

# Assignment 2

## Task 1:

- Read in a data file of all counties in US
- Make a list of unique county names

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

```
In [ ]: # 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 [ ]: # Make a list of unique county names

featureList = data['features']
namelist = []

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

setlist = set(namelist)
print(setlist)
```

{'Will', 'Sandusky', 'Buffalo', 'Hampden', 'Cowley', 'Montgomery', 'Colorado', 'Tioga', 'Wetzel', 'Hennepin', 'Whiteside', 'Tehama', 'Travis', 'Macomb', 'Ransom', 'Faulk', 'Bernalillo', 'Mower', 'Daviess', 'Harnett', 'Sharp', 'Hansford', 'Wood', 'Yakima', 'Middlesex', 'Bayamón', 'Dillon', 'North Slope', 'Klickitat', 'Reeves', 'Campbell', 'Eagle', 'Yadkin', 'Lampasas', 'Toa Baja', 'Trempealeau', 'Yabucoa', 'Gray', 'Ziebach', 'Guaynabo', 'Summers', 'Gosper', 'Leake', 'Schuyler', 'Chatham', 'Keokuk', 'Phillips', 'Jersey', 'Boyle', 'Brule', 'Ralls', 'Spokane', 'Hand', 'Wabaunsee', 'Nicholas', 'Tuscaloosa', 'Waukesha', 'Lander', 'Frederick', 'Muskegon', 'Caledonia', 'Barber', 'Hodgeman', 'Aitkin', 'Gibson', 'Toole', 'Quitman', 'Granville', 'Sweet Grass', 'St. Landry', 'Wicomico', 'Bamberg', 'Broome', 'St. Lawrence', 'Passaic', 'Providence', 'Pontotoc', 'Archer', 'Moore', 'Pacific', 'Petroleum', 'Ward', 'Mahnommen', 'Lenoir', 'Kit Carson', 'Northwest Arctic', 'Sabana Grande', 'Telfair', 'Andrew', 'Lewis', 'Otero', 'Bureau', 'Caddo', 'Morrow', 'Tipton', 'Pueblo', 'Sublette', 'Elk', 'Kitsap', 'Charlottesville', 'Davidson', 'Maury', 'Pierce', 'Grays Harbor', 'Wahkiakum', 'Mariposa', 'LaPorte', 'Raleigh', 'Greenwood', 'Waukhara', 'Christian', 'Racine', 'Starke', 'Amherst', 'Windham', 'McHenry', 'Collier', 'Covington', 'Tensas', 'New Madrid', 'Alexander', 'Emery', 'Sullivan', 'Wilson', 'Osborne', 'Grant', 'Powder River', 'Missoula', 'Salt Lake', 'Henderson', 'Hertford', 'McDonough', 'Yuba', 'Talladega', 'Tate', 'Treutlen', 'Palm Beach', 'San Jacinto', 'Bronx', 'Portsmouth', 'Major', 'Hot Spring', 'Fairfield', 'Baldwin', 'Bulloch', 'Bandera', 'Pointe Coupee', 'Washtenaw', 'Calumet', 'Burlington', 'Wharton', 'Tolland', 'Franklin', 'Gurabo', 'Minidoka', 'Gallatin', 'Lexington', 'Jones', 'Fulvanna', 'Floyd', 'Pratt', 'Mingo', 'Frontier', 'Owsley', 'Volusia', 'Somervell', 'Dixon', 'Orange', 'Burleigh', 'McCone', 'Childress', 'Gulf', 'Mayagüez', 'Idaho', 'Cowlitz', 'Walla Walla', 'Chickasaw', 'Blue Earth', 'Herkimer', 'Burt', 'Vieques', 'Pennington', 'Tift', 'Chattahoochee', 'Caribou', 'Saratoga', 'Genesee', 'Gage', 'Banner', 'Crisp', 'Milwaukee', 'Russell', 'Morris', 'Lapeer', 'Gregory', 'Kern', 'Fillmore', 'LaSalle', 'San Francisco', 'Dukes', 'Musselshell', 'Whatcom', 'Pottawattamie', 'Comerio', 'Cerro Gordo', 'Monroe', 'Atlantic', 'District of Columbia', 'St. Louis', 'Craighead', 'Fentress', 'Craig', 'Levy', 'Ramsey', 'Washoe', 'Traill', 'Bear Lake', 'Worth', 'Norfolk', 'Branch', 'Hood River', 'Southeast Fairbanks', 'Huerfano', 'Larue', 'Claiborne', 'Simpson', 'Seneca', 'Tarrant', 'Bartow', 'Dawson', 'Utah', 'Garland', 'Cheboygan', 'Cannon', 'Ringgold', 'Santa Clara', 'Lafayette', 'Grand Isle', 'Todd', 'Sheboygan', 'Dixie', 'Fond du Lac', 'Sierra', 'Nemaha', 'Conway', 'Lincoln', 'Shiawassee', 'Deaf Smith', 'LaGrange', 'Carteret', 'King and Queen', 'San Luis Obispo', 'Bonner', 'St. Charles', 'Schoolcraft', 'Swisher', 'McLeod', 'Stephens', 'Newberry', 'Camas', 'Aiken', 'Charlevoix', 'Sequatchie', 'Mineral', 'Porter', 'Riverside', 'Saunders', 'Fairfax', 'Isabella', 'Ceiba', 'Hamilton', 'Prentiss', 'Moffat', 'Hunterdon', 'Berks', 'Ascension', 'Spink', 'Lumpkin', 'Stonewall', 'Kerr', 'Wyandot', 'Little River', 'Cattaraugus', 'Buckingham', 'Howard', 'Arroyo', 'Cape Girardeau', 'Hormigueros', 'Hampshire', 'Allegan', 'Winneshiek', 'Baker', 'Snohomish', 'Pettis', 'Yates', 'Rockbridge', 'Strafford', 'Platte', 'Wibaux', 'Broomfield', 'Forrest', 'San Augustine', 'Aroostook', 'Calaveras', 'Ross', 'Emanuel', 'Canadian', 'Wapello', 'Robertson', 'Emmons', 'Sibley', 'Lee', 'Lucas', 'Yellow Medicine', 'McDowell', 'Spartanburg', 'Slope', 'Alfalfa', 'Tippicanoe', 'Valencia', 'Lamar', 'Swain', 'Willacy', 'Barnes', 'Richardson', 'Pecos', 'Hamblen', 'Box Butte', 'Hernando', 'Kanawha', 'Troup', 'Dakota', 'Tama', 'Concho', 'Malheur', 'Barranquitas', 'Chesapeake', 'McIntosh', 'New York', 'Lac qui Parle', 'King George', 'De Baca', 'Keya Paha', 'Chippewa', 'Hartley', 'Bolivar', 'Macoupin', 'Laurel', 'Conjos', 'Tazewell', 'Barceloneta', 'Klamath', 'Queens', 'Iowa', 'Rincon', 'Josephine', 'Kingsbury', 'La Plata', 'Power', 'Parke', 'Hart', 'Hickory', 'Androscoggin', 'Bledsoe', 'Mason', 'Harford', 'Carson City', 'Brookings', 'Shackelford', 'Glades', 'Limestone', 'Bradley', 'Glascock', 'Oceana', 'Webb', 'Bates', 'Allamakee', 'Geauga', 'Mobile', 'Santa Fe', 'Steele', 'Placer', 'Guthrie', 'Skamania', 'Tompkins', 'Mifflin', 'Mata gorda', 'Winchester', 'Obion', 'Nye', 'McCook', 'Newton', 'Marinette', 'Metcalfe', 'Citrus', 'Bowie', 'Columbiana', 'Mackinac', 'Duplin', 'Jo Daviess', 'Pipestone', 'Presque Isle', 'Calhoun', 'Real', 'Hutchinson', 'Fall River', 'Thurston', 'Albemarle', 'Alleghany', 'Bailey', 'Rosebud', 'Wagoner', 'Baxter', 'Tooele', 'Pembina', 'Chase', 'Huntington', 'Las Animas', 'Tripp', 'Manassas Park', 'Callaway', 'Tishomingo', 'St. Martin', 'Menominee', 'Towner', 'Brazoria', 'Talbot', 'Delaware', 'Blackford', 'Merced', 'Huntingdon', 'Cooke', 'Montague', 'Karnes', 'Socorro', 'Day', 'Grundy', 'Presidio', 'Hood', 'Winona', 'Iosco', 'Piscataquis', 'New Castle', 'Howell', 'Linn', 'McKinley', 'Den

