

```
#importowanie biblioteki pandas
```

```
import pandas as pd
```

```
#tworzenie ramki danych ze słownika
```

```
data = pd.read_csv('IHME_PREM_CH_HEALTH_2020_Y2021M10D11.csv',  
encoding='utf-8')
```

```
data_frame = pd.DataFrame(data)
```

```
#wyświetlenie ramki danych
```

```
data_frame
```

| | observation_id | submitted_time | gender | \ |
|------|---------------------|-----------------------------|--------|---|
| 0 | u2_4503977216704512 | 2020-07-06 17:46:17.8 UTC | Male | |
| 1 | u2_4505961390931968 | 2020-07-07 00:25:56.895 UTC | Female | |
| 2 | u2_4506421419048960 | 2020-07-11 07:16:01.196 UTC | Male | |
| 3 | u2_4506681267716096 | 2020-07-01 14:32:45.987 UTC | Male | |
| 4 | u2_4506682207240192 | 2020-07-01 15:07:48.944 UTC | Male | |
| ... | ... | ... | ... | |
| 7223 | u2_6754387638878208 | 2020-07-01 14:59:06.82 UTC | Male | |
| 7224 | u2_6754421129347072 | 2020-07-05 02:06:50.522 UTC | Male | |
| 7225 | u2_6754616949866496 | 2020-07-07 06:44:30.974 UTC | Male | |
| 7226 | u2_6754906729086976 | 2020-07-02 09:49:21.467 UTC | Male | |
| 7227 | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male | |

| | age | geography | \ |
|------|--------------------|----------------------------------|---|
| 0 | 26 to 35 years old | City center or metropolitan area | |
| 1 | 26 to 35 years old | Suburban/Peri-urban | |
| 2 | 26 to 35 years old | City center or metropolitan area | |
| 3 | 26 to 35 years old | Suburban/Peri-urban | |
| 4 | 26 to 35 years old | Rural | |
| ... | ... | ... | |
| 7223 | 16 to 25 years old | City center or metropolitan area | |
| 7224 | 16 to 25 years old | Suburban/Peri-urban | |
| 7225 | 26 to 35 years old | Rural | |
| 7226 | 16 to 25 years old | Rural | |
| 7227 | 16 to 25 years old | Rural | |

| | financial_situation | \ |
|------|---|---|
| 0 | I can afford food and regular expenses, but no... | |
| 1 | I cannot afford enough food for my family | |
| 2 | I can afford food and regular expenses, but no... | |
| 3 | I can afford food and regular expenses, but no... | |
| 4 | I can afford food, but nothing else | |
| ... | ... | |
| 7223 | I cannot afford enough food for my family | |
| 7224 | I can afford food and regular expenses, and bu... | |
| 7225 | I can afford food, but nothing else | |
| 7226 | I cannot afford enough food for my family | |

7227 I cannot afford enough food for my family

| | education | employment_status | ethnicity \ |
|------|-----------------------|--------------------|---------------|
| 0 | College or university | Employed full-time | Afro-Jamaican |
| 1 | Technical school | Self-employed | Hispanic |
| 2 | College or university | Self-employed | Bantou |
| 3 | Secondary/high school | Self-employed | Bantou |
| 4 | Secondary/high school | Employed part-time | Mestizo |
| ... | ... | ... | ... |
| 7223 | College or university | Self-employed | Mossi |
| 7224 | Secondary/high school | Employed part-time | Baganda |
| 7225 | Technical school | Self-employed | Yoruba |
| 7226 | Secondary/high school | Employed full-time | Tagalog |
| 7227 | Primary school | Employed full-time | Baganda |

| | religion | ... u2_pre_no_provider_why_other |
|-------------------------|----------------|----------------------------------|
| u2_post_provider_need \ | | |
| 0 | Roman Catholic | ... |
| Yes | | NaN |
| 1 | Catholicism | ... |
| No | | NaN |
| 2 | Protestantism | ... |
| No | | NaN |
| 3 | Protestantism | ... |
| Yes | | NaN |
| 4 | Other | ... |
| Yes | | NaN |
| ... | ... | ... |
| ... | | |
| 7223 | Roman Catholic | ... |
| Yes | | NaN |
| 7224 | Muslim | ... |
| No | | NaN |
| 7225 | Christianity | ... |
| No | | NaN |
| 7226 | Christianity | ... |
| No | | NaN |
| 7227 | Christianity | ... |
| Yes | | NaN |

| | u2_post_condition \ |
|------|---|
| 0 | Birth defect or congenital problem |
| 1 | NaN |
| 2 | NaN |
| 3 | Diarrhea |
| 4 | Birth defect or congenital problem^Diarrhea |
| ... | ... |
| 7223 | Birth defect or congenital problem |
| 7224 | NaN |
| 7225 | NaN |

| | | | |
|-------------------------------|---|----------------------|-----|
| 7226 | | NaN | |
| 7227 | Birth defect or congenital problem | | |
| | u2_post_provider_visit | \ | |
| 0 | | No | |
| 1 | | NaN | |
| 2 | | NaN | |
| 3 | | No | |
| 4 | | Yes | |
| ... | | ... | |
| 7223 | My child saw a provider during this time, but | ... | |
| 7224 | | NaN | |
| 7225 | | NaN | |
| 7226 | | NaN | |
| 7227 | | Yes | |
| | u2_post_provider_where | u2_post_provider_num | \ |
| 0 | | NaN | NaN |
| 1 | | NaN | NaN |
| 2 | | NaN | NaN |
| 3 | | NaN | NaN |
| 4 | At my home^Health facility | 2 | |
| ... | | ... | ... |
| 7223 | | NaN | 5 |
| 7224 | | NaN | NaN |
| 7225 | | NaN | NaN |
| 7226 | | NaN | NaN |
| 7227 | Health facility | 1 | |
| | u2_post_no_provider_why | | |
| u2_post_no_provider_why_other | \ | | |
| 0 | Health facility closed | | NaN |
| 1 | | NaN | NaN |
| 2 | | NaN | NaN |
| 3 | Turned away from health facility | | NaN |
| 4 | | NaN | NaN |
| ... | | ... | ... |
| 7223 | Decline to respond | | NaN |
| 7224 | | NaN | NaN |
| 7225 | | NaN | NaN |
| 7226 | | NaN | NaN |

7227 NaN NaN

| | country | user_id |
|------|----------------------------------|---------------------|
| 0 | Jamaica | u2_4519417576161280 |
| 1 | United States | u2_6197364724858880 |
| 2 | Democratic Republic of the Congo | u2_5202308155834368 |
| 3 | Democratic Republic of the Congo | u2_6709282991243264 |
| 4 | Nicaragua | u2_6190896700194816 |
| ... | ... | ... |
| 7223 | Burkina Faso | u2_6532940630851584 |
| 7224 | Uganda | u2_5363001946800128 |
| 7225 | Nigeria | u2_5779942448562176 |
| 7226 | Philippines | u2_6586517350252544 |
| 7227 | Uganda | u2_4955652432855040 |

[7228 rows x 47 columns]

#zapisanie ramki danych do pliku csv

```
data_frame.to_csv('data_frame.csv')
```

#tworzenie ramki dancyh z listy list

```
data_list = [  
    [  
        'Warszawa',  
        'Łódź',  
        'Poznań'  
    ],  
    [  
        123,  
        456,  
        789  
    ]  
]
```

```
pd.DataFrame(data_list)
```

| | 0 | 1 | 2 |
|---|----------|------|--------|
| 0 | Warszawa | Łódź | Poznań |
| 1 | 123 | 456 | 789 |

#transponowanie

```
t_data_frame = pd.DataFrame(data_frame).T  
t_data_frame
```

0 \

| | |
|-----------------------------|---|
| observation_id | |
| u2_4503977216704512 | |
| submitted_time | 2020-07-06 |
| 17:46:17.8 UTC | |
| gender | |
| Male | |
| age | 26 to 35 |
| years old | |
| geography | City center or |
| metropolitan area | |
| financial_situation | I can afford food and regular expenses, but no... |
| education | College or |
| university | |
| employment_status | Employed |
| full-time | |
| ethnicity | |
| Afro-Jamaican | |
| religion | |
| Roman Catholic | |
| u2_hh | |
| 2 | |
| u2_child_count | |
| 2 | |
| u2_child1_age_months | |
| 24.0 | |
| u2_child1_sex | |
| Male | |
| u2_child2_age_months | |
| 12.0 | |
| u2_child2_sex | |
| Male | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 3.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| Yes | |
| u2_post_vaccine_count | |

```

3.0
u2_post_no_vaccine_why
NaN
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
2
u2_rotavirus_doses
1
u2_pneu_doses
1
u2_measles_doses
1
u2_pre_provider_need
Yes
u2_pre_condition
Diarrhea
u2_pre_provider_visit
No
u2_pre_provider_where
NaN
u2_pre_provider_num
NaN
u2_pre_no_provider_why
Health
facility closed
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
Yes
u2_post_condition
Birth defect or
congenital problem
u2_post_provider_visit
No
u2_post_provider_where
NaN
u2_post_provider_num
NaN
u2_post_no_provider_why
Health
facility closed
u2_post_no_provider_why_other
NaN
country
Jamaica
user_id
u2_4519417576161280

1 \
observation_id

```

| | |
|-----------------------------|---------------------------------|
| u2_4505961390931968 | |
| submitted_time | 2020-07-07 |
| 00:25:56.895 UTC | |
| gender | |
| Female | |
| age | 26 to 35 |
| years old | |
| geography | |
| Suburban/Peri-urban | |
| financial_situation | I cannot afford enough food for |
| my family | |
| education | |
| Technical school | |
| employment_status | |
| Self-employed | |
| ethnicity | |
| Hispanic | |
| religion | |
| Catholicism | |
| u2_hh | |
| 4 | |
| u2_child_count | |
| 1 | |
| u2_child1_age_months | |
| 24.0 | |
| u2_child1_sex | |
| Male | |
| u2_child2_age_months | |
| NaN | |
| u2_child2_sex | |
| NaN | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 4.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| No | |
| u2_post_vaccine_count | |
| NaN | |

| | |
|-------------------------------|---|
| u2_post_no_vaccine_why | My child was not due for any vaccines during t... |
| u2_post_no_vaccine_why_other | |
| u2_dtp_doses | Don't know |
| u2_rotavirus_doses | Don't know |
| u2_pneu_doses | Don't know |
| u2_measles_doses | Don't know |
| u2_pre_provider_need | Yes |
| u2_pre_condition | Other |
| u2_pre_provider_visit | Yes |
| u2_pre_provider_where | Health facility |
| u2_pre_provider_num | 1 |
| u2_pre_no_provider_why | NaN |
| u2_pre_no_provider_why_other | NaN |
| u2_post_provider_need | No |
| u2_post_condition | NaN |
| u2_post_provider_visit | NaN |
| u2_post_provider_where | NaN |
| u2_post_provider_num | NaN |
| u2_post_no_provider_why | NaN |
| u2_post_no_provider_why_other | NaN |
| country | United States |
| user_id | u2_6197364724858880 |
| 2 \ | |
| observation_id | u2_4506421419048960 |

| | |
|-----------------------------|---|
| submitted_time | 2020-07-11 |
| 07:16:01.196 UTC | |
| gender | |
| Male | |
| age | 26 to 35 |
| years old | |
| geography | City center or |
| metropolitan area | |
| financial_situation | I can afford food and regular expenses, but no... |
| education | College or |
| university | |
| employment_status | |
| Self-employed | |
| ethnicity | |
| Bantou | |
| religion | |
| Protestantism | |
| u2_hh | |
| 5 | |
| u2_child_count | |
| 1 | |
| u2_child1_age_months | |
| 0.0 | |
| u2_child1_sex | |
| Male | |
| u2_child2_age_months | |
| NaN | |
| u2_child2_sex | |
| NaN | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| No | |
| u2_pre_vaccine_count | |
| NaN | |
| u2_pre_no_vaccine_why | |
| Other | |
| u2_pre_no_vaccine_why_other | |
| XXXX | |
| u2_post_vaccines | |
| No | |
| u2_post_vaccine_count | |
| NaN | |
| u2_post_no_vaccine_why | |

| | |
|-------------------------------|------------------------|
| Other | |
| u2_post_no_vaccine_why_other | |
| XXXX | |
| u2_dtp_doses | |
| 0 | |
| u2_rotavirus_doses | |
| 0 | |
| u2_pneu_doses | |
| 0 | |
| u2_measles_doses | |
| Don't know | |
| u2_pre_provider_need | |
| No | |
| u2_pre_condition | |
| NaN | |
| u2_pre_provider_visit | |
| NaN | |
| u2_pre_provider_where | |
| NaN | |
| u2_pre_provider_num | |
| NaN | |
| u2_pre_no_provider_why | |
| NaN | |
| u2_pre_no_provider_why_other | |
| NaN | |
| u2_post_provider_need | |
| No | |
| u2_post_condition | |
| NaN | |
| u2_post_provider_visit | |
| NaN | |
| u2_post_provider_where | |
| NaN | |
| u2_post_provider_num | |
| NaN | |
| u2_post_no_provider_why | |
| NaN | |
| u2_post_no_provider_why_other | |
| NaN | |
| country | Democratic Republic of |
| the Congo | |
| user_id | |
| u2_5202308155834368 | |
| 3 \ | |
| observation_id | |
| u2_4506681267716096 | |
| submitted_time | 2020-07-01 |

```

14:32:45.987 UTC
gender
Male
age
26 to 35
years old
geography
Suburban/Peri-urban
financial_situation
I can afford food and regular expenses,
but no...
education
Secondary/high school
employment_status
Self-employed
ethnicity
Bantou
religion
Protestantism
u2_hh
6
u2_child_count
1
u2_child1_age_months
1.0
u2_child1_sex
Male
u2_child2_age_months
NaN
u2_child2_sex
NaN
u2_child3_age_months
NaN
u2_child3_sex
NaN
u2_vaccine_card
Yes
u2_pre_vaccines
No
u2_pre_vaccine_count
NaN
u2_pre_no_vaccine_why
I did not want my child to be
vaccinated
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
No
u2_post_vaccine_count
NaN
u2_post_no_vaccine_why
Health
facility closed

```

| | | |
|-------------------------------|-------------------------------------|--|
| u2_post_no_vaccine_why_other | | |
| NaN | | |
| u2_dtp_doses | | |
| 3 or more | | |
| u2_rotavirus_doses | | |
| 3 or more | | |
| u2_pneu_doses | | |
| 3 or more | | |
| u2_measles_doses | | |
| 2 or more | | |
| u2_pre_provider_need | | |
| Yes | | |
| u2_pre_condition | | |
| Diarrhea | | |
| u2_pre_provider_visit | My child saw a provider during this | |
| time, but ... | | |
| u2_pre_provider_where | | |
| NaN | | |
| u2_pre_provider_num | | |
| 3 | | |
| u2_pre_no_provider_why | Turned away from | |
| health facility | | |
| u2_pre_no_provider_why_other | | |
| NaN | | |
| u2_post_provider_need | | |
| Yes | | |
| u2_post_condition | | |
| Diarrhea | | |
| u2_post_provider_visit | | |
| No | | |
| u2_post_provider_where | | |
| NaN | | |
| u2_post_provider_num | | |
| NaN | | |
| u2_post_no_provider_why | Turned away from | |
| health facility | | |
| u2_post_no_provider_why_other | | |
| NaN | | |
| country | Democratic Republic of | |
| the Congo | | |
| user_id | | |
| u2_6709282991243264 | | |
| | | |
| 4 | \ | |
| observation_id | | |
| u2_4506682207240192 | | |
| submitted_time | 2020-07-01 | |
| 15:07:48.944 UTC | | |

| | |
|------------------------------|------------------------|
| gender | Male |
| age | 26 to 35 |
| years old | |
| geography | |
| Rural | |
| financial_situation | I can afford food, but |
| nothing else | |
| education | |
| Secondary/high school | |
| employment_status | Employed |
| part-time | |
| ethnicity | |
| Mestizo | |
| religion | |
| Other | |
| u2_hh | |
| 4 | |
| u2_child_count | |
| 2 | |
| u2_child1_age_months | |
| 5.0 | |
| u2_child1_sex | |
| Female | |
| u2_child2_age_months | |
| 2.0 | |
| u2_child2_sex | |
| Male | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 6.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| Yes | |
| u2_post_vaccine_count | |
| 5.0 | |
| u2_post_no_vaccine_why | |
| NaN | |
| u2_post_no_vaccine_why_other | |

NaN
 u2_dtp_doses
 3 or more
 u2_rotavirus_doses
 3 or more
 u2_pneu_doses
 3 or more
 u2_measles_doses
 2 or more
 u2_pre_provider_need
 Yes
 u2_pre_condition Birth defect or congenital
 problem^Diarrhea
 u2_pre_provider_visit
 No
 u2_pre_provider_where
 NaN
 u2_pre_provider_num
 NaN
 u2_pre_no_provider_why Health facility closed^Turned away from
 health...
 u2_pre_no_provider_why_other
 NaN
 u2_post_provider_need
 Yes
 u2_post_condition Birth defect or congenital
 problem^Diarrhea
 u2_post_provider_visit
 Yes
 u2_post_provider_where At my
 home^Health facility
 u2_post_provider_num
 2
 u2_post_no_provider_why
 NaN
 u2_post_no_provider_why_other
 NaN
 country
 Nicaragua
 user_id
 u2_6190896700194816

5

\

| | |
|---------------------|------------------------|
| observation_id | |
| u2_4506936952487936 | |
| submitted_time | 2020-07-15 17:35:55.32 |
| UTC | |
| gender | |
| Male | |

| | |
|------------------------------|------------------------------------|
| age | 16 to 25 years |
| old | |
| geography | City center or metropolitan |
| area | |
| financial_situation | I cannot afford enough food for my |
| family | |
| education | Secondary/high |
| school | |
| employment_status | |
| Unemployed | |
| ethnicity | |
| Java | |
| religion | |
| Muslim | |
| u2_hh | |
| 2 | |
| u2_child_count | |
| 2 | |
| u2_child1_age_months | |
| 9.0 | |
| u2_child1_sex | |
| Male | |
| u2_child2_age_months | |
| 11.0 | |
| u2_child2_sex | |
| Male | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 3.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| Yes | |
| u2_post_vaccine_count | |
| 1.0 | |
| u2_post_no_vaccine_why | |
| NaN | |
| u2_post_no_vaccine_why_other | |
| NaN | |
| u2_dtp_doses | |

```

1
u2_rotavirus_doses
0
u2_pneu_doses
1
u2_measles_doses
0
u2_pre_provider_need
Yes
u2_pre_condition
Diarrhea
u2_pre_provider_visit
No
u2_pre_provider_where
NaN
u2_pre_provider_num
NaN
u2_pre_no_provider_why          Turned away from health
facility
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
Yes
u2_post_condition
Diarrhea
u2_post_provider_visit
No
u2_post_provider_where
NaN
u2_post_provider_num
NaN
u2_post_no_provider_why          Turned away from health
facility
u2_post_no_provider_why_other
NaN
country
Indonesia
user_id
u2_6680972922716160

```

```

6      \
observation_id
u2_4507055500296192
submitted_time          2020-07-01
20:49:40.526 UTC
gender
Female
age

```


years old
geography
Suburban/Peri-urban
financial_situation I can afford food and regular expenses,
and bu...
education College or
university
employment_status
Unemployed
ethnicity
Hiligaynon
religion
Christianity
u2_hh
8
u2_child_count
1
u2_child1_age_months
24.0
u2_child1_sex
Female
u2_child2_age_months
NaN
u2_child2_sex
NaN
u2_child3_age_months
NaN
u2_child3_sex
NaN
u2_vaccine_card
Yes
u2_pre_vaccines
No
u2_pre_vaccine_count
NaN
u2_pre_no_vaccine_why My child was not due for any vaccines
during t...
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
No
u2_post_vaccine_count
NaN
u2_post_no_vaccine_why My child was not due for any vaccines
during t...
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
3 or more

u2_rotavirus_doses
3 or more
u2_pneu_doses
0
u2_measles_doses
1
u2_pre_provider_need
No
u2_pre_condition
NaN
u2_pre_provider_visit
NaN
u2_pre_provider_where
NaN
u2_pre_provider_num
NaN
u2_pre_no_provider_why
NaN
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
No
u2_post_condition
NaN
u2_post_provider_visit
NaN
u2_post_provider_where
NaN
u2_post_provider_num
NaN
u2_post_no_provider_why
NaN
u2_post_no_provider_why_other
NaN
country
Philippines
user_id
u2_6438713447415808

