panda

April 1, 2023

```
[3]: import pandas as pd
```

```
[4]: df=pd.read_csv("services.csv")
```

```
[5]: df
```

```
[5]:     id  location_id  program_id        accepted_payments  \
     0    1            1         NaN                      NaN
     1    2            2         NaN                      NaN
     2    3            3         NaN                      NaN
     3    4            4         NaN                      NaN
     4    5            5         NaN                      NaN
     5    6            6         NaN                      NaN
     6    7            7         NaN                      NaN
     7    8            8         NaN                      NaN
     8    9            9         NaN                      NaN
     9   10           10         NaN                      NaN
     10  11           11         NaN                      NaN
     11  12           12         NaN                      NaN
     12  13           13         NaN                      NaN
     13  14           14         NaN                      NaN
     14  15           15         NaN                      NaN
     15  16           16         NaN                      NaN
     16  17           17         NaN                      NaN
     17  18           18         NaN                      NaN
     18  19           19         NaN                      NaN
     19  20           20         NaN                      NaN
     20  21           21         NaN                      NaN
     21  22           22         NaN  Cash, Check, Credit Card
     22  23           22         NaN                      NaN

            alternate_name                        application_process  \
     0                 NaN                Walk in or apply by phone.
     1                 NaN         Apply by phone for an appointment.
     2                 NaN  Phone for information (403-4300 Ext. 4322).
     3                 NaN                            Apply by phone.
     4                 NaN                      Phone for information.
```

```
5                      NaN  Walk in or apply by phone for membership appli…
6                      NaN  Apply by phone or be referred by a doctor, soc…
7                      NaN                                   Apply by phone.
8                      NaN  Walk in. Proof of residency in California requ…
9                      NaN  Walk in. Proof of California residency to rece…
10                     NaN  Walk in. Proof of California residency require…
11                     NaN  Walk in or apply by phone, email or webpage re…
12                     NaN  Walk in. Proof of California residency require…
13                     NaN  Call for appointment. Referral from human serv…
14                     NaN          Walk in or through other agency referral.
15                     NaN  Walk in. Written application, identification r…
16                     NaN                                 Call for information.
17                     NaN  Call for screening appointment. Medical visits…
18                     NaN    Call for screening appointment (650-347-3648).
19                     NaN                                          Walk in.
20                     NaN                    By phone during business hours.
21  Fotos para pasaportes            Walk in or apply by phone or mail
22                     NaN            Walk in or apply by phone or mail

                                                audience  \
0   Older adults age 55 or over, ethnic minorities…
1        Residents of San Mateo County age 55 or over
2   Older adults age 55 or over who can benefit fr…
3   Parents, children, families with problems of c…
4   Low-income working families with children tran…
5                                             Any age
6   Older adults who have memory or sensory loss, …
7   Senior citizens age 60 or over, disabled indiv…
8      Ethnic minorities, especially Spanish speaking
9                                                 NaN
10                                                NaN
11  Adults, parents, children in 1st-12th grades i…
12                                                NaN
13  Individuals or families with low or no income …
14  Adult alcoholic/drug addictive men and women w…
15                                                NaN
16                                                NaN
17                                                NaN
18                                                NaN
19                                                NaN
20                                                NaN
21  Profit and nonprofit businesses, the public, m…
22  Second service and nonprofit businesses, the p…

                                             description  \
0   A walk-in center for older adults that provide…
1   Provides training and job placement to eligibl…
```

2

```
2    Offers supportive counseling services to San M…
3    Provides supervised visitation services and a …
4    Provides fixed 8% short term loans to eligible…
5    A multipurpose center offering a wide variety …
6    Rosener House is a day center for older adults…
7    Delivers a hot meal to the home of persons age…
8    Provides general reading material, including b…
9    Provides general reading and media materials, …
10   Provides general reading materials, including …
11   Offers an intergenerational literacy program f…
12   Provides general reading materials, including …
13   Provides food, clothing, bus tokens and shelte…
14   Provides a long-term (6-12 month) residential …
15   Provides emergency assistance including food a…
16   Provides emergency food, clothing and furnitur…
17   By appointment only, Project Smile provides a …
18   Provides free medical and dental care to those…
19              no unrequired fields for this service
20                             just a test service
21   [NOTE THIS IS NOT A REAL SERVICE--THIS IS FOR …
22   [NOTE THIS IS NOT A REAL ORGANIZATION--THIS IS…
```