t', 'Grand', 'Pickett', 'Arkansas', 'Poinsett', 'Cumberland', 'Leelanau', 'Fremont', 'Cocke', 'Evans', 'Jessamine', 'Charlotte', 'Kearny', 'Dunklin', 'Teller', 'Cloud', 'Charleston', 'Hendry', 'Oklahoma', 'Allen', 'Baltimore', 'Menifee', 'East Feliciana', 'Berkshire', 'Hall', 'Gadsden', 'Hocking', 'St. Clair', 'Meeker', 'Belmont', 'Nevada', 'Essex', 'Kimball', 'Stark', 'Bourbon', 'Beltrami', 'Taney', 'McLean', 'Aurora', 'Lanier', 'Sheridan', 'Bland', 'Asotin', 'Price', 'Newaygo', 'Prince of Wales-Hyder', 'Vermilion', 'Carolina', 'Hardee', 'La Salle', 'Big Stone', 'Outagamie', 'Scott', 'Guernsey', 'Divide', 'West Baton Rouge', 'Northampton', 'Pendleton', 'Cottle', 'Terrebonne', 'Winston', 'Langlade', 'Arecibo', 'Kenosha', 'Ada', 'Onondaga', 'Clackamas', 'Miller', 'Tippah', 'San Saba', 'Siskiyou', 'Conecuh', 'Piatt', 'Sandoval', 'Traverse', 'Prince George', 'Cache', 'Wabash', 'Calloway', 'Ashe', 'Skagway', 'Jay', 'Knox', 'Okaloosa', 'Hooker', 'Grady', 'Randolph', 'Lancaster', 'Suffolk', 'Sussex', 'Wilkes', 'Saginaw', 'Blaine', 'Dinwiddie', 'Ritchie', 'Torrance', 'San Diego', 'Richland', 'Lares', 'Westchester', 'Broward', 'Whitman', 'Perquimans', 'Botetourt', 'Sitka', 'Clarke', 'Schley', 'Atchison', 'Sampson', 'Hopkins', 'Leavenworth', 'Ocean', 'Marion', 'Wells', 'Bacon', 'Gilpin', 'Sanilac', 'Benton', 'Kimble', 'Bay', 'Garfield', 'Livingston', 'Desha', 'Clarendon', 'Rains', 'Roosevelt', 'Ravalli', 'Ingham', 'Red Lake', 'Manatee', 'Cross', 'Haines', 'Arlington', 'Donley', 'Ford', 'White Pine', 'McMullen', 'Williams', 'Beaver', 'Autauga', 'De Witt', 'Daniels', 'Clear Creek', 'Falls Church', 'Davis', 'Moultrie', 'Laurens', 'Jefferson Davis', 'Jerauld', 'St. Mary', 'Schoharie', 'Cobb', 'Crook', 'Juncos', 'Gunnison', 'Habersham', 'Garvin', 'Mayes', 'Nez Perce', 'Miner', 'Maunabo', 'Holmes', 'Searcy', 'Wyandotte', 'Jeff Davis', 'Yamhill', 'Lehigh', 'Gila', 'Garden', 'Itasca', 'Moody', 'Lubbock', 'Frio', 'Rush', 'Isanti', 'Las Piedras', 'Grafton', 'Stokes', 'Coles', 'Charles', 'Sanborn', 'Yakutat', 'Oneida', 'Boise', 'Horry', 'Greenville', 'Luna', 'El Dorado', 'Duchesne', 'Dewey', 'Davison', 'Upson', 'Gentry', 'Elliott', 'Pepin', 'Candler', 'Rich', 'Anderson', 'Loup', 'Kossuth', 'Somerset', 'Corozal', 'Mohave', 'Nowata', 'Sangamon', 'Avoyelles', 'Williamsburg', 'Bennett', 'Perry', 'Green Lake', 'Harlan', 'Stoddard', 'Heard', 'Lipscomb', 'Tom Green', 'Lane', 'Humphreys', 'Carlton', 'Twin Falls', 'Culebra', 'Stanton', 'Clayton', 'Carlisle', 'Juniata', 'DeKalb', 'Osceola', 'Turner', 'Hinds', 'Blount', 'Ouachita', 'Maricopa', 'Sully', 'Beadle', 'Andrews', 'Brevard', 'Trimble', 'Vernon', 'Ray', 'Reagan', 'Windsor', 'Rawlins', 'Clare', 'Trujillo Alto', 'Humboldt', 'Yavapai', 'Oktibbeha', 'Blanco', 'Meagher', 'Hudspeth', 'Gooding', 'Shasta', 'Buchanan', 'Brazos', 'Posey', 'Knott', 'Tyrrell', 'Monongalia', 'Sabine', 'Cook', 'Wheeler', 'Runnels', 'Okmulgee', 'Macon', 'Pittsylvania', 'Yalobusha', 'Lackawanna', 'Hale', 'Reynolds', 'Loudoun', 'Kalawao', 'Oregon', 'Juana Diaz', 'Calcasieu', 'Kleberg', 'Fauquier', 'Bottineau', 'Napa', 'Staunton', 'Gem', 'Colonial Heights', 'Vigo', 'Pima', 'Currituck', 'Roanoke', 'Grayson', 'Lynn', 'Aibonito', 'Anchorage', 'Lorain', 'Mecklenburg', 'Georgetown', 'Cochise', 'King', 'Chemung', 'Codington', 'Henry', 'Olmsted', 'Cimarron', 'Buena Vista', 'Hockley', 'Sanpete', 'Liberty', 'Dolores', 'Camp', 'Bent', 'Summit', 'Glasscock', 'Kings', 'McMinn', 'Kittitas', 'Spotsylvania', 'Chautauqua', 'Wasatch', 'Miami', 'Woodson', 'Aransas', 'Rooks', 'Nueces', 'Harrison', 'Indiana', 'Collingsworth', 'Briscoe', 'Dallas', 'Bristol', 'Jim Hogg', 'Stillwater', 'Tulare', 'Cullman', 'Bryan', 'Judith Basin', 'Big Horn', 'Wake', 'Ferry', 'Ness', 'Isabela', 'Chenango', 'Sharkey', 'Maries', 'Jayuya', 'Gwinnett', 'Patrick', 'Cecil', 'Whitley', 'Martin', 'Kershaw', 'Love', 'Payne', 'Shawnee', 'Charles City', 'Luce', 'Sonoma', 'Weston', 'Screven', 'Sumter', 'Erath', 'Stone', 'Vance', 'Dutchess', 'Cambria', 'Monona', 'Bladen', 'Harmon', 'Caroline', 'Natrona', 'Coal', 'Latimer', 'Grenada', 'Hoke', 'DeWitt', 'Yoakum', 'Audubon', 'Llano', 'Powell', 'Trinity', 'Darlington', 'San Patricio', 'Kiowa', 'Kootenai', 'Sequoyah', 'Cabarrus', 'Fulton', 'Allegany', 'Coffey', 'Hawaii', 'Mesa', 'Freeborn', 'Saguache', 'Edmonson', 'Cheshire', 'Amite', 'Independence', 'DeSoto', 'Alcorn', 'Coweta', 'Park', 'Iberia', 'Rio Grande', 'Rice', 'Routt', 'Solano', 'Tangipahoa', 'Tucker', 'Letcher', 'Parker', 'East Baton Rouge', 'Pitkin', 'Rowan', 'Salem', 'Stephenson', 'Twiggs', 'Litchfield', 'Trego', 'Lassen', 'Fairbanks North Star', 'Toombs', 'Berkeley', 'St. Croix', 'Berrien', 'Overton', 'Stearns', 'Osage', 'Finney', 'Brooke', 'Suwannee', 'Hatillo', 'Gilchrist', 'Manat', 'Creek', 'Ohio', 'Roane', 'Licking', 'Zapata', 'Deschutes', 'Cottonwood', 'Spalding', 'Rockwall', 'Cotton', 'McCracken', 'Oswego', 'Plymouth', 'Onslow', 'Tyler', 'Daggett', 'Bennington', 'Kenedy', 'Waynesboro', 'Hayes', 'Hudson', 'Johnston', 'Colleton', 'Crow Wing', 'Red River', 'Tattnall', 'Hillsdale', 'Stanislaus', 'Alpine', 'Hopewell', 'Iredell', 'Mille Lacs', 'Neshoba', 'Walworth', 'Snyder', 'Morton', 'Ontonagon', 'Bell', 'Kenn