7 \

| | |
|----------------|-----------------------------|
| observation_id | u2_4507565829652480 |
| submitted_time | 2020-07-06 19:46:18.779 UTC |
| gender | Female |
| age | |
| years old | |

| | |
|------------------------------|---|
| geography | |
| Suburban/Peri-urban | |
| financial_situation | I can afford food and regular expenses, and bu... |
| education | College or |
| university | |
| employment_status | Employed |
| full-time | |
| ethnicity | |
| Malay | |
| religion | |
| Muslim | |
| u2_hh | |
| 4 | |
| u2_child_count | |
| 1 | |
| u2_child1_age_months | |
| 18.0 | |
| u2_child1_sex | |
| Female | |
| u2_child2_age_months | |
| NaN | |
| u2_child2_sex | |
| NaN | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 1.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| Yes | |
| u2_post_vaccine_count | |
| 1.0 | |
| u2_post_no_vaccine_why | |
| NaN | |
| u2_post_no_vaccine_why_other | |
| NaN | |
| u2_dtp_doses | |
| 3 or more | |
| u2_rotavirus_doses | |

1
u2_pneu_doses
0
u2_measles_doses
1
u2_pre_provider_need
No
u2_pre_condition
NaN
u2_pre_provider_visit
NaN
u2_pre_provider_where
NaN
u2_pre_provider_num
NaN
u2_pre_no_provider_why
NaN
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
Yes
u2_post_condition
Other
u2_post_provider_visit
No
u2_post_provider_where
NaN
u2_post_provider_num
NaN
u2_post_no_provider_why Health
facility closed
u2_post_no_provider_why_other
NaN
country
Indonesia
user_id
u2_6676464578068480

8 \

| | |
|---------------------|----------------|
| observation_id | |
| u2_4508158434476032 | |
| submitted_time | 2020-07-23 |
| 10:20:46.151 UTC | |
| gender | |
| Male | |
| age | 16 to 25 |
| years old | |
| geography | City center or |

| | |
|------------------------------|---------------------------------|
| metropolitan area | |
| financial_situation | I cannot afford enough food for |
| my family | |
| education | |
| Post graduate | |
| employment_status | |
| Student | |
| ethnicity | |
| Amhara | |
| religion | |
| Ethiopian Orthodox | |
| u2_hh | |
| 1 | |
| u2_child_count | |
| 1 | |
| u2_child1_age_months | |
| 2.0 | |
| u2_child1_sex | |
| Male | |
| u2_child2_age_months | |
| NaN | |
| u2_child2_sex | |
| NaN | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 3.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| Yes | |
| u2_post_vaccine_count | |
| 15.0 | |
| u2_post_no_vaccine_why | |
| NaN | |
| u2_post_no_vaccine_why_other | |
| NaN | |
| u2_dtp_doses | |
| 2 | |
| u2_rotavirus_doses | |
| 3 or more | |

| | |
|------------------------------|---|
| financial_situation | I can afford food and regular expenses, but no... |
| education | Secondary/high school |
| employment_status | Unemployed |
| ethnicity | Asian |
| religion | Prefer Not To Answer |
| u2_hh | 1 |
| u2_child_count | 2 |
| u2_child1_age_months | 3.0 |
| u2_child1_sex | Male |
| u2_child2_age_months | 2.0 |
| u2_child2_sex | Male |
| u2_child3_age_months | NaN |
| u2_child3_sex | NaN |
| u2_vaccine_card | Yes |
| u2_pre_vaccines | Yes |
| u2_pre_vaccine_count | 2.0 |
| u2_pre_no_vaccine_why | NaN |
| u2_pre_no_vaccine_why_other | NaN |
| u2_post_vaccines | Yes |
| u2_post_vaccine_count | 5.0 |
| u2_post_no_vaccine_why | NaN |
| u2_post_no_vaccine_why_other | NaN |
| u2_dtp_doses | 2 |
| u2_rotavirus_doses | 2 |
| u2_pneu_doses | |

```

0
u2_measles_doses
2 or more
u2_pre_provider_need
Yes
u2_pre_condition
Diarrhea^Pneumonia
u2_pre_provider_visit      My child saw a provider during this
time, but ...
u2_pre_provider_where
NaN
u2_pre_provider_num
3
u2_pre_no_provider_why      Treatment or provider
unavailable^Turned away ...
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
Yes
u2_post_condition
Diarrhea
u2_post_provider_visit
Yes
u2_post_provider_where      At my
home^Health facility
u2_post_provider_num
3
u2_post_no_provider_why
NaN
u2_post_no_provider_why_other
NaN
country
Brazil
user_id
u2_5467689875668992

```

```

... \
observation_id      ...
submitted_time      ...
gender              ...
age                 ...
geography            ...
financial_situation  ...
education            ...
employment_status    ...
ethnicity            ...
religion             ...
u2_hh                ...
u2_child_count       ...

```


| | |
|-------------------------------|-----|
| u2_child1_age_months | ... |
| u2_child1_sex | ... |
| u2_child2_age_months | ... |
| u2_child2_sex | ... |
| u2_child3_age_months | ... |
| u2_child3_sex | ... |
| u2_vaccine_card | ... |
| u2_pre_vaccines | ... |
| u2_pre_vaccine_count | ... |
| u2_pre_no_vaccine_why | ... |
| u2_pre_no_vaccine_why_other | ... |
| u2_post_vaccines | ... |
| u2_post_vaccine_count | ... |
| u2_post_no_vaccine_why | ... |
| u2_post_no_vaccine_why_other | ... |
| u2_dtp_doses | ... |
| u2_rotavirus_doses | ... |
| u2_pneu_doses | ... |
| u2_measles_doses | ... |
| u2_pre_provider_need | ... |
| u2_pre_condition | ... |
| u2_pre_provider_visit | ... |
| u2_pre_provider_where | ... |
| u2_pre_provider_num | ... |
| u2_pre_no_provider_why | ... |
| u2_pre_no_provider_why_other | ... |
| u2_post_provider_need | ... |
| u2_post_condition | ... |
| u2_post_provider_visit | ... |
| u2_post_provider_where | ... |
| u2_post_provider_num | ... |
| u2_post_no_provider_why | ... |
| u2_post_no_provider_why_other | ... |
| country | ... |
| user_id | ... |

7218 \

observation_id

u2_6752654418247680

submitted_time

2020-07-01

23:21:56.579 UTC

gender

Male

age

26 to 35

years old

geography

Suburban/Peri-urban

financial_situation

I can afford food and regular expenses,

but no...

| | |
|------------------------------|----------|
| education | |
| Secondary/high school | |
| employment_status | Employed |
| full-time | |
| ethnicity | |
| Bisaya | |
| religion | |
| Other | |
| u2_hh | |
| 8 | |
| u2_child_count | |
| 3 | |
| u2_child1_age_months | |
| 1.0 | |
| u2_child1_sex | |
| Male | |
| u2_child2_age_months | |
| 3.0 | |
| u2_child2_sex | |
| Male | |
| u2_child3_age_months | |
| 6.0 | |
| u2_child3_sex | |
| Male | |
| u2_vaccine_card | |
| No | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 2.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| Yes | |
| u2_post_vaccine_count | |
| 2.0 | |
| u2_post_no_vaccine_why | |
| NaN | |
| u2_post_no_vaccine_why_other | |
| NaN | |
| u2_dtp_doses | |
| 1 | |
| u2_rotavirus_doses | |
| 1 | |
| u2_pneu_doses | |
| 1 | |
| u2_measles_doses | |

1
u2_pre_provider_need
Yes
u2_pre_condition
Pneumonia
u2_pre_provider_visit
Yes
u2_pre_provider_where
Other
u2_pre_provider_num
1
u2_pre_no_provider_why
NaN
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
Yes
u2_post_condition
Pneumonia
u2_post_provider_visit
Yes
u2_post_provider_where
Online
u2_post_provider_num
3
u2_post_no_provider_why
NaN
u2_post_no_provider_why_other
NaN
country
Philippines
user_id
u2_5526451209633792

7219 \\
observation_id
u2_6752892453388288
submitted_time 2020-07-01
15:11:02.591 UTC
gender
Male
age 26 to 35
years old
geography City center or
metropolitan area
financial_situation I can afford food and regular expenses,
but no...
education College or

university
employment_status
Student
ethnicity
Mossi
religion
Muslim
u2_hh
2
u2_child_count
3
u2_child1_age_months
12.0
u2_child1_sex
Female
u2_child2_age_months
1.0
u2_child2_sex
Female
u2_child3_age_months
1.0
u2_child3_sex
Male
u2_vaccine_card
Yes
u2_pre_vaccines
Yes
u2_pre_vaccine_count
6.0
u2_pre_no_vaccine_why
NaN
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
Yes
u2_post_vaccine_count
3.0
u2_post_no_vaccine_why
NaN
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
2
u2_rotavirus_doses
2
u2_pneu_doses
2
u2_measles_doses
2 or more

| | |
|-------------------------------|---|
| u2_pre_provider_need | |
| No | |
| u2_pre_condition | |
| NaN | |
| u2_pre_provider_visit | |
| NaN | |
| u2_pre_provider_where | |
| NaN | |
| u2_pre_provider_num | |
| NaN | |
| u2_pre_no_provider_why | |
| NaN | |
| u2_pre_no_provider_why_other | |
| NaN | |
| u2_post_provider_need | |
| Yes | |
| u2_post_condition | |
| Diarrhea | |
| u2_post_provider_visit | My child saw a provider during this |
| time, but ... | |
| u2_post_provider_where | |
| NaN | |
| u2_post_provider_num | |
| 3 | |
| u2_post_no_provider_why | Health |
| facility closed | |
| u2_post_no_provider_why_other | |
| NaN | |
| country | |
| Burkina Faso | |
| user_id | |
| u2_5681478860275712 | |
| | |
| 7220 \ | |
| observation_id | |
| u2_6752921816662016 | |
| submitted_time | 2020-07-02 |
| 07:58:23.835 UTC | |
| gender | |
| Female | |
| age | Over 45 |
| years old | |
| geography | |
| Rural | |
| financial_situation | I can afford food and regular expenses, |
| but no... | |
| education | |
| Secondary/high school | |

employment_status
Unemployed
ethnicity
Serb
religion
Eastern Orthodox
u2_hh
1
u2_child_count
2
u2_child1_age_months
3.0
u2_child1_sex
Female
u2_child2_age_months
2.0
u2_child2_sex
Male
u2_child3_age_months
NaN
u2_child3_sex
NaN
u2_vaccine_card
Yes
u2_pre_vaccines
Yes
u2_pre_vaccine_count
6.0
u2_pre_no_vaccine_why
NaN
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
Yes
u2_post_vaccine_count
3.0
u2_post_no_vaccine_why
NaN
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
0
u2_rotavirus_doses
0
u2_pneu_doses
0
u2_measles_doses
0
u2_pre_provider_need

| | |
|-------------------------------|---|
| Yes | |
| u2_pre_condition | |
| Diarrhea | |
| u2_pre_provider_visit | |
| Yes | |
| u2_pre_provider_where | |
| Health facility | |
| u2_pre_provider_num | |
| 3 | |
| u2_pre_no_provider_why | |
| NaN | |
| u2_pre_no_provider_why_other | |
| NaN | |
| u2_post_provider_need | |
| Yes | |
| u2_post_condition | |
| Diarrhea | |
| u2_post_provider_visit | My child saw a provider during this |
| time, but ... | |
| u2_post_provider_where | |
| NaN | |
| u2_post_provider_num | |
| 2 | |
| u2_post_no_provider_why | Health |
| facility closed | |
| u2_post_no_provider_why_other | |
| NaN | |
| country | |
| Serbia | |
| user_id | |
| u2_4665415275380736 | |
| | |
| 7221 \ | |
| observation_id | |
| u2_6753354803052544 | |
| submitted_time | 2020-07-22 |
| 01:35:04.112 UTC | |
| gender | |
| Male | |
| age | 36 to 45 |
| years old | |
| geography | City center or |
| metropolitan area | |
| financial_situation | I can afford food and regular expenses, |
| but no... | |
| education | College or |
| university | |
| employment_status | Employed |

full-time
ethnicity
White
religion
Catholicism
u2_hh
9
u2_child_count
1
u2_child1_age_months
24.0
u2_child1_sex
Female
u2_child2_age_months
NaN
u2_child2_sex
NaN
u2_child3_age_months
NaN
u2_child3_sex
NaN
u2_vaccine_card
Yes
u2_pre_vaccines
Yes
u2_pre_vaccine_count
1.0
u2_pre_no_vaccine_why
NaN
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
No
u2_post_vaccine_count
NaN
u2_post_no_vaccine_why Shortage of vaccines or vaccines
out of stock
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
Don't know
u2_rotavirus_doses
1
u2_pneu_doses
Don't know
u2_measles_doses
Don't know
u2_pre_provider_need
No

u2_pre_condition
NaN
u2_pre_provider_visit
NaN
u2_pre_provider_where
NaN
u2_pre_provider_num
NaN
u2_pre_no_provider_why
NaN
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
No
u2_post_condition
NaN
u2_post_provider_visit
NaN
u2_post_provider_where
NaN
u2_post_provider_num
NaN
u2_post_no_provider_why
NaN
u2_post_no_provider_why_other
NaN
country
Costa Rica
user_id
u2_5900294404964352

| | |
|----------------------|-------------------------------------|
| | 7222 \ |
| observation_id | u2_6754044917055488 |
| submitted_time | 2020-07-15 01:58:06.955 UTC |
| gender | Female |
| age | 26 to 35 years old |
| geography | Suburban/Peri-urban |
| financial_situation | I can afford food, but nothing else |
| education | College or university |
| employment_status | Employed full-time |
| ethnicity | Hispanic |
| religion | Prefer Not To Answer |
| u2_hh | 3 |
| u2_child_count | 1 |
| u2_child1_age_months | 9.0 |
| u2_child1_sex | Male |
| u2_child2_age_months | NaN |
| u2_child2_sex | NaN |
| u2_child3_age_months | NaN |

| | |
|-------------------------------|---------------------|
| u2_child3_sex | NaN |
| u2_vaccine_card | Yes |
| u2_pre_vaccines | Yes |
| u2_pre_vaccine_count | 6.0 |
| u2_pre_no_vaccine_why | NaN |
| u2_pre_no_vaccine_why_other | NaN |
| u2_post_vaccines | Yes |
| u2_post_vaccine_count | 6.0 |
| u2_post_no_vaccine_why | NaN |
| u2_post_no_vaccine_why_other | NaN |
| u2_dtp_doses | 3 or more |
| u2_rotavirus_doses | 3 or more |
| u2_pneu_doses | 3 or more |
| u2_measles_doses | Don't know |
| u2_pre_provider_need | No |
| u2_pre_condition | NaN |
| u2_pre_provider_visit | NaN |
| u2_pre_provider_where | NaN |
| u2_pre_provider_num | NaN |
| u2_pre_no_provider_why | NaN |
| u2_pre_no_provider_why_other | NaN |
| u2_post_provider_need | No |
| u2_post_condition | NaN |
| u2_post_provider_visit | NaN |
| u2_post_provider_where | NaN |
| u2_post_provider_num | NaN |
| u2_post_no_provider_why | NaN |
| u2_post_no_provider_why_other | NaN |
| country | United States |
| user_id | u2_5022190522335232 |

7223 \

| | |
|---------------------|---------------------------------|
| observation_id | |
| u2_6754387638878208 | |
| submitted_time | 2020-07-01 |
| 14:59:06.82 UTC | |
| gender | |
| Male | |
| age | 16 to 25 |
| years old | |
| geography | City center or |
| metropolitan area | |
| financial_situation | I cannot afford enough food for |
| my family | |
| education | College or |
| university | |
| employment_status | |
| Self-employed | |

ethnicity
Mossi
religion
Roman Catholic
u2_hh
3
u2_child_count
1
u2_child1_age_months
6.0
u2_child1_sex
Male
u2_child2_age_months
NaN
u2_child2_sex
NaN
u2_child3_age_months
NaN
u2_child3_sex
NaN
u2_vaccine_card
Yes
u2_pre_vaccines
Yes
u2_pre_vaccine_count
2.0
u2_pre_no_vaccine_why
NaN
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
No
u2_post_vaccine_count
NaN
u2_post_no_vaccine_why
child was sick
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
3 or more
u2_rotavirus_doses
3 or more
u2_pneu_doses
1
u2_measles_doses
1
u2_pre_provider_need
No
u2_pre_condition

My

| | |
|-------------------------------|---|
| NaN | |
| u2_pre_provider_visit | |
| NaN | |
| u2_pre_provider_where | |
| NaN | |
| u2_pre_provider_num | |
| NaN | |
| u2_pre_no_provider_why | |
| NaN | |
| u2_pre_no_provider_why_other | |
| NaN | |
| u2_post_provider_need | |
| Yes | |
| u2_post_condition | Birth defect or |
| congenital problem | |
| u2_post_provider_visit | My child saw a provider during this |
| time, but ... | |
| u2_post_provider_where | |
| NaN | |
| u2_post_provider_num | |
| 5 | |
| u2_post_no_provider_why | Decline |
| to respond | |
| u2_post_no_provider_why_other | |
| NaN | |
| country | |
| Burkina Faso | |
| user_id | |
| u2_6532940630851584 | |
| | |
| 7224 \ | |
| observation_id | |
| u2_6754421129347072 | |
| submitted_time | 2020-07-05 |
| 02:06:50.522 UTC | |
| gender | |
| Male | |
| age | 16 to 25 |
| years old | |
| geography | |
| Suburban/Peri-urban | |
| financial_situation | I can afford food and regular expenses, |
| and bu... | |
| education | |
| Secondary/high school | |
| employment_status | Employed |
| part-time | |
| ethnicity | |
| Baganda | |

religion
Muslim
u2_hh
1
u2_child_count
1
u2_child1_age_months
14.0
u2_child1_sex
Female
u2_child2_age_months
NaN
u2_child2_sex
NaN
u2_child3_age_months
NaN
u2_child3_sex
NaN
u2_vaccine_card
Yes
u2_pre_vaccines
Yes
u2_pre_vaccine_count
1.0
u2_pre_no_vaccine_why
NaN
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
No
u2_post_vaccine_count
NaN
u2_post_no_vaccine_why Fear of being infected with COVID-19^Health fa...
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
1
u2_rotavirus_doses
1
u2_pneu_doses
1
u2_measles_doses
1
u2_pre_provider_need
Yes
u2_pre_condition
Other
u2_pre_provider_visit

Yes
 u2_pre_provider_where
 Health facility
 u2_pre_provider_num
 3
 u2_pre_no_provider_why
 NaN
 u2_pre_no_provider_why_other
 NaN
 u2_post_provider_need
 No
 u2_post_condition
 NaN
 u2_post_provider_visit
 NaN
 u2_post_provider_where
 NaN
 u2_post_provider_num
 NaN
 u2_post_no_provider_why
 NaN
 u2_post_no_provider_why_other
 NaN
 country
 Uganda
 user_id
 u2_5363001946800128

| | |
|----------------------|-------------------------------------|
| | 7225 \ |
| observation_id | u2_6754616949866496 |
| submitted_time | 2020-07-07 06:44:30.974 UTC |
| gender | Male |
| age | 26 to 35 years old |
| geography | Rural |
| financial_situation | I can afford food, but nothing else |
| education | Technical school |
| employment_status | Self-employed |
| ethnicity | Yoruba |
| religion | Christianity |
| u2_hh | 4 |
| u2_child_count | 2 |
| u2_child1_age_months | 11.0 |
| u2_child1_sex | Female |
| u2_child2_age_months | 12.0 |
| u2_child2_sex | Female |
| u2_child3_age_months | NaN |
| u2_child3_sex | NaN |
| u2_vaccine_card | No |
| u2_pre_vaccines | No |

| | |
|-------------------------------|---------------------|
| u2_pre_vaccine_count | NaN |
| u2_pre_no_vaccine_why | Lack of money |
| u2_pre_no_vaccine_why_other | NaN |
| u2_post_vaccines | No |
| u2_post_vaccine_count | NaN |
| u2_post_no_vaccine_why | Lack of money |
| u2_post_no_vaccine_why_other | NaN |
| u2_dtp_doses | 2 |
| u2_rotavirus_doses | 2 |
| u2_pneu_doses | 2 |
| u2_measles_doses | 2 or more |
| u2_pre_provider_need | No |
| u2_pre_condition | NaN |
| u2_pre_provider_visit | NaN |
| u2_pre_provider_where | NaN |
| u2_pre_provider_num | NaN |
| u2_pre_no_provider_why | NaN |
| u2_pre_no_provider_why_other | NaN |
| u2_post_provider_need | No |
| u2_post_condition | NaN |
| u2_post_provider_visit | NaN |
| u2_post_provider_where | NaN |
| u2_post_provider_num | NaN |
| u2_post_no_provider_why | NaN |
| u2_post_no_provider_why_other | NaN |
| country | Nigeria |
| user_id | u2_5779942448562176 |

