```python
url = "https://github.com/fivethirtyeight/data/blob/master/star-wars-survey/StarWars.csv"

import requests

response = requests.get(url)

response
```

```
<Response [200]>
```

```python
dir(response)
```

```
['__attrs__',
 '__bool__',
 '__class__',
 '__delattr__',
 '__dict__',
 '__dir__',
 '__doc__',
 '__enter__',
 '__eq__',
 '__exit__',
 '__format__',
 '__ge__',
 '__getattribute__',
 '__getstate__',
 '__gt__',
 '__hash__',
 '__init__',
 '__init_subclass__',
 '__iter__',
 '__le__',
 '__lt__',
 '__module__',
 '__ne__',
 '__new__',
 '__nonzero__',
 '__reduce__',
 '__reduce_ex__',
 '__repr__',
 '__setattr__',
 '__setstate__',
 '__sizeof__',
 '__str__',
 '__subclasshook__',
 '__weakref__',
 '_content',
 '_content_consumed',
 '_next',
 'apparent_encoding',
```

```
 'close',
 'connection',
 'content',
 'cookies',
 'elapsed',
 'encoding',
 'headers',
 'history',
 'is_permanent_redirect',
 'is_redirect',
 'iter_content',
 'iter_lines',
 'json',
 'links',
 'next',
 'ok',
 'raise_for_status',
 'raw',
 'reason',
 'request',
 'status_code',
 'text',
 'url']
```

```
response.json().keys()
```

```
dict_keys(['payload', 'title'])
```

```
data = response.json()['payload']['blob']['rawLines']
```

```
data[0]
```

```
'RespondentID,Have you seen any of the 6 films in the Star Wars
franchise?,Do you consider yourself to be a fan of the Star Wars film
franchise?,Which of the following Star Wars films have you seen?
Please select all that apply.,,,,,,Please rank the Star Wars films in
order of preference with 1 being your favorite film in the franchise
and 6 being your least favorite film.,,,,,,"Please state whether you
view the following characters favorably, unfavorably, or are
unfamiliar with him/her.",,,,,,,,,,,,,,Which character shot first?,Are
you familiar with the Expanded Universe?,Do you consider yourself to
be a fan of the Expanded Universe?Œæ,Do you consider yourself to be a
fan of the Star Trek franchise?,Gender,Age,Household
Income,Education,Location (Census Region)'
```

```
data[1]
```

```
',Response,Response,Star Wars: Episode I  The Phantom Menace,Star
Wars: Episode II  Attack of the Clones,Star Wars: Episode III  Revenge
of the Sith,Star Wars: Episode IV  A New Hope,Star Wars: Episode V The
Empire Strikes Back,Star Wars: Episode VI Return of the Jedi,Star
```

Wars: Episode I The Phantom Menace,Star Wars: Episode II Attack of the Clones,Star Wars: Episode III Revenge of the Sith,Star Wars: Episode IV A New Hope,Star Wars: Episode V The Empire Strikes Back,Star Wars: Episode VI Return of the Jedi,Han Solo,Luke Skywalker,Princess Leia Organa,Anakin Skywalker,Obi Wan Kenobi,Emperor Palpatine,Darth Vader,Lando Calrissian,Boba Fett,C-3P0,R2 D2,Jar Jar Binks,Padme Amidala,Yoda,Response,Response,Response,Response,Response,Response,Response,Response,Response'

```
len(data)
```

```
1188
```

```python
# with open("StarWars.csv", "w") as f:
#     f.write(data[0])
```

```python
# with open("StarWars.csv", "a") as f:
#     f.write(data[1])
```

```python
# with open("StarWars.csv", "a") as f:
#     f.write(data[2])
```

```python
# with open("StarWars.csv", "w") as f:
#     f.write(data[0])
```

```python
# with open("StarWars.csv", "a") as f:
#     for row in data[1:]:
#         f.writelines(row)
```

```python
import pandas as pd
```

```python
data[0]
```

'RespondentID,Have you seen any of the 6 films in the Star Wars franchise?,Do you consider yourself to be a fan of the Star Wars film franchise?,Which of the following Star Wars films have you seen? Please select all that apply.,,,,,,Please rank the Star Wars films in order of preference with 1 being your favorite film in the franchise and 6 being your least favorite film.,,,,,,"Please state whether you view the following characters favorably, unfavorably, or are unfamiliar with him/her.",,,,,,,,,,,,,,Which character shot first?,Are you familiar with the Expanded Universe?,Do you consider yourself to be a fan of the Expanded Universe?Œæ,Do you consider yourself to be a fan of the Star Trek franchise?,Gender,Age,Household Income,Education,Location (Census Region)'

```python
with open("star.csv", "w") as f:
    for row in data:
        f.write(row+ "\n")
```

```python
import pandas as pd
```

```
star = pd.read_csv("star.csv", encoding = "windows-1251")

star
```

```
      RespondentID
0              NaN   \
1      3.292880e+09
2      3.292880e+09
3      3.292765e+09
4      3.292763e+09
...             ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
0                                          Response              \
1                                               Yes
2                                                No
3                                               Yes
4                                               Yes
...                                             ...
1182                                            Yes
1183                                            Yes
1184                                             No
1185                                            Yes
1186                                            Yes

      Do you consider yourself to be a fan of the Star Wars film
franchise?
0                                          Response
\
1                                               Yes

2                                               NaN

3                                                No

4                                               Yes

...                                             ...

1182                                            Yes

1183                                            Yes

1184                                            NaN

1185                                            Yes
```

```
1186                                                    No


      Which of the following Star Wars films have you seen? Please
select all that apply.
0             Star Wars: Episode I  The Phantom Menace
\
1             Star Wars: Episode I  The Phantom Menace

2                                                    NaN

3             Star Wars: Episode I  The Phantom Menace

4             Star Wars: Episode I  The Phantom Menace

...                                                    ...

1182          Star Wars: Episode I  The Phantom Menace

1183          Star Wars: Episode I  The Phantom Menace

1184                                                   NaN

1185          Star Wars: Episode I  The Phantom Menace

1186          Star Wars: Episode I  The Phantom Menace


                                         Unnamed: 4
0     Star Wars: Episode II  Attack of the Clones  \
1     Star Wars: Episode II  Attack of the Clones
2                                            NaN
3     Star Wars: Episode II  Attack of the Clones
4     Star Wars: Episode II  Attack of the Clones
...                                          ...
1182  Star Wars: Episode II  Attack of the Clones
1183  Star Wars: Episode II  Attack of the Clones
1184                                         NaN
1185  Star Wars: Episode II  Attack of the Clones
1186  Star Wars: Episode II  Attack of the Clones

                                         Unnamed: 5
0     Star Wars: Episode III  Revenge of the Sith  \
1     Star Wars: Episode III  Revenge of the Sith
2                                            NaN
3     Star Wars: Episode III  Revenge of the Sith
4     Star Wars: Episode III  Revenge of the Sith
...                                          ...
1182  Star Wars: Episode III  Revenge of the Sith
1183  Star Wars: Episode III  Revenge of the Sith
```

```
1184                                              NaN
1185   Star Wars: Episode III  Revenge of the Sith
1186                                              NaN

                               Unnamed: 6
0      Star Wars: Episode IV  A New Hope  \
1      Star Wars: Episode IV  A New Hope
2                                    NaN
3                                    NaN
4      Star Wars: Episode IV  A New Hope
...                                  ...
1182   Star Wars: Episode IV  A New Hope
1183   Star Wars: Episode IV  A New Hope
1184                                 NaN
1185   Star Wars: Episode IV  A New Hope
1186                                 NaN

                                          Unnamed: 7
0      Star Wars: Episode V The Empire Strikes Back  \
1      Star Wars: Episode V The Empire Strikes Back
2                                              NaN
3                                              NaN
4      Star Wars: Episode V The Empire Strikes Back
...                                            ...
1182   Star Wars: Episode V The Empire Strikes Back
1183   Star Wars: Episode V The Empire Strikes Back
1184                                           NaN
1185   Star Wars: Episode V The Empire Strikes Back
1186   Star Wars: Episode V The Empire Strikes Back

                                        Unnamed: 8
0      Star Wars: Episode VI Return of the Jedi  \
1      Star Wars: Episode VI Return of the Jedi
2                                            NaN
3                                            NaN
4      Star Wars: Episode VI Return of the Jedi
...                                          ...
1182   Star Wars: Episode VI Return of the Jedi
1183   Star Wars: Episode VI Return of the Jedi
1184                                         NaN
1185   Star Wars: Episode VI Return of the Jedi
1186   Star Wars: Episode VI Return of the Jedi

    Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.
0               Star Wars: Episode I  The Phantom Menace
\
1                                                       3
```

```
2                                                         NaN

3                                                           1

4                                                           5

...                                                       ...

1182                                                        5

1183                                                        4

1184                                                      NaN

1185                                                        4

1186                                                        6


         ...      Unnamed: 28          Which character shot first?
0        ...            Yoda                         Response  \
1        ...   Very favorably  I don't understand this question
2        ...              NaN                               NaN
3        ...  Unfamiliar (N/A)  I don't understand this question
4        ...   Very favorably  I don't understand this question
...      ...              ...                               ...
1182     ...   Very favorably                               Han
1183     ...   Very favorably  I don't understand this question
1184     ...              NaN                               NaN
1185     ...   Very favorably                               Han
1186     ... Very unfavorably  I don't understand this question

      Are you familiar with the Expanded Universe?
0                                        Response  \
1                                             Yes
2                                             NaN
3                                              No
4                                              No
...                                           ...
1182                                           No
1183                                           No
1184                                          NaN
1185                                           No
1186                                           No

      Do you consider yourself to be a fan of the Expanded Universe?НЖ

0                                                Response
\
1                                                      No
```

2	NaN
3	NaN
4	NaN
...	...
1182	NaN
1183	NaN
1184	NaN
1185	NaN
1186	NaN

	Do you consider yourself to be a fan of the Star Trek franchise?
0	Response \
1	No
2	Yes
3	No
4	Yes
...	...
1182	Yes
1183	Yes
1184	No
1185	Yes
1186	No

	Gender	Age	Household Income
0	Response	Response	Response \
1	Male	18-29	NaN
2	Male	18-29	$0 - $24,999
3	Male	18-29	$0 - $24,999
4	Male	18-29	$100,000 - $149,999
...	...	...	...

```
1182    Female      18-29          $0 - $24,999
1183    Female      30-44    $50,000 - $99,999
1184    Female      30-44    $50,000 - $99,999
1185    Female      45-60  $100,000 - $149,999
1186    Female       > 60    $50,000 - $99,999

                                Education Location (Census Region)
0                                 Response                  Response
1                      High school degree           South Atlantic
2                         Bachelor degree       West South Central
3                      High school degree       West North Central
4      Some college or Associate degree       West North Central
...                                    ...                       ...
1182   Some college or Associate degree       East North Central
1183                      Bachelor degree                 Mountain
1184                      Bachelor degree          Middle Atlantic
1185   Some college or Associate degree       East North Central
1186                      Graduate degree                  Pacific

[1187 rows x 38 columns]
```