ebec', 'Walthall', 'Leslie', 'Arenac', 'Antrim', 'Quebradillas', 'Dickinson', 'Washbur  
 n', 'Maverick', 'Upshur', 'Randall', 'Dodge', 'Evangeline', 'Cuming', 'Watsonwan', 'Cha  
 riton', 'Carter', 'Brown', 'West Feliciana', 'Lea', 'Marshall', 'Tallahatchie', 'Maui  
 ', 'Accomack', 'La Crosse', 'Door', 'Cameron', 'Bollinger', 'Moca', 'Deuel', 'Highland  
 s', 'Jasper', 'Huron', 'Harney', 'Stewart', 'Cascade', 'Warren', 'Trigg', 'Waldo', 'Sh  
 erburne', 'Niobrara', 'Washita', 'Benson', 'Refugio', 'Kendall', 'Goshen', 'Hettinger  
 ', 'Mahaska', 'Forsyth', 'Owyhee', 'Dickenson', 'Salinas', 'Columbus', 'Mono', 'Kemper  
 ', 'Bingham', 'Atascosa', 'Coke', 'Shawano', 'Umatilla', 'Dickey', 'Nance', 'Greeley',  
 'Lebanon', 'Cavalier', 'Contra Costa', 'Muhlenberg', 'Panola', 'Angelina', 'Butte', 'R  
 o Grande', 'Hardeman', 'Del Norte', 'Decatur', 'Neosho', 'Clatsop', 'Barnwell', 'Sta  
 rr', 'Drew', 'Yuma', 'Valley', 'Story', 'Apache', 'Jefferson', 'Hamlin', 'Sterling', '  
 Stevens', 'Greenup', 'Rio Blanco', 'Boone', 'Estill', 'Dooly', 'Edmunds', 'Charlton',  
 'Los Alamos', 'Ector', 'Yellowstone', 'Naguabo', "Queen Anne's", 'Bergen', 'Kalkaska',  
 'Clarion', 'Wayne', 'Faulkner', 'Dimmit', 'Buncombe', 'Gates', 'San Sebasti  
 n', 'Gran  
 ite', 'Morehouse', 'Hickman', 'Oliver', 'Hanover', 'Grand Traverse', 'Johnson', 'Jewel  
 l', 'Dearborn', 'Texas', 'Oldham', 'Cibola', 'Greene', 'Mecosta', 'Pasco', 'Rockdale',  
 'Charles Mix', 'Gu  
 nica', 'Aguas Buenas', 'Centre', 'Powhatan', 'Shelby', 'Fresno', '  
 Cleveland', 'San Lorenzo', 'Baca', 'Coahoma', 'Winn', 'Plaquemines', 'Kodiak Island',  
 'Venango', 'Juab', 'Petersburg', 'Mountrail', 'Gaston', 'Galveston', 'Wrangell', 'Jim  
 Wells', 'Luquillo', 'Morovis', 'Archuleta', 'Wichita', 'Fisher', 'Carroll', 'Parmer',  
 'Natchitoches', 'Young', 'Guilford', 'Steuben', 'Elbert', 'Houghton', 'Collin', 'Becke  
 r', 'New Hanover', 'Cole', 'Acadia', 'Crittenden', 'Cleburne', 'Garrard', 'Woodford',  
 'Keith', 'Webster', 'George', 'St. Francois', 'O'Brien', 'Jennings', 'Monterey', 'Wirt  
 ', 'Kearney', 'Abbeville', 'Moniteau', 'Greenbrier', 'Golden Valley', 'Sac', 'Leon', '  
 Honolulu', 'Woods', 'Choctaw', 'Lamb', 'Vermillion', 'Midland', 'Barrow', 'Greer', 'Fl  
 orencia', 'Lycoming', 'McDonald', 'Pottawatomie', 'Surry', 'Dickens', 'Colusa', 'Chicot  
 ', 'Flagler', 'Adjuntas', 'Upton', 'Newport', 'Hidalgo', 'Ozaukee', 'Terry', 'Fannin',  
 'Edgefield', 'Corson', 'Calvert', 'Kent', 'Do  
 a Ana', 'McKenzie', 'Goodhue', 'Hartfor  
 d', 'Modoc', 'Kittson', 'Naranjito', 'Ida', 'Cabell', 'Wasco', 'Clermont', 'Caguas', '  
 Caswell', 'Ottawa', 'Le Flore', 'Broadwater', 'Kenton', 'Westmoreland', 'Pondera', 'Pi  