7226 \

| | |
|---------------------|---|
| observation_id | u2_6754906729086976 |
| submitted_time | 2020-07-02 09:49:21.467 |
| UTC | |
| gender | Male |
| age | 16 to 25 years |
| old | |
| geography | Rural |
| financial_situation | I cannot afford enough food for my family |
| education | Secondary/high school |
| employment_status | Employed full-time |
| ethnicity | Tagalog |
| religion | |

Christianity
u2_hh
1
u2_child_count
2
u2_child1_age_months
5.0
u2_child1_sex
Male
u2_child2_age_months
8.0
u2_child2_sex
Male
u2_child3_age_months
NaN
u2_child3_sex
NaN
u2_vaccine_card
Yes
u2_pre_vaccines
Yes
u2_pre_vaccine_count
1.0
u2_pre_no_vaccine_why
NaN
u2_pre_no_vaccine_why_other
NaN
u2_post_vaccines
Yes
u2_post_vaccine_count
1.0
u2_post_no_vaccine_why
NaN
u2_post_no_vaccine_why_other
NaN
u2_dtp_doses
0
u2_rotavirus_doses
2
u2_pneu_doses
1
u2_measles_doses
1
u2_pre_provider_need
No
u2_pre_condition
NaN
u2_pre_provider_visit
NaN

u2_pre_provider_where
NaN
u2_pre_provider_num
NaN
u2_pre_no_provider_why
NaN
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
No
u2_post_condition
NaN
u2_post_provider_visit
NaN
u2_post_provider_where
NaN
u2_post_provider_num
NaN
u2_post_no_provider_why
NaN
u2_post_no_provider_why_other
NaN
country
Philippines
user_id
u2_6586517350252544

7227
observation_id
u2_6754986118873088
submitted_time 2020-07-02
15:45:03.342 UTC
gender
Male
age 16 to 25
years old
geography
Rural
financial_situation I cannot afford enough food for
my family
education
Primary school
employment_status Employed
full-time
ethnicity
Baganda
religion
Christianity

| | |
|------------------------------|-------------------------------------|
| u2_hh | |
| 1 | |
| u2_child_count | |
| 1 | |
| u2_child1_age_months | |
| 8.0 | |
| u2_child1_sex | |
| Male | |
| u2_child2_age_months | |
| NaN | |
| u2_child2_sex | |
| NaN | |
| u2_child3_age_months | |
| NaN | |
| u2_child3_sex | |
| NaN | |
| u2_vaccine_card | |
| Yes | |
| u2_pre_vaccines | |
| Yes | |
| u2_pre_vaccine_count | |
| 5.0 | |
| u2_pre_no_vaccine_why | |
| NaN | |
| u2_pre_no_vaccine_why_other | |
| NaN | |
| u2_post_vaccines | |
| Yes | |
| u2_post_vaccine_count | |
| 1.0 | |
| u2_post_no_vaccine_why | |
| NaN | |
| u2_post_no_vaccine_why_other | |
| NaN | |
| u2_dtp_doses | |
| 1 | |
| u2_rotavirus_doses | |
| 1 | |
| u2_pneu_doses | |
| 1 | |
| u2_measles_doses | |
| 1 | |
| u2_pre_provider_need | |
| Yes | |
| u2_pre_condition | |
| Diarrhea | |
| u2_pre_provider_visit | My child saw a provider during this |
| time, but ... | |
| u2_pre_provider_where | |

```

NaN
u2_pre_provider_num
2
u2_pre_no_provider_why Health
facility closed
u2_pre_no_provider_why_other
NaN
u2_post_provider_need
Yes
u2_post_condition Birth defect or
congenital problem
u2_post_provider_visit
Yes
u2_post_provider_where
Health facility
u2_post_provider_num
1
u2_post_no_provider_why
NaN
u2_post_no_provider_why_other
NaN
country
Uganda
user_id
u2_4955652432855040

```

```
[47 rows x 7228 columns]
```

#wyświetlenie 10 pierwszych wierszy ramki

```
data_frame.head(10)
```

| | observation_id | submitted_time | gender | \ |
|---|---------------------|-----------------------------|--------|---|
| 0 | u2_4503977216704512 | 2020-07-06 17:46:17.8 UTC | Male | |
| 1 | u2_4505961390931968 | 2020-07-07 00:25:56.895 UTC | Female | |
| 2 | u2_4506421419048960 | 2020-07-11 07:16:01.196 UTC | Male | |
| 3 | u2_4506681267716096 | 2020-07-01 14:32:45.987 UTC | Male | |
| 4 | u2_4506682207240192 | 2020-07-01 15:07:48.944 UTC | Male | |
| 5 | u2_4506936952487936 | 2020-07-15 17:35:55.32 UTC | Male | |
| 6 | u2_4507055500296192 | 2020-07-01 20:49:40.526 UTC | Female | |
| 7 | u2_4507565829652480 | 2020-07-06 19:46:18.779 UTC | Female | |
| 8 | u2_4508158434476032 | 2020-07-23 10:20:46.151 UTC | Male | |
| 9 | u2_4508201350594560 | 2020-07-14 15:25:14.669 UTC | Male | |

| | age | geography | \ |
|---|--------------------|----------------------------------|---|
| 0 | 26 to 35 years old | City center or metropolitan area | |
| 1 | 26 to 35 years old | Suburban/Peri-urban | |
| 2 | 26 to 35 years old | City center or metropolitan area | |
| 3 | 26 to 35 years old | Suburban/Peri-urban | |
| 4 | 26 to 35 years old | Rural | |

| | | |
|---|--------------------|----------------------------------|
| 5 | 16 to 25 years old | City center or metropolitan area |
| 6 | 36 to 45 years old | Suburban/Peri-urban |
| 7 | 26 to 35 years old | Suburban/Peri-urban |
| 8 | 16 to 25 years old | City center or metropolitan area |
| 9 | 16 to 25 years old | Rural |

financial_situation

education \

| | | |
|---|---|-----------------------|
| 0 | I can afford food and regular expenses, but no... | College or university |
| 1 | I cannot afford enough food for my family | Technical school |
| 2 | I can afford food and regular expenses, but no... | College or university |
| 3 | I can afford food and regular expenses, but no... | Secondary/high school |
| 4 | I can afford food, but nothing else | Secondary/high school |
| 5 | I cannot afford enough food for my family | Secondary/high school |
| 6 | I can afford food and regular expenses, and bu... | College or university |
| 7 | I can afford food and regular expenses, and bu... | College or university |
| 8 | I cannot afford enough food for my family | Post graduate |
| 9 | I can afford food and regular expenses, but no... | Secondary/high school |

| | employment_status | ethnicity | religion | ... | \ |
|---|--------------------|---------------|----------------------|-----|---|
| 0 | Employed full-time | Afro-Jamaican | Roman Catholic | ... | |
| 1 | Self-employed | Hispanic | Catholicism | ... | |
| 2 | Self-employed | Bantou | Protestantism | ... | |
| 3 | Self-employed | Bantou | Protestantism | ... | |
| 4 | Employed part-time | Mestizo | Other | ... | |
| 5 | Unemployed | Java | Muslim | ... | |
| 6 | Unemployed | Hiligaynon | Christianity | ... | |
| 7 | Employed full-time | Malay | Muslim | ... | |
| 8 | Student | Amhara | Ethiopian Orthodox | ... | |
| 9 | Unemployed | Asian | Prefer Not To Answer | ... | |

| | u2_pre_no_provider_why_other | u2_post_provider_need | \ |
|---|------------------------------|-----------------------|---|
| 0 | NaN | Yes | |
| 1 | NaN | No | |
| 2 | NaN | No | |
| 3 | NaN | Yes | |
| 4 | NaN | Yes | |
| 5 | NaN | Yes | |
| 6 | NaN | No | |
| 7 | NaN | Yes | |

| | | | |
|---|---|----------|-----|
| 8 | | NaN | Yes |
| 9 | | NaN | Yes |
| u2_post_condition \ | | | |
| 0 | Birth defect or congenital problem | | |
| 1 | | NaN | |
| 2 | | NaN | |
| 3 | | Diarrhea | |
| 4 | Birth defect or congenital problem^Diarrhea | | |
| 5 | | Diarrhea | |
| 6 | | NaN | |
| 7 | | Other | |
| 8 | | Diarrhea | |
| 9 | | Diarrhea | |
| u2_post_provider_visit \ | | | |
| 0 | | | No |
| 1 | | | NaN |
| 2 | | | NaN |
| 3 | | | No |
| 4 | | | Yes |
| 5 | | | No |
| 6 | | | NaN |
| 7 | | | No |
| 8 | My child saw a provider during this time, but ... | | ... |
| 9 | | | Yes |
| u2_post_provider_where u2_post_provider_num \ | | | |
| 0 | | NaN | NaN |
| 1 | | NaN | NaN |
| 2 | | NaN | NaN |
| 3 | | NaN | NaN |
| 4 | At my home^Health facility | | 2 |
| 5 | | NaN | NaN |
| 6 | | NaN | NaN |
| 7 | | NaN | NaN |
| 8 | | NaN | 2 |
| 9 | At my home^Health facility | | 3 |
| u2_post_no_provider_why u2_post_no_provider_why_other \ | | | |
| 0 | Health facility closed | | NaN |
| 1 | | NaN | NaN |
| 2 | | NaN | NaN |
| 3 | Turned away from health facility | | NaN |
| 4 | | NaN | NaN |
| 5 | Turned away from health facility | | NaN |
| 6 | | NaN | NaN |
| 7 | Health facility closed | | NaN |
| 8 | Health facility closed | | NaN |
| 9 | | NaN | NaN |

| | country | user_id |
|---|----------------------------------|---------------------|
| 0 | Jamaica | u2_4519417576161280 |
| 1 | United States | u2_6197364724858880 |
| 2 | Democratic Republic of the Congo | u2_5202308155834368 |
| 3 | Democratic Republic of the Congo | u2_6709282991243264 |
| 4 | Nicaragua | u2_6190896700194816 |
| 5 | Indonesia | u2_6680972922716160 |
| 6 | Philippines | u2_6438713447415808 |
| 7 | Indonesia | u2_6676464578068480 |
| 8 | Ethiopia | u2_6601115441561600 |
| 9 | Brazil | u2_5467689875668992 |

[10 rows x 47 columns]

#wyświetlenie ostatnich 10 wierszy
data_frame.tail(10)

| | observation_id | submitted_time | gender | \ |
|------|---------------------|-----------------------------|--------|---|
| 7218 | u2_6752654418247680 | 2020-07-01 23:21:56.579 UTC | Male | |
| 7219 | u2_6752892453388288 | 2020-07-01 15:11:02.591 UTC | Male | |
| 7220 | u2_6752921816662016 | 2020-07-02 07:58:23.835 UTC | Female | |
| 7221 | u2_6753354803052544 | 2020-07-22 01:35:04.112 UTC | Male | |
| 7222 | u2_6754044917055488 | 2020-07-15 01:58:06.955 UTC | Female | |
| 7223 | u2_6754387638878208 | 2020-07-01 14:59:06.82 UTC | Male | |
| 7224 | u2_6754421129347072 | 2020-07-05 02:06:50.522 UTC | Male | |
| 7225 | u2_6754616949866496 | 2020-07-07 06:44:30.974 UTC | Male | |
| 7226 | u2_6754906729086976 | 2020-07-02 09:49:21.467 UTC | Male | |
| 7227 | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male | |

| | age | geography | \ |
|------|--------------------|----------------------------------|---|
| 7218 | 26 to 35 years old | Suburban/Peri-urban | |
| 7219 | 26 to 35 years old | City center or metropolitan area | |
| 7220 | Over 45 years old | Rural | |
| 7221 | 36 to 45 years old | City center or metropolitan area | |
| 7222 | 26 to 35 years old | Suburban/Peri-urban | |
| 7223 | 16 to 25 years old | City center or metropolitan area | |
| 7224 | 16 to 25 years old | Suburban/Peri-urban | |
| 7225 | 26 to 35 years old | Rural | |
| 7226 | 16 to 25 years old | Rural | |
| 7227 | 16 to 25 years old | Rural | |

| | financial_situation | \ |
|------|---|---|
| 7218 | I can afford food and regular expenses, but no... | |
| 7219 | I can afford food and regular expenses, but no... | |
| 7220 | I can afford food and regular expenses, but no... | |
| 7221 | I can afford food and regular expenses, but no... | |
| 7222 | I can afford food, but nothing else | |
| 7223 | I cannot afford enough food for my family | |
| 7224 | I can afford food and regular expenses, and bu... | |

| | |
|------|---|
| 7225 | I can afford food, but nothing else |
| 7226 | I cannot afford enough food for my family |
| 7227 | I cannot afford enough food for my family |

| | education | employment_status | ethnicity | \ |
|------|-----------------------|--------------------|-----------|---|
| 7218 | Secondary/high school | Employed full-time | Bisaya | |
| 7219 | College or university | Student | Mossi | |
| 7220 | Secondary/high school | Unemployed | Serb | |
| 7221 | College or university | Employed full-time | White | |
| 7222 | College or university | Employed full-time | Hispanic | |
| 7223 | College or university | Self-employed | Mossi | |
| 7224 | Secondary/high school | Employed part-time | Baganda | |
| 7225 | Technical school | Self-employed | Yoruba | |
| 7226 | Secondary/high school | Employed full-time | Tagalog | |
| 7227 | Primary school | Employed full-time | Baganda | |

| | religion | ... u2_pre_no_provider_why_other | \ |
|------|----------------------|----------------------------------|-----|
| 7218 | Other | ... | NaN |
| 7219 | Muslim | ... | NaN |
| 7220 | Eastern Orthodox | ... | NaN |
| 7221 | Catholicism | ... | NaN |
| 7222 | Prefer Not To Answer | ... | NaN |
| 7223 | Roman Catholic | ... | NaN |
| 7224 | Muslim | ... | NaN |
| 7225 | Christianity | ... | NaN |
| 7226 | Christianity | ... | NaN |
| 7227 | Christianity | ... | NaN |

| | u2_post_provider_need | u2_post_condition | \ |
|------|-----------------------|------------------------------------|---|
| 7218 | Yes | Pneumonia | |
| 7219 | Yes | Diarrhea | |
| 7220 | Yes | Diarrhea | |
| 7221 | No | NaN | |
| 7222 | No | NaN | |
| 7223 | Yes | Birth defect or congenital problem | |
| 7224 | No | NaN | |
| 7225 | No | NaN | |
| 7226 | No | NaN | |
| 7227 | Yes | Birth defect or congenital problem | |

| | u2_post_provider_visit | \ |
|------|---|---|
| 7218 | Yes | |
| 7219 | My child saw a provider during this time, but ... | |
| 7220 | My child saw a provider during this time, but ... | |
| 7221 | NaN | |
| 7222 | NaN | |
| 7223 | My child saw a provider during this time, but ... | |
| 7224 | NaN | |
| 7225 | NaN | |
| 7226 | NaN | |

| | | | |
|---------------------------|-------------------------------|----------------------|---------------------|
| 7227 | | | Yes |
| | u2_post_provider_where | u2_post_provider_num | |
| u2_post_no_provider_why \ | | | |
| 7218 | Online | 3 | |
| NaN | | | |
| 7219 | NaN | 3 | Health facility |
| closed | | | |
| 7220 | NaN | 2 | Health facility |
| closed | | | |
| 7221 | NaN | NaN | |
| NaN | | | |
| 7222 | NaN | NaN | |
| NaN | | | |
| 7223 | NaN | 5 | Decline to |
| respond | | | |
| 7224 | NaN | NaN | |
| NaN | | | |
| 7225 | NaN | NaN | |
| NaN | | | |
| 7226 | NaN | NaN | |
| NaN | | | |
| 7227 | Health facility | 1 | |
| NaN | | | |
| | u2_post_no_provider_why_other | country | user_id |
| 7218 | NaN | Philippines | u2_5526451209633792 |
| 7219 | NaN | Burkina Faso | u2_5681478860275712 |
| 7220 | NaN | Serbia | u2_4665415275380736 |
| 7221 | NaN | Costa Rica | u2_5900294404964352 |
| 7222 | NaN | United States | u2_5022190522335232 |
| 7223 | NaN | Burkina Faso | u2_6532940630851584 |
| 7224 | NaN | Uganda | u2_5363001946800128 |
| 7225 | NaN | Nigeria | u2_5779942448562176 |
| 7226 | NaN | Philippines | u2_6586517350252544 |
| 7227 | NaN | Uganda | u2_4955652432855040 |
| [10 rows x 47 columns] | | | |


```
#wyświetlić informacje o ramce
```

```
data_frame.info()
```

```
<class 'pandas.core.frame.DataFrame'>
```

```
RangeIndex: 7228 entries, 0 to 7227
```

```
Data columns (total 47 columns):
```

| # | Column | Non-Null Count | Dtype |
|----|------------------------------|----------------|---------|
| 0 | observation_id | 7228 non-null | object |
| 1 | submitted_time | 7228 non-null | object |
| 2 | gender | 7228 non-null | object |
| 3 | age | 7228 non-null | object |
| 4 | geography | 7228 non-null | object |
| 5 | financial_situation | 7228 non-null | object |
| 6 | education | 7228 non-null | object |
| 7 | employment_status | 7228 non-null | object |
| 8 | ethnicity | 7228 non-null | object |
| 9 | religion | 7228 non-null | object |
| 10 | u2_hh | 7227 non-null | object |
| 11 | u2_child_count | 7228 non-null | int64 |
| 12 | u2_child1_age_months | 7228 non-null | float64 |
| 13 | u2_child1_sex | 7228 non-null | object |
| 14 | u2_child2_age_months | 2756 non-null | float64 |
| 15 | u2_child2_sex | 2756 non-null | object |
| 16 | u2_child3_age_months | 922 non-null | float64 |
| 17 | u2_child3_sex | 922 non-null | object |
| 18 | u2_vaccine_card | 7228 non-null | object |
| 19 | u2_pre_vaccines | 7228 non-null | object |
| 20 | u2_pre_vaccine_count | 5149 non-null | float64 |
| 21 | u2_pre_no_vaccine_why | 2079 non-null | object |
| 22 | u2_pre_no_vaccine_why_other | 222 non-null | object |
| 23 | u2_post_vaccines | 7228 non-null | object |
| 24 | u2_post_vaccine_count | 4451 non-null | float64 |
| 25 | u2_post_no_vaccine_why | 2777 non-null | object |
| 26 | u2_post_no_vaccine_why_other | 183 non-null | object |
| 27 | u2_dtp_doses | 7228 non-null | object |
| 28 | u2_rotavirus_doses | 7228 non-null | object |
| 29 | u2_pneu_doses | 7228 non-null | object |
| 30 | u2_measles_doses | 7228 non-null | object |
| 31 | u2_pre_provider_need | 7228 non-null | object |
| 32 | u2_pre_condition | 3420 non-null | object |
| 33 | u2_pre_provider_visit | 3390 non-null | object |
| 34 | u2_pre_provider_where | 2070 non-null | object |
| 35 | u2_pre_provider_num | 2932 non-null | object |
| 36 | u2_pre_no_provider_why | 1320 non-null | object |
| 37 | u2_pre_no_provider_why_other | 63 non-null | object |
| 38 | u2_post_provider_need | 7174 non-null | object |
| 39 | u2_post_condition | 3402 non-null | object |
| 40 | u2_post_provider_visit | 3365 non-null | object |

```

41 u2_post_provider_where      1845 non-null object
42 u2_post_provider_num       2909 non-null object
43 u2_post_no_provider_why     1520 non-null object
44 u2_post_no_provider_why_other 50 non-null object
45 country                     7228 non-null object
46 user_id                     7228 non-null object
dtypes: float64(5), int64(1), object(41)
memory usage: 2.6+ MB

```

#wyświetlić liczbę kolumn i wierszy

```
data_frame.shape
```

```
(7228, 47)
```

