted_repeats = sorted(repeats.items(), key=lambda x:x[1], reverse=True)
top_repeats = sorted_repeats[0:3]
converted_repeats = dict(top_repeats)

#Answer
print(converted_repeats)

for county in converted_repeats.keys():
  print(f"One of the three most common county names is {county.title()}.")

print(f"\nStates that have the county name of Washington: {sorted(Washington_List)}")
print(f"States that have the county name of Franklin: {sorted(Franklin_List)}")
print(f"States that have the county name of Jefferson: {sorted(Jefferson_List)}")
```

```
{'Washington': 31, 'Franklin': 26, 'Jefferson': 26}
One of the three most common county names is Washington.
One of the three most common county names is Franklin.
One of the three most common county names is Jefferson.

States that have the county name of Washington: ['01', '05', '08', '12', '13', '16', '
17', '18', '19', '20', '21', '22', '23', '24', '27', '28', '29', '31', '36', '37', '39
', '40', '41', '42', '44', '47', '48', '49', '50', '51', '55']
States that have the county name of Franklin: ['01', '05', '12', '13', '16', '17', '18
', '19', '20', '21', '22', '23', '25', '28', '29', '31', '36', '37', '39', '42', '47',
'48', '50', '51', '51', '53']
States that have the county name of Jefferson: ['01', '05', '08', '12', '13', '16', '1
7', '18', '19', '20', '21', '22', '28', '29', '30', '31', '36', '39', '40', '41', '42
', '47', '48', '53', '54', '55']
```

In [ ]:
```
#Notes
#Set
setlist = {}

setlist = set(namelist)
len(setlist)
```