 ckens', 'Otsego', 'Bradford', 'Richmond', 'Victoria', 'Pamlico', 'Pinellas', 'Glenn',  
 'Harper', 'Tuscola', 'Saline', 'Yankton', 'Dorado', 'Juneau', 'Dawes', 'Ware', 'Hoonah  
 -Angoon', 'San Joaquin', 'Duval', 'Davie', 'Carver', 'Yazoo', 'Banks', 'Hanson', 'New  
 London', 'Cedar', 'Harvey', 'Thayer', 'Waller', 'Waupaca', 'Casey', 'Cidra', 'Keweenaw  
 ', 'Bon Homme', 'Lo  
 za', 'Peach', 'Multnomah', 'Sauk', 'Jack', 'Wheatland', 'Ketchika  
 n Gateway', 'Irion', 'Nacogdoches', 'Lenawee', 'Pershing', 'Bastrop', 'Tillamook', 'Al  
 eutians West', 'Bleckley', 'Albany', 'Marlboro', 'Camden', 'Ogemaw', 'Cheatham', 'Ante  
 lope', 'Kay', 'Cata  
 o', 'Wise', 'El Paso', 'Brewster', 'Defiance', 'Culpeper', 'Burne  
 tt', 'Minnehaha', 'Holt', 'Lawrence', 'Beauregard', 'Rock Island', 'McCulloch', 'Catoo  
 sa', 'Paulding', 'Chittenden', 'Arthur', 'Sevier', 'Unicoi', 'Gove', 'Hubbard', 'Weakl  
 ey', 'Nome', 'Gasconade', 'Colfax', 'Gonzales', 'Sutton', 'Vinton', 'Nelson', 'Fajardo  
 ', 'Madera', 'Chowan', 'Callahan', 'Stutsman', 'Lemhi', 'Florida', 'Lake of the Woods  
 ', 'Potter', 'Pittsburg', 'Motley', 'Baraga', 'Highland', 'Okeechobee', 'Ozark', 'Glyn  
 n', 'King William', 'Yukon-Koyukuk', 'Red Willow', 'Lynchburg', 'Dale', 'Burleson', 'C  
 onverse', 'Cape May', 'Denver', 'Chelan', 'Latah', 'DuPage', 'Armstrong', 'Comal', 'In  
 dian River', 'Newport News', 'Terrell', 'Martinsville', 'Taliaferro', 'Gilliam', 'Dade  
 ', 'Carbon', 'Alexandria', 'Kosciusko', 'Inyo', 'Wabasha', 'Burke', 'Gillespie', 'Niag  
 ara', 'Breathitt', 'Schenectady', 'Noxubee', 'Wade Hampton', 'Dyer', 'Roseau', 'Robert  
 s', 'Putnam', 'Weber', 'Bucks', 'Page', 'Garrett', 'Emmet', 'Weld', 'Greenlee', 'Susqu  
 ehanna', 'Okfuskee', 'Morrill', 'Dillingham', 'Coamo', 'Danville', 'Durham', 'Ionia',  
 'Lonoke', 'Santa Cruz', 'Issaquena', 'Guayanilla', 'Orocovis', 'Eaton', 'Lowndes', 'Cl  
 ay', 'Rock', 'Bethel', 'Gloucester', 'Bond', 'Thomas', 'Chisago', 'Yolo', 'Amador', 'V  
 al Verde', 'Humacao', 'Falls', 'Milam', 'Merrick', 'Boulder', 'Wright', 'Lewis and Cla  
 rk', 'Santa Isabel', 'Clallam', 'Bremer', 'Kauai', 'Butler', 'Montour', 'Rabun', 'McPh  
 erson', 'Hughes', 'Kenai Peninsula', 'Bexar', 'Borden', 'Goliad', 'Sagadahoc', 'Barron  
 ', 'Hawkins', 'Meigs', 'Appomattox', 'Manitowoc', 'Los Angeles', 'Millard', 'Kaufman',  
 'Rio Arriba', 'Wallace', 'Lunenburg', 'Clark', 'St. John the Baptist', 'Nottoway', 'Sa  
 n Miguel', 'Bienville', 'Irwin', 'San Germ  
 n', 'Manistee', 'Pleasants', 'Muscogee', '  
 Avery', 'Prince William', 'Dane', 'Belknap', 'Waseca', 'Woodruff', 'Houston', 'Kingman  
 ', 'Scioto', 'Throckmorton', 'Cass', 'Tillman', 'Live Oak', 'Anson', 'Cooper', 'Adams