#wyświetlić informację statystyczną o kolumnach liczbowych

```
data_frame.describe()
```

| | u2_child_count | u2_child1_age_months | u2_child2_age_months \ |
|-------|----------------|----------------------|------------------------|
| count | 7228.000000 | 7228.000000 | 2756.000000 |
| mean | 1.508854 | 7.646526 | 7.163831 |
| std | 0.710711 | 6.993561 | 6.906221 |
| min | 1.000000 | 0.000000 | 0.000000 |
| 25% | 1.000000 | 2.000000 | 2.000000 |
| 50% | 1.000000 | 5.000000 | 5.000000 |
| 75% | 2.000000 | 12.000000 | 10.000000 |
| max | 3.000000 | 25.000000 | 25.000000 |

| | u2_child3_age_months | u2_pre_vaccine_count |
|-----------------------|----------------------|----------------------|
| u2_post_vaccine_count | | |
| count | 922.000000 | 5.149000e+03 |
| 4.451000e+03 | | |
| mean | 6.629826 | 5.839653e+05 |
| 3.009780e+06 | | |
| std | 6.477690 | 2.273222e+07 |
| 1.514366e+08 | | |
| min | 0.000000 | 0.000000e+00 |
| 0.000000e+00 | | |
| 25% | 2.000000 | 1.000000e+00 |
| 1.000000e+00 | | |
| 50% | 5.000000 | 2.000000e+00 |
| 2.000000e+00 | | |
| 75% | 9.000000 | 3.000000e+00 |
| 3.000000e+00 | | |
| max | 25.000000 | 1.124894e+09 |
| 9.983722e+09 | | |

#wyświetlić informację statystyczną o kolumnach kategorizowanych

```
data_frame.describe(include='all')
```

| | observation_id | submitted_time | gender | \ |
|--------|---------------------|-----------------------------|--------|---|
| count | 7228 | 7228 | 7228 | |
| unique | 7228 | 7228 | 4 | |
| top | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male | |
| freq | 1 | 1 | 5073 | |
| mean | NaN | NaN | NaN | |
| std | NaN | NaN | NaN | |
| min | NaN | NaN | NaN | |
| 25% | NaN | NaN | NaN | |
| 50% | NaN | NaN | NaN | |
| 75% | NaN | NaN | NaN | |
| max | NaN | NaN | NaN | |

| | age | geography | \ |
|--------|--------------------|----------------------------------|---|
| count | 7228 | 7228 | |
| unique | 6 | 4 | |
| top | 16 to 25 years old | City center or metropolitan area | |
| freq | 3229 | 2901 | |
| mean | NaN | NaN | |
| std | NaN | NaN | |
| min | NaN | NaN | |
| 25% | NaN | NaN | |
| 50% | NaN | NaN | |
| 75% | NaN | NaN | |
| max | NaN | NaN | |

| | financial_situation | \ |
|--------|---|---|
| count | 7228 | |
| unique | 6 | |
| top | I can afford food and regular expenses, but no... | |
| freq | 1728 | |
| mean | NaN | |
| std | NaN | |
| min | NaN | |
| 25% | NaN | |
| 50% | NaN | |
| 75% | NaN | |
| max | NaN | |

| | education | employment_status | ethnicity |
|----------|-----------------------|--------------------|-----------|
| religion | \ | | |
| count | 7228 | 7228 | 7228 |
| unique | 8 | 8 | 171 |
| top | College or university | Employed full-time | Mestizo |
| freq | 2968 | 2061 | 666 |
| mean | NaN | NaN | NaN |

| | | | |
|-----|--|-----|-----|
| NaN | | | |
| std | | NaN | NaN |
| NaN | | | |
| min | | NaN | NaN |
| NaN | | | |
| 25% | | NaN | NaN |
| NaN | | | |
| 50% | | NaN | NaN |
| NaN | | | |
| 75% | | NaN | NaN |
| NaN | | | |
| max | | NaN | NaN |
| NaN | | | |

| | ... | u2_pre_no_provider_why_other | u2_post_provider_need | \ |
|--------|-----|------------------------------|-----------------------|---|
| count | ... | 63 | 7174 | |
| unique | ... | 1 | 2 | |
| top | ... | XXXX | No | |
| freq | ... | 63 | 3809 | |
| mean | ... | NaN | NaN | |
| std | ... | NaN | NaN | |
| min | ... | NaN | NaN | |
| 25% | ... | NaN | NaN | |
| 50% | ... | NaN | NaN | |
| 75% | ... | NaN | NaN | |
| max | ... | NaN | NaN | |

| | u2_post_condition | u2_post_provider_visit |
|------------------------|-------------------|------------------------|
| u2_post_provider_where | \ | |
| count | 3402 | 3365 |
| 1845 | | |
| unique | 129 | 3 |
| 13 | | |
| top | Diarrhea | Yes |
| facility | | Health |
| freq | 857 | 1845 |
| 1262 | | |
| mean | NaN | NaN |
| NaN | | |
| std | NaN | NaN |
| NaN | | |
| min | NaN | NaN |
| NaN | | |
| 25% | NaN | NaN |
| NaN | | |
| 50% | NaN | NaN |
| NaN | | |
| 75% | NaN | NaN |
| NaN | | |
| max | NaN | NaN |

NaN

| | u2_post_provider_num | u2_post_no_provider_why | \ |
|--------|----------------------|-------------------------|---|
| count | 2909 | 1520 | |
| unique | 11 | 82 | |
| top | 1 | Health facility closed | |
| freq | 957 | 525 | |
| mean | NaN | NaN | |
| std | NaN | NaN | |
| min | NaN | NaN | |
| 25% | NaN | NaN | |
| 50% | NaN | NaN | |
| 75% | NaN | NaN | |
| max | NaN | NaN | |

| | u2_post_no_provider_why_other | country | user_id |
|--------|-------------------------------|-------------|---------------------|
| count | 50 | 7228 | 7228 |
| unique | 1 | 76 | 7228 |
| top | XXXX | Philippines | u2_4955652432855040 |
| freq | 50 | 481 | 1 |
| mean | NaN | NaN | NaN |
| std | NaN | NaN | NaN |
| min | NaN | NaN | NaN |
| 25% | NaN | NaN | NaN |
| 50% | NaN | NaN | NaN |
| 75% | NaN | NaN | NaN |
| max | NaN | NaN | NaN |

[11 rows x 47 columns]

#usuwanie brakujących wartości w ramce danych

`data_frame.dropna(inplace=True)`

#przedstawić wybór wierszy i kolumn używając nazw oraz indeksów na różne sposoby

#metoda 1

`data_frame["observation_id"]`

```

0      u2_4503977216704512
1      u2_4505961390931968
2      u2_4506421419048960
3      u2_4506681267716096
4      u2_4506682207240192
...
7223   u2_6754387638878208
7224   u2_6754421129347072
7225   u2_6754616949866496
7226   u2_6754906729086976
7227   u2_6754986118873088
Name: observation_id, Length: 7228, dtype: object

```

#metoda 2

```
data_frame.observation_id
```

```

0      u2_4503977216704512
1      u2_4505961390931968
2      u2_4506421419048960
3      u2_4506681267716096
4      u2_4506682207240192
...
7223   u2_6754387638878208
7224   u2_6754421129347072
7225   u2_6754616949866496
7226   u2_6754906729086976
7227   u2_6754986118873088
Name: observation_id, Length: 7228, dtype: object

```

#przedstawianie wyboru wierszy z ramki danych pod warunkiem spełnienia kilku warunków jednocześnie

```
data_frame[(data_frame.gender == 'Male') & (data_frame.geography ==
'City center or metropolitan area') & data_frame.employment_status !=
'Unemployed']
```

| | observation_id | submitted_time | gender \ |
|------|---------------------|-----------------------------|----------|
| 0 | u2_4503977216704512 | 2020-07-06 17:46:17.8 UTC | Male |
| 1 | u2_4505961390931968 | 2020-07-07 00:25:56.895 UTC | Female |
| 2 | u2_4506421419048960 | 2020-07-11 07:16:01.196 UTC | Male |
| 3 | u2_4506681267716096 | 2020-07-01 14:32:45.987 UTC | Male |
| 4 | u2_4506682207240192 | 2020-07-01 15:07:48.944 UTC | Male |
| ... | ... | ... | ... |
| 7223 | u2_6754387638878208 | 2020-07-01 14:59:06.82 UTC | Male |
| 7224 | u2_6754421129347072 | 2020-07-05 02:06:50.522 UTC | Male |
| 7225 | u2_6754616949866496 | 2020-07-07 06:44:30.974 UTC | Male |
| 7226 | u2_6754906729086976 | 2020-07-02 09:49:21.467 UTC | Male |
| 7227 | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male |

| | age | geography \ |
|---|--------------------|----------------------------------|
| 0 | 26 to 35 years old | City center or metropolitan area |

| | | | |
|------|--------------------|----------------------------------|---------------------|
| 1 | 26 to 35 years old | | Suburban/Peri-urban |
| 2 | 26 to 35 years old | City center or metropolitan area | |
| 3 | 26 to 35 years old | | Suburban/Peri-urban |
| 4 | 26 to 35 years old | | Rural |
| ... | | | ... |
| 7223 | 16 to 25 years old | City center or metropolitan area | |
| 7224 | 16 to 25 years old | | Suburban/Peri-urban |
| 7225 | 26 to 35 years old | | Rural |
| 7226 | 16 to 25 years old | | Rural |
| 7227 | 16 to 25 years old | | Rural |

| | | financial_situation \ |
|------|---|-----------------------|
| 0 | I can afford food and regular expenses, but no... | |
| 1 | I cannot afford enough food for my family | |
| 2 | I can afford food and regular expenses, but no... | |
| 3 | I can afford food and regular expenses, but no... | |
| 4 | I can afford food, but nothing else | |
| ... | | ... |
| 7223 | I cannot afford enough food for my family | |
| 7224 | I can afford food and regular expenses, and bu... | |
| 7225 | I can afford food, but nothing else | |
| 7226 | I cannot afford enough food for my family | |
| 7227 | I cannot afford enough food for my family | |

| | education | employment_status | ethnicity \ |
|------|-----------------------|--------------------|---------------|
| 0 | College or university | Employed full-time | Afro-Jamaican |
| 1 | Technical school | Self-employed | Hispanic |
| 2 | College or university | Self-employed | Bantou |
| 3 | Secondary/high school | Self-employed | Bantou |
| 4 | Secondary/high school | Employed part-time | Mestizo |
| ... | | | ... |
| 7223 | College or university | Self-employed | Mossi |
| 7224 | Secondary/high school | Employed part-time | Baganda |
| 7225 | Technical school | Self-employed | Yoruba |
| 7226 | Secondary/high school | Employed full-time | Tagalog |
| 7227 | Primary school | Employed full-time | Baganda |

| | religion | ... | u2_pre_no_provider_why_other |
|-------------------------|----------------|-----|------------------------------|
| u2_post_provider_need \ | | | |
| 0 | Roman Catholic | ... | NaN |
| Yes | | | |
| 1 | Catholicism | ... | NaN |
| No | | | |
| 2 | Protestantism | ... | NaN |
| No | | | |
| 3 | Protestantism | ... | NaN |
| Yes | | | |
| 4 | Other | ... | NaN |
| Yes | | | |
| ... | | ... | ... |

| | | | |
|------|----------------|-----|-----|
| ... | | | |
| 7223 | Roman Catholic | ... | NaN |
| Yes | | | |
| 7224 | Muslim | ... | NaN |
| No | | | |
| 7225 | Christianity | ... | NaN |
| No | | | |
| 7226 | Christianity | ... | NaN |
| No | | | |
| 7227 | Christianity | ... | NaN |
| Yes | | | |

| | u2_post_condition | \ |
|------|---|-----|
| 0 | Birth defect or congenital problem | |
| 1 | | NaN |
| 2 | | NaN |
| 3 | Diarrhea | |
| 4 | Birth defect or congenital problem^Diarrhea | |
| ... | | ... |
| 7223 | Birth defect or congenital problem | |
| 7224 | | NaN |
| 7225 | | NaN |
| 7226 | | NaN |
| 7227 | Birth defect or congenital problem | |

| | u2_post_provider_visit | \ |
|------|---|-----|
| 0 | No | |
| 1 | NaN | |
| 2 | NaN | |
| 3 | No | |
| 4 | Yes | |
| ... | | ... |
| 7223 | My child saw a provider during this time, but | ... |
| 7224 | | NaN |
| 7225 | | NaN |
| 7226 | | NaN |
| 7227 | | Yes |

| | u2_post_provider_where | u2_post_provider_num | \ |
|------|----------------------------|----------------------|-----|
| 0 | | NaN | NaN |
| 1 | | NaN | NaN |
| 2 | | NaN | NaN |
| 3 | | NaN | NaN |
| 4 | At my home^Health facility | | 2 |
| ... | | ... | ... |
| 7223 | | NaN | 5 |
| 7224 | | NaN | NaN |
| 7225 | | NaN | NaN |
| 7226 | | NaN | NaN |
| 7227 | Health facility | | 1 |

| | u2_post_no_provider_why | |
|---------------------------------|----------------------------------|-----|
| u2_post_no_provider_why_other \ | | |
| 0 | Health facility closed | NaN |
| 1 | NaN | NaN |
| 2 | NaN | NaN |
| 3 | Turned away from health facility | NaN |
| 4 | NaN | NaN |
| ... | ... | ... |
| 7223 | Decline to respond | NaN |
| 7224 | NaN | NaN |
| 7225 | NaN | NaN |
| 7226 | NaN | NaN |
| 7227 | NaN | NaN |

| | country | user_id |
|------|----------------------------------|---------------------|
| 0 | Jamaica | u2_4519417576161280 |
| 1 | United States | u2_6197364724858880 |
| 2 | Democratic Republic of the Congo | u2_5202308155834368 |
| 3 | Democratic Republic of the Congo | u2_6709282991243264 |
| 4 | Nicaragua | u2_6190896700194816 |
| ... | ... | ... |
| 7223 | Burkina Faso | u2_6532940630851584 |
| 7224 | Uganda | u2_5363001946800128 |
| 7225 | Nigeria | u2_5779942448562176 |
| 7226 | Philippines | u2_6586517350252544 |
| 7227 | Uganda | u2_4955652432855040 |

[7228 rows x 47 columns]

#wybór wierszy które zawierają w kolumnie kategoryzowanej określone słowo

`data_frame[data_frame.gender.str.contains('Male')]`

| | observation_id | submitted_time | gender \ |
|---|---------------------|-----------------------------|----------|
| 0 | u2_4503977216704512 | 2020-07-06 17:46:17.8 UTC | Male |
| 2 | u2_4506421419048960 | 2020-07-11 07:16:01.196 UTC | Male |
| 3 | u2_4506681267716096 | 2020-07-01 14:32:45.987 UTC | Male |
| 4 | u2_4506682207240192 | 2020-07-01 15:07:48.944 UTC | Male |
| 5 | u2_4506936952487936 | 2020-07-15 17:35:55.32 UTC | Male |

| | | | |
|------|---------------------|-----------------------------|------|
| ... | ... | ... | ... |
| 7223 | u2_6754387638878208 | 2020-07-01 14:59:06.82 UTC | Male |
| 7224 | u2_6754421129347072 | 2020-07-05 02:06:50.522 UTC | Male |
| 7225 | u2_6754616949866496 | 2020-07-07 06:44:30.974 UTC | Male |
| 7226 | u2_6754906729086976 | 2020-07-02 09:49:21.467 UTC | Male |
| 7227 | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male |

| | age | geography | \ |
|------|--------------------|----------------------------------|---|
| 0 | 26 to 35 years old | City center or metropolitan area | |
| 2 | 26 to 35 years old | City center or metropolitan area | |
| 3 | 26 to 35 years old | Suburban/Peri-urban | |
| 4 | 26 to 35 years old | Rural | |
| 5 | 16 to 25 years old | City center or metropolitan area | |
| ... | ... | ... | |
| 7223 | 16 to 25 years old | City center or metropolitan area | |
| 7224 | 16 to 25 years old | Suburban/Peri-urban | |
| 7225 | 26 to 35 years old | Rural | |
| 7226 | 16 to 25 years old | Rural | |
| 7227 | 16 to 25 years old | Rural | |

| | financial_situation | \ |
|------|---|---|
| 0 | I can afford food and regular expenses, but no... | |
| 2 | I can afford food and regular expenses, but no... | |
| 3 | I can afford food and regular expenses, but no... | |
| 4 | I can afford food, but nothing else | |
| 5 | I cannot afford enough food for my family | |
| ... | ... | |
| 7223 | I cannot afford enough food for my family | |
| 7224 | I can afford food and regular expenses, and bu... | |
| 7225 | I can afford food, but nothing else | |
| 7226 | I cannot afford enough food for my family | |
| 7227 | I cannot afford enough food for my family | |

| | education | employment_status | ethnicity | \ |
|------|-----------------------|--------------------|---------------|---|
| 0 | College or university | Employed full-time | Afro-Jamaican | |
| 2 | College or university | Self-employed | Bantou | |
| 3 | Secondary/high school | Self-employed | Bantou | |
| 4 | Secondary/high school | Employed part-time | Mestizo | |
| 5 | Secondary/high school | Unemployed | Java | |
| ... | ... | ... | ... | |
| 7223 | College or university | Self-employed | Mossi | |
| 7224 | Secondary/high school | Employed part-time | Baganda | |
| 7225 | Technical school | Self-employed | Yoruba | |
| 7226 | Secondary/high school | Employed full-time | Tagalog | |
| 7227 | Primary school | Employed full-time | Baganda | |

| | religion | ... | u2_pre_no_provider_why_other |
|-----------------------|----------------|-----|------------------------------|
| u2_post_provider_need | \ | | |
| 0 | Roman Catholic | ... | NaN |
| Yes | | | |

| | | | |
|------|----------------|-----|-----|
| 2 | Protestantism | ... | NaN |
| No | | | |
| 3 | Protestantism | ... | NaN |
| Yes | | | |
| 4 | Other | ... | NaN |
| Yes | | | |
| 5 | Muslim | ... | NaN |
| Yes | | | |
| ... | ... | ... | ... |
| ... | | | |
| 7223 | Roman Catholic | ... | NaN |
| Yes | | | |
| 7224 | Muslim | ... | NaN |
| No | | | |
| 7225 | Christianity | ... | NaN |
| No | | | |
| 7226 | Christianity | ... | NaN |
| No | | | |
| 7227 | Christianity | ... | NaN |
| Yes | | | |

| | u2_post_condition | \ |
|------|---|----------|
| 0 | Birth defect or congenital problem | |
| 2 | | NaN |
| 3 | | Diarrhea |
| 4 | Birth defect or congenital problem^Diarrhea | |
| 5 | | Diarrhea |
| ... | | ... |
| 7223 | Birth defect or congenital problem | |
| 7224 | | NaN |
| 7225 | | NaN |
| 7226 | | NaN |
| 7227 | Birth defect or congenital problem | |

| | u2_post_provider_visit | \ |
|------|---|-----|
| 0 | | No |
| 2 | | NaN |
| 3 | | No |
| 4 | | Yes |
| 5 | | No |
| ... | | ... |
| 7223 | My child saw a provider during this time, but | ... |
| 7224 | | NaN |
| 7225 | | NaN |
| 7226 | | NaN |
| 7227 | | Yes |

| | u2_post_provider_where | u2_post_provider_num | \ |
|---|------------------------|----------------------|---|
| 0 | NaN | NaN | |
| 2 | NaN | NaN | |

| | | | |
|---------------------------------|----------------------------------|---------------------|-----|
| 3 | | NaN | NaN |
| 4 | At my home^Health facility | 2 | |
| 5 | | NaN | |
| ... | | ... | |
| 7223 | | NaN | 5 |
| 7224 | | NaN | NaN |
| 7225 | | NaN | NaN |
| 7226 | | NaN | NaN |
| 7227 | Health facility | 1 | |
| u2_post_no_provider_why | | | |
| u2_post_no_provider_why_other \ | | | |
| 0 | Health facility closed | | NaN |
| 2 | | NaN | NaN |
| 3 | Turned away from health facility | | NaN |
| 4 | | NaN | NaN |
| 5 | Turned away from health facility | | NaN |
| ... | | ... | ... |
| 7223 | Decline to respond | | NaN |
| 7224 | | NaN | NaN |
| 7225 | | NaN | NaN |
| 7226 | | NaN | NaN |
| 7227 | | NaN | NaN |
| country user_id | | | |
| 0 | Jamaica | u2_4519417576161280 | |
| 2 | Democratic Republic of the Congo | u2_5202308155834368 | |
| 3 | Democratic Republic of the Congo | u2_6709282991243264 | |
| 4 | Nicaragua | u2_6190896700194816 | |
| 5 | Indonesia | u2_6680972922716160 | |
| ... | | ... | ... |
| 7223 | Burkina Faso | u2_6532940630851584 | |
| 7224 | Uganda | u2_5363001946800128 | |
| 7225 | Nigeria | u2_5779942448562176 | |
| 7226 | Philippines | u2_6586517350252544 | |
| 7227 | Uganda | u2_4955652432855040 | |

