

Codes to get the farms' metadata from ERS at USDA API

Method: GET

Data Status: Raw

Data Storage: .csv files

It starts from importing libraries. It's worth to mention here that I chose to create environment variables to store my credentials to avoid exposure. I imported `config` to retrieve my API keys for future usage.

```
import requests
import json
import pandas as pd
from decouple import config
DATAGOV_API_KEY = config('DATAGOV_API_KEY')
```

Get the states info.

```
End = "https://api.ers.usda.gov/data/arms/state?"
URLPost = {'api_key': str(USDA_API_KEY)}
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
print(jsontxt_farmdata)
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
print(farm_data_df)
farm_data_df.to_csv("farm_state_info.csv", mode='w')
```

Get the available year info.

```
End = "https://api.ers.usda.gov/data/arms/year?"
URLPost = {'api_key': str(USDA_API_KEY),
}
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=jsontxt_farmdata['data']
print(farm_data_df)
```

Here we get to know that the survey data is from 1996 to 2019.

Get the survey data.

On their API guidance, we have to pass two variables (year and at least one of the two input fields ("report" or "variable")). According to the variable index, `igcfi` means Gross cash farm income. Here's the code of getting all the cash farm income reports from all states in `fie` in the past 10 years.

```
End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
           'year': '2009,2010,2011,2014,2015,2016,2017,2018,2019',
           'state': 'all',
           'variable': 'igcfi'
          }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("farm_allstates_igcfi_2009to2019.csv", mode='w')
```

Get the category.

```
End = "https://api.ers.usda.gov/data/arms/category?"
URLPost = {'api_key': str(USDA_API_KEY),
           }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("farm_category_info.csv", mode='w')
```

Get the report info.

```
End = "https://api.ers.usda.gov/data/arms/report?"
URLPost = {'api_key': str(USDA_API_KEY),
           }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("farm_report_name_info.csv", mode='w')
```

Get all variable info from ERS at USDA API.

```
End = "https://api.ers.usda.gov/data/arms/variable?"
URLPost = {'api_key': str(USDA_API_KEY),
           }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("farm_variable_info.csv", mode='w')
```

Get the farm types info from ERS at USDA API.

```

End = "https://api.ers.usda.gov/data/arms/farmtype?"
URLPost = {'api_key': str(USDA_API_KEY),
           }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("farm_types.csv", mode='w')

```

Get all Farm Business Balance Sheets of Washington State's farms in 2019 fiscal year.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
           'year': '2019',
           'state': 'Washington',
           'report': 'Farm Business Balance Sheet'
           }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allfarm_balancesheet_washington_2019.csv", mode='w')

```

Get all Farm Business Balance Sheets of California State's farms in 2019 fiscal year.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
           'year': '2019',
           'state': 'California',
           'report': 'Farm Business Balance Sheet'
           }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allfarm_balancesheet_california_2019.csv", mode='w')

```

Get all Farm Business Balance Sheets of Minnesota State's farms in 2019 fiscal year.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
           'year': '2019',
           'state': 'Minnesota',
           'report': 'Farm Business Balance Sheet'
           }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allfarm_balancesheet_Minnesota_2019.csv", mode='w')

```

Get the net farm income statement of all farms from all surveyed states from 2009 to 2019.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2009,2010,2011,2014,2015,2016,2017,2018,2019',
            'state': 'all',
            'variable': 'infi',
            'report': 'Farm Business Income Statement',
            'category': 'All Farms'
            }

print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("farm_allstates_infi_netfarmincome_2009to2019.csv", mode='w')

```

Get all the types of net income or gross income of farms' dairy category from all surveyed states in 2019.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2019',
            'state': 'Arkansas,Washington,California,Florida,Georgia,Illinois,Indiana,Iowa,Kansas,Minnesota,Missouri,'
                    'Nebraska,North Carolina,Texas,Washington,Wisconsin',
            'category_value': 'dairy',
            'report': 'Farm Business Income Statement',
            'variable': 'igcfi,infi,tothhi,iiothfm,agi,incfi,incfig,incfin,incfidp,incficcp,incfimlb,incficnsv,incfiioth'
            }

print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allstates_dairy_net&grossincome_2019.csv", mode='w')

```

Get all the types of net income or gross income of farms' cattle category from all surveyed states in 2019.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2019',
            'state': 'Arkansas,Washington,California,Florida,Georgia,Illinois,Indiana,Iowa,Kansas,Minnesota,Missouri,'
                    'Nebraska,North Carolina,Texas,Washington,Wisconsin',
            'category_value': 'cattle',
            'report': 'Farm Business Income Statement',
            'variable': 'igcfi,infi,tothhi,iiothfm,agi,incfi,incfig,incfin,incfidp,incficcp,incfimlb,incficnsv,incfiioth'
            }

print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allstates_cattle_net&grossincome_2019.csv", mode='w')