, 'Rutland', 'Sioux', 'Coconino', 'Teton', 'Nicollet', 'Fredericksburg', 'Cochran', 'Eddy', 'Preble', 'Sarpy', 'Lyman', 'Baylor', 'Shannon', 'Montezuma', 'Washington', 'Pike', 'Comanche', 'Sweetwater', 'Norton', 'Harris', 'Morgan', 'Stanly', 'Camuy', 'Halifax', 'Ochiltree', 'Boyd', 'Stafford', 'Sarasota', 'St. Francis', 'Sanders', 'Galax', 'Transylvania', 'Switzerland', 'Rockland', 'Alachua', 'Bullock', 'Dickson', 'Smyth', 'Harrisonburg', 'Wilkinson', 'Laramie', 'Walton', 'Fallon', 'Dorchester', 'Manassas', 'Crockett', 'McLennan', 'Colquitt', 'Wadena', 'Alamance', 'Bristol Bay', 'Columbia', 'Beckham', 'Loudon', 'Treasure', 'Koochiching', 'Cayuga', 'Deer Lodge', 'Cuyahoga', 'Gordon', 'Nodaway', 'Iroquois', 'Renville', 'Hillsborough', 'Medina', 'Saluda', 'Brantley', 'Pawnee', 'McNairy', 'Hampton', 'Sebastian', 'Prince George's', 'Sumner', 'Brooks', 'Leflore', 'Alameda', 'Butts', 'Lavaca', 'Beaverhead', 'Meade', 'Scotts Bluff', 'Clearfield', 'Oconto', 'Vanderburgh', 'Williamson', 'La Paz', 'St. Mary's', 'Wilcox', 'Walker', 'Grand Forks', 'Rutherford', 'Mahoning', 'Iberville', 'Elkhart', 'Walsh', 'Northumberland', 'Plumas', 'Guadalupe', 'Oxford', 'Elko', 'Marathon', 'Imperial', 'Haakon', 'Perkins', 'Orangeburg', 'Loving', 'Gaines', 'Haskell', 'Marengo', 'Boundary', 'Magoffin', 'Lake', 'Riley', 'Freestone', 'St. James', 'Washakie', 'Bath', 'Chilton', 'Elmore', 'Amelia', 'Canyon', 'Green', 'Emporia', 'Giles', 'Bee', 'Haralson', 'Billings', 'Taos', 'Southampton', 'Person', 'Island', 'Union', 'Watauga', 'Brunswick', 'Ballard', 'Mitchell', 'Addison', 'Pine', 'Nassau', 'Bossier', 'Clearwater', 'Labette', 'Douglas', 'Bowman', 'Penobscot', 'Ciales', 'Seminole', 'Radford', 'Wilbarger', 'Roscommon', 'Graves', 'Bartholomew', 'Massac', 'Pequeuelas', 'Graham', 'Okanogan', 'Champaign', 'Cherry', 'Morrison', 'Piute', 'San Mateo', 'San Juan', 'Pickaway', 'Owen', 'Yell', 'Pope', 'Chambers', 'Alcona', 'Doddridge', 'Appling', 'Prairie', 'Wilkin', 'Cortland', 'Seward', 'Ashland', 'Curry', 'Schleicher', 'St. Tammany', 'Bosque', 'Yauco', 'Uintah', 'Stanley', 'Fergus', 'Geary', 'Foster', 'Van Zandt', 'Isle of Wight', 'Sedgwick', 'Black Hawk', 'Missaukee', 'Muskogee', 'Navajo', 'Itawamba', 'Monmouth', 'Fort Bend', 'Worcester', 'Eastland', 'Barbour', 'Montmorency', 'Delta', 'Ben Hill', 'Appanoose', 'Eau Claire', 'Churchill', 'McClain', 'Sacramento', 'Woodbury', 'Hinsdale', 'Coffee', 'Lajas', 'Republic', 'New Haven', 'Troups', 'Nolan', 'Ponce', 'Custer', 'Haywood', 'Dubois', 'McDuffie', 'Blair', 'Fayette', 'Rensselaer', 'Otoe', 'Dubuque', 'Poquoson', 'Winkler', 'Anne Arundel', 'Coos', 'Mendocino', 'Otter Tail', 'Wythe', 'Meriwether', 'Dare', 'Marin', 'Barry', 'Pend Oreille', 'Cayey', 'Catron', 'Payette', 'Greenville', 'Pasquotank', 'Concordia', 'Ellsworth', 'Augusta', 'Etowah', 'Palo Alto', 'Aguadilla', 'St. Bernard', 'Wallowa', 'Hancock', 'Logan', 'Ouray', 'Culberson', 'New Kent', 'Dallam', 'Gladin', 'Denali', 'Villalba', 'Quay', 'Furnas', 'Van Wert', 'Pulaski', 'Chattooga', 'Crenshaw', 'Burnet', 'Castro', 'Grimes', 'Ashley', 'Iron', 'Erie', 'Titus', 'Foard', 'San Bernardino', 'Montrose', 'Lauderdale', 'Reno', 'Bibb', 'Murray', 'Alpena', 'Athens', 'Pitt', 'Canavanas', 'Nuckolls', 'Coshocton', 'Muscatine', 'Griggs', 'Chester', 'Hyde', 'Gratiot', 'Uinta', 'Cassia', 'Barton', 'Santa Rosa', 'Beaufort', 'Utah', 'Ste. Genevieve', 'Rockingham', 'Hardin', 'Sawyer', 'Pearl River', 'James City', 'Kankakee', 'Toa Alta', 'Jerome', 'St. Helena', 'Garza', 'Flathead', 'Rusk', 'Lyon', 'Coosa', 'Colbert', 'Sherman', 'Crosby', 'St. Lucie', 'Alamosa', 'Forest', 'Costilla', 'Geneva', 'Escambia', 'Kingfisher', 'Pushmataha', 'Ontario', 'LaMoore', 'Portage', 'Goochland', 'Caldwell', 'Polk', 'Lamoille', 'York', 'Nantucket', 'Bracken', 'Atoka', 'Scotland', 'Matanuska-Susitna', 'Kewaunee', 'Darke', 'Luzerne', 'Echols', 'Crawford', 'Kinney', 'Trumbull', 'De Soto', 'Phelps', 'Poweshiek', 'Rapides', 'Des Moines', 'Attala', 'Edgecomb', 'Crane', 'McCormick', 'Oscoda', 'Larimer', 'Benzie', 'Pocahontas', 'Mathews', 'Craven', 'Sargent', 'Jackson', 'Schuylkill', 'Pemiscot', 'Copiah', 'Braxton', 'Philadelphia', 'Menard', 'Vilas', 'Edwards', 'East Carroll', 'Norman', 'Bertie', 'Muskingum', 'Bonnevile', 'Scurry', 'Tallapoosa', 'Esmeralda', 'Gallia', 'St. Johns', 'Jenkins', 'Kalamazoo', 'Ellis', 'Virginia Beach', 'Oglethorpe', 'Aguada', 'Oakland', 'Breckinridge', 'Warrick', 'Fleming', 'Mellette', 'Ulster', 'Hunt', 'Hempstead', 'Eureka', 'Tunica', 'Anoka', 'Benewah', 'Chaves', 'Preston', 'Roger Mills', 'Tulsa', 'Allendale', 'St. Joseph', 'Dauphin', 'Hitchcock', 'San Benito', 'Kanabec', 'Clinton', 'Mora', 'Kidder', 'Skagit', 'Rhea', 'Atkinson', 'Cheyenne', 'Vega Baja', 'Mercer', 'Nash', 'Shenandoah', 'Early', 'Le Sueur', 'White', 'Bedford', 'Chouteau', 'Arapahoe', 'Silver Bow', 'Hot Springs', 'Catawba', 'Dunn', 'Whitfield', 'Faribault', 'Denton', 'Sunflower', 'Long', 'Powers', 'Rappahannock', 'Woodward', 'Miami-Dade', 'Rogers', 'Cherokee', 'Nobles', 'Harding', 'Madison', 'Orleans', 'Chesterfield', 'Barren', 'West Carroll', 'Robeson', 'Cabo Rojo', 'Hardy', 'Kandiyohi', 'Ashtabula', 'Montcalm', 'Henrico', 'Lafourche', 'Alle