[5073 rows x 47 columns]

#wybór wierszy które nie zawierają w kolumnie kategoryzowanej określonego słowa

```
data_frame[data_frame.gender.str.contains('Male') == False]
```

| | observation_id | submitted_time | gender | \ |
|------|---------------------|-----------------------------|--------|-----|
| 1 | u2_4505961390931968 | 2020-07-07 00:25:56.895 UTC | Female | |
| 6 | u2_4507055500296192 | 2020-07-01 20:49:40.526 UTC | Female | |
| 7 | u2_4507565829652480 | 2020-07-06 19:46:18.779 UTC | Female | |
| 20 | u2_4511237020057600 | 2020-07-02 20:50:17.062 UTC | Female | |
| 23 | u2_4511670271737856 | 2020-07-13 12:03:36.361 UTC | Female | |
| ... | ... | ... | ... | ... |
| 7214 | u2_6751491357671424 | 2020-07-10 05:41:25.097 UTC | Female | |
| 7215 | u2_6752103454474240 | 2020-07-06 00:23:53.122 UTC | Female | |
| 7216 | u2_6752135703429120 | 2020-07-08 04:49:00.626 UTC | Female | |
| 7220 | u2_6752921816662016 | 2020-07-02 07:58:23.835 UTC | Female | |
| 7222 | u2_6754044917055488 | 2020-07-15 01:58:06.955 UTC | Female | |

| | age | geography | \ |
|------|--------------------|----------------------------------|-----|
| 1 | 26 to 35 years old | Suburban/Peri-urban | |
| 6 | 36 to 45 years old | Suburban/Peri-urban | |
| 7 | 26 to 35 years old | Suburban/Peri-urban | |
| 20 | 16 to 25 years old | City center or metropolitan area | |
| 23 | Under 16 | Rural | |
| ... | ... | ... | ... |
| 7214 | Under 16 | Suburban/Peri-urban | |
| 7215 | 16 to 25 years old | Rural | |
| 7216 | 26 to 35 years old | Rural | |
| 7220 | Over 45 years old | Rural | |
| 7222 | 26 to 35 years old | Suburban/Peri-urban | |

| | financial_situation | \ |
|------|---|-----|
| 1 | I cannot afford enough food for my family | |
| 6 | I can afford food and regular expenses, and bu... | |
| 7 | I can afford food and regular expenses, and bu... | |
| 20 | I can afford food, but nothing else | |
| 23 | I can afford food, but nothing else | |
| ... | ... | ... |
| 7214 | I cannot afford enough food for my family | |
| 7215 | I cannot afford enough food for my family | |
| 7216 | I can afford food and regular expenses, but no... | |
| 7220 | I can afford food and regular expenses, but no... | |
| 7222 | I can afford food, but nothing else | |

| | education | employment_status |
|------------|-----------------------|--------------------|
| ethnicity | | |
| 1 | Technical school | Self-employed |
| Hispanic | | |
| 6 | College or university | Unemployed |
| Hiligaynon | | |
| 7 | College or university | Employed full-time |

| | | | |
|----------------|-----------------------|----------------------------|----------------------|
| Malay | | | |
| 20 | College or university | Unemployed | Prefer not to answer |
| 23 | Primary school | Student and work part-time | |
| Java | | | |
| ... | ... | ... | |
| ... | | | |
| 7214 | Primary school | Student | |
| Other | | | |
| 7215 | College or university | Unemployed | |
| Mestizo | | | |
| 7216 | Secondary/high school | Unemployed | Non- |
| hispanic White | | | |
| 7220 | Secondary/high school | Unemployed | |
| Serb | | | |
| 7222 | College or university | Employed full-time | |
| Hispanic | | | |

| | religion | ... | u2_pre_no_provider_why_other | \ |
|------|----------------------|-----|------------------------------|-----|
| 1 | Catholicism | ... | | NaN |
| 6 | Christianity | ... | | NaN |
| 7 | Muslim | ... | | NaN |
| 20 | Prefer Not To Answer | ... | | NaN |
| 23 | Protestantism | ... | | NaN |
| ... | ... | ... | | ... |
| 7214 | Other | ... | | NaN |
| 7215 | Other | ... | | NaN |
| 7216 | Other | ... | | NaN |
| 7220 | Eastern Orthodox | ... | | NaN |
| 7222 | Prefer Not To Answer | ... | | NaN |

| | u2_post_provider_need | u2_post_condition | \ |
|------|-----------------------|-------------------|---|
| 1 | No | NaN | |
| 6 | No | NaN | |
| 7 | Yes | Other | |
| 20 | No | NaN | |
| 23 | Yes | Diarrhea | |
| ... | ... | ... | |
| 7214 | No | NaN | |
| 7215 | No | NaN | |
| 7216 | Yes | Other | |
| 7220 | Yes | Diarrhea | |
| 7222 | No | NaN | |

| | u2_post_provider_visit | \ |
|----|------------------------|---|
| 1 | NaN | |
| 6 | NaN | |
| 7 | No | |
| 20 | NaN | |
| 23 | Yes | |

| | | | |
|-------------------------|---|----------------------|---------------------|
| ... | | | ... |
| 7214 | | | NaN |
| 7215 | | | NaN |
| 7216 | | | Yes |
| 7220 | My child saw a provider during this time, but | | ... |
| 7222 | | | NaN |
| | | | |
| | u2_post_provider_where | u2_post_provider_num | |
| u2_post_no_provider_why | \ | | |
| 1 | NaN | NaN | |
| NaN | | | |
| 6 | NaN | NaN | |
| NaN | | | |
| 7 | NaN | NaN | Health facility |
| closed | | | |
| 20 | NaN | NaN | |
| NaN | | | |
| 23 | At my home | 1 | |
| NaN | | | |
| ... | ... | ... | |
| ... | | | |
| 7214 | NaN | NaN | |
| NaN | | | |
| 7215 | NaN | NaN | |
| NaN | | | |
| 7216 | Health facility | 10 or more | |
| NaN | | | |
| 7220 | NaN | 2 | Health facility |
| closed | | | |
| 7222 | NaN | NaN | |
| NaN | | | |
| | | | |
| | u2_post_no_provider_why_other | country | user_id |
| 1 | NaN | United States | u2_6197364724858880 |
| 6 | NaN | Philippines | u2_6438713447415808 |
| 7 | NaN | Indonesia | u2_6676464578068480 |
| 20 | NaN | Kenya | u2_6498443776491520 |
| 23 | NaN | Indonesia | u2_5560025030590464 |
| ... | ... | ... | ... |
| 7214 | NaN | Costa Rica | u2_5835409122918400 |
| 7215 | NaN | Ecuador | u2_4581970969624576 |

| | | | |
|------|-----|---------------|---------------------|
| 7216 | NaN | United States | u2_5459760907812864 |
| 7220 | NaN | Serbia | u2_4665415275380736 |
| 7222 | NaN | United States | u2_5022190522335232 |

[2155 rows x 47 columns]

```
#tworzenie kolumny na podstawie istniejącej
data_frame['gender10'] = data_frame['gender']*10
data_frame
```

| | observation_id | submitted_time | gender \ |
|------|---------------------|-----------------------------|----------|
| 0 | u2_4503977216704512 | 2020-07-06 17:46:17.8 UTC | Male |
| 1 | u2_4505961390931968 | 2020-07-07 00:25:56.895 UTC | Female |
| 2 | u2_4506421419048960 | 2020-07-11 07:16:01.196 UTC | Male |
| 3 | u2_4506681267716096 | 2020-07-01 14:32:45.987 UTC | Male |
| 4 | u2_4506682207240192 | 2020-07-01 15:07:48.944 UTC | Male |
| ... | ... | ... | ... |
| 7223 | u2_6754387638878208 | 2020-07-01 14:59:06.82 UTC | Male |
| 7224 | u2_6754421129347072 | 2020-07-05 02:06:50.522 UTC | Male |
| 7225 | u2_6754616949866496 | 2020-07-07 06:44:30.974 UTC | Male |
| 7226 | u2_6754906729086976 | 2020-07-02 09:49:21.467 UTC | Male |
| 7227 | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male |

| | age | geography \ |
|------|--------------------|----------------------------------|
| 0 | 26 to 35 years old | City center or metropolitan area |
| 1 | 26 to 35 years old | Suburban/Peri-urban |
| 2 | 26 to 35 years old | City center or metropolitan area |
| 3 | 26 to 35 years old | Suburban/Peri-urban |
| 4 | 26 to 35 years old | Rural |
| ... | ... | ... |
| 7223 | 16 to 25 years old | City center or metropolitan area |
| 7224 | 16 to 25 years old | Suburban/Peri-urban |
| 7225 | 26 to 35 years old | Rural |
| 7226 | 16 to 25 years old | Rural |
| 7227 | 16 to 25 years old | Rural |

| | financial_situation \ |
|------|---|
| 0 | I can afford food and regular expenses, but no... |
| 1 | I cannot afford enough food for my family |
| 2 | I can afford food and regular expenses, but no... |
| 3 | I can afford food and regular expenses, but no... |
| 4 | I can afford food, but nothing else |
| ... | ... |
| 7223 | I cannot afford enough food for my family |
| 7224 | I can afford food and regular expenses, and bu... |
| 7225 | I can afford food, but nothing else |
| 7226 | I cannot afford enough food for my family |

| | | | |
|------|---|--------------------|---------------|
| 7227 | I cannot afford enough food for my family | | |
| | education | employment_status | ethnicity \ |
| 0 | College or university | Employed full-time | Afro-Jamaican |
| 1 | Technical school | Self-employed | Hispanic |
| 2 | College or university | Self-employed | Bantou |
| 3 | Secondary/high school | Self-employed | Bantou |
| 4 | Secondary/high school | Employed part-time | Mestizo |
| ... | ... | ... | ... |
| 7223 | College or university | Self-employed | Mossi |
| 7224 | Secondary/high school | Employed part-time | Baganda |
| 7225 | Technical school | Self-employed | Yoruba |
| 7226 | Secondary/high school | Employed full-time | Tagalog |
| 7227 | Primary school | Employed full-time | Baganda |

| | | | |
|------|----------------|-----|-------------------------|
| | religion | ... | u2_post_provider_need \ |
| 0 | Roman Catholic | ... | Yes |
| 1 | Catholicism | ... | No |
| 2 | Protestantism | ... | No |
| 3 | Protestantism | ... | Yes |
| 4 | Other | ... | Yes |
| ... | ... | ... | ... |
| 7223 | Roman Catholic | ... | Yes |
| 7224 | Muslim | ... | No |
| 7225 | Christianity | ... | No |
| 7226 | Christianity | ... | No |
| 7227 | Christianity | ... | Yes |

| | |
|------|---|
| | u2_post_condition \ |
| 0 | Birth defect or congenital problem |
| 1 | NaN |
| 2 | NaN |
| 3 | Diarrhea |
| 4 | Birth defect or congenital problem^Diarrhea |
| ... | ... |
| 7223 | Birth defect or congenital problem |
| 7224 | NaN |
| 7225 | NaN |
| 7226 | NaN |
| 7227 | Birth defect or congenital problem |

| | |
|------|---|
| | u2_post_provider_visit \ |
| 0 | No |
| 1 | NaN |
| 2 | NaN |
| 3 | No |
| 4 | Yes |
| ... | ... |
| 7223 | My child saw a provider during this time, but ... |
| 7224 | NaN |

| | | |
|------|----------------------------------|-------------------------------|
| 7225 | | NaN |
| 7226 | | NaN |
| 7227 | | Yes |
| | u2_post_provider_where | u2_post_provider_num \ |
| 0 | NaN | NaN |
| 1 | NaN | NaN |
| 2 | NaN | NaN |
| 3 | NaN | NaN |
| 4 | At my home^Health facility | 2 |
| ... | ... | ... |
| 7223 | NaN | 5 |
| 7224 | NaN | NaN |
| 7225 | NaN | NaN |
| 7226 | NaN | NaN |
| 7227 | Health facility | 1 |
| | u2_post_no_provider_why | u2_post_no_provider_why_other |
| \ | | |
| 0 | Health facility closed | NaN |
| 1 | NaN | NaN |
| 2 | NaN | NaN |
| 3 | Turned away from health facility | NaN |
| 4 | NaN | NaN |
| ... | ... | ... |
| 7223 | Decline to respond | NaN |
| 7224 | NaN | NaN |
| 7225 | NaN | NaN |
| 7226 | NaN | NaN |
| 7227 | NaN | NaN |
| | country | user_id \ |
| 0 | Jamaica | u2_4519417576161280 |
| 1 | United States | u2_6197364724858880 |
| 2 | Democratic Republic of the Congo | u2_5202308155834368 |
| 3 | Democratic Republic of the Congo | u2_6709282991243264 |
| 4 | Nicaragua | u2_6190896700194816 |
| ... | ... | ... |
| 7223 | Burkina Faso | u2_6532940630851584 |
| 7224 | Uganda | u2_5363001946800128 |

| | | gender |
|------|--------|--------|
| 0 | Male | Male |
| 1 | Female | Female |
| 2 | Male | Male |
| 3 | Male | Male |
| 4 | Male | Male |
| ... | | |
| 7223 | Male | Male |
| 7224 | Male | Male |
| 7225 | Male | Male |
| 7226 | Male | Male |
| 7227 | Male | Male |

#usuwanie kolumny

| | observation_id | submitted_time | gender |
|------|---------------------|-----------------------------|--------|
| 0 | u2_4503977216704512 | 2020-07-06 17:46:17.8 UTC | Male |
| 1 | u2_4505961390931968 | 2020-07-07 00:25:56.895 UTC | Female |
| 2 | u2_4506421419048960 | 2020-07-11 07:16:01.196 UTC | Male |
| 3 | u2_4506681267716096 | 2020-07-01 14:32:45.987 UTC | Male |
| 4 | u2_4506682207240192 | 2020-07-01 15:07:48.944 UTC | Male |
| ... | ... | ... | ... |
| 7223 | u2_6754387638878208 | 2020-07-01 14:59:06.82 UTC | Male |
| 7224 | u2_6754421129347072 | 2020-07-05 02:06:50.522 UTC | Male |
| 7225 | u2_6754616949866496 | 2020-07-07 06:44:30.974 UTC | Male |
| 7226 | u2_6754906729086976 | 2020-07-02 09:49:21.467 UTC | Male |
| 7227 | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male |

| | age | | | | geography | |
|------|-----|----|----|-----------|-------------|----------------------|
| 0 | 26 | to | 35 | years old | City center | or metropolitan area |
| 1 | 26 | to | 35 | years old | | Suburban/Peri-urban |
| 2 | 26 | to | 35 | years old | City center | or metropolitan area |
| 3 | 26 | to | 35 | years old | | Suburban/Peri-urban |
| 4 | 26 | to | 35 | years old | | Rural |
| ... | | | | ... | | ... |
| 7223 | 16 | to | 25 | years old | City center | or metropolitan area |
| 7224 | 16 | to | 25 | years old | | Suburban/Peri-urban |
| 7225 | 26 | to | 35 | years old | | Rural |
| 7226 | 16 | to | 25 | years old | | Rural |
| 7227 | 16 | to | 25 | years old | | Rural |

```
financial_situation \
```

| | |
|------|---|
| 0 | I can afford food and regular expenses, but no... |
| 1 | I cannot afford enough food for my family |
| 2 | I can afford food and regular expenses, but no... |
| 3 | I can afford food and regular expenses, but no... |
| 4 | I can afford food, but nothing else |
| ... | ... |
| 7223 | I cannot afford enough food for my family |
| 7224 | I can afford food and regular expenses, and bu... |
| 7225 | I can afford food, but nothing else |
| 7226 | I cannot afford enough food for my family |
| 7227 | I cannot afford enough food for my family |

| | education | employment_status | ethnicity \ |
|------|-----------------------|--------------------|---------------|
| 0 | College or university | Employed full-time | Afro-Jamaican |
| 1 | Technical school | Self-employed | Hispanic |
| 2 | College or university | Self-employed | Bantou |
| 3 | Secondary/high school | Self-employed | Bantou |
| 4 | Secondary/high school | Employed part-time | Mestizo |
| ... | ... | ... | ... |
| 7223 | College or university | Self-employed | Mossi |
| 7224 | Secondary/high school | Employed part-time | Baganda |
| 7225 | Technical school | Self-employed | Yoruba |
| 7226 | Secondary/high school | Employed full-time | Tagalog |
| 7227 | Primary school | Employed full-time | Baganda |

| | religion | ... | u2_pre_no_provider_why_other |
|-------------------------|----------------|-----|------------------------------|
| u2_post_provider_need \ | | | |
| 0 | Roman Catholic | ... | NaN |
| Yes | | | |
| 1 | Catholicism | ... | NaN |
| No | | | |
| 2 | Protestantism | ... | NaN |
| No | | | |
| 3 | Protestantism | ... | NaN |
| Yes | | | |
| 4 | Other | ... | NaN |
| Yes | | | |
| ... | ... | ... | ... |
| ... | | | |
| 7223 | Roman Catholic | ... | NaN |
| Yes | | | |
| 7224 | Muslim | ... | NaN |
| No | | | |
| 7225 | Christianity | ... | NaN |
| No | | | |
| 7226 | Christianity | ... | NaN |
| No | | | |
| 7227 | Christianity | ... | NaN |
| Yes | | | |

| | u2_post_condition \ | |
|---------------------------------|---|------------------------|
| 0 | Birth defect or congenital problem | |
| 1 | NaN | |
| 2 | NaN | |
| 3 | Diarrhea | |
| 4 | Birth defect or congenital problem^Diarrhea | |
| ... | ... | |
| 7223 | Birth defect or congenital problem | |
| 7224 | NaN | |
| 7225 | NaN | |
| 7226 | NaN | |
| 7227 | Birth defect or congenital problem | |
| | u2_post_provider_visit \ | |
| 0 | No | |
| 1 | NaN | |
| 2 | NaN | |
| 3 | No | |
| 4 | Yes | |
| ... | ... | |
| 7223 | My child saw a provider during this time, but ... | |
| 7224 | NaN | |
| 7225 | NaN | |
| 7226 | NaN | |
| 7227 | Yes | |
| | u2_post_provider_where | u2_post_provider_num \ |
| 0 | NaN | NaN |
| 1 | NaN | NaN |
| 2 | NaN | NaN |
| 3 | NaN | NaN |
| 4 | At my home^Health facility | 2 |
| ... | ... | ... |
| 7223 | NaN | 5 |
| 7224 | NaN | NaN |
| 7225 | NaN | NaN |
| 7226 | NaN | NaN |
| 7227 | Health facility | 1 |
| | u2_post_no_provider_why | |
| u2_post_no_provider_why_other \ | | |
| 0 | Health facility closed | NaN |
| 1 | NaN | NaN |
| 2 | NaN | NaN |
| 3 | Turned away from health facility | NaN |
| 4 | NaN | NaN |

| | | |
|------|--------------------|-----|
| ... | ... | ... |
| 7223 | Decline to respond | NaN |
| 7224 | NaN | NaN |
| 7225 | NaN | NaN |
| 7226 | NaN | NaN |
| 7227 | NaN | NaN |

| | country | user_id |
|------|----------------------------------|---------------------|
| 0 | Jamaica | u2_4519417576161280 |
| 1 | United States | u2_6197364724858880 |
| 2 | Democratic Republic of the Congo | u2_5202308155834368 |
| 3 | Democratic Republic of the Congo | u2_6709282991243264 |
| 4 | Nicaragua | u2_6190896700194816 |
| ... | ... | ... |
| 7223 | Burkina Faso | u2_6532940630851584 |
| 7224 | Uganda | u2_5363001946800128 |
| 7225 | Nigeria | u2_5779942448562176 |
| 7226 | Philippines | u2_6586517350252544 |
| 7227 | Uganda | u2_4955652432855040 |

[7228 rows x 47 columns]