star.drop(0)

```
      RespondentID
1      3.292880e+09  \
2      3.292880e+09
3      3.292765e+09
4      3.292763e+09
5      3.292731e+09
...             ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                         Yes         \
2                                                          No
3                                                         Yes
4                                                         Yes
5                                                         Yes
...                                                       ...
1182                                                      Yes
1183                                                      Yes
1184                                                       No
1185                                                      Yes
1186                                                      Yes

      Do you consider yourself to be a fan of the Star Wars film
```

```
franchise?
1                                                    Yes
\
2                                                    NaN

3                                                     No

4                                                    Yes

5                                                    Yes

...                                                  ...

1182                                                 Yes

1183                                                 Yes

1184                                                 NaN

1185                                                 Yes

1186                                                  No


     Which of the following Star Wars films have you seen? Please
select all that apply.
1             Star Wars: Episode I  The Phantom Menace
\
2                                                    NaN

3             Star Wars: Episode I  The Phantom Menace

4             Star Wars: Episode I  The Phantom Menace

5             Star Wars: Episode I  The Phantom Menace

...                                                  ...

1182          Star Wars: Episode I  The Phantom Menace

1183          Star Wars: Episode I  The Phantom Menace

1184                                                 NaN

1185          Star Wars: Episode I  The Phantom Menace

1186          Star Wars: Episode I  The Phantom Menace


                                 Unnamed: 4
1     Star Wars: Episode II  Attack of the Clones  \
```

```
2                                                   NaN
3      Star Wars: Episode II  Attack of the Clones
4      Star Wars: Episode II  Attack of the Clones
5      Star Wars: Episode II  Attack of the Clones
...                                                 ...
1182   Star Wars: Episode II  Attack of the Clones
1183   Star Wars: Episode II  Attack of the Clones
1184                                                NaN
1185   Star Wars: Episode II  Attack of the Clones
1186   Star Wars: Episode II  Attack of the Clones

                                          Unnamed: 5
1      Star Wars: Episode III  Revenge of the Sith  \
2                                                  NaN
3      Star Wars: Episode III  Revenge of the Sith
4      Star Wars: Episode III  Revenge of the Sith
5      Star Wars: Episode III  Revenge of the Sith
...                                                ...
1182   Star Wars: Episode III  Revenge of the Sith
1183   Star Wars: Episode III  Revenge of the Sith
1184                                               NaN
1185   Star Wars: Episode III  Revenge of the Sith
1186                                               NaN

                                    Unnamed: 6
1      Star Wars: Episode IV  A New Hope  \
2                                       NaN
3                                       NaN
4      Star Wars: Episode IV  A New Hope
5      Star Wars: Episode IV  A New Hope
...                                     ...
1182   Star Wars: Episode IV  A New Hope
1183   Star Wars: Episode IV  A New Hope
1184                                    NaN
1185   Star Wars: Episode IV  A New Hope
1186                                    NaN

                                               Unnamed: 7
1      Star Wars: Episode V The Empire Strikes Back  \
2                                                   NaN
3                                                   NaN
4      Star Wars: Episode V The Empire Strikes Back
5      Star Wars: Episode V The Empire Strikes Back
...                                                 ...
1182   Star Wars: Episode V The Empire Strikes Back
1183   Star Wars: Episode V The Empire Strikes Back
1184                                                NaN
1185   Star Wars: Episode V The Empire Strikes Back
1186   Star Wars: Episode V The Empire Strikes Back
```

```
                                                    Unnamed: 8
1     Star Wars: Episode VI Return of the Jedi  \
2                                            NaN
3                                            NaN
4     Star Wars: Episode VI Return of the Jedi
5     Star Wars: Episode VI Return of the Jedi
...                                         ...
1182  Star Wars: Episode VI Return of the Jedi
1183  Star Wars: Episode VI Return of the Jedi
1184                                         NaN
1185  Star Wars: Episode VI Return of the Jedi
1186  Star Wars: Episode VI Return of the Jedi

      Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.
1                                                            3
\
2                                                          NaN

3                                                            1

4                                                            5

5                                                            5

...                                                        ...

1182                                                         5

1183                                                         4

1184                                                       NaN

1185                                                         4

1186                                                         6


      ...      Unnamed: 28      Which character shot first?
1     ...      Very favorably  I don't understand this question  \
2     ...                 NaN                              NaN
3     ...      Unfamiliar (N/A)  I don't understand this question
4     ...      Very favorably  I don't understand this question
5     ...  Somewhat favorably                            Greedo
...   ...                 ...                              ...
1182  ...      Very favorably                              Han
1183  ...      Very favorably  I don't understand this question
1184  ...                 NaN                              NaN
1185  ...      Very favorably                              Han
```

```
1186  ...    Very unfavorably  I don't understand this question

      Are you familiar with the Expanded Universe?
1                                               Yes  \
2                                               NaN
3                                                No
4                                                No
5                                               Yes
...                                             ...
1182                                             No
1183                                             No
1184                                            NaN
1185                                             No
1186                                             No

      Do you consider yourself to be a fan of the Expanded Universe?ʮж

1                                                           No
\
2                                                          NaN

3                                                          NaN

4                                                          NaN

5                                                           No

...                                                        ...

1182                                                       NaN

1183                                                       NaN

1184                                                       NaN

1185                                                       NaN

1186                                                       NaN


      Do you consider yourself to be a fan of the Star Trek franchise?
Gender
1                                                           No
Male  \
2                                                          Yes
Male
3                                                           No
Male
4                                                          Yes
Male
5                                                           No
```

```
Male
...                                                              ...
...
1182                                                             Yes
Female
1183                                                             Yes
Female
1184                                                              No
Female
1185                                                             Yes
Female
1186                                                              No
Female

        Age       Household Income                            Education
1     18-29                    NaN                    High school degree  \
2     18-29          $0 - $24,999                       Bachelor degree
3     18-29          $0 - $24,999                    High school degree
4     18-29  $100,000 - $149,999  Some college or Associate degree
5     18-29  $100,000 - $149,999  Some college or Associate degree
...     ...                    ...                                   ...
1182  18-29          $0 - $24,999  Some college or Associate degree
1183  30-44      $50,000 - $99,999                    Bachelor degree
1184  30-44      $50,000 - $99,999                    Bachelor degree
1185  45-60  $100,000 - $149,999  Some college or Associate degree
1186   > 60      $50,000 - $99,999                    Graduate degree

      Location (Census Region)
1                South Atlantic
2            West South Central
3            West North Central
4            West North Central
5            West North Central
...                         ...
1182         East North Central
1183                   Mountain
1184            Middle Atlantic
1185         East North Central
1186                    Pacific

[1186 rows x 38 columns]

star

      RespondentID
0              NaN  \
1      3.292880e+09
2      3.292880e+09
3      3.292765e+09
4      3.292763e+09
```

```
...                    ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

       Have you seen any of the 6 films in the Star Wars franchise?
0                                                    Response          \
1                                                         Yes
2                                                          No
3                                                         Yes
4                                                         Yes
...                                                       ...
1182                                                      Yes
1183                                                      Yes
1184                                                       No
1185                                                      Yes
1186                                                      Yes

       Do you consider yourself to be a fan of the Star Wars film
franchise?
0                                                    Response
\
1                                                         Yes

2                                                         NaN

3                                                          No

4                                                         Yes

...                                                       ...

1182                                                      Yes

1183                                                      Yes

1184                                                      NaN

1185                                                      Yes

1186                                                       No


       Which of the following Star Wars films have you seen? Please
select all that apply.
0                 Star Wars: Episode I  The Phantom Menace
\
1                 Star Wars: Episode I  The Phantom Menace
```

```
2                                                        NaN

3              Star Wars: Episode I  The Phantom Menace

4              Star Wars: Episode I  The Phantom Menace

...                                                      ...

1182           Star Wars: Episode I  The Phantom Menace

1183           Star Wars: Episode I  The Phantom Menace

1184                                                     NaN

1185           Star Wars: Episode I  The Phantom Menace

1186           Star Wars: Episode I  The Phantom Menace


                                          Unnamed: 4
0     Star Wars: Episode II  Attack of the Clones  \
1     Star Wars: Episode II  Attack of the Clones
2                                            NaN
3     Star Wars: Episode II  Attack of the Clones
4     Star Wars: Episode II  Attack of the Clones
...                                          ...
1182  Star Wars: Episode II  Attack of the Clones
1183  Star Wars: Episode II  Attack of the Clones
1184                                         NaN
1185  Star Wars: Episode II  Attack of the Clones
1186  Star Wars: Episode II  Attack of the Clones

                                          Unnamed: 5
0     Star Wars: Episode III  Revenge of the Sith  \
1     Star Wars: Episode III  Revenge of the Sith
2                                            NaN
3     Star Wars: Episode III  Revenge of the Sith
4     Star Wars: Episode III  Revenge of the Sith
...                                          ...
1182  Star Wars: Episode III  Revenge of the Sith
1183  Star Wars: Episode III  Revenge of the Sith
1184                                         NaN
1185  Star Wars: Episode III  Revenge of the Sith
1186                                         NaN

                                Unnamed: 6
0     Star Wars: Episode IV  A New Hope  \
1     Star Wars: Episode IV  A New Hope
2                                   NaN
3                                   NaN
```

```
4     Star Wars: Episode IV  A New Hope
...                                   ...
1182  Star Wars: Episode IV  A New Hope
1183  Star Wars: Episode IV  A New Hope
1184                                  NaN
1185  Star Wars: Episode IV  A New Hope
1186                                  NaN

                                                 Unnamed: 7
0     Star Wars: Episode V The Empire Strikes Back  \
1     Star Wars: Episode V The Empire Strikes Back
2                                             NaN
3                                             NaN
4     Star Wars: Episode V The Empire Strikes Back
...                                            ...
1182  Star Wars: Episode V The Empire Strikes Back
1183  Star Wars: Episode V The Empire Strikes Back
1184                                          NaN
1185  Star Wars: Episode V The Empire Strikes Back
1186  Star Wars: Episode V The Empire Strikes Back

                                              Unnamed: 8
0     Star Wars: Episode VI Return of the Jedi  \
1     Star Wars: Episode VI Return of the Jedi
2                                          NaN
3                                          NaN
4     Star Wars: Episode VI Return of the Jedi
...                                         ...
1182  Star Wars: Episode VI Return of the Jedi
1183  Star Wars: Episode VI Return of the Jedi
1184                                       NaN
1185  Star Wars: Episode VI Return of the Jedi
1186  Star Wars: Episode VI Return of the Jedi

      Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.
0              Star Wars: Episode I  The Phantom Menace
\
1                                                     3

2                                                   NaN

3                                                     1

4                                                     5

...                                                 ...

1182                                                  5
```

```
1183                                                                4

1184                                                              NaN

1185                                                                4

1186                                                                6


        ...        Unnamed: 28      Which character shot first?
0       ...               Yoda                        Response  \
1       ...     Very favorably  I don't understand this question
2       ...                NaN                               NaN
3       ...    Unfamiliar (N/A)  I don't understand this question
4       ...     Very favorably  I don't understand this question
...     ...                ...                               ...
1182    ...     Very favorably                               Han
1183    ...     Very favorably  I don't understand this question
1184    ...                NaN                               NaN
1185    ...     Very favorably                               Han
1186    ...   Very unfavorably  I don't understand this question

      Are you familiar with the Expanded Universe?
0                                         Response  \
1                                              Yes
2                                              NaN
3                                               No
4                                               No
...                                            ...
1182                                            No
1183                                            No
1184                                           NaN
1185                                            No