gheny', 'Wakulla', 'Coleman', 'Kane', 'Santa Barbara', 'Uvalde', 'Maricao', 'Swift', 'Rolette', 'Aleutians East', 'Ogle', 'Marquette', 'Navarro', 'Austin', 'Vega Alta', 'Pattillas', 'Louisa', 'Smith', 'Towns', 'Wolfe', 'Wexford', 'Crowley', 'Merrimack', 'Taylor', 'Laclede', 'Grainger', 'Prince Edward', 'Tuscarawas', 'Pender', 'Palo Pinto', 'Box Elder', 'Wyoming', 'Pinal', 'Bullitt', 'Clinch', 'Zavala', 'Dundy', 'Hays', 'Guayama', 'Yancey', 'Dougherty', 'Winnebago', 'Valdez-Cordova', 'Shoshone', 'Barnstable', 'Gregg', 'Audrain', 'Sutter', 'Fountain', 'Hemphill', 'Oconee', 'Rockcastle', 'Hill', 'Van Buren', 'Spencer', 'Mills', 'Bannock', 'Coryell', 'Adair', 'McCurtain', 'Assumption', 'Peoria', 'Gogebic', 'Doniphan', 'McCreary', 'McKean', 'Auglaize', 'Rankin', 'Alger', 'Hendricks', 'Lake and Peninsula', 'Glacier', 'Edgar', 'Ventura', 'Carson', 'Redwood', 'Effingham', 'Bayfield', 'Noble', 'Chaffee', 'Catahoula', 'Storey', 'Izard', 'Las Maras', 'Adair', 'Gilmer', 'Ripley', 'Tuolumne', 'Mississippi'}