#zmiana nazwy kolumny

```
data_frame.rename(columns={"age": "year"}, inplace = True)
data_frame
```

| | observation_id | submitted_time | gender | \ |
|------|---------------------|-----------------------------|--------|-----|
| 0 | u2_4503977216704512 | 2020-07-06 17:46:17.8 UTC | Male | |
| 1 | u2_4505961390931968 | 2020-07-07 00:25:56.895 UTC | Female | |
| 2 | u2_4506421419048960 | 2020-07-11 07:16:01.196 UTC | Male | |
| 3 | u2_4506681267716096 | 2020-07-01 14:32:45.987 UTC | Male | |
| 4 | u2_4506682207240192 | 2020-07-01 15:07:48.944 UTC | Male | |
| ... | ... | ... | ... | ... |
| 7223 | u2_6754387638878208 | 2020-07-01 14:59:06.82 UTC | Male | |
| 7224 | u2_6754421129347072 | 2020-07-05 02:06:50.522 UTC | Male | |
| 7225 | u2_6754616949866496 | 2020-07-07 06:44:30.974 UTC | Male | |
| 7226 | u2_6754906729086976 | 2020-07-02 09:49:21.467 UTC | Male | |
| 7227 | u2_6754986118873088 | 2020-07-02 15:45:03.342 UTC | Male | |

| | year | geography | \ |
|---|--------------------|----------------------------------|---|
| 0 | 26 to 35 years old | City center or metropolitan area | |
| 1 | 26 to 35 years old | Suburban/Peri-urban | |
| 2 | 26 to 35 years old | City center or metropolitan area | |
| 3 | 26 to 35 years old | Suburban/Peri-urban | |

| | | |
|------|--------------------|----------------------------------|
| 4 | 26 to 35 years old | Rural |
| ... | ... | ... |
| 7223 | 16 to 25 years old | City center or metropolitan area |
| 7224 | 16 to 25 years old | Suburban/Peri-urban |
| 7225 | 26 to 35 years old | Rural |
| 7226 | 16 to 25 years old | Rural |
| 7227 | 16 to 25 years old | Rural |

| | financial_situation | \ |
|------|---|-----|
| 0 | I can afford food and regular expenses, but no... | |
| 1 | I cannot afford enough food for my family | |
| 2 | I can afford food and regular expenses, but no... | |
| 3 | I can afford food and regular expenses, but no... | |
| 4 | I can afford food, but nothing else | |
| ... | ... | ... |
| 7223 | I cannot afford enough food for my family | |
| 7224 | I can afford food and regular expenses, and bu... | |
| 7225 | I can afford food, but nothing else | |
| 7226 | I cannot afford enough food for my family | |
| 7227 | I cannot afford enough food for my family | |

| | education | employment_status | ethnicity | \ |
|------|-----------------------|--------------------|---------------|-----|
| 0 | College or university | Employed full-time | Afro-Jamaican | |
| 1 | Technical school | Self-employed | Hispanic | |
| 2 | College or university | Self-employed | Bantou | |
| 3 | Secondary/high school | Self-employed | Bantou | |
| 4 | Secondary/high school | Employed part-time | Mestizo | |
| ... | ... | ... | ... | ... |
| 7223 | College or university | Self-employed | Mossi | |
| 7224 | Secondary/high school | Employed part-time | Baganda | |
| 7225 | Technical school | Self-employed | Yoruba | |
| 7226 | Secondary/high school | Employed full-time | Tagalog | |
| 7227 | Primary school | Employed full-time | Baganda | |

| | religion | ... | u2_pre_no_provider_why_other |
|-----------------------|----------------|-----|------------------------------|
| u2_post_provider_need | \ | | |
| 0 | Roman Catholic | ... | NaN |
| Yes | | | |
| 1 | Catholicism | ... | NaN |
| No | | | |
| 2 | Protestantism | ... | NaN |
| No | | | |
| 3 | Protestantism | ... | NaN |
| Yes | | | |
| 4 | Other | ... | NaN |
| Yes | | | |
| ... | ... | ... | ... |
| ... | | | |
| 7223 | Roman Catholic | ... | NaN |
| Yes | | | |

| | | |
|------|------------------|-----|
| 7224 | Muslim ... | NaN |
| No | | |
| 7225 | Christianity ... | NaN |
| No | | |
| 7226 | Christianity ... | NaN |
| No | | |
| 7227 | Christianity ... | NaN |
| Yes | | |

| | u2_post_condition \ |
|------|---|
| 0 | Birth defect or congenital problem |
| 1 | NaN |
| 2 | NaN |
| 3 | Diarrhea |
| 4 | Birth defect or congenital problem^Diarrhea |
| ... | ... |
| 7223 | Birth defect or congenital problem |
| 7224 | NaN |
| 7225 | NaN |
| 7226 | NaN |
| 7227 | Birth defect or congenital problem |

| | u2_post_provider_visit \ |
|------|---|
| 0 | No |
| 1 | NaN |
| 2 | NaN |
| 3 | No |
| 4 | Yes |
| ... | ... |
| 7223 | My child saw a provider during this time, but ... |
| 7224 | NaN |
| 7225 | NaN |
| 7226 | NaN |
| 7227 | Yes |

| | u2_post_provider_where | u2_post_provider_num \ |
|------|----------------------------|------------------------|
| 0 | NaN | NaN |
| 1 | NaN | NaN |
| 2 | NaN | NaN |
| 3 | NaN | NaN |
| 4 | At my home^Health facility | 2 |
| ... | ... | ... |
| 7223 | NaN | 5 |
| 7224 | NaN | NaN |
| 7225 | NaN | NaN |
| 7226 | NaN | NaN |
| 7227 | Health facility | 1 |

| | u2_post_no_provider_why |
|---------------------------------|-------------------------|
| u2_post_no_provider_why_other \ | |

| | | |
|------|----------------------------------|-----|
| 0 | Health facility closed | NaN |
| 1 | NaN | NaN |
| 2 | NaN | NaN |
| 3 | Turned away from health facility | NaN |
| 4 | NaN | NaN |
| ... | ... | ... |
| 7223 | Decline to respond | NaN |
| 7224 | NaN | NaN |
| 7225 | NaN | NaN |
| 7226 | NaN | NaN |
| 7227 | NaN | NaN |

| | country | user_id |
|------|----------------------------------|---------------------|
| 0 | Jamaica | u2_4519417576161280 |
| 1 | United States | u2_6197364724858880 |
| 2 | Democratic Republic of the Congo | u2_5202308155834368 |
| 3 | Democratic Republic of the Congo | u2_6709282991243264 |
| 4 | Nicaragua | u2_6190896700194816 |
| ... | ... | ... |
| 7223 | Burkina Faso | u2_6532940630851584 |
| 7224 | Uganda | u2_5363001946800128 |
| 7225 | Nigeria | u2_5779942448562176 |
| 7226 | Philippines | u2_6586517350252544 |
| 7227 | Uganda | u2_4955652432855040 |

[7228 rows x 47 columns]

#zapisanie ramki danych do pliku csv

data_frame.to_csv('data_frame.csv')

#wyświetlenie średniej

data_frame.u2_child_count.mean()

np.float64(1.5088544548976204)

#wyświetlenie maksymalnej wartości kolumny

data_frame.u2_child_count.max()

np.int64(3)

```

#wyświetlenie minimalnej wartości kolumny
data_frame.u2_child_count.min()

np.int64(1)

#wyświetlenie liczby wierszy
#wyświetlenie maksymalnej wartości kolumny
data_frame.u2_child_count.count()

np.int64(7228)

#wyświetlenie wartości unikalnych
data_frame.gender.unique()

array(['Male', 'Female', 'Prefer not to answer', 'Not Available'],
      dtype=object)

#wyświetlenie liczby rekordów odpowiadających wartości
data_frame.country.value_counts()

country
Philippines      5864
Afghanistan      3836
Indonesia        2989
Venezuela (Bolivarian Republic of)  2474
Mali              2440
...
South Africa      77
Saudi Arabia      64
Niger             55
Bahrain           52
Oman              49
Name: count, Length: 76, dtype: int64

#sortowanie wierszy ramki danych według wartości określonej kolumny
data_frame.sort_values(['age'], ascending = False)

```

| | observation_id | submitted_time | gender | \ |
|-------|---------------------|-----------------------------|--------|-----|
| 0 | gp_4503617949401088 | 2020-07-07 14:48:29.83 UTC | Male | |
| 39805 | gp_6212113459838976 | 2020-07-01 16:26:44.48 UTC | Male | |
| 39774 | gp_6210954120658944 | 2020-07-18 20:27:53.831 UTC | Female | |
| 7745 | gp_4835939500425216 | 2020-07-03 07:36:54.128 UTC | Male | |
| 39769 | gp_6210720447594496 | 2020-07-07 19:59:10.754 UTC | Male | |
| ... | ... | ... | ... | ... |
| 31870 | gp_5876032570916864 | 2020-07-18 01:37:13.994 UTC | Male | |
| 31869 | gp_5875986900189184 | 2020-07-01 17:16:36.293 UTC | Male | |
| 31868 | gp_5875928183078912 | 2020-07-02 01:42:03.266 UTC | Female | |
| 12528 | gp_5039420454731776 | 2020-07-11 00:38:04.472 UTC | Male | |
| 26245 | gp_5637891361603584 | 2020-06-30 23:40:51.831 UTC | Female | |
| | age | geography | \ | |

| | | |
|-------|--------------------|----------------------------------|
| 0 | Under 16 | Suburban/Peri-urban |
| 39805 | Under 16 | Rural |
| 39774 | Under 16 | Rural |
| 7745 | Under 16 | Rural |
| 39769 | Under 16 | Rural |
| ... | ... | ... |
| 31870 | 16 to 25 years old | City center or metropolitan area |
| 31869 | 16 to 25 years old | Rural |
| 31868 | 16 to 25 years old | City center or metropolitan area |
| 12528 | 16 to 25 years old | City center or metropolitan area |
| 26245 | 16 to 25 years old | Rural |

| | financial_situation \ |
|-------|---|
| 0 | I can afford food and regular expenses, but no... |
| 39805 | I can afford food, but nothing else |
| 39774 | I can afford food and regular expenses, and bu... |
| 7745 | I can afford food and regular expenses, but no... |
| 39769 | I cannot afford enough food for my family |
| ... | ... |
| 31870 | I cannot afford enough food for my family |
| 31869 | I can afford food and regular expenses, and bu... |
| 31868 | I can afford food and regular expenses, but no... |
| 12528 | I cannot afford enough food for my family |
| 26245 | I can afford food and regular expenses, but no... |

| | school | employment_status |
|-------------|-----------------------|----------------------------|
| ethnicity \ | | |
| 0 | Secondary/high school | Employed full-time |
| Ankole | | |
| 39805 | Secondary/high school | Student |
| Sarakole | | |
| 39774 | Technical school | Employed part-time |
| Igbo | | |
| 7745 | Secondary/high school | Self-employed |
| Bisaya | | |
| 39769 | Primary school | Self-employed |
| Malinke | | |
| ... | ... | ... |
| ... | | |
| 31870 | College or university | Unemployed |
| to say | | Prefer not |
| 31869 | Secondary/high school | Employed full-time |
| Northern | | |
| Mande | | |
| 31868 | Secondary/high school | Student and work part-time |
| Tagalog | | |
| 12528 | Technical school | Employed full-time |
| Arab | | |
| 26245 | Technical school | Student |
| Other | | |

| | | | | |
|-------|----------------------|-----|-----------------------------|---|
| | religion | ... | gp_post_miss_dose_why_other | \ |
| 0 | Christianity | ... | NaN | |
| 39805 | Muslim | ... | NaN | |
| 39774 | Christianity | ... | NaN | |
| 7745 | Other | ... | NaN | |
| 39769 | Muslim | ... | NaN | |
| ... | ... | ... | ... | |
| 31870 | Prefer Not To Answer | ... | NaN | |
| 31869 | Muslim | ... | NaN | |
| 31868 | Christianity | ... | NaN | |
| 12528 | Muslim (Shia) | ... | NaN | |
| 26245 | Christianity | ... | NaN | |

| | | | |
|-------|---------------------|--------------------|--------------------------|
| | gp_post_labor_force | gp_pre_labor_force | gp_unemployment_why |
| \ | | | |
| 0 | No | No | NaN |
| 39805 | No | No | NaN |
| 39774 | No | No | NaN |
| 7745 | Yes | Yes | NaN |
| 39769 | No | No | NaN |
| ... | ... | ... | ... |
| 31870 | No | Yes | Business / office closed |
| 31869 | Yes | Yes | NaN |
| 31868 | No | Yes | Business / office closed |
| 12528 | No | No | NaN |
| 26245 | No | No | NaN |

| | | | |
|-------------|---------------------------|---------------|----------------|
| | gp_unemployment_why_other | gp_pre_income | gp_post_income |
| country \ | | | |
| 0 | NaN | 50000.0 | 999497.0 |
| Uganda | | | |
| 39805 | NaN | 82475574.0 | 8247557.0 |
| Mali | | | |
| 39774 | NaN | 1.0 | 1.0 |
| Nigeria | | | |
| 7745 | NaN | 5000.0 | 5000.0 |
| Philippines | | | |
| 39769 | NaN | 94066792.0 | 94066792.0 |
| Mali | | | |

```

...
...
31870 NaN 800.0 808000.0
Colombia
31869 NaN 170000.0 50000.0 Ivory
Coast
31868 NaN 40000.0 35000.0
Philippines
12528 NaN 0.0 0.0
Iraq
26245 NaN 800.0 800.0
Colombia

```

```

weight user_id
0 2.675598 gp_6372662088826880
39805 2.165410 gp_4816278315597824
39774 2.207765 gp_5680568787795968
7745 1.929975 gp_6559930632372224
39769 2.711022 gp_4556741239111680
...
31870 1.625813 gp_4860486959235072
31869 1.000000 gp_4655799541956608
31868 1.550364 gp_4886213289050112
12528 1.655397 gp_5669009610768384
26245 1.792738 gp_5200759995236352

```

[52490 rows x 48 columns]

#wyświetlanie wierszy dla 10 największych wartości określonej kolumny
data_frame.nlargest(10, 'weight')

```

observation_id submitted_time gender \
3774 gp_4665227603083264 2020-07-24 03:57:54.877 UTC Female
4482 gp_4696567945887744 2020-07-15 10:33:37.864 UTC Male
7265 gp_4816317741006848 2020-07-14 19:20:11.775 UTC Female
7940 gp_4845288906031104 2020-07-05 22:12:21.834 UTC Female
9809 gp_4924182455648256 2020-07-05 09:29:28.805 UTC Female
10722 gp_4962030073413632 2020-07-02 16:09:01.896 UTC Male
17281 gp_5248369841930240 2020-07-02 22:17:57.454 UTC Male
18131 gp_5283973979963392 2020-07-02 07:32:48.826 UTC Female
21289 gp_5419180758401024 2020-07-05 13:26:40.929 UTC Male
26953 gp_5669895447773184 2020-07-15 23:50:54.245 UTC Female

```

```

age geography \
3774 Under 16 City center or metropolitan area
4482 26 to 35 years old City center or metropolitan area
7265 Under 16 Suburban/Peri-urban
7940 Under 16 City center or metropolitan area
9809 16 to 25 years old City center or metropolitan area
10722 36 to 45 years old Suburban/Peri-urban

```

| | | | |
|-------|----------|-----------|----------------------------------|
| 17281 | | Under 16 | City center or metropolitan area |
| 18131 | 26 to 35 | years old | City center or metropolitan area |
| 21289 | 36 to 45 | years old | Rural |
| 26953 | | Under 16 | Rural |

financial_situation

| | | | |
|----------|---|---------------------|--|
| school \ | | | |
| 3774 | I can afford food and regular expenses, but no... | No formal education | |
| 4482 | I can afford food and regular expenses, and bu... | No formal education | |
| 7265 | I cannot afford enough food for my family | No formal education | |
| 7940 | I can afford food, but nothing else | No formal education | |
| 9809 | I cannot afford enough food for my family | No formal education | |
| 10722 | I can afford food and regular expenses, and bu... | No formal education | |
| 17281 | I can afford food, but nothing else | No formal education | |
| 18131 | I cannot afford enough food for my family | No formal education | |
| 21289 | I can afford food, but nothing else | Primary school | |
| 26953 | I cannot afford enough food for my family | Primary school | |

| ... | employment_status | ethnicity | religion |
|--------|--------------------|----------------------|----------------------|
| 3774 \ | Unemployed | Ukrainian | Prefer Not To Answer |
| 4482 | Self-employed | Russian | Agnosticism |
| 7265 | Retired | Mestizo | Evangelicalism |
| 7940 | Student | White | Catholicism |
| 9809 | Unemployed | Somali | Muslim |
| 10722 | Retired | Afro-Asian | Other |
| 17281 | Self-employed | Prefer not to answer | Vodoun |
| 18131 | Unemployed | Arab | Muslim (Shia) |
| 21289 | Employed full-time | Fulani | Muslim |
| 26953 | Employed part-time | Arab (Other) | Muslim (Sunni) |

...

| | gp_post_miss_dose_why_other | gp_post_labor_force |
|----------------------|-----------------------------|---------------------|
| gp_pre_labor_force \ | | |
| 3774 | NaN | Yes |
| No | | |
| 4482 | NaN | Yes |
| No | | |
| 7265 | NaN | Yes |
| Yes | | |
| 7940 | NaN | No |
| No | | |
| 9809 | NaN | Yes |
| No | | |
| 10722 | NaN | Yes |
| No | | |
| 17281 | NaN | Yes |
| No | | |
| 18131 | NaN | Yes |
| Yes | | |
| 21289 | NaN | Yes |
| Yes | | |
| 26953 | NaN | Yes |
| Yes | | |

| | gp_unemployment_why | gp_unemployment_why_other | gp_pre_income \ |
|-------|---------------------|---------------------------|-----------------|
| 3774 | NaN | NaN | 1.5 |
| 4482 | NaN | NaN | 0.0 |
| 7265 | NaN | NaN | 800.0 |
| 7940 | NaN | NaN | 0.0 |
| 9809 | NaN | NaN | 10.0 |
| 10722 | NaN | NaN | 222.0 |
| 17281 | NaN | NaN | 50.0 |
| 18131 | NaN | NaN | 80.0 |
| 21289 | NaN | NaN | 70000.0 |
| 26953 | NaN | NaN | 300.0 |

| | gp_post_income | country | weight | user_id |
|-------|----------------|--------------|---------|---------------------|
| 3774 | 0.0 | Ukraine | 6.41142 | gp_5850331822161920 |
| 4482 | 150000.0 | Kazakhstan | 6.41142 | gp_5140308383236096 |
| 7265 | 530.0 | Panama | 6.41142 | gp_6286689484144640 |
| 7940 | 0.0 | Colombia | 6.41142 | gp_5154587281719296 |
| 9809 | 10.0 | Somalia | 6.41142 | gp_5852393440018432 |
| 10722 | 222.0 | Saudi Arabia | 6.41142 | gp_4797705280290816 |
| 17281 | 50.0 | Benin | 6.41142 | gp_5616480036585472 |
| 18131 | 80.0 | Lebanon | 6.41142 | gp_6566692340105216 |
| 21289 | 70000.0 | Niger | 6.41142 | gp_4658733716340736 |
| 26953 | 0.0 | Bahrain | 6.41142 | gp_4801118388617216 |