1186                                            No

      Do you consider yourself to be a fan of the Expanded Universe?  \

0                                              Response

1                                                    No

2                                                   NaN

3                                                   NaN

4                                                   NaN

...                                                 ...

1182                                                NaN
```

```
1183                                              NaN

1184                                              NaN

1185                                              NaN

1186                                              NaN


      Do you consider yourself to be a fan of the Star Trek franchise?

0                                          Response
\
1                                                No

2                                               Yes

3                                                No

4                                               Yes

...                                               ...

1182                                            Yes

1183                                            Yes

1184                                             No

1185                                            Yes

1186                                             No


         Gender        Age      Household Income
0      Response   Response                Response  \
1          Male      18-29                     NaN
2          Male      18-29         $0 - $24,999
3          Male      18-29         $0 - $24,999
4          Male      18-29   $100,000 - $149,999
...         ...        ...                     ...
1182     Female     18-29         $0 - $24,999
1183     Female     30-44     $50,000 - $99,999
1184     Female     30-44     $50,000 - $99,999
1185     Female     45-60   $100,000 - $149,999
1186     Female      > 60     $50,000 - $99,999

                             Education Location (Census Region)
0                             Response             Response
1                   High school degree       South Atlantic
```

```
2                    Bachelor degree        West South Central
3                High school degree         West North Central
4     Some college or Associate degree      West North Central
...                              ...                        ...
1182  Some college or Associate degree      East North Central
1183                  Bachelor degree                 Mountain
1184                  Bachelor degree          Middle Atlantic
1185  Some college or Associate degree      East North Central
1186                  Graduate degree                  Pacific

[1187 rows x 38 columns]

star[1:]

      RespondentID
1     3.292880e+09  \
2     3.292880e+09
3     3.292765e+09
4     3.292763e+09
5     3.292731e+09
...            ...
1182  3.288389e+09
1183  3.288379e+09
1184  3.288375e+09
1185  3.288373e+09
1186  3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                   Yes              \
2                                                    No
3                                                   Yes
4                                                   Yes
5                                                   Yes
...                                                 ...
1182                                                Yes
1183                                                Yes
1184                                                 No
1185                                                Yes
1186                                                Yes

      Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                                   Yes
\
2                                                   NaN

3                                                    No

4                                                   Yes
```

```
5                                                                    Yes

...                                                                  ...

1182                                                                 Yes

1183                                                                 Yes

1184                                                                 NaN

1185                                                                 Yes

1186                                                                  No


      Which of the following Star Wars films have you seen? Please
select all that apply.
1              Star Wars: Episode I  The Phantom Menace
\
2                                                        NaN

3              Star Wars: Episode I  The Phantom Menace

4              Star Wars: Episode I  The Phantom Menace

5              Star Wars: Episode I  The Phantom Menace

...                                                      ...

1182           Star Wars: Episode I  The Phantom Menace

1183           Star Wars: Episode I  The Phantom Menace

1184                                                     NaN

1185           Star Wars: Episode I  The Phantom Menace

1186           Star Wars: Episode I  The Phantom Menace


                                        Unnamed: 4
1      Star Wars: Episode II  Attack of the Clones  \
2                                              NaN
3      Star Wars: Episode II  Attack of the Clones
4      Star Wars: Episode II  Attack of the Clones
5      Star Wars: Episode II  Attack of the Clones
...                                            ...
1182   Star Wars: Episode II  Attack of the Clones
1183   Star Wars: Episode II  Attack of the Clones
1184                                           NaN
1185   Star Wars: Episode II  Attack of the Clones
```

```
1186  Star Wars: Episode II  Attack of the Clones

                                          Unnamed: 5
1     Star Wars: Episode III  Revenge of the Sith   \
2                                                NaN
3     Star Wars: Episode III  Revenge of the Sith
4     Star Wars: Episode III  Revenge of the Sith
5     Star Wars: Episode III  Revenge of the Sith
...                                            ...
1182  Star Wars: Episode III  Revenge of the Sith
1183  Star Wars: Episode III  Revenge of the Sith
1184                                           NaN
1185  Star Wars: Episode III  Revenge of the Sith
1186                                           NaN

                                 Unnamed: 6
1     Star Wars: Episode IV  A New Hope   \
2                                    NaN
3                                    NaN
4     Star Wars: Episode IV  A New Hope
5     Star Wars: Episode IV  A New Hope
...                                  ...
1182  Star Wars: Episode IV  A New Hope
1183  Star Wars: Episode IV  A New Hope
1184                                 NaN
1185  Star Wars: Episode IV  A New Hope
1186                                 NaN

                                            Unnamed: 7
1     Star Wars: Episode V The Empire Strikes Back   \
2                                                NaN
3                                                NaN
4     Star Wars: Episode V The Empire Strikes Back
5     Star Wars: Episode V The Empire Strikes Back
...                                            ...
1182  Star Wars: Episode V The Empire Strikes Back
1183  Star Wars: Episode V The Empire Strikes Back
1184                                           NaN
1185  Star Wars: Episode V The Empire Strikes Back
1186  Star Wars: Episode V The Empire Strikes Back

                                          Unnamed: 8
1     Star Wars: Episode VI Return of the Jedi   \
2                                            NaN
3                                            NaN
4     Star Wars: Episode VI Return of the Jedi
5     Star Wars: Episode VI Return of the Jedi
...                                          ...
1182  Star Wars: Episode VI Return of the Jedi
1183  Star Wars: Episode VI Return of the Jedi
```

```
1184                                         NaN
1185  Star Wars: Episode VI Return of the Jedi
1186  Star Wars: Episode VI Return of the Jedi

      Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.
1                                              3
\
2                                            NaN

3                                              1

4                                              5

5                                              5

...                                          ...

1182                                           5

1183                                           4

1184                                         NaN

1185                                           4

1186                                           6


      ...          Unnamed: 28      Which character shot first?
1     ...     Very favorably  I don't understand this question  \
2     ...                NaN                               NaN
3     ...    Unfamiliar (N/A)  I don't understand this question
4     ...     Very favorably  I don't understand this question
5     ...  Somewhat favorably                            Greedo
...   ...                ...                               ...
1182  ...     Very favorably                               Han
1183  ...     Very favorably  I don't understand this question
1184  ...                NaN                               NaN
1185  ...     Very favorably                               Han
1186  ...   Very unfavorably  I don't understand this question

      Are you familiar with the Expanded Universe?
1                                             Yes  \
2                                             NaN
3                                              No
4                                              No
5                                             Yes
...                                           ...
```

```
1182                                No
1183                                No
1184                                NaN
1185                                No
1186                                No

      Do you consider yourself to be a fan of the Expanded Universe?  \

1                                   No

2                                   NaN

3                                   NaN

4                                   NaN

5                                   No

...                                 ...

1182                                NaN

1183                                NaN

1184                                NaN

1185                                NaN

1186                                NaN


      Do you consider yourself to be a fan of the Star Trek franchise?
Gender
1                                   No
Male  \
2                                   Yes
Male
3                                   No
Male
4                                   Yes
Male
5                                   No
Male
...                                 ...
...
1182                                Yes
Female
1183                                Yes
Female
1184                                No
```

```
Female
1185                                                          Yes
Female
1186                                                           No
Female

          Age      Household Income                             Education
1       18-29                   NaN            High school degree     \
2       18-29         $0 - $24,999               Bachelor degree
3       18-29         $0 - $24,999            High school degree
4       18-29  $100,000 - $149,999  Some college or Associate degree
5       18-29  $100,000 - $149,999  Some college or Associate degree
...       ...                   ...                               ...
1182    18-29         $0 - $24,999  Some college or Associate degree
1183    30-44       $50,000 - $99,999             Bachelor degree
1184    30-44       $50,000 - $99,999             Bachelor degree
1185    45-60  $100,000 - $149,999  Some college or Associate degree
1186     > 60       $50,000 - $99,999             Graduate degree

      Location (Census Region)
1                South Atlantic
2            West South Central
3            West North Central
4            West North Central
5            West North Central
...                         ...
1182          East North Central
1183                    Mountain
1184             Middle Atlantic
1185          East North Central
1186                     Pacific

[1186 rows x 38 columns]

df = star[1:].copy()

df

      RespondentID
1      3.292880e+09   \
2      3.292880e+09
3      3.292765e+09
4      3.292763e+09
5      3.292731e+09
...              ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09
```

```
      Have you seen any of the 6 films in the Star Wars franchise?
1                                                        Yes              \
2                                                         No
3                                                        Yes
4                                                        Yes
5                                                        Yes
...                                                      ...
1182                                                     Yes
1183                                                     Yes
1184                                                      No
1185                                                     Yes
1186                                                     Yes

      Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                                        Yes
\
2                                                        NaN

3                                                         No

4                                                        Yes

5                                                        Yes

...                                                      ...

1182                                                     Yes

1183                                                     Yes

1184                                                     NaN

1185                                                     Yes

1186                                                      No

      Which of the following Star Wars films have you seen? Please
select all that apply.
1               Star Wars: Episode I  The Phantom Menace
\
2                                                        NaN

3               Star Wars: Episode I  The Phantom Menace

4               Star Wars: Episode I  The Phantom Menace

5               Star Wars: Episode I  The Phantom Menace
```

```
...                                                           ...

1182              Star Wars: Episode I  The Phantom Menace

1183              Star Wars: Episode I  The Phantom Menace

1184                                                          NaN

1185              Star Wars: Episode I  The Phantom Menace

1186              Star Wars: Episode I  The Phantom Menace


                                              Unnamed: 4
1     Star Wars: Episode II  Attack of the Clones  \
2                                             NaN
3     Star Wars: Episode II  Attack of the Clones
4     Star Wars: Episode II  Attack of the Clones
5     Star Wars: Episode II  Attack of the Clones
...                                           ...
1182  Star Wars: Episode II  Attack of the Clones
1183  Star Wars: Episode II  Attack of the Clones
1184                                          NaN
1185  Star Wars: Episode II  Attack of the Clones
1186  Star Wars: Episode II  Attack of the Clones


                                              Unnamed: 5
1     Star Wars: Episode III  Revenge of the Sith  \
2                                             NaN
3     Star Wars: Episode III  Revenge of the Sith
4     Star Wars: Episode III  Revenge of the Sith
5     Star Wars: Episode III  Revenge of the Sith
...                                           ...
1182  Star Wars: Episode III  Revenge of the Sith
1183  Star Wars: Episode III  Revenge of the Sith
1184                                          NaN
1185  Star Wars: Episode III  Revenge of the Sith
1186                                          NaN


                               Unnamed: 6
1     Star Wars: Episode IV  A New Hope  \
2                                    NaN
3                                    NaN
4     Star Wars: Episode IV  A New Hope
5     Star Wars: Episode IV  A New Hope
...                                  ...
1182  Star Wars: Episode IV  A New Hope
1183  Star Wars: Episode IV  A New Hope
1184                                 NaN
1185  Star Wars: Episode IV  A New Hope
```

```
1186                                            NaN

                                         Unnamed: 7
1       Star Wars: Episode V The Empire Strikes Back  \
2                                                NaN
3                                                NaN
4       Star Wars: Episode V The Empire Strikes Back
5       Star Wars: Episode V The Empire Strikes Back
...                                              ...
1182    Star Wars: Episode V The Empire Strikes Back
1183    Star Wars: Episode V The Empire Strikes Back
1184                                             NaN
1185    Star Wars: Episode V The Empire Strikes Back
1186    Star Wars: Episode V The Empire Strikes Back

                                         Unnamed: 8
1       Star Wars: Episode VI Return of the Jedi  \
2                                            NaN
3                                            NaN
4       Star Wars: Episode VI Return of the Jedi
5       Star Wars: Episode VI Return of the Jedi
...                                          ...
1182    Star Wars: Episode VI Return of the Jedi
1183    Star Wars: Episode VI Return of the Jedi
1184                                         NaN
1185    Star Wars: Episode VI Return of the Jedi
1186    Star Wars: Episode VI Return of the Jedi
```

      Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.

1	3 \
2	NaN
3	1
4	5
5	5
...	...
1182	5
1183	4
1184	NaN
1185	4

```
1186                                                6


      ...           Unnamed: 28        Which character shot first?
1     ...         Very favorably  I don't understand this question  \
2     ...                   NaN                                NaN
3     ...     Unfamiliar (N/A)  I don't understand this question
4     ...         Very favorably  I don't understand this question
5     ...     Somewhat favorably                             Greedo
...   ...                   ...                                ...
1182  ...         Very favorably                                Han
1183  ...         Very favorably  I don't understand this question
1184  ...                   NaN                                NaN
1185  ...         Very favorably                                Han
1186  ...       Very unfavorably  I don't understand this question

      Are you familiar with the Expanded Universe?
1                                            Yes  \
2                                            NaN
3                                             No
4                                             No
5                                            Yes
...                                          ...
1182                                          No
1183                                          No
1184                                         NaN
1185                                          No
1186                                          No

      Do you consider yourself to be a fan of the Expanded Universe?Нж

1                                                            No
\
2                                                           NaN

3                                                           NaN

4                                                           NaN

5                                                            No

...                                                         ...

1182                                                        NaN

1183                                                        NaN

1184                                                        NaN

1185                                                        NaN
```

```
1186                                                      NaN


      Do you consider yourself to be a fan of the Star Trek franchise?
Gender
1                                                          No
Male  \
2                                                         Yes
Male
3                                                          No
Male
4                                                         Yes
Male
5                                                          No
Male
...                                                       ...
...
1182                                                      Yes
Female
1183                                                      Yes
Female
1184                                                       No
Female
1185                                                      Yes
Female
1186                                                       No
Female

           Age       Household Income                          Education
1       18-29                    NaN              High school degree  \
2       18-29         $0 - $24,999                 Bachelor degree
3       18-29         $0 - $24,999              High school degree
4       18-29  $100,000 - $149,999  Some college or Associate degree
5       18-29  $100,000 - $149,999  Some college or Associate degree
...       ...                    ...                               ...
1182  18-29         $0 - $24,999  Some college or Associate degree
1183  30-44     $50,000 - $99,999                 Bachelor degree
1184  30-44     $50,000 - $99,999                 Bachelor degree
1185  45-60  $100,000 - $149,999  Some college or Associate degree
1186   > 60     $50,000 - $99,999                 Graduate degree

      Location (Census Region)
1               South Atlantic
2           West South Central
3           West North Central
4           West North Central
5           West North Central
...                        ...
1182         East North Central
```

```
1183                Mountain
1184          Middle Atlantic
1185       East North Central
1186                 Pacific

[1186 rows x 38 columns]

df.columns

Index(['RespondentID',
       'Have you seen any of the 6 films in the Star Wars franchise?',
       'Do you consider yourself to be a fan of the Star Wars film
franchise?',
       'Which of the following Star Wars films have you seen? Please
select all that apply.',
       'Unnamed: 4', 'Unnamed: 5', 'Unnamed: 6', 'Unnamed: 7',
'Unnamed: 8',
       'Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.',
       'Unnamed: 10', 'Unnamed: 11', 'Unnamed: 12', 'Unnamed: 13',
       'Unnamed: 14',
       'Please state whether you view the following characters
favorably, unfavorably, or are unfamiliar with him/her.',
       'Unnamed: 16', 'Unnamed: 17', 'Unnamed: 18', 'Unnamed: 19',
       'Unnamed: 20', 'Unnamed: 21', 'Unnamed: 22', 'Unnamed: 23',
       'Unnamed: 24', 'Unnamed: 25', 'Unnamed: 26', 'Unnamed: 27',
       'Unnamed: 28', 'Which character shot first?',
       'Are you familiar with the Expanded Universe?',
       'Do you consider yourself to be a fan of the Expanded Universe?
Нж',
       'Do you consider yourself to be a fan of the Star Trek
franchise?',
       'Gender', 'Age', 'Household Income', 'Education',
       'Location (Census Region)'],
      dtype='object')

df[['RespondentID',
       'Have you seen any of the 6 films in the Star Wars franchise?',
       'Do you consider yourself to be a fan of the Star Wars film
franchise?']]

      RespondentID
1     3.292880e+09  \
2     3.292880e+09
3     3.292765e+09
4     3.292763e+09
5     3.292731e+09

...             ...
1182  3.288389e+09
```

```
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                          Yes        \
2                                                           No
3                                                          Yes
4                                                          Yes
5                                                          Yes
...                                                        ...
1182                                                       Yes
1183                                                       Yes
1184                                                        No
1185                                                       Yes
1186                                                       Yes

      Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                                          Yes

2                                                          NaN

3                                                           No

4                                                          Yes

5                                                          Yes

...                                                        ...

1182                                                       Yes

1183                                                       Yes

1184                                                       NaN

1185                                                       Yes

1186                                                        No


[1186 rows x 3 columns]

df.iloc[:,0:3]

      RespondentID
1     3.292880e+09  \
2     3.292880e+09
3     3.292765e+09
```

```
4      3.292763e+09
5      3.292731e+09
...            ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                       Yes           \
2                                                        No
3                                                       Yes
4                                                       Yes
5                                                       Yes
...                                                     ...
1182                                                    Yes
1183                                                    Yes
1184                                                     No
1185                                                    Yes
1186                                                    Yes

      Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                                       Yes

2                                                       NaN

3                                                        No

4                                                       Yes

5                                                       Yes

...                                                     ...

1182                                                    Yes

1183                                                    Yes

1184                                                    NaN

1185                                                    Yes

1186                                                     No


[1186 rows x 3 columns]

cleaned = df.iloc[:,0:3]
```

```python
mapping = {"Yes":True,  "No":False}

cleaned["Have you seen any of the 6 films in the Star Wars
franchise?"].map(mapping)
```

```
1         True
2        False
3         True
4         True
5         True
         ...
1182      True
1183      True
1184     False
1185      True
1186      True
Name: Have you seen any of the 6 films in the Star Wars franchise?,
Length: 1186, dtype: bool
```

```python
# cleaned.iloc[:,1] = cleaned["Have you seen any of the 6 films in the
Star Wars franchise?"].map(mapping)

cleaned.iloc[:,1] = cleaned.iloc[:,1].map(mapping)

cleaned
```

```
      RespondentID
1      3.292880e+09  \
2      3.292880e+09
3      3.292765e+09
4      3.292763e+09
5      3.292731e+09
...             ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                  True          \
2                                                 False
3                                                  True
4                                                  True
5                                                  True
...                                                 ...
1182                                               True
1183                                               True
1184                                              False
1185                                               True
1186                                               True
```

```
      Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                                              Yes

2                                                              NaN

3                                                               No

4                                                              Yes

5                                                              Yes

...                                                            ...

1182                                                           Yes

1183                                                           Yes

1184                                                           NaN

1185                                                           Yes

1186                                                            No


[1186 rows x 3 columns]

cleaned.iloc[:,2] = cleaned.iloc[:,2].map(mapping)

cleaned

       RespondentID
1       3.292880e+09   \
2       3.292880e+09
3       3.292765e+09
4       3.292763e+09
5       3.292731e+09
...              ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                         True              \
2                                                        False
3                                                         True
4                                                         True
5                                                         True
```

```
...                                                          ...
1182                                                        True
1183                                                        True
1184                                                       False
1185                                                        True
1186                                                        True

      Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                                            True

2                                                             NaN

3                                                           False

4                                                            True

5                                                            True

...                                                          ...

1182                                                         True

1183                                                         True

1184                                                          NaN

1185                                                         True

1186                                                        False


[1186 rows x 3 columns]
```

```python
renamed = ["id", "seen_any", "fan"]
```

```python
cleaned.columns
```

```
Index(['RespondentID',
       'Have you seen any of the 6 films in the Star Wars franchise?',
       'Do you consider yourself to be a fan of the Star Wars film
franchise?'],
      dtype='object')
```

```python
rename_dict = dict(zip(cleaned.columns, renamed))
rename_dict
```

```
{'RespondentID': 'id',
 'Have you seen any of the 6 films in the Star Wars franchise?':
'seen_any',
```

```
 'Do you consider yourself to be a fan of the Star Wars film
franchise?': 'fan'}

cleaned.rename(rename_dict, axis = 1)

                   id seen_any      fan
1      3.292880e+09      True     True
2      3.292880e+09     False      NaN
3      3.292765e+09      True    False
4      3.292763e+09      True     True
5      3.292731e+09      True     True
...              ...       ...      ...
1182   3.288389e+09      True     True
1183   3.288379e+09      True     True
1184   3.288375e+09     False      NaN
1185   3.288373e+09      True     True
1186   3.288373e+09      True    False

[1186 rows x 3 columns]

cleaned

       RespondentID
1      3.292880e+09  \
2      3.292880e+09
3      3.292765e+09
4      3.292763e+09
5      3.292731e+09
...             ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                     True          \
2                                                    False
3                                                     True
4                                                     True
5                                                     True
...                                                    ...
1182                                                  True
1183                                                  True
1184                                                 False
1185                                                  True
1186                                                  True

      Do you consider yourself to be a fan of the Star Wars film
franchise?
```

1	True
2	NaN
3	False
4	True
5	True
...	...
1182	True
1183	True
1184	NaN
1185	True
1186	False

```
[1186 rows x 3 columns]
```

```
cleaned.columns = renamed
```

```
cleaned
```

```
                id seen_any      fan
1     3.292880e+09     True     True
2     3.292880e+09    False      NaN
3     3.292765e+09     True    False
4     3.292763e+09     True     True
5     3.292731e+09     True     True
...            ...      ...      ...
1182  3.288389e+09     True     True
1183  3.288379e+09     True     True
1184  3.288375e+09    False      NaN
1185  3.288373e+09     True     True
1186  3.288373e+09     True    False
```

```
[1186 rows x 3 columns]
```

```
cleaned["seen_any"].value_counts()
```

```
seen_any
True     936
False    250
Name: count, dtype: int64
```

```
cleaned.iloc[:,1:]
```

```
      seen_any     fan
1         True    True
2        False     NaN
3         True   False
4         True    True
5         True    True
...        ...     ...
1182      True    True
1183      True    True
1184     False     NaN
1185      True    True
1186      True   False

[1186 rows x 2 columns]
```

```
cleaned.iloc[:,1:].value_counts()
```

```
seen_any  fan
True      True      552
          False     284
Name: count, dtype: int64
```

```
cleaned.iloc[:,1:].apply(pd.value_counts, axis = "index")
```

```
       seen_any   fan
True        936   552
False       250   284
```

```
df
```

```
       RespondentID
1      3.292880e+09   \
2      3.292880e+09
3      3.292765e+09
4      3.292763e+09
5      3.292731e+09
...             ...
1182   3.288389e+09
1183   3.288379e+09
1184   3.288375e+09
1185   3.288373e+09
1186   3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                        Yes          \
2                                                         No
3                                                        Yes
4                                                        Yes
5                                                        Yes
...                                                      ...
1182                                                     Yes
```

```
1183                                             Yes
1184                                              No
1185                                             Yes
1186                                             Yes

     Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                               Yes
\
2                                               NaN

3                                                No

4                                               Yes

5                                               Yes

...                                             ...

1182                                            Yes

1183                                            Yes

1184                                            NaN

1185                                            Yes

1186                                             No


     Which of the following Star Wars films have you seen? Please
select all that apply.
1              Star Wars: Episode I  The Phantom Menace
\
2                                               NaN

3              Star Wars: Episode I  The Phantom Menace

4              Star Wars: Episode I  The Phantom Menace

5              Star Wars: Episode I  The Phantom Menace

...                                             ...

1182           Star Wars: Episode I  The Phantom Menace

1183           Star Wars: Episode I  The Phantom Menace

1184                                            NaN

1185           Star Wars: Episode I  The Phantom Menace
```

```
1186             Star Wars: Episode I  The Phantom Menace


                                       Unnamed: 4
1      Star Wars: Episode II  Attack of the Clones  \
2                                             NaN
3      Star Wars: Episode II  Attack of the Clones
4      Star Wars: Episode II  Attack of the Clones
5      Star Wars: Episode II  Attack of the Clones
...                                           ...
1182   Star Wars: Episode II  Attack of the Clones
1183   Star Wars: Episode II  Attack of the Clones
1184                                          NaN
1185   Star Wars: Episode II  Attack of the Clones
1186   Star Wars: Episode II  Attack of the Clones

                                        Unnamed: 5
1      Star Wars: Episode III  Revenge of the Sith  \
2                                              NaN
3      Star Wars: Episode III  Revenge of the Sith
4      Star Wars: Episode III  Revenge of the Sith
5      Star Wars: Episode III  Revenge of the Sith
...                                            ...
1182   Star Wars: Episode III  Revenge of the Sith
1183   Star Wars: Episode III  Revenge of the Sith
1184                                           NaN
1185   Star Wars: Episode III  Revenge of the Sith
1186                                           NaN

                             Unnamed: 6
1      Star Wars: Episode IV  A New Hope  \
2                                    NaN
3                                    NaN
4      Star Wars: Episode IV  A New Hope
5      Star Wars: Episode IV  A New Hope
...                                  ...
1182   Star Wars: Episode IV  A New Hope
1183   Star Wars: Episode IV  A New Hope
1184                                 NaN
1185   Star Wars: Episode IV  A New Hope
1186                                 NaN

                                       Unnamed: 7
1      Star Wars: Episode V The Empire Strikes Back  \
2                                             NaN
3                                             NaN
4      Star Wars: Episode V The Empire Strikes Back
5      Star Wars: Episode V The Empire Strikes Back
...                                           ...
```

```
1182  Star Wars: Episode V The Empire Strikes Back
1183  Star Wars: Episode V The Empire Strikes Back
1184                                            NaN
1185  Star Wars: Episode V The Empire Strikes Back
1186  Star Wars: Episode V The Empire Strikes Back

                                    Unnamed: 8
1       Star Wars: Episode VI Return of the Jedi  \
2                                            NaN
3                                            NaN
4       Star Wars: Episode VI Return of the Jedi
5       Star Wars: Episode VI Return of the Jedi
...                                          ...
1182  Star Wars: Episode VI Return of the Jedi
1183  Star Wars: Episode VI Return of the Jedi
1184                                         NaN
1185  Star Wars: Episode VI Return of the Jedi
1186  Star Wars: Episode VI Return of the Jedi
```

Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.