```

Get all the types of net income or gross income of farms' all other livestock category from all surveyed states in 2019.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2019',
            'state': 'Arkansas,Washington,California,Florida,Georgia,Illinois,Indiana,Iowa,Kansas,Minnesota,Missouri,'
                    'Nebraska,North Carolina,Texas,Washington,Wisconsin',
            'category_value': 'all other livestock',
            'report': 'Farm Business Income Statement',
            'variable': 'igcfi,infi,tothhi,iothfm,agi,incfi,incfig,incfin,incfidp,incficcp,incfimlb,incficnsv,incfioth'
            }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allstates_allotherlivestock_net&grossincome_2019.csv", mode='w')

```

Get all the types of net income or gross income of farms' corn category from all surveyed states in 2019.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2019',
            'state': 'Arkansas,Washington,California,Florida,Georgia,Illinois,Indiana,Iowa,Kansas,Minnesota,Missouri,'
                    'Nebraska,North Carolina,Texas,Washington,Wisconsin',
            'category_value': 'corn',
            'report': 'Farm Business Income Statement',
            'variable': 'igcfi,infi,tothhi,iothfm,agi,incfi,incfig,incfin,incfidp,incficcp,incfimlb,incficnsv,incfioth'
            }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allstates_corn_net&grossincome_2019.csv", mode='w')

```

Get all the types of net income or gross income of farms' tobacco, cotton, peanuts category from all surveyed states in 2019.

```

End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2019',
            'state': 'Arkansas,Washington,California,Florida,Georgia,Illinois,Indiana,Iowa,Kansas,Minnesota,Missouri,'
                    'Nebraska,North Carolina,Texas,Washington,Wisconsin',
            'category_value': 'tobacco, cotton, peanuts',
            'report': 'Farm Business Income Statement',
            'variable': 'igcfi,infi,tothhi,iothfm,agi,incfi,incfig,incfin,incfidp,incficcp,incfimlb,incficnsv,incfioth'
            }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allstates_tobaccocottonpeanuts_net&grossincome_2019.csv", mode='w')

```

Get all the types of net income or gross income of farms' wheat category from all surveyed states in 2019.

```
End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2019',
            'state': 'Arkansas,Washington,California,Florida,Georgia,Illinois,Indiana,Iowa,Kansas,Minnesota,Missouri,'
                    'Nebraska,North Carolina,Texas,Washington,Wisconsin',
            'category_value': 'wheat',
            'report': 'Farm Business Income Statement',
            'variable': 'igcfi,infi,tothhi,iothfm,agi,incfi,incfig,incfin,incfidp,incficcp,incfimlb,incficnsv,incfioth'
            }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("allstates_wheat_net&grossincome_2019.csv", mode='w')
```

Get the total number of farms from all the surveyed states from 2009 to 2019.

```
End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2009,2010,2011,2012,2013,2014,2015,2016,2017,2018,2019',
            'state': 'all',
            'variable': 'kount',
            'variable_name': 'Estimated number',
            'category': 'All Farms',
            'report': 'Farm Business Income Statement'
            }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("totalnumberfarm_2009to2019.csv", mode='w')
```

Get the number of dairy farms from all the surveyed states in 2019.

```
End = "https://api.ers.usda.gov/data/arms/surveydata?"
URLPost = {'api_key': str(USDA_API_KEY),
            'year': '2019',
            'state': 'Arkansas,Washington,California,Florida,Georgia,Illinois,Indiana,Iowa,Kansas,Minnesota,Missour'
                    'Nebraska,North Carolina,Texas,Washington,Wisconsin',
            'variable': 'kount',
            'category_value': 'dairy',
            'report': 'Farm Business Income Statement'
            }
print(URLPost)
ERS_response = requests.get(End, URLPost)
print(ERS_response)
jsontxt_farmdata= ERS_response.json()
farm_data_df=pd.json_normalize(jsontxt_farmdata['data'])
farm_data_df.to_csv("numberofdairyfarm_2019.csv", mode='w')
```