[10 rows x 48 columns]

```
#wyświetlanie wierszy dla 10 najmniejszych wartości określonej kolumny
data_frame.nsmallest(10, 'weight')
```

| | observation_id | submitted_time | gender | \ |
|------|---------------------|-----------------------------|--------|---|
| 144 | gp_4509416591458304 | 2020-07-25 11:16:23.805 UTC | Female | |
| 520 | gp_4526482610454528 | 2020-07-17 12:58:56.165 UTC | Male | |
| 852 | gp_4540126480039936 | 2020-07-07 18:23:05.845 UTC | Male | |
| 960 | gp_4544756689666048 | 2020-07-02 12:36:58.115 UTC | Male | |
| 964 | gp_4544937145401344 | 2020-07-12 14:25:59.905 UTC | Male | |
| 1363 | gp_4561830661062656 | 2020-07-02 16:05:59.404 UTC | Male | |
| 1398 | gp_4563247127855104 | 2020-07-14 10:33:08.86 UTC | Female | |
| 1567 | gp_4569919158222848 | 2020-07-05 11:00:07.838 UTC | Female | |
| 1684 | gp_4574351463809024 | 2020-07-05 16:04:36.891 UTC | Male | |
| 1872 | gp_4583458099953664 | 2020-07-03 14:11:13.9 UTC | Male | |

| | age | geography | \ |
|------|--------------------|----------------------------------|---|
| 144 | 16 to 25 years old | City center or metropolitan area | |
| 520 | 16 to 25 years old | Suburban/Peri-urban | |
| 852 | 16 to 25 years old | Suburban/Peri-urban | |
| 960 | 16 to 25 years old | City center or metropolitan area | |
| 964 | 16 to 25 years old | City center or metropolitan area | |
| 1363 | 26 to 35 years old | Rural | |
| 1398 | 16 to 25 years old | City center or metropolitan area | |
| 1567 | 16 to 25 years old | City center or metropolitan area | |
| 1684 | 16 to 25 years old | Rural | |
| 1872 | 16 to 25 years old | City center or metropolitan area | |

| | financial_situation | \ |
|------|---|---|
| 144 | I can afford food and regular expenses, and bu... | |
| 520 | I can afford food and regular expenses, and bu... | |
| 852 | I cannot afford enough food for my family | |
| 960 | I can afford food and regular expenses, and bu... | |
| 964 | I can afford food and regular expenses, and bu... | |
| 1363 | I can afford food, but nothing else | |
| 1398 | I can afford food and regular expenses, but no... | |
| 1567 | I cannot afford enough food for my family | |
| 1684 | I can afford food and regular expenses, but no... | |
| 1872 | I can afford food and regular expenses, and bu... | |

| | school | employment_status | |
|--------------|-----------------------|----------------------------|----------------------|
| ethnicity | | | \ |
| 144 | College or university | Student | |
| Chinese | | | |
| 520 | College or university | Student | Prefer not to answer |
| 852 | Secondary/high school | Student | |
| Other | | | |
| 960 | College or university | Student and work part-time | |
| Voltaire/Gur | | | |
| 964 | Secondary/high school | Student | |

| | | |
|----------------|-----------------------|--------------------|
| Kru | | |
| 1363 | Secondary/high school | Unemployed |
| Akan | | |
| 1398 | College or university | Employed part-time |
| Chinese | | |
| 1567 | Secondary/high school | Student |
| Chinese | | |
| 1684 | College or university | Student |
| Other | | |
| 1872 | College or university | Student |
| Northern Mande | | |

| | religion | ... | gp_post_miss_dose_why_other | \ |
|------|----------------------|-----|-----------------------------|---|
| 144 | Agnosticism | ... | NaN | |
| 520 | Catholicism | ... | NaN | |
| 852 | Catholicism | ... | NaN | |
| 960 | Catholicism | ... | NaN | |
| 964 | Catholicism | ... | NaN | |
| 1363 | Catholicism | ... | NaN | |
| 1398 | Other | ... | NaN | |
| 1567 | Buddhism | ... | NaN | |
| 1684 | Prefer Not To Answer | ... | NaN | |
| 1872 | Muslim | ... | NaN | |

| | gp_post_labor_force | gp_pre_labor_force | gp_unemployment_why | \ |
|------|---------------------|--------------------|---------------------|---|
| 144 | No | No | NaN | |
| 520 | Yes | Yes | NaN | |
| 852 | No | No | NaN | |
| 960 | No | No | NaN | |
| 964 | Yes | Yes | NaN | |
| 1363 | No | No | NaN | |
| 1398 | Yes | Yes | NaN | |
| 1567 | No | No | NaN | |
| 1684 | Yes | No | NaN | |
| 1872 | No | No | NaN | |

| | gp_unemployment_why_other | gp_pre_income | gp_post_income | |
|-----------|---------------------------|---------------|----------------|-------------|
| country \ | | | | |
| 144 | NaN | 0.0 | 0.0 | Hong Kong |
| 520 | NaN | 0.0 | 0.0 | Ivory Coast |
| 852 | NaN | 1.0 | 1000.0 | Ivory Coast |
| 960 | NaN | 0.0 | 0.0 | Ivory Coast |
| 964 | NaN | 21000.0 | 27000.0 | Ivory Coast |
| 1363 | NaN | 150000.0 | 150000.0 | Ivory Coast |

| | | | | |
|-------|-----|---------|---------|-------|
| 1398 | NaN | 6000.0 | 6000.0 | Hong |
| Kong | | | | |
| 1567 | NaN | 0.0 | 0.0 | Hong |
| Kong | | | | |
| 1684 | NaN | 80000.0 | 80000.0 | Ivory |
| Coast | | | | |
| 1872 | NaN | 0.0 | 0.0 | Ivory |
| Coast | | | | |

| | weight | user_id |
|------|--------|---------------------|
| 144 | 1.0 | gp_5058356632354816 |
| 520 | 1.0 | gp_6142385918836736 |
| 852 | 1.0 | gp_4852694114369536 |
| 960 | 1.0 | gp_6358894674182144 |
| 964 | 1.0 | gp_6238940295331840 |
| 1363 | 1.0 | gp_4934027729698816 |
| 1398 | 1.0 | gp_5776393856352256 |
| 1567 | 1.0 | gp_5899587211755520 |
| 1684 | 1.0 | gp_5676395832803328 |
| 1872 | 1.0 | gp_6429813654421504 |

[10 rows x 48 columns]

#wyświetlenie wierszy da 10 największych wartości określonej kolumny pod warunkiem określonych wartości innej kolumny
data_frame[data_frame['ethnicity'] == 'Chinese'].nlargest(10, 'weight')

| | observation_id | submitted_time | gender | \ |
|-------|---------------------|-----------------------------|--------|---|
| 52010 | gp_6735853616627712 | 2020-07-26 00:14:59.342 UTC | Male | |
| 26194 | gp_5635674017628160 | 2020-07-01 22:36:13.34 UTC | Female | |
| 33994 | gp_5964867221848064 | 2020-07-02 01:46:35.224 UTC | Female | |
| 37808 | gp_6126128483008512 | 2020-07-02 04:10:15.291 UTC | Female | |
| 19992 | gp_5365734990675968 | 2020-07-04 10:10:16.268 UTC | Female | |
| 5229 | gp_4729703346995200 | 2020-07-01 23:39:03.512 UTC | Male | |
| 27229 | gp_5681794151350272 | 2020-07-25 14:54:52.485 UTC | Male | |
| 28872 | gp_5750585669451776 | 2020-07-06 12:55:10.953 UTC | Male | |
| 47189 | gp_6528578931130368 | 2020-07-25 10:51:26.623 UTC | Male | |
| 52101 | gp_6739600402022400 | 2020-07-05 10:20:31.806 UTC | Male | |

| | age | geography | \ |
|-------|-------------------|----------------------------------|---|
| 52010 | Under 16 | City center or metropolitan area | |
| 26194 | Over 45 years old | Suburban/Peri-urban | |
| 33994 | Over 45 years old | Suburban/Peri-urban | |
| 37808 | Over 45 years old | Suburban/Peri-urban | |
| 19992 | Over 45 years old | Suburban/Peri-urban | |
| 5229 | Under 16 | Suburban/Peri-urban | |
| 27229 | Under 16 | City center or metropolitan area | |
| 28872 | Under 16 | City center or metropolitan area | |
| 47189 | Under 16 | City center or metropolitan area | |

| | | | | |
|---------------------|---|-----------------------------|-----------|---|
| 52101 | Under 16 | Suburban/Peri-urban | | |
| | | financial_situation | \ | |
| 52010 | I can comfortably afford food, clothes, and fu... | | | |
| 26194 | I can afford food and regular expenses, and bu... | | | |
| 33994 | I can afford food and regular expenses, and bu... | | | |
| 37808 | I can comfortably afford food, clothes, and fu... | | | |
| 19992 | I can afford food, but nothing else | | | |
| 5229 | I can afford food and regular expenses, and bu... | | | |
| 27229 | I cannot afford enough food for my family | | | |
| 28872 | I cannot afford enough food for my family | | | |
| 47189 | I can afford food and regular expenses, and bu... | | | |
| 52101 | I can afford food and regular expenses, but no... | | | |
| | school | employment_status | ethnicity | \ |
| 52010 | Primary school | Student | Chinese | |
| 26194 | Secondary/high school | Employed full-time | Chinese | |
| 33994 | Secondary/high school | Retired | Chinese | |
| 37808 | Secondary/high school | Retired | Chinese | |
| 19992 | College or university | Unemployed | Chinese | |
| 5229 | Secondary/high school | Student | Chinese | |
| 27229 | Secondary/high school | Student | Chinese | |
| 28872 | Secondary/high school | Student | Chinese | |
| 47189 | Secondary/high school | Student and work part-time | Chinese | |
| 52101 | Secondary/high school | Student | Chinese | |
| | religion | gp_post_miss_dose_why_other | | |
| gp_post_labor_force | \ | | | |
| 52010 | Buddhism | ... | NaN | |
| Yes | | | | |
| 26194 | Buddhism | ... | NaN | |
| Yes | | | | |
| 33994 | Christianity | ... | NaN | |
| No | | | | |
| 37808 | Christianity | ... | NaN | |
| Yes | | | | |
| 19992 | Buddhism | ... | NaN | |
| No | | | | |
| 5229 | Christianity | ... | NaN | |
| No | | | | |
| 27229 | Buddhism | ... | NaN | |
| No | | | | |
| 28872 | Christianity | ... | NaN | |
| Yes | | | | |
| 47189 | Buddhism | ... | NaN | |
| No | | | | |
| 52101 | Buddhism | ... | NaN | |
| No | | | | |
| | gp_pre_labor_force | | | |

| | |
|---------------------|--|
| gp_unemployment_why | \ |
| 52010 | No |
| NaN | |
| 26194 | Yes |
| NaN | |
| 33994 | No |
| NaN | |
| 37808 | Yes |
| NaN | |
| 19992 | No |
| NaN | |
| 5229 | No |
| NaN | |
| 27229 | No |
| NaN | |
| 28872 | Yes |
| NaN | |
| 47189 | No |
| NaN | |
| 52101 | Yes Not able to go to work due to government |
| manda... | |

| | gp_unemployment_why_other | gp_pre_income | gp_post_income | country |
|-------|---------------------------|---------------|----------------|----------|
| \ | | | | |
| 52010 | NaN | 0.0 | 0.0 | Malaysia |
| 26194 | NaN | 1000.0 | 1200.0 | Malaysia |
| 33994 | NaN | 0.0 | 0.0 | Malaysia |
| 37808 | NaN | 500.0 | 500.0 | Malaysia |
| 19992 | NaN | 0.0 | 0.0 | Malaysia |
| 5229 | NaN | 4000.0 | 4000.0 | Malaysia |
| 27229 | NaN | 0.0 | 0.0 | Malaysia |
| 28872 | NaN | 5000.0 | 4500.0 | Malaysia |
| 47189 | NaN | 0.0 | 0.0 | Malaysia |
| 52101 | NaN | 3500.0 | 3000.0 | Malaysia |

| | weight | user_id |
|-------|----------|---------------------|
| 52010 | 3.206059 | gp_4567382006956032 |
| 26194 | 2.584217 | gp_5337201199546368 |
| 33994 | 2.584217 | gp_5707177534947328 |
| 37808 | 2.584217 | gp_6211090023186432 |

```

19992  2.553618  gp_6165029812961280
5229   2.502590  gp_5431670490005504
27229  2.502590  gp_5746967461494784
28872  2.502590  gp_5013102881406976
47189  2.502590  gp_6552871429996544
52101  2.502590  gp_6123853283065856

```

```
[10 rows x 48 columns]
```

#grupowanie wierszy według wartości kolumny kategoryzowanej, potem uśrednienie wartości dla pewnych kolumn, liczba wartości i mediana dla pozostałych kolumn w grupach

```
data_frame.groupby(['age', 'country']).agg({'weight': 'mean'})
```

| | | weight |
|--------------------|------------------------------------|----------|
| age | country | |
| 16 to 25 years old | Afghanistan | 1.519903 |
| | Albania | 2.512004 |
| | Algeria | 1.926268 |
| | Argentina | 1.766030 |
| | Bahrain | 2.646164 |
| ... | | ... |
| Under 16 | Uruguay | 2.977481 |
| | Venezuela (Bolivarian Republic of) | 2.325178 |
| | Viet Nam | 2.784022 |
| | Yemen | 2.552718 |
| | Zambia | 3.676628 |

```
[396 rows x 1 columns]
```

#grupowanie wierszy według wartości kolumny kategoryzowanej, potem uśrednienie wartości dla pewnych kolumn, liczba wartości i mediana dla pozostałych kolumn w grupach

```
group = data_frame.groupby(['age', 'country']).agg({'weight': ['mean', 'median']})
```

#wyświetlenie nazwy kolumn indeksu złożonego

```
group.index.names
```

```
FrozenList(['age', 'country'])
```

#sortowanie kolumn indeksu złożonego

```
group.sort_index()
```

| | | weight |
|--------------------|-------------|----------|
| | | mean |
| median | | |
| age | country | |
| 16 to 25 years old | Afghanistan | 1.519903 |

| | | |
|----------|------------------------------------|----------|
| 1.467960 | Albania | 2.512004 |
| 2.383431 | Algeria | 1.926268 |
| 1.827014 | Argentina | 1.766030 |
| 1.707583 | Bahrain | 2.646164 |
| 2.362396 | | |
| ... | | ... |
| ... | | |
| Under 16 | Uruguay | 2.977481 |
| 2.872425 | Venezuela (Bolivarian Republic of) | 2.325178 |
| 2.158791 | Viet Nam | 2.784022 |
| 2.604028 | Yemen | 2.552718 |
| 2.525756 | Zambia | 3.676628 |
| 3.990096 | | |

[396 rows x 2 columns]

#tworzenie tabeli przestawnej

```
df_pivot = data_frame.pivot_table(values = 'age',
index='financial_situation', columns='gender', aggfunc='sum',
margins=False, dropna=True, fill_value=None)
df_pivot
```

```
gender
Female \
financial_situation
```

```
I can afford food and regular expenses, and buy... 26 to 35 years
old26 to 35 years old16 to 25 y...
I can afford food and regular expenses, but not... 26 to 35 years
old36 to 45 years old26 to 35 y...
I can afford food, but nothing else 26 to 35 years
old26 to 35 years old16 to 25 y...
I can comfortably afford food, clothes, and fur... 26 to 35 years
old16 to 25 years old26 to 35 y...
I cannot afford enough food for my family 26 to 35 years
old16 to 25 years old16 to 25 y...
```

```
gender
Male \
financial_situation
```

| | |
|--|--------------------|
| I can afford food and regular expenses, and buy... | 26 to 35 years old |
| I can afford food and regular expenses, but not... | Under 16 |
| I can afford food, but nothing else | 16 to 25 years old |
| I can comfortably afford food, clothes, and fur... | 36 to 45 years old |
| I cannot afford enough food for my family | Under 16 |

gender

Prefer not to respond

financial_situation

| | |
|--|--------------------|
| I can afford food and regular expenses, and buy... | 16 to 25 years old |
| I can afford food and regular expenses, but not... | 36 to 45 years old |
| I can afford food, but nothing else | 16 to 25 years old |
| I can comfortably afford food, clothes, and fur... | Over 45 years old |
| I cannot afford enough food for my family | 16 to 25 years old |

#wyświetlenie indeksów i kolumn tabelu przestawnej

df_pivot.index

```
Index(['I can afford food and regular expenses, and buy new clothes
once a year, but nothing else',
      'I can afford food and regular expenses, but nothing else',
      'I can afford food, but nothing else',
      'I can comfortably afford food, clothes, and furniture, and I
have savings',
      'I cannot afford enough food for my family'],
      dtype='object', name='financial_situation')
```

#wyświetlenie indeksów i kolumn tabelu przestawnej

df_pivot.columns

```
Index(['Female', 'Male', 'Prefer not to respond'], dtype='object',
      name='gender')
```

#indeks złożony tabeli przestawnej

```
df_pivot = data_frame.pivot_table(values = 'age',
index=['financial_situation', 'country'], columns='gender',
```

```
aggfunc='sum', margins=False, dropna=True, fill_value=None)
df_pivot
```

```
gender
Female \
financial_situation      country
I can afford food and regular expenses, and buy... Afghanistan
16 to 25 years old26 to 35 years old16 to 25 y...
26 to 35 years old36 to 45 years old26 to 35 y... Albania
26 to 35 years old26 to 35 years old16 to 25 y... Algeria
16 to 25 years old26 to 35 years old36 to 45 y... Argentina
26 to 35 years old26 to 35 years old16 to 25 y... Bahrain
...
...
I cannot afford enough food for my family      Venezuela
(Bolivarian Republic of) 36 to 45 years old16 to 25 years old16 to 25
y...
16 to 25 years old26 to 35 years old16 to 25 y... Viet Nam
36 to 45 years old26 to 35 years old26 to 35 y... Yemen
16 to 25 years old16 to 25 years old16 to 25 y... Zambia
16 to 25 years old16 to 25 years old36 to 45 y... Zimbabwe

gender
Male \
financial_situation      country
I can afford food and regular expenses, and buy... Afghanistan
16 to 25 years old26 to 35 years old16 to 25 y...
36 to 45 years old16 to 25 years old16 to 25 y... Albania
26 to 35 years old36 to 45 years old16 to 25 y... Algeria
16 to 25 years old16 to 25 years old16 to 25 y... Argentina
36 to 45 years old16 to 25 years old36 to 45 y... Bahrain
...
...
I cannot afford enough food for my family      Venezuela
(Bolivarian Republic of) 16 to 25 years old16 to 25 years old16 to 25
y...
```


| | | | |
|--|--------------------|--------------------|-------------|
| 36 to 45 years old | 26 to 35 years old | 16 to 25 y... | Viet Nam |
| | | | Yemen |
| 26 to 35 years old | 16 to 25 years old | 16 to 25 y... | Zambia |
| 16 to 25 years old | 16 to 25 years old | 16 to 25 y... | Zimbabwe |
| 36 to 45 years old | 36 to 45 years old | 16 to 25 y... | |
| gender | | | |
| Prefer not to respond | | | |
| financial_situation | | | country |
| I can afford food and regular expenses, and buy... | | | Afghanistan |
| 36 to 45 years old | 26 to 35 years old | 26 to 35 y... | Albania |
| NaN | | | Algeria |
| NaN | | | Argentina |
| NaN | | | Bahrain |
| NaN | | | |
| ... | | | |
| ... | | | |
| I cannot afford enough food for my family | | | Venezuela |
| (Bolivarian Republic of) | 16 to 25 years old | 36 to 45 years old | Under |
| 1616... | | | |
| | | | Viet Nam |
| NaN | | | Yemen |
| 16 to 25 years old | 16 to 25 years old | 16 to 25 y... | Zambia |
| Under 16 | | | Zimbabwe |
| NaN | | | |

[380 rows x 3 columns]

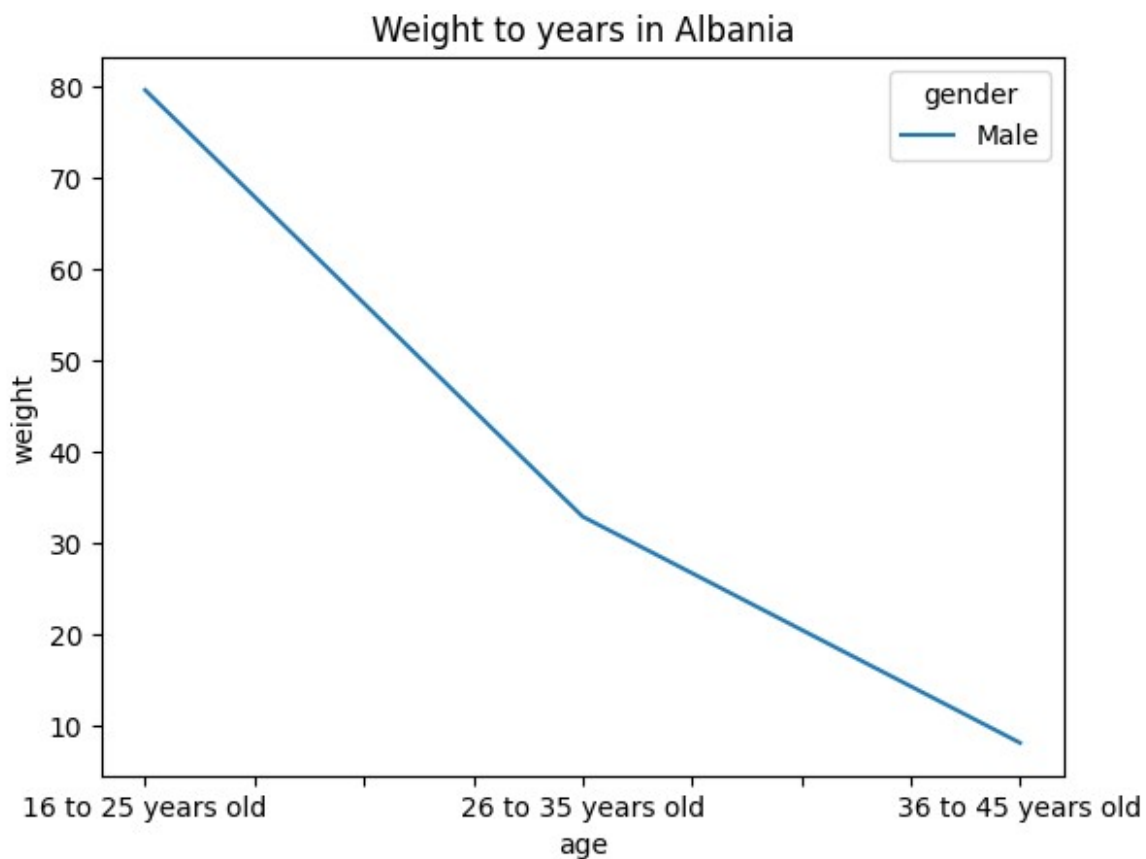
#import matplotlib + wskazanie że należy wykres rysować w zeszycie a nie w zakładce

```
import matplotlib.pyplot as plt
%matplotlib inline
```