1	3 \
2	NaN
3	1
4	5
5	5
...	...
1182	5
1183	4
1184	NaN
1185	4
1186	6

```
        ...        Unnamed: 28       Which character shot first?
1       ...        Very favorably  I don't understand this question  \
2       ...                  NaN                                NaN
3       ...     Unfamiliar (N/A)  I don't understand this question
4       ...        Very favorably  I don't understand this question
```

```
5     ...    Somewhat favorably                              Greedo
...   ...                    ...                                ...
1182  ...       Very favorably                                   Han
1183  ...       Very favorably  I don't understand this question
1184  ...                  NaN                                   NaN
1185  ...       Very favorably                                   Han
1186  ...     Very unfavorably  I don't understand this question

      Are you familiar with the Expanded Universe?
1                                               Yes  \
2                                               NaN
3                                                No
4                                                No
5                                               Yes
...                                             ...
1182                                             No
1183                                             No
1184                                            NaN
1185                                             No
1186                                             No

      Do you consider yourself to be a fan of the Expanded Universe?\
1                                                              No
\
2                                                             NaN

3                                                             NaN

4                                                             NaN

5                                                              No

...                                                           ...

1182                                                          NaN

1183                                                          NaN

1184                                                          NaN

1185                                                          NaN

1186                                                          NaN


      Do you consider yourself to be a fan of the Star Trek franchise?
Gender
1                                                              No
Male  \
2                                                             Yes
```

```
Male
3                                                          No
Male
4                                                         Yes
Male
5                                                          No
Male
...                                                        ...
...
1182                                                      Yes
Female
1183                                                      Yes
Female
1184                                                       No
Female
1185                                                      Yes
Female
1186                                                       No
Female

         Age      Household Income                             Education
1       18-29                   NaN              High school degree  \
2       18-29         $0 - $24,999                 Bachelor degree
3       18-29         $0 - $24,999              High school degree
4       18-29  $100,000 - $149,999  Some college or Associate degree
5       18-29  $100,000 - $149,999  Some college or Associate degree
...       ...                   ...                               ...
1182    18-29         $0 - $24,999  Some college or Associate degree
1183    30-44     $50,000 - $99,999                 Bachelor degree
1184    30-44     $50,000 - $99,999                 Bachelor degree
1185    45-60  $100,000 - $149,999  Some college or Associate degree
1186     > 60     $50,000 - $99,999                 Graduate degree

      Location (Census Region)
1                South Atlantic
2            West South Central
3            West North Central
4            West North Central
5            West North Central
...                         ...
1182         East North Central
1183                   Mountain
1184            Middle Atlantic
1185         East North Central
1186                    Pacific

[1186 rows x 38 columns]

df.iloc[:,3:9]
```

```
      Which of the following Star Wars films have you seen? Please
select all that apply.
1               Star Wars: Episode I  The Phantom Menace
\
2                                                     NaN

3               Star Wars: Episode I  The Phantom Menace

4               Star Wars: Episode I  The Phantom Menace

5               Star Wars: Episode I  The Phantom Menace

...                                                   ...

1182            Star Wars: Episode I  The Phantom Menace

1183            Star Wars: Episode I  The Phantom Menace

1184                                                  NaN

1185            Star Wars: Episode I  The Phantom Menace

1186            Star Wars: Episode I  The Phantom Menace


                                       Unnamed: 4
1     Star Wars: Episode II  Attack of the Clones  \
2                                             NaN
3     Star Wars: Episode II  Attack of the Clones
4     Star Wars: Episode II  Attack of the Clones
5     Star Wars: Episode II  Attack of the Clones
...                                           ...
1182  Star Wars: Episode II  Attack of the Clones
1183  Star Wars: Episode II  Attack of the Clones
1184                                          NaN
1185  Star Wars: Episode II  Attack of the Clones
1186  Star Wars: Episode II  Attack of the Clones

                                       Unnamed: 5
1     Star Wars: Episode III  Revenge of the Sith  \
2                                             NaN
3     Star Wars: Episode III  Revenge of the Sith
4     Star Wars: Episode III  Revenge of the Sith
5     Star Wars: Episode III  Revenge of the Sith
...                                           ...
1182  Star Wars: Episode III  Revenge of the Sith
1183  Star Wars: Episode III  Revenge of the Sith
1184                                          NaN
1185  Star Wars: Episode III  Revenge of the Sith
1186                                          NaN
```

```
                                 Unnamed: 6
1     Star Wars: Episode IV  A New Hope  \
2                                    NaN
3                                    NaN
4     Star Wars: Episode IV  A New Hope
5     Star Wars: Episode IV  A New Hope
...                                  ...
1182  Star Wars: Episode IV  A New Hope
1183  Star Wars: Episode IV  A New Hope
1184                                 NaN
1185  Star Wars: Episode IV  A New Hope
1186                                 NaN

                                       Unnamed: 7
1     Star Wars: Episode V The Empire Strikes Back  \
2                                              NaN
3                                              NaN
4     Star Wars: Episode V The Empire Strikes Back
5     Star Wars: Episode V The Empire Strikes Back
...                                            ...
1182  Star Wars: Episode V The Empire Strikes Back
1183  Star Wars: Episode V The Empire Strikes Back
1184                                           NaN
1185  Star Wars: Episode V The Empire Strikes Back
1186  Star Wars: Episode V The Empire Strikes Back

                                    Unnamed: 8
1     Star Wars: Episode VI Return of the Jedi
2                                          NaN
3                                          NaN
4     Star Wars: Episode VI Return of the Jedi
5     Star Wars: Episode VI Return of the Jedi
...                                        ...
1182  Star Wars: Episode VI Return of the Jedi
1183  Star Wars: Episode VI Return of the Jedi
1184                                       NaN
1185  Star Wars: Episode VI Return of the Jedi
1186  Star Wars: Episode VI Return of the Jedi

[1186 rows x 6 columns]

seen = df.iloc[:,3:9].copy()

seen.columns = ["seen_episode1","seen_episode2",
                "seen_episode3","seen_episode4",
                "seen_episode5","seen_episode6"]

seen
```

```
                                   seen_episode1
1     Star Wars: Episode I  The Phantom Menace  \
2                                          NaN
3     Star Wars: Episode I  The Phantom Menace
4     Star Wars: Episode I  The Phantom Menace
5     Star Wars: Episode I  The Phantom Menace
...                                        ...
1182  Star Wars: Episode I  The Phantom Menace
1183  Star Wars: Episode I  The Phantom Menace
1184                                       NaN
1185  Star Wars: Episode I  The Phantom Menace
1186  Star Wars: Episode I  The Phantom Menace

                                   seen_episode2
1     Star Wars: Episode II  Attack of the Clones  \
2                                           NaN
3     Star Wars: Episode II  Attack of the Clones
4     Star Wars: Episode II  Attack of the Clones
5     Star Wars: Episode II  Attack of the Clones
...                                         ...
1182  Star Wars: Episode II  Attack of the Clones
1183  Star Wars: Episode II  Attack of the Clones
1184                                        NaN
1185  Star Wars: Episode II  Attack of the Clones
1186  Star Wars: Episode II  Attack of the Clones

                                   seen_episode3
1     Star Wars: Episode III  Revenge of the Sith  \
2                                           NaN
3     Star Wars: Episode III  Revenge of the Sith
4     Star Wars: Episode III  Revenge of the Sith
5     Star Wars: Episode III  Revenge of the Sith
...                                         ...
1182  Star Wars: Episode III  Revenge of the Sith
1183  Star Wars: Episode III  Revenge of the Sith
1184                                        NaN
1185  Star Wars: Episode III  Revenge of the Sith
1186                                        NaN

                                   seen_episode4
1     Star Wars: Episode IV  A New Hope  \
2                                   NaN
3                                   NaN
4     Star Wars: Episode IV  A New Hope
5     Star Wars: Episode IV  A New Hope
...                                 ...
1182  Star Wars: Episode IV  A New Hope
1183  Star Wars: Episode IV  A New Hope
1184                                NaN
1185  Star Wars: Episode IV  A New Hope
```

```
1186                                       NaN

                                seen_episode5
1      Star Wars: Episode V The Empire Strikes Back  \
2                                            NaN
3                                            NaN
4      Star Wars: Episode V The Empire Strikes Back
5      Star Wars: Episode V The Empire Strikes Back
...                                           ...
1182   Star Wars: Episode V The Empire Strikes Back
1183   Star Wars: Episode V The Empire Strikes Back
1184                                         NaN
1185   Star Wars: Episode V The Empire Strikes Back
1186   Star Wars: Episode V The Empire Strikes Back

                                seen_episode6
1      Star Wars: Episode VI Return of the Jedi
2                                           NaN
3                                           NaN
4      Star Wars: Episode VI Return of the Jedi
5      Star Wars: Episode VI Return of the Jedi
...                                          ...
1182   Star Wars: Episode VI Return of the Jedi
1183   Star Wars: Episode VI Return of the Jedi
1184                                        NaN
1185   Star Wars: Episode VI Return of the Jedi
1186   Star Wars: Episode VI Return of the Jedi

[1186 rows x 6 columns]

seen = seen.notnull()

cleaned

                 id seen_any      fan
1      3.292880e+09     True     True
2      3.292880e+09    False      NaN
3      3.292765e+09     True    False
4      3.292763e+09     True     True
5      3.292731e+09     True     True
...             ...      ...      ...
1182   3.288389e+09     True     True
1183   3.288379e+09     True     True
1184   3.288375e+09    False      NaN
1185   3.288373e+09     True     True
1186   3.288373e+09     True    False

[1186 rows x 3 columns]

seen
```

```
      seen_episode1  seen_episode2  seen_episode3  seen_episode4
1              True           True           True           True  \
2             False          False          False          False
3              True           True           True          False
4              True           True           True           True
5              True           True           True           True
...             ...            ...            ...            ...
1182           True           True           True           True
1183           True           True           True           True
1184          False          False          False          False
1185           True           True           True           True
1186           True           True          False          False

      seen_episode5  seen_episode6
1              True           True
2             False          False
3             False          False
4              True           True
5              True           True
...             ...            ...
1182           True           True
1183           True           True
1184          False          False
1185           True           True
1186           True           True

[1186 rows x 6 columns]
```

```
df.iloc[:,9:15]
```

```
      Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.
1                                                             3
\
2                                                           NaN

3                                                             1

4                                                             5

5                                                             5

...                                                         ...

1182                                                          5

1183                                                          4

1184                                                        NaN
```