## Task 2: Find the 3 most common names of the counties

List the county name and state code

```

In [ ]: #Create a List
featureList = data['features']
namelist = []

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

#Compare dictionary and List
cntyDict = {}
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 for top 3 county names
print(converted_newdict)

#Find state codes of top 3 county names
featureList = data['features']
Washington_List = []
Franklin_List = []
Jefferson_List = []

for f in featureList:
    properties = f['properties']
    county_name = properties['NAME']
    state_code = properties['STATE']

    if county_name == "Washington":
        Washington_List.append(state_code)
    elif county_name == "Jefferson":
        Jefferson_List.append(state_code)
    elif county_name == "Franklin":
        Franklin_List.append(state_code)
    else:
        pass

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}

```

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', '17', '18', '19', '20', '21', '22', '28', '29', '30', '31', '36', '39', '40', '41', '42', '47', '48', '53', '54', '55']

## Task 3: Basic statistics by state

For each state, find the number of counties, name and size (census area) of the biggest and smallest county by area, and find the total and average area of counties

### Part 1. Each state find the number of counties

```
In [ ]: state_dict_counties = {}

for element in data['features']:
    properties = element['properties']
    state_code = properties['STATE']
    state_dict_counties[state_code] = state_dict_counties.get(state_code, 0) + 1

print(state_dict_counties)
```

{ '02': 29, '04': 15, '05': 75, '08': 64, '09': 8, '12': 67, '13': 159, '06': 58, '01': 67, '17': 102, '18': 92, '19': 99, '15': 5, '16': 44, '20': 105, '21': 120, '22': 64, '26': 83, '27': 87, '28': 82, '23': 16, '24': 24, '25': 14, '30': 56, '31': 93, '32': 17, '33': 10, '34': 21, '35': 33, '29': 115, '37': 100, '38': 53, '39': 88, '40': 77, '36': 62, '45': 46, '46': 66, '47': 95, '41': 36, '42': 67, '48': 254, '49': 29, '53': 39, '54': 55, '55': 72, '56': 23, '72': 78, '50': 14, '51': 134, '10': 3, '11': 1, '44': 5 }

### Part 2. Name and size of the biggest and smallest county by state

```
In [ ]: #pair county with state
states = {}

for element in data['features']:
    properties = element['properties']
    state = properties['STATE']

    if state not in states:
        states[state] = {}
        states[state][properties['NAME']] = properties['CENSUSAREA']
    else:
        states[state][properties['NAME']] = properties['CENSUSAREA']

#sort_counties
#sort_counties function
def sort_counties(x):
    x = sorted(x.items(), key=lambda item: item[1])
    smallest = x[0]
    biggest = x[-1]
    return f'\n{smallest[0]} is the smallest county with area: {smallest[1]}\n{biggest[0]} is the biggest county with area: {biggest[1]}'

#smallest and largest county by state
for state in states:
    result = sort_counties(states[state])
    print(f'For state{state}: {result}\n')
```



For state02:

Skagway is the smallest county with area: 452.325

Yukon-Koyukuk is the biggest county with area: 145504.789

For state04:

Santa Cruz is the smallest county with area: 1236.916

Coconino is the biggest county with area: 18618.885

For state05:

Lafayette is the smallest county with area: 528.268

Union is the biggest county with area: 1039.214

For state08:

Broomfield is the smallest county with area: 33.034

Las Animas is the biggest county with area: 4772.672

For state09:

Middlesex is the smallest county with area: 369.301

Litchfield is the biggest county with area: 920.56

For state12:

Union is the smallest county with area: 243.556

Collier is the biggest county with area: 1998.324

For state13:

Clarke is the smallest county with area: 119.2

Ware is the biggest county with area: 892.461

For state06:

San Francisco is the smallest county with area: 46.873

San Bernardino is the biggest county with area: 20056.938

For state01:

Etowah is the smallest county with area: 534.991

Baldwin is the biggest county with area: 1589.784

For state17:

Putnam is the smallest county with area: 160.161

McLean is the biggest county with area: 1183.378

For state18:

Ohio is the smallest county with area: 86.14

Allen is the biggest county with area: 657.308

For state19:

Dickinson is the smallest county with area: 380.606

Kossuth is the biggest county with area: 972.72

For state15:

Kalawao is the smallest county with area: 11.991

Hawaii is the biggest county with area: 4028.417

For state16:

Payette is the smallest county with area: 406.867

Idaho is the biggest county with area: 8477.352

For state20:

Wyandotte is the smallest county with area: 151.6

Butler is the biggest county with area: 1429.863

For state21:  
Robertson is the smallest county with area: 99.911  
Pike is the biggest county with area: 786.833

For state22:  
Orleans is the smallest county with area: 169.423  
Vernon is the biggest county with area: 1327.91

For state26:  
Benzie is the smallest county with area: 319.704  
Marquette is the biggest county with area: 1808.401

For state27:  
Ramsey is the smallest county with area: 152.212  
St. Louis is the biggest county with area: 6247.401

For state28:  
Alcorn is the smallest county with area: 400.038  
Yazoo is the biggest county with area: 922.947

For state23:  
Sagadahoc is the smallest county with area: 253.695  
Aroostook is the biggest county with area: 6671.33

For state24:  
Baltimore is the smallest county with area: 80.944  
Frederick is the biggest county with area: 660.221

For state25:  
Nantucket is the smallest county with area: 44.97  
Worcester is the biggest county with area: 1510.77

For state30:  
Silver Bow is the smallest county with area: 718.477  
Beaverhead is the biggest county with area: 5541.624

For state31:  
Sarpy is the smallest county with area: 238.99  
Cherry is the biggest county with area: 5960.422

For state32:  
Carson City is the smallest county with area: 144.662  
Nye is the biggest county with area: 18181.924

For state33:  
Strafford is the smallest county with area: 368.975  
Coos is the biggest county with area: 1794.685

For state34:  
Hudson is the smallest county with area: 46.191  
Burlington is the biggest county with area: 798.576

For state35:  
Los Alamos is the smallest county with area: 109.167  
Catron is the biggest county with area: 6923.69

For state29:  
St. Louis is the smallest county with area: 61.909  
Texas is the biggest county with area: 1177.266

For state37:

Chowan is the smallest county with area: 172.473

Robeson is the biggest county with area: 949.221

For state38:

Eddy is the smallest county with area: 630.171

McKenzie is the biggest county with area: 2760.323

For state39:

Lake is the smallest county with area: 227.493

Ashtabula is the biggest county with area: 701.931

For state40:

Marshall is the smallest county with area: 371.08

Osage is the biggest county with area: 2246.358

For state36:

New York is the smallest county with area: 22.829

St. Lawrence is the biggest county with area: 2680.377

For state45:

McCormick is the smallest county with area: 359.13

Horry is the biggest county with area: 1133.896

For state46:

Clay is the smallest county with area: 412.185

Meade is the biggest county with area: 3470.984

For state47:

Trousdale is the smallest county with area: 114.193

Shelby is the biggest county with area: 763.174

For state41:

Multnomah is the smallest county with area: 431.297

Harney is the biggest county with area: 10133.17

For state42:

Montour is the smallest county with area: 130.242

Lycoming is the biggest county with area: 1228.594

For state48:

Rockwall is the smallest county with area: 127.036

Brewster is the biggest county with area: 6183.733

For state49:

Davis is the smallest county with area: 298.778

San Juan is the biggest county with area: 7819.988

For state53:

San Juan is the smallest county with area: 173.915

Okanogan is the biggest county with area: 5267.978

For state54:

Hancock is the smallest county with area: 82.609

Randolph is the biggest county with area: 1039.681

For state55:

Pepin is the smallest county with area: 231.983

Marathon is the biggest county with area: 1544.983

For state56:  
Hot Springs is the smallest county with area: 2004.092  
Sweetwater is the biggest county with area: 10426.649

For state72:  
Cataño is the smallest county with area: 4.845  
Arecibo is the biggest county with area: 125.947

For state50:  
Grand Isle is the smallest county with area: 81.811  
Windsor is the biggest county with area: 969.337

For state51:  
Falls Church is the smallest county with area: 1.999  
Pittsylvania is the biggest county with area: 968.941

For state10:  
New Castle is the smallest county with area: 426.286  
Sussex is the biggest county with area: 936.079

For state11:  
District of Columbia is the smallest county with area: 61.048  
District of Columbia is the biggest county with area: 61.048

For state44:  
Bristol is the smallest county with area: 24.164  
Providence is the biggest county with area: 409.502

### Part 3. Find total and average area by state

```
In [ ]: #calculate total and avergae
for state in states:
    state_counties = states[state]
    states_total = 0
    for area in state_counties.values():
        states_total += area
    avg = states_total/len(state_counties)
    print(f'For state {state}, the total area is {round(states_total, 2)} with an aver
```

For state 02, the total area is 570640.95 with an average county size of 19677.27  
For state 04, the total area is 113594.09 with an average county size of 7572.94  
For state 05, the total area is 52035.48 with an average county size of 693.81  
For state 08, the total area is 103641.89 with an average county size of 1619.4  
For state 09, the total area is 4842.36 with an average county size of 605.29  
For state 12, the total area is 53624.76 with an average county size of 800.37  
For state 13, the total area is 57513.49 with an average county size of 361.72  
For state 06, the total area is 155779.22 with an average county size of 2685.85  
For state 01, the total area is 50645.33 with an average county size of 755.9  
For state 17, the total area is 55518.93 with an average county size of 544.3  
For state 18, the total area is 35826.11 with an average county size of 389.41  
For state 19, the total area is 55857.13 with an average county size of 564.21  
For state 15, the total area is 6422.63 with an average county size of 1284.53  
For state 16, the total area is 82643.12 with an average county size of 1878.25  
For state 20, the total area is 81758.72 with an average county size of 778.65  
For state 21, the total area is 39486.33 with an average county size of 329.05  
For state 22, the total area is 43203.91 with an average county size of 675.06  
For state 26, the total area is 56538.9 with an average county size of 681.19  
For state 27, the total area is 79626.74 with an average county size of 915.25  
For state 28, the total area is 46923.27 with an average county size of 572.24  
For state 23, the total area is 30842.92 with an average county size of 1927.68  
For state 24, the total area is 9108.94 with an average county size of 396.04  
For state 25, the total area is 7800.06 with an average county size of 557.15  
For state 30, the total area is 145545.8 with an average county size of 2599.03  
For state 31, the total area is 76824.18 with an average county size of 826.07  
For state 32, the total area is 109781.18 with an average county size of 6457.72  
For state 33, the total area is 8952.65 with an average county size of 895.26  
For state 34, the total area is 7354.22 with an average county size of 350.2  
For state 35, the total area is 121298.15 with an average county size of 3675.7  
For state 29, the total area is 68233.73 with an average county size of 598.54  
For state 37, the total area is 48617.9 with an average county size of 486.18  
For state 38, the total area is 69000.8 with an average county size of 1301.9  
For state 39, the total area is 40860.7 with an average county size of 464.33  
For state 40, the total area is 68594.92 with an average county size of 890.84  
For state 36, the total area is 47126.39 with an average county size of 760.1  
For state 45, the total area is 30060.7 with an average county size of 653.49  
For state 46, the total area is 75811.0 with an average county size of 1148.65  
For state 47, the total area is 41234.89 with an average county size of 434.05  
For state 41, the total area is 95988.01 with an average county size of 2666.33  
For state 42, the total area is 44742.7 with an average county size of 667.8  
For state 48, the total area is 261231.71 with an average county size of 1028.47  
For state 49, the total area is 82169.62 with an average county size of 2833.44  
For state 53, the total area is 66455.52 with an average county size of 1703.99  
For state 54, the total area is 24038.21 with an average county size of 437.06  
For state 55, the total area is 54157.8 with an average county size of 752.19  
For state 56, the total area is 97093.14 with an average county size of 4221.44  
For state 72, the total area is 3423.78 with an average county size of 43.89  
For state 50, the total area is 9216.66 with an average county size of 658.33  
For state 51, the total area is 38167.76 with an average county size of 295.87  
For state 10, the total area is 1948.54 with an average county size of 649.51  
For state 11, the total area is 61.05 with an average county size of 61.05  
For state 44, the total area is 1033.82 with an average county size of 206.76