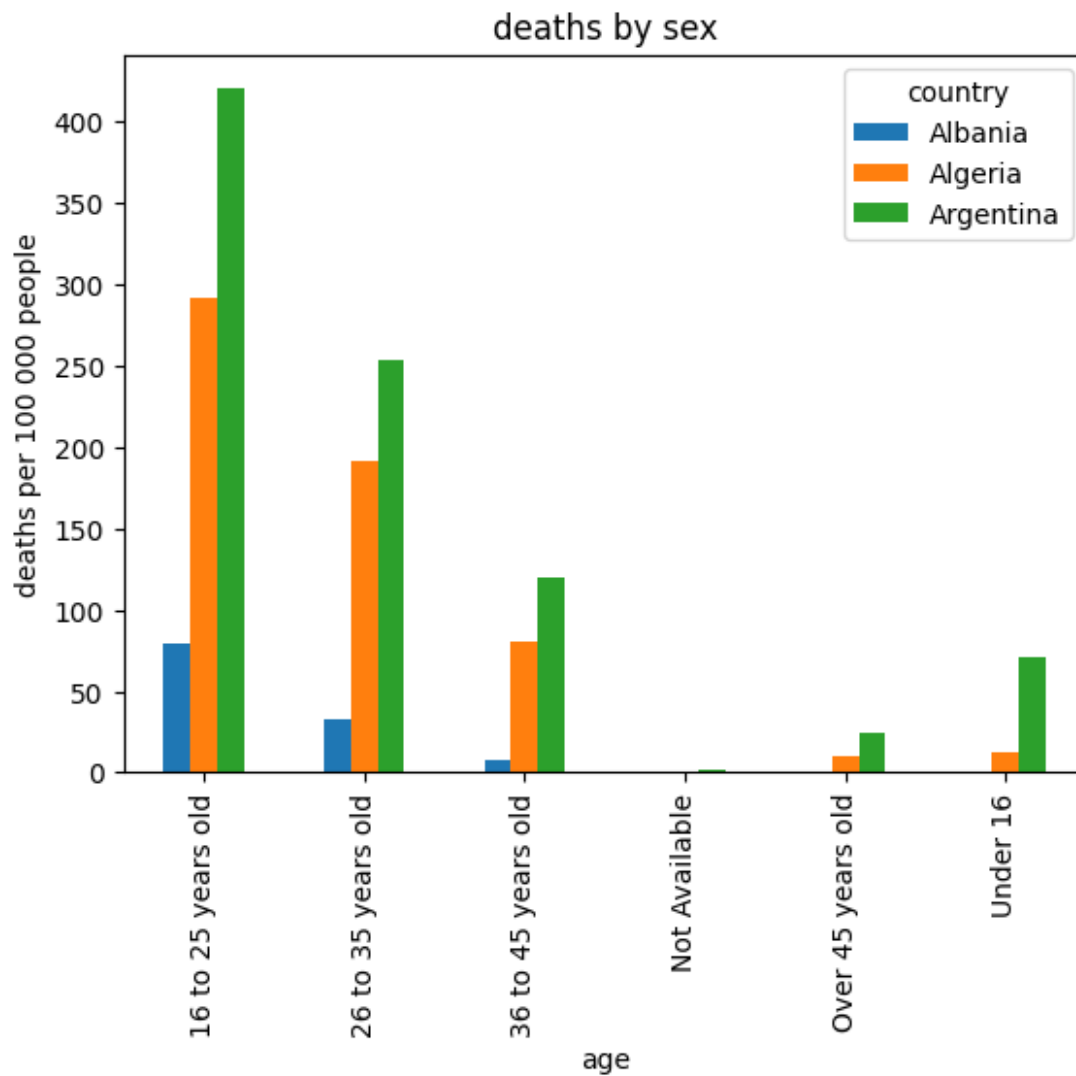
#wykres na podstawie tabeli przestawnej

```
data_frame[(data_frame['country'] == 'Albania') &
            (data_frame['gender'] == 'Male')].pivot_table(values='weight',
index='age', columns='gender', aggfunc='sum',
                                                    fill_value=None,
margins=False, dropna=True).plot(kind = 'line')
```

```
plt.ylabel('weight') # etykieta osi y
plt.title('Weight to years in Albania') # tytuł wykresu
Text(0.5, 1.0, 'Weight to years in Albania')
```



```
#histogram z tabeli przestawnej
df_bar = data_frame[(data_frame['country'].isin(['Albania', 'Algeria',
'Argentina'])) & (data_frame['gender'] ==
'Male')].pivot_table(values='weight', index='age', columns='country',
aggfunc='sum',
fill_value=None,
margins=False, dropna=True)
df_bar.plot(kind = 'bar')
plt.ylabel('weight')
plt.title('weight by country')
Text(0.5, 1.0, 'deaths by sex')
```



```
#łączenie za pomocą merge
df1 = pd.read_csv('data1.csv')

df2 = pd.read_csv('data2.csv')

merged_df = pd.merge(df1, df2, on='ID')
merged_df

  ID  Imię  Miasto
0   1   Jan  Warszawa
1   2  Anna  Kraków
2   3  Piotr  Gdańsk

concat_df = pd.merge(df1, df2)
concat_df
```

| | ID | Imię | Miasto |
|---|----|-------|----------|
| 0 | 1 | Jan | Warszawa |
| 1 | 2 | Anna | Kraków |
| 2 | 3 | Piotr | Gdańsk |

#dodawanie kolumn za pomocą operacji matematycznych

```
data_frame['weight+gp_pre_income'] = data_frame['weight']
+data_frame['gp_pre_income']
data_frame
```

| | observation_id | submitted_time | \ |
|-------|---------------------|-------------------------|-----|
| 0 | gp_4503617949401088 | 2020-07-07 14:48:29.83 | UTC |
| 1 | gp_4503631639609344 | 2020-07-09 13:22:37.107 | UTC |
| 2 | gp_4503700758593536 | 2020-07-04 18:53:36.471 | UTC |
| 3 | gp_4503737805832192 | 2020-07-12 17:58:20.798 | UTC |
| 4 | gp_4503819343101952 | 2020-07-06 00:20:22.983 | UTC |
| ... | ... | ... | ... |
| 52485 | gp_6755106844573696 | 2020-07-02 12:37:51.894 | UTC |
| 52486 | gp_6755213279232000 | 2020-07-02 07:07:44.269 | UTC |
| 52487 | gp_6755237508677632 | 2020-07-02 10:26:38.461 | UTC |
| 52488 | gp_6755275458740224 | 2020-07-24 23:16:52.556 | UTC |
| 52489 | gp_6755355351842816 | 2020-07-02 13:33:00.269 | UTC |

| | gender | age | \ |
|-------|-----------------------|--------------------|-----|
| 0 | Male | Under 16 | |
| 1 | Female | 26 to 35 years old | |
| 2 | Male | 36 to 45 years old | |
| 3 | Male | 26 to 35 years old | |
| 4 | Male | 26 to 35 years old | |
| ... | ... | ... | ... |
| 52485 | Female | 36 to 45 years old | |
| 52486 | Male | 26 to 35 years old | |
| 52487 | Prefer not to respond | 16 to 25 years old | |
| 52488 | Prefer not to respond | 26 to 35 years old | |
| 52489 | Female | 26 to 35 years old | |

| | geography | \ |
|-------|----------------------------------|-----|
| 0 | Suburban/Peri-urban | |
| 1 | City center or metropolitan area | |
| 2 | City center or metropolitan area | |
| 3 | Rural | |
| 4 | Suburban/Peri-urban | |
| ... | ... | ... |
| 52485 | Suburban/Peri-urban | |
| 52486 | City center or metropolitan area | |
| 52487 | Suburban/Peri-urban | |
| 52488 | Rural | |
| 52489 | City center or metropolitan area | |

| | | financial_situation | \ |
|-------|---|---------------------|---|
| 0 | I can afford food and regular expenses, but no... | | |
| 1 | I cannot afford enough food for my family | | |
| 2 | I can comfortably afford food, clothes, and fu... | | |
| 3 | I can afford food and regular expenses, and bu... | | |
| 4 | I can afford food and regular expenses, and bu... | | |
| ... | | | |
| 52485 | I can afford food, but nothing else | | |
| 52486 | I can afford food and regular expenses, but no... | | |
| 52487 | I can afford food, but nothing else | | |
| 52488 | I cannot afford enough food for my family | | |
| 52489 | I cannot afford enough food for my family | | |

| | education | employment_status | \ |
|-------|-----------------------|----------------------------|---|
| 0 | Secondary/high school | Employed full-time | |
| 1 | College or university | Unemployed | |
| 2 | Primary school | Employed full-time | |
| 3 | Technical school | Student | |
| 4 | Technical school | Employed full-time | |
| ... | | | |
| 52485 | Secondary/high school | Employed part-time | |
| 52486 | College or university | Employed full-time | |
| 52487 | Secondary/high school | Self-employed | |
| 52488 | Prefer not to answer | Student and work part-time | |
| 52489 | Secondary/high school | Unemployed | |

| | ethnicity | religion | ... |
|--------------------|----------------------|----------------------|-----|
| gp_pre_labor_force | \ | | |
| 0 | Ankole | Christianity | ... |
| No | | | |
| 1 | Mestizo | Catholicism | ... |
| Yes | | | |
| 2 | Non-hispanic White | Agnosticism | ... |
| Yes | | | |
| 3 | Mestizo | Christianity | ... |
| Yes | | | |
| 4 | Mestizo | Catholicism | ... |
| Yes | | | |
| ... | ... | ... | ... |
| ... | | | |
| 52485 | Not Available | Catholicism | ... |
| Yes | | | |
| 52486 | Arab | Muslim (Sunni) | ... |
| Yes | | | |
| 52487 | Grebo | Prefer Not To Answer | ... |
| No | | | |
| 52488 | Prefer not to answer | Other | ... |
| No | | | |
| 52489 | Tagalog | Christianity | ... |

Yes

| | gp_unemployment_why | gp_unemployment_why_other | \ |
|-------|-----------------------------------|---------------------------|---|
| 0 | NaN | NaN | |
| 1 | NaN | NaN | |
| 2 | NaN | NaN | |
| 3 | Laid off while business continues | NaN | |
| 4 | NaN | NaN | |
| ... | ... | ... | |
| 52485 | Business / office closed | NaN | |
| 52486 | NaN | NaN | |
| 52487 | NaN | NaN | |
| 52488 | NaN | NaN | |
| 52489 | NaN | NaN | |

| | gp_pre_income | gp_post_income | country | weight |
|-------|---------------|----------------|--------------------------|----------|
| \ | | | | |
| 0 | 50000.0 | 999497.0 | Uganda | 2.675598 |
| 1 | 300.0 | 200.0 | Ecuador | 1.997161 |
| 2 | 3200.0 | 3200.0 | United States of America | 1.898763 |
| 3 | 12.0 | 12.0 | Colombia | 1.691686 |
| 4 | 3000000.0 | 400000.0 | Colombia | 1.691686 |
| ... | ... | ... | ... | ... |
| 52485 | 900.0 | 900.0 | Italy | 2.260748 |
| 52486 | 1200000.0 | 120000.0 | Algeria | 1.896411 |
| 52487 | 0.0 | 0.0 | Liberia | 1.795822 |
| 52488 | 15.0 | 58.0 | Burkina Faso | 1.795822 |
| 52489 | 14000.0 | 16000.0 | Philippines | 1.608296 |

| | user_id | weight-gp_pre_income | weight+gp_pre_income |
|-------|---------------------|----------------------|----------------------|
| 0 | gp_6372662088826880 | -4.999732e+04 | 5.000268e+04 |
| 1 | gp_5900473574883328 | -2.980028e+02 | 3.019972e+02 |
| 2 | gp_4813642242981888 | -3.198101e+03 | 3.201899e+03 |
| 3 | gp_4703669741420544 | -1.030831e+01 | 1.369169e+01 |
| 4 | gp_4762741153988608 | -2.999998e+06 | 3.000002e+06 |
| ... | ... | ... | ... |
| 52485 | gp_5444968770699264 | -8.977393e+02 | 9.022607e+02 |
| 52486 | gp_5482738571804672 | -1.199998e+06 | 1.200002e+06 |
| 52487 | gp_5658409882091520 | 1.795822e+00 | 1.795822e+00 |
| 52488 | gp_5003001999917056 | -1.320418e+01 | 1.679582e+01 |

```
52489 gp_5388715507843072 -1.399839e+04 1.400161e+04
```

```
[52490 rows x 50 columns]
```

```
#dodawanie kolumn za pomocą lambdy
```

```
data_frame['weight-gp_pre_income'] = data_frame.apply(lambda row:  
row['weight'] - row['gp_pre_income'], axis=1)
```

```
data_frame
```

| | observation_id | submitted_time \ |
|-------|---------------------|-----------------------------|
| 0 | gp_4503617949401088 | 2020-07-07 14:48:29.83 UTC |
| 1 | gp_4503631639609344 | 2020-07-09 13:22:37.107 UTC |
| 2 | gp_4503700758593536 | 2020-07-04 18:53:36.471 UTC |
| 3 | gp_4503737805832192 | 2020-07-12 17:58:20.798 UTC |
| 4 | gp_4503819343101952 | 2020-07-06 00:20:22.983 UTC |
| ... | ... | ... |
| 52485 | gp_6755106844573696 | 2020-07-02 12:37:51.894 UTC |
| 52486 | gp_6755213279232000 | 2020-07-02 07:07:44.269 UTC |
| 52487 | gp_6755237508677632 | 2020-07-02 10:26:38.461 UTC |
| 52488 | gp_6755275458740224 | 2020-07-24 23:16:52.556 UTC |
| 52489 | gp_6755355351842816 | 2020-07-02 13:33:00.269 UTC |

| | gender | age \ |
|-------|-----------------------|--------------------|
| 0 | Male | Under 16 |
| 1 | Female | 26 to 35 years old |
| 2 | Male | 36 to 45 years old |
| 3 | Male | 26 to 35 years old |
| 4 | Male | 26 to 35 years old |
| ... | ... | ... |
| 52485 | Female | 36 to 45 years old |
| 52486 | Male | 26 to 35 years old |
| 52487 | Prefer not to respond | 16 to 25 years old |
| 52488 | Prefer not to respond | 26 to 35 years old |
| 52489 | Female | 26 to 35 years old |

| | geography \ |
|-------|----------------------------------|
| 0 | Suburban/Peri-urban |
| 1 | City center or metropolitan area |
| 2 | City center or metropolitan area |
| 3 | Rural |
| 4 | Suburban/Peri-urban |
| ... | ... |
| 52485 | Suburban/Peri-urban |
| 52486 | City center or metropolitan area |
| 52487 | Suburban/Peri-urban |
| 52488 | Rural |
| 52489 | City center or metropolitan area |

| | financial_situation \ |
|---|---|
| 0 | I can afford food and regular expenses, but no... |

| | |
|-------|---|
| 1 | I cannot afford enough food for my family |
| 2 | I can comfortably afford food, clothes, and fu... |
| 3 | I can afford food and regular expenses, and bu... |
| 4 | I can afford food and regular expenses, and bu... |
| ... | ... |
| 52485 | I can afford food, but nothing else |
| 52486 | I can afford food and regular expenses, but no... |
| 52487 | I can afford food, but nothing else |
| 52488 | I cannot afford enough food for my family |
| 52489 | I cannot afford enough food for my family |

| | education | employment_status \ |
|-------|-----------------------|----------------------------|
| 0 | Secondary/high school | Employed full-time |
| 1 | College or university | Unemployed |
| 2 | Primary school | Employed full-time |
| 3 | Technical school | Student |
| 4 | Technical school | Employed full-time |
| ... | ... | ... |
| 52485 | Secondary/high school | Employed part-time |
| 52486 | College or university | Employed full-time |
| 52487 | Secondary/high school | Self-employed |
| 52488 | Prefer not to answer | Student and work part-time |
| 52489 | Secondary/high school | Unemployed |

| | ethnicity | religion ... |
|----------------------|----------------------|--------------------------|
| gp_pre_labor_force \ | | |
| 0 | Ankole | Christianity ... |
| No | | |
| 1 | Mestizo | Catholicism ... |
| Yes | | |
| 2 | Non-hispanic White | Agnosticism ... |
| Yes | | |
| 3 | Mestizo | Christianity ... |
| Yes | | |
| 4 | Mestizo | Catholicism ... |
| Yes | | |
| ... | ... | ... |
| ... | | |
| 52485 | Not Available | Catholicism ... |
| Yes | | |
| 52486 | Arab | Muslim (Sunni) ... |
| Yes | | |
| 52487 | Grebo | Prefer Not To Answer ... |
| No | | |
| 52488 | Prefer not to answer | Other ... |
| No | | |
| 52489 | Tagalog | Christianity ... |
| Yes | | |

| gp_unemployment_why | gp_unemployment_why_other \ |
|---------------------|-----------------------------|
|---------------------|-----------------------------|

| | | | |
|-------|-----------------------------------|-----|-----|
| 0 | | NaN | NaN |
| 1 | | NaN | NaN |
| 2 | | NaN | NaN |
| 3 | Laid off while business continues | | NaN |
| 4 | | NaN | NaN |
| ... | | ... | ... |
| 52485 | Business / office closed | | NaN |
| 52486 | | NaN | NaN |
| 52487 | | NaN | NaN |
| 52488 | | NaN | NaN |
| 52489 | | NaN | NaN |

| | gp_pre_income | gp_post_income | country | weight |
|-------|---------------|----------------|--------------------------|----------|
| \ | | | | |
| 0 | 50000.0 | 999497.0 | Uganda | 2.675598 |
| 1 | 300.0 | 200.0 | Ecuador | 1.997161 |
| 2 | 3200.0 | 3200.0 | United States of America | 1.898763 |
| 3 | 12.0 | 12.0 | Colombia | 1.691686 |
| 4 | 3000000.0 | 400000.0 | Colombia | 1.691686 |
| ... | ... | ... | ... | ... |
| 52485 | 900.0 | 900.0 | Italy | 2.260748 |
| 52486 | 1200000.0 | 120000.0 | Algeria | 1.896411 |
| 52487 | 0.0 | 0.0 | Liberia | 1.795822 |
| 52488 | 15.0 | 58.0 | Burkina Faso | 1.795822 |
| 52489 | 14000.0 | 16000.0 | Philippines | 1.608296 |

| | user_id | weight-gp_pre_income | weight+gp_pre_income |
|-------|---------------------|----------------------|----------------------|
| 0 | gp_6372662088826880 | -4.999732e+04 | 5.000268e+04 |
| 1 | gp_5900473574883328 | -2.980028e+02 | 3.019972e+02 |
| 2 | gp_4813642242981888 | -3.198101e+03 | 3.201899e+03 |
| 3 | gp_4703669741420544 | -1.030831e+01 | 1.369169e+01 |
| 4 | gp_4762741153988608 | -2.999998e+06 | 3.000002e+06 |
| ... | | ... | ... |
| 52485 | gp_5444968770699264 | -8.977393e+02 | 9.022607e+02 |
| 52486 | gp_5482738571804672 | -1.199998e+06 | 1.200002e+06 |
| 52487 | gp_5658409882091520 | 1.795822e+00 | 1.795822e+00 |
| 52488 | gp_5003001999917056 | -1.320418e+01 | 1.679582e+01 |
| 52489 | gp_5388715507843072 | -1.399839e+04 | 1.400161e+04 |

[52490 rows x 50 columns]

```
#operacje na chunksize
chunksize = 1000
for chunk in pd.read_csv('IHME_PREM_GEN_POP_2020_Y2021M10D11.csv',
chunksize=chunksize):
    print(chunk.shape) #wyświetla rozmiar chunka-kawałka
```

[illegible]

```
(1000, 48)
(1000, 48)
(1000, 48)
(1000, 48)
(1000, 48)
(1000, 48)
(1000, 48)
(1000, 48)
(490, 48)
```