1185			4	
1186			6	

	Unnamed: 10	Unnamed: 11	Unnamed: 12	Unnamed: 13	Unnamed: 14
1	2	1	4	5	6
2	NaN	NaN	NaN	NaN	NaN
3	2	3	4	5	6
4	6	1	2	4	3
5	4	6	2	1	3
...	...	...	...	...	...
1182	4	6	3	2	1
1183	5	6	2	3	1
1184	NaN	NaN	NaN	NaN	NaN
1185	3	6	5	2	1
1186	1	2	3	4	5

[1186 rows x 6 columns]

```
ranking = df.iloc[:,9:15].copy()
```

```
ranking
```

	Please rank the Star Wars films in order of preference with 1 being your favorite film in the franchise and 6 being your least favorite film.
1	3
2	NaN
3	1
4	5
5	5
...	...
1182	5
1183	4
1184	NaN
1185	4
1186	6

	Unnamed: 10	Unnamed: 11	Unnamed: 12	Unnamed: 13	Unnamed: 14

```
1              2          1          4          5          6
2            NaN        NaN        NaN        NaN        NaN
3              2          3          4          5          6
4              6          1          2          4          3
5              4          6          2          1          3
...          ...        ...        ...        ...        ...
1182           4          6          3          2          1
1183           5          6          2          3          1
1184         NaN        NaN        NaN        NaN        NaN
1185           3          6          5          2          1
1186           1          2          3          4          5

[1186 rows x 6 columns]

ranking.columns

Index(['Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.',
       'Unnamed: 10', 'Unnamed: 11', 'Unnamed: 12', 'Unnamed: 13',
       'Unnamed: 14'],
      dtype='object')

ranking.columns = ["ranking_"+str(i) for i in range(1,7)] # list
comprehension

ranking
```

```
      ranking_1  ranking_2  ranking_3  ranking_4  ranking_5  ranking_6
1             3          2          1          4          5          6
2           NaN        NaN        NaN        NaN        NaN        NaN
3             1          2          3          4          5          6
4             5          6          1          2          4          3
5             5          4          6          2          1          3
...         ...        ...        ...        ...        ...        ...
1182          5          4          6          3          2          1
1183          4          5          6          2          3          1
1184        NaN        NaN        NaN        NaN        NaN        NaN
1185          4          3          6          5          2          1
1186          6          1          2          3          4          5

[1186 rows x 6 columns]

ranking.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1186 entries, 1 to 1186
Data columns (total 6 columns):
 #   Column     Non-Null Count   Dtype
---  ------     --------------   -----
 0   ranking_1  835 non-null     object
```

```
 1    ranking_2  836 non-null      object
 2    ranking_3  835 non-null      object
 3    ranking_4  836 non-null      object
 4    ranking_5  836 non-null      object
 5    ranking_6  836 non-null      object
dtypes: object(6)
memory usage: 55.7+ KB
```

```
ranking.astype(int)
```

```
------------------------------------------------------------------------
-----
ValueError                                 Traceback (most recent call
last)
Cell In[108], line 1
----> 1 ranking.astype(int)

File ~\AppData\Roaming\Python\Python311\site-packages\pandas\core\
generic.py:6324, in NDFrame.astype(self, dtype, copy, errors)
   6317     results = [
   6318         self.iloc[:, i].astype(dtype, copy=copy)
   6319         for i in range(len(self.columns))
   6320     ]
   6322 else:
   6323     # else, only a single dtype is given
-> 6324     new_data = self._mgr.astype(dtype=dtype, copy=copy,
errors=errors)
   6325     return self._constructor(new_data).__finalize__(self,
method="astype")
   6327 # GH 33113: handle empty frame or series

File ~\AppData\Roaming\Python\Python311\site-packages\pandas\core\
internals\managers.py:451, in BaseBlockManager.astype(self, dtype,
copy, errors)
    448 elif using_copy_on_write():
    449     copy = False
--> 451 return self.apply(
    452     "astype",
    453     dtype=dtype,
    454     copy=copy,
    455     errors=errors,
    456     using_cow=using_copy_on_write(),
    457 )

File ~\AppData\Roaming\Python\Python311\site-packages\pandas\core\
internals\managers.py:352, in BaseBlockManager.apply(self, f,
align_keys, **kwargs)
    350         applied = b.apply(f, **kwargs)
    351     else:
--> 352         applied = getattr(b, f)(**kwargs)
```

```
    353     result_blocks = extend_blocks(applied, result_blocks)
    355 out = type(self).from_blocks(result_blocks, self.axes)

File ~\AppData\Roaming\Python\Python311\site-packages\pandas\core\
internals\blocks.py:511, in Block.astype(self, dtype, copy, errors,
using_cow)
    491 """
    492 Coerce to the new dtype.
    493
  (...)
    507 Block
    508 """
    509 values = self.values
--> 511 new_values = astype_array_safe(values, dtype, copy=copy,
errors=errors)
    513 new_values = maybe_coerce_values(new_values)
    515 refs = None

File ~\AppData\Roaming\Python\Python311\site-packages\pandas\core\
dtypes\astype.py:242, in astype_array_safe(values, dtype, copy,
errors)
    239     dtype = dtype.numpy_dtype
    241 try:
--> 242     new_values = astype_array(values, dtype, copy=copy)
    243 except (ValueError, TypeError):
    244     # e.g. _astype_nansafe can fail on object-dtype of strings
    245     #  trying to convert to float
    246     if errors == "ignore":

File ~\AppData\Roaming\Python\Python311\site-packages\pandas\core\
dtypes\astype.py:187, in astype_array(values, dtype, copy)
    184     values = values.astype(dtype, copy=copy)
    186 else:
--> 187     values = _astype_nansafe(values, dtype, copy=copy)
    189 # in pandas we don't store numpy str dtypes, so convert to
object
    190 if isinstance(dtype, np.dtype) and
issubclass(values.dtype.type, str):

File ~\AppData\Roaming\Python\Python311\site-packages\pandas\core\
dtypes\astype.py:138, in _astype_nansafe(arr, dtype, copy, skipna)
    134     raise ValueError(msg)
    136 if copy or is_object_dtype(arr.dtype) or
is_object_dtype(dtype):
    137     # Explicit copy, or required since NumPy can't view from /
to object.
--> 138     return arr.astype(dtype, copy=True)
    140 return arr.astype(dtype, copy=copy)

ValueError: cannot convert float NaN to integer
```

```
ranking = ranking.astype(float)

cleaned
seen
ranking
```

	ranking_1	ranking_2	ranking_3	ranking_4	ranking_5	ranking_6
1	3.0	2.0	1.0	4.0	5.0	6.0
2	NaN	NaN	NaN	NaN	NaN	NaN
3	1.0	2.0	3.0	4.0	5.0	6.0
4	5.0	6.0	1.0	2.0	4.0	3.0
5	5.0	4.0	6.0	2.0	1.0	3.0
...	...	...	...	...	...	...
1182	5.0	4.0	6.0	3.0	2.0	1.0
1183	4.0	5.0	6.0	2.0	3.0	1.0
1184	NaN	NaN	NaN	NaN	NaN	NaN
1185	4.0	3.0	6.0	5.0	2.0	1.0
1186	6.0	1.0	2.0	3.0	4.0	5.0

```
[1186 rows x 6 columns]

pd.concat([cleaned,seen, ranking])
```

	id	seen_any	fan	seen_episode1	seen_episode2	seen_episode3
1	3.292880e+09	True	True	NaN	NaN	NaN \
2	3.292880e+09	False	NaN	NaN	NaN	NaN
3	3.292765e+09	True	False	NaN	NaN	NaN
4	3.292763e+09	True	True	NaN	NaN	NaN
5	3.292731e+09	True	True	NaN	NaN	NaN
...	...	...	...	...	...	...
1182	NaN	NaN	NaN	NaN	NaN	NaN
1183	NaN	NaN	NaN	NaN	NaN	NaN
1184	NaN	NaN	NaN	NaN	NaN	NaN
1185	NaN	NaN	NaN	NaN	NaN	NaN
1186	NaN	NaN	NaN	NaN	NaN	NaN

```
      seen_episode4 seen_episode5 seen_episode6  ranking_1  ranking_2
```

	1				
1	NaN	NaN	NaN	NaN	NaN \
2	NaN	NaN	NaN	NaN	NaN
3	NaN	NaN	NaN	NaN	NaN
4	NaN	NaN	NaN	NaN	NaN
5	NaN	NaN	NaN	NaN	NaN
...	...	...	...	...	...
1182	NaN	NaN	NaN	5.0	4.0
1183	NaN	NaN	NaN	4.0	5.0
1184	NaN	NaN	NaN	NaN	NaN
1185	NaN	NaN	NaN	4.0	3.0
1186	NaN	NaN	NaN	6.0	1.0

	ranking_3	ranking_4	ranking_5	ranking_6
1	NaN	NaN	NaN	NaN
2	NaN	NaN	NaN	NaN
3	NaN	NaN	NaN	NaN
4	NaN	NaN	NaN	NaN
5	NaN	NaN	NaN	NaN
...	...	...	...	...
1182	6.0	3.0	2.0	1.0
1183	6.0	2.0	3.0	1.0
1184	NaN	NaN	NaN	NaN
1185	6.0	5.0	2.0	1.0
1186	2.0	3.0	4.0	5.0

[3558 rows x 15 columns]

```
final = cleaned.merge(seen,left_index=True, right_index=True)

final = final.merge(ranking,left_index=True, right_index=True)

final
```

	id	seen_any	fan	seen_episode1	seen_episode2
1	3.292880e+09	True	True	True	True \
2	3.292880e+09	False	NaN	False	False
3	3.292765e+09	True	False	True	True
4	3.292763e+09	True	True	True	True
5	3.292731e+09	True	True	True	True
...	...	...	...	...	...

```
1182    3.288389e+09      True    True          True          True
1183    3.288379e+09      True    True          True          True
1184    3.288375e+09     False     NaN         False         False
1185    3.288373e+09      True    True          True          True
1186    3.288373e+09      True   False          True          True

      seen_episode3  seen_episode4  seen_episode5  seen_episode6  \
ranking_1
1              True           True           True           True
3.0  \
2             False          False          False          False
NaN
3              True          False          False          False
1.0
4              True           True           True           True
5.0
5              True           True           True           True
5.0
...             ...            ...            ...            ...
...
1182           True           True           True           True
5.0
1183           True           True           True           True
4.0
1184          False          False          False          False
NaN
1185           True           True           True           True
4.0
1186          False          False           True           True
6.0

      ranking_2  ranking_3  ranking_4  ranking_5  ranking_6
1           2.0        1.0        4.0        5.0        6.0
2           NaN        NaN        NaN        NaN        NaN
3           2.0        3.0        4.0        5.0        6.0
4           6.0        1.0        2.0        4.0        3.0
5           4.0        6.0        2.0        1.0        3.0
...         ...        ...        ...        ...        ...
1182        4.0        6.0        3.0        2.0        1.0
1183        5.0        6.0        2.0        3.0        1.0
1184        NaN        NaN        NaN        NaN        NaN
1185        3.0        6.0        5.0        2.0        1.0
1186        1.0        2.0        3.0        4.0        5.0

[1186 rows x 15 columns]

df.iloc[:,:15]

      RespondentID
1     3.292880e+09   \
```

```
2        3.292880e+09
3        3.292765e+09
4        3.292763e+09
5        3.292731e+09
...              ...
1182  3.288389e+09
1183  3.288379e+09
1184  3.288375e+09
1185  3.288373e+09
1186  3.288373e+09

      Have you seen any of the 6 films in the Star Wars franchise?
1                                                  Yes                 \
2                                                   No
3                                                  Yes
4                                                  Yes
5                                                  Yes
...                                                ...
1182                                               Yes
1183                                               Yes
1184                                                No
1185                                               Yes
1186                                               Yes

      Do you consider yourself to be a fan of the Star Wars film
franchise?
1                                                  Yes
\
2                                                  NaN

3                                                   No

4                                                  Yes

5                                                  Yes

...                                                ...

1182                                               Yes

1183                                               Yes

1184                                               NaN

1185                                               Yes

1186                                                No

      Which of the following Star Wars films have you seen? Please
```

```
select all that apply.
1              Star Wars: Episode I  The Phantom Menace
\
2                                                    NaN

3              Star Wars: Episode I  The Phantom Menace

4              Star Wars: Episode I  The Phantom Menace

5              Star Wars: Episode I  The Phantom Menace

...                                                  ...

1182           Star Wars: Episode I  The Phantom Menace

1183           Star Wars: Episode I  The Phantom Menace

1184                                                 NaN

1185           Star Wars: Episode I  The Phantom Menace

1186           Star Wars: Episode I  The Phantom Menace


                                           Unnamed: 4
1      Star Wars: Episode II  Attack of the Clones  \
2                                              NaN
3      Star Wars: Episode II  Attack of the Clones
4      Star Wars: Episode II  Attack of the Clones
5      Star Wars: Episode II  Attack of the Clones
...                                            ...
1182   Star Wars: Episode II  Attack of the Clones
1183   Star Wars: Episode II  Attack of the Clones
1184                                           NaN
1185   Star Wars: Episode II  Attack of the Clones
1186   Star Wars: Episode II  Attack of the Clones

                                           Unnamed: 5
1      Star Wars: Episode III  Revenge of the Sith  \
2                                              NaN
3      Star Wars: Episode III  Revenge of the Sith
4      Star Wars: Episode III  Revenge of the Sith
5      Star Wars: Episode III  Revenge of the Sith
...                                            ...
1182   Star Wars: Episode III  Revenge of the Sith
1183   Star Wars: Episode III  Revenge of the Sith
1184                                           NaN
1185   Star Wars: Episode III  Revenge of the Sith
1186                                           NaN
```

```
                                   Unnamed: 6
1     Star Wars: Episode IV  A New Hope   \
2                                    NaN
3                                    NaN
4     Star Wars: Episode IV  A New Hope
5     Star Wars: Episode IV  A New Hope
...                                  ...
1182  Star Wars: Episode IV  A New Hope
1183  Star Wars: Episode IV  A New Hope
1184                                 NaN
1185  Star Wars: Episode IV  A New Hope
1186                                 NaN


                                   Unnamed: 7
1     Star Wars: Episode V The Empire Strikes Back   \
2                                            NaN
3                                            NaN
4     Star Wars: Episode V The Empire Strikes Back
5     Star Wars: Episode V The Empire Strikes Back
...                                          ...
1182  Star Wars: Episode V The Empire Strikes Back
1183  Star Wars: Episode V The Empire Strikes Back
1184                                         NaN
1185  Star Wars: Episode V The Empire Strikes Back
1186  Star Wars: Episode V The Empire Strikes Back


                                   Unnamed: 8
1     Star Wars: Episode VI Return of the Jedi   \
2                                          NaN
3                                          NaN
4     Star Wars: Episode VI Return of the Jedi
5     Star Wars: Episode VI Return of the Jedi
...                                        ...
1182  Star Wars: Episode VI Return of the Jedi
1183  Star Wars: Episode VI Return of the Jedi
1184                                       NaN
1185  Star Wars: Episode VI Return of the Jedi
1186  Star Wars: Episode VI Return of the Jedi


     Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
favorite film.
1                                                              3
\
2                                                            NaN

3                                                              1

4                                                              5
```

5	5
...	...
1182	5
1183	4
1184	NaN
1185	4
1186	6

	Unnamed: 10	Unnamed: 11	Unnamed: 12	Unnamed: 13	Unnamed: 14
1	2	1	4	5	6
2	NaN	NaN	NaN	NaN	NaN
3	2	3	4	5	6
4	6	1	2	4	3
5	4	6	2	1	3
...	...	...	...	...	...
1182	4	6	3	2	1
1183	5	6	2	3	1
1184	NaN	NaN	NaN	NaN	NaN
1185	3	6	5	2	1
1186	1	2	3	4	5

[1186 rows x 15 columns]

```python
cleaned.iloc[:,1:].apply(pd.value_counts(normalize = True), axis = "index")
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[119], line 1
----> 1 cleaned.iloc[:,1:].apply(pd.value_counts(normalize = True), axis = "index")

TypeError: value_counts() missing 1 required positional argument: 'values'
```

```python
cleaned.iloc[:,1:].apply(lambda col:col.value_counts(normalize = True), axis = 0)*100
```

```
        seen_any        fan
True    78.920742  66.028708
False   21.079258  33.971292
```

```python
final.iloc[:,1:3]["seen_any"].value_counts(normalize = True)*100

seen_any
True      78.920742
False     21.079258
Name: proportion, dtype: float64

def perc(col):
    return col.value_counts(normalize = True)

final.iloc[:,1:3].apply(lambda i:i.value_counts(normalize = True))
```

```
       seen_any        fan
True   0.789207   0.660287
False  0.210793   0.339713
```

```python
final.iloc[:,1:3].apply(perc, axis = 0)
```

```
       seen_any        fan
True   0.789207   0.660287
False  0.210793   0.339713
```

```python
percentages = final.iloc[:,1:9].apply(lambda
i:i.value_counts(normalize = True))

percentages
```

```
       seen_any        fan   seen_episode1   seen_episode2   seen_episode3

False  0.210793   0.339713        0.432546        0.51855        0.536256
\
True   0.789207   0.660287        0.567454        0.48145        0.463744


       seen_episode4   seen_episode5   seen_episode6
False        0.488196        0.360877        0.37774
True         0.511804        0.639123        0.62226
```

```python
import matplotlib.pyplot as plt

percentages.plot.bar()
plt.show()
```
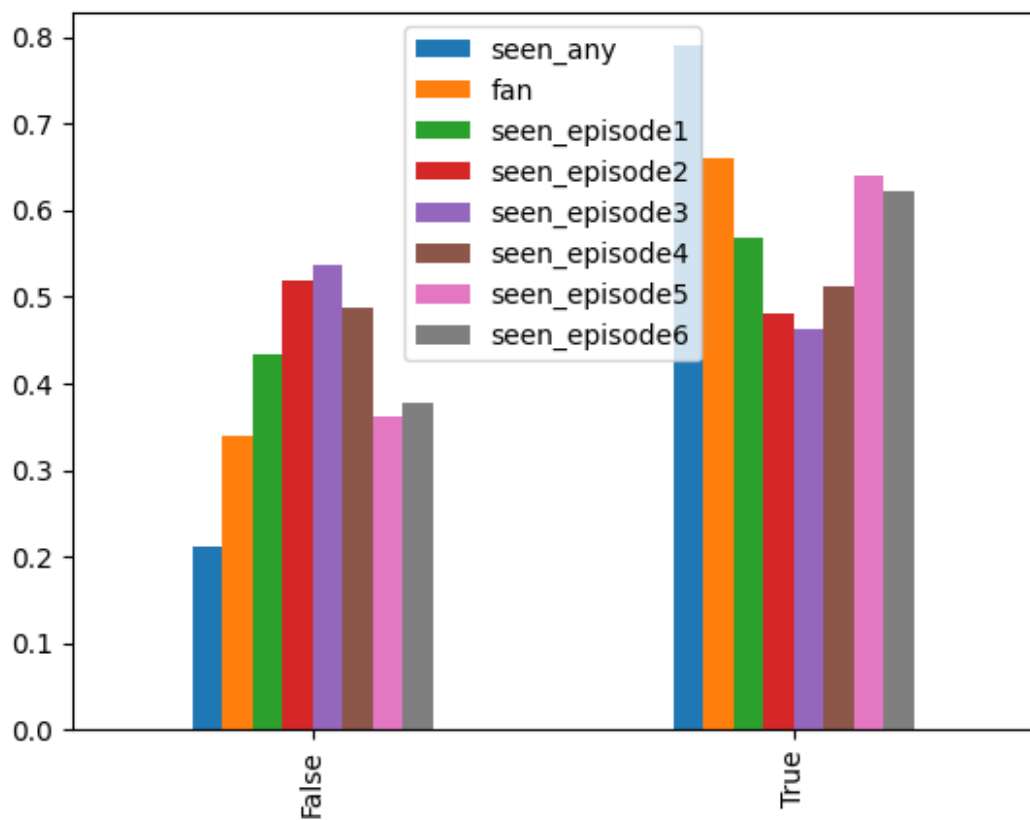
```
percentages.loc[True].plot.bar()
plt.show()
```
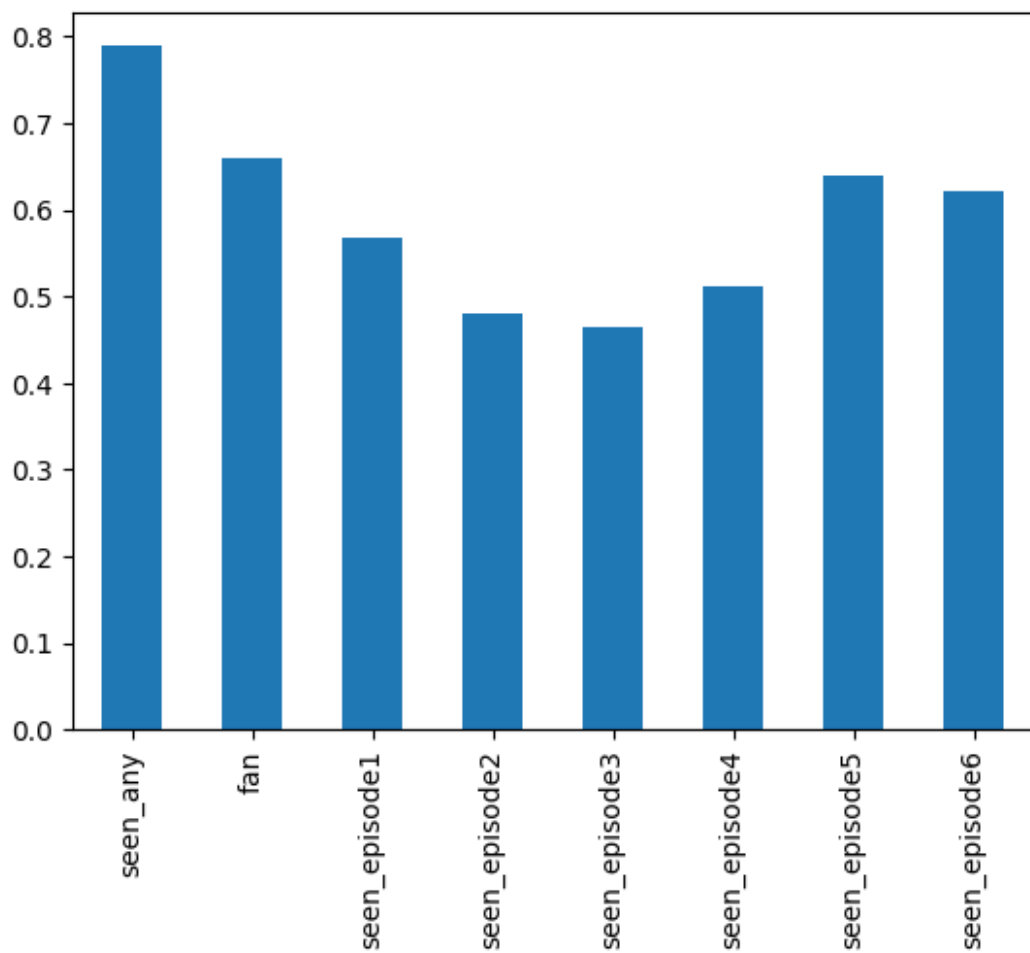
```
percentages.loc[True].plot.barh()
plt.show()
```
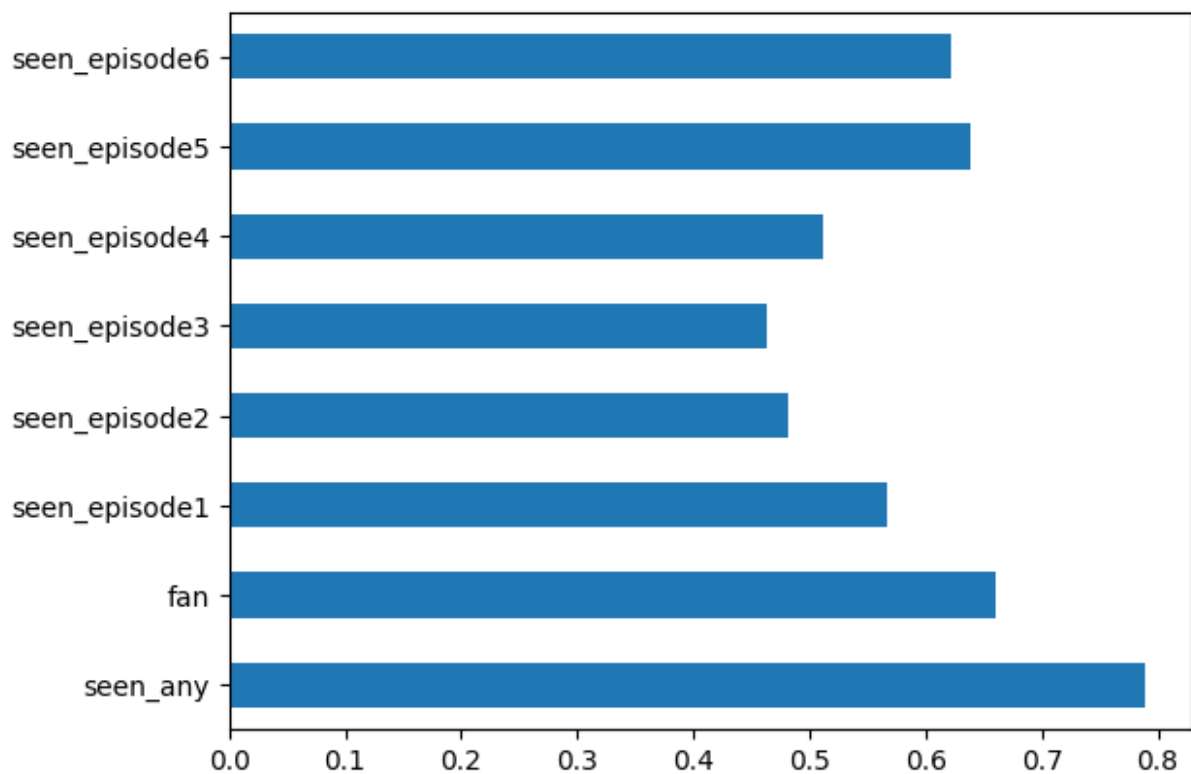
```
final.iloc[:,9:]

        ranking_1  ranking_2  ranking_3  ranking_4  ranking_5  ranking_6
1            3.0        2.0        1.0        4.0        5.0        6.0
2            NaN        NaN        NaN        NaN        NaN        NaN
3            1.0        2.0        3.0        4.0        5.0        6.0
4            5.0        6.0        1.0        2.0        4.0        3.0
5            5.0        4.0        6.0        2.0        1.0        3.0
...          ...        ...        ...        ...        ...        ...
1182         5.0        4.0        6.0        3.0        2.0        1.0
1183         4.0        5.0        6.0        2.0        3.0        1.0
1184         NaN        NaN        NaN        NaN        NaN        NaN
1185         4.0        3.0        6.0        5.0        2.0        1.0
1186         6.0        1.0        2.0        3.0        4.0        5.0

[1186 rows x 6 columns]

final.iloc[:,9:].mean()

ranking_1    3.732934
ranking_2    4.087321
ranking_3    4.341317
ranking_4    3.272727
ranking_5    2.513158
ranking_6    3.047847
dtype: float64
```

```
final.iloc[:,9:].mean().plot.barh()
plt.show()
```
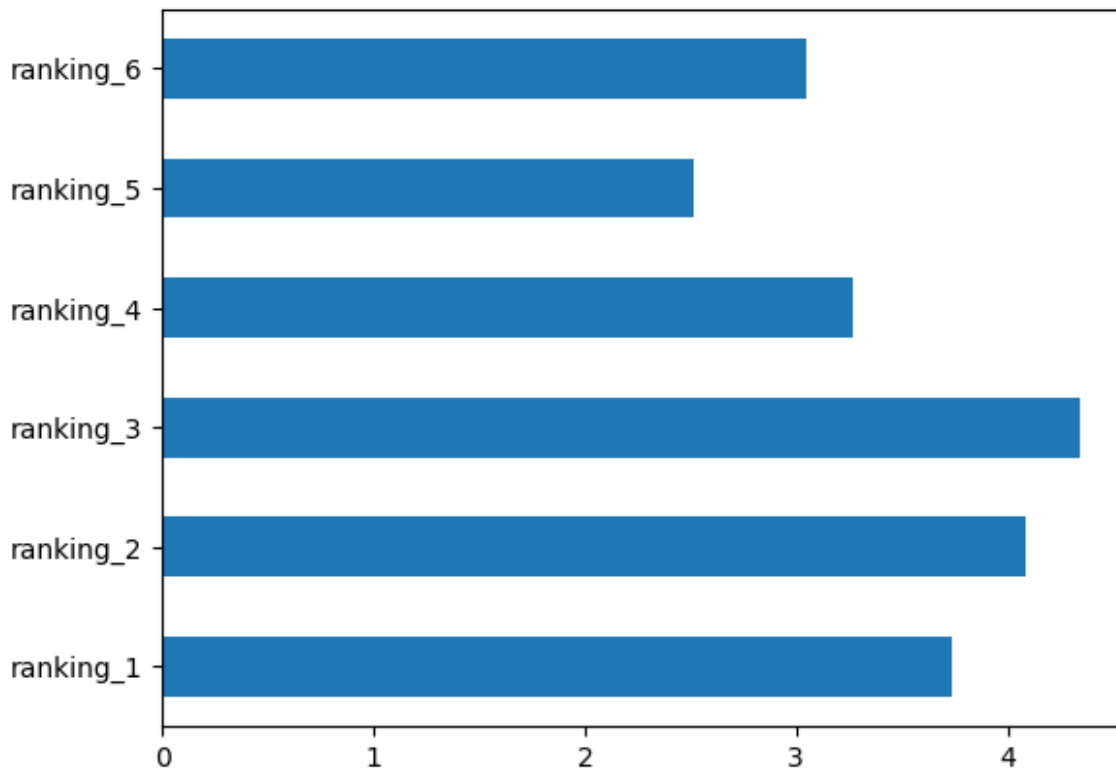


```
final.iloc[:,9:].max()

ranking_1    6.0
ranking_2    6.0
ranking_3    6.0
ranking_4    6.0
ranking_5    6.0
ranking_6    6.0
dtype: float64

df.columns

Index(['RespondentID',
       'Have you seen any of the 6 films in the Star Wars franchise?',
       'Do you consider yourself to be a fan of the Star Wars film
franchise?',
       'Which of the following Star Wars films have you seen? Please
select all that apply.',
       'Unnamed: 4', 'Unnamed: 5', 'Unnamed: 6', 'Unnamed: 7',
'Unnamed: 8',
       'Please rank the Star Wars films in order of preference with 1
being your favorite film in the franchise and 6 being your least
```

```
favorite film.',
       'Unnamed: 10', 'Unnamed: 11', 'Unnamed: 12', 'Unnamed: 13',
       'Unnamed: 14',
       'Please state whether you view the following characters
favorably, unfavorably, or are unfamiliar with him/her.',
       'Unnamed: 16', 'Unnamed: 17', 'Unnamed: 18', 'Unnamed: 19',
       'Unnamed: 20', 'Unnamed: 21', 'Unnamed: 22', 'Unnamed: 23',
       'Unnamed: 24', 'Unnamed: 25', 'Unnamed: 26', 'Unnamed: 27',
       'Unnamed: 28', 'Which character shot first?',
       'Are you familiar with the Expanded Universe?',
       'Do you consider yourself to be a fan of the Expanded Universe?
Њж',
       'Do you consider yourself to be a fan of the Star Trek
franchise?',
       'Gender', 'Age', 'Household Income', 'Education',
       'Location (Census Region)'],
      dtype='object')

male_bol = df["Gender"] == "Male"
female_bol = df["Gender"] == "Female"

male = final[male_bol]

female = final[female_bol]

print(male.shape, female.shape)

(497, 15) (549, 15)

print(male.shape[0]+ female.shape[0])

1046

df["Gender"].value_counts(dropna = False)

Gender
Female    549
Male      497
NaN       140
Name: count, dtype: int64

male.iloc[:,9:].mean().plot.barh()
plt.show()
```
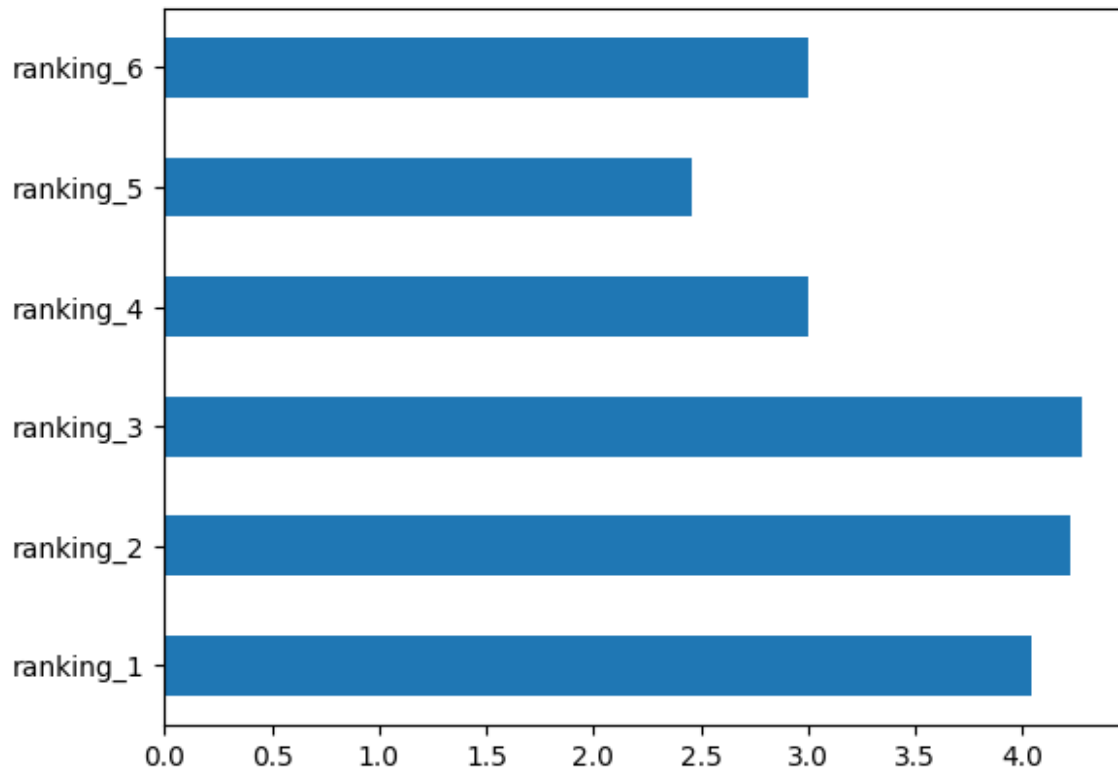
```
female.iloc[:,9:].mean().plot.barh()
plt.show()
```