	eligibility	email
0	Age 55 or over for most programs, age 60 or ov…	NaN
1	Age 55 or over, county resident and willing an…	NaN
2	Resident of San Mateo County age 55 or over	NaN
3	None	NaN
4	Eligibility: Low-income family with legal cust…	NaN
5	None	NaN
6	Age 18 or over	NaN
7	Homebound person unable to cook or shop	NaN
8	Resident of California to obtain a library card	NaN
9	Resident of California to obtain a card	NaN
10	Resident of California to obtain a library car…	NaN
11	English-speaking adult reading at or below 7th…	NaN
12	Resident of California to obtain a library card	NaN
13	None for most services. For emergency assistan…	NaN
14	Age 21-60, detoxed, physically able and willin…	NaN
15	None for emergency assistance	NaN
16	Low-income families	NaN
17	Low-income person without access to health care	NaN
18	Low-income person without access to health care	NaN
19	NaN	NaN
20	NaN	NaN
21	None	passports@example.org
22	None	NaN

```
          …                          interpretation_services  \
0    …                                                 NaN
1    …                                                 NaN
2    …                                                 NaN
3    …                                                 NaN
4    …                                                 NaN
5    …                                                 NaN
6    …                                                 NaN
7    …                                                 NaN
8    …                                                 NaN
9    …                                                 NaN
10   …                                                 NaN
11   …                                                 NaN
12   …                                                 NaN
13   …                                                 NaN
14   …                                                 NaN
15   …                                                 NaN
16   …                                                 NaN
17   …                                                 NaN
18   …                                                 NaN
19   …                                                 NaN
20   …                                                 NaN
21   …  We offer 3-way interpretation services over th…
22   …                                                 NaN


                                            keywords languages  \
0   ADULT PROTECTION AND CARE SERVICES, Meal Sites…       NaN
1   EMPLOYMENT/TRAINING SERVICES, Job Development,…        NaN
2   Geriatric Counseling, Older Adults, Gay, Lesbi…       NaN
3   INDIVIDUAL AND FAMILY DEVELOPMENT SERVICES, Gr…       NaN
4       COMMUNITY SERVICES, Speakers, Automobile Loans    NaN
5   ADULT PROTECTION AND CARE SERVICES, In-Home Su…       NaN
6   ADULT PROTECTION AND CARE SERVICES, Adult Day …       NaN
7   ADULT PROTECTION AND CARE SERVICES, Meal Sites…       NaN
8   EDUCATION SERVICES, Library, Libraries, Public…       NaN
9   EDUCATION SERVICES, Library, Libraries, Public…       NaN
10  EDUCATION SERVICES, Library, Libraries, Public…       NaN
11  EDUCATION SERVICES, Adult, Alternative, Litera…       NaN
12  EDUCATION SERVICES, Library, Libraries, Public…       NaN
13  COMMUNITY SERVICES, Interpretation/Translation…       NaN
14  ALCOHOLISM SERVICES, Residential Care, DRUG AB…       NaN
15  COMMODITY SERVICES, Clothing/Personal Items, C…       NaN
16  COMMODITY SERVICES, Clothing/Personal Items, C…       NaN
17  HEALTH SERVICES, Outpatient Care, Community Cl…       NaN
18  HEALTH SERVICES, Outpatient Care, Community Cl…       NaN
19                                               NaN       NaN
20                                               NaN       NaN
```

```
21                                 Salud, Medicina    Spanish
22        Ruby on Rails/Postgres/Redis, testing, wic       NaN

                                    name  \
0             Fair Oaks Adult Activity Center
1             Second Career Employment Program
2                    Senior Peer Counseling
3                    Family Visitation Center
4          Economic Self-Sufficiency Program
5        Little House Recreational Activities
6             Rosener House Adult Day Services
7               Meals on Wheels – South County
8                           Fair Oaks Branch
9                               Main Library
10                           Schaberg Branch
11                               Project Read
12                     Redwood Shores Branch
13                        Redwood City Corps
14             Adult Rehabilitation Center
15                            Sunnyvale Corps
16        South San Francisco Citadel Corps
17                              Project Smile
18             San Mateo Free Medical Clinic
19                     Service with blank fields
20             Service for Admin Test Location
21                             Passport Photos
22                          Example Service Name

                          required_documents  \
0                                         NaN
1                                         NaN
2                                         NaN
3                                         NaN
4                                         NaN
5                                         NaN
6                                         NaN
7                                         NaN
8                                         NaN
9                                         NaN
10                                        NaN
11                                        NaN
12                                        NaN
13                                        NaN
14                                        NaN
15                                        NaN
16                                        NaN
17                                        NaN
```

```
18                                     NaN
19                                     NaN
20                                     NaN
21  Government-issued picture identification
22                                     NaN


                            service_areas    status  \
0                                   Colma    active
1                        San Mateo County    active
2                        San Mateo County    active
3                        San Mateo County    active
4                        San Mateo County    active
5                        San Mateo County    active
6     Belmont, Burlingame, East Palo Alto    active
7                  Belmont, East Palo Alto    active
8                        San Mateo County    active
9                        San Mateo County    active
10                       San Mateo County    active
11                              Daly City    active
12                       San Mateo County    active
13    Belmont, Burlingame, East Palo Alto    active
14       Alameda County, San Mateo County    active
15                                    NaN    active
16  Colma, Daly City, South San Francisco    active
17                         East Palo Alto    active
18                    Belmont, Burlingame    active
19                                    NaN   defunct
20                       San Mateo County  inactive
21       Alameda County, San Mateo County    active
22       San Mateo County, Alameda County    active


                                     wait_time            website  \
0                                     No wait.                NaN
1                                      Varies.                NaN
2                                      Varies.                NaN
3                                     No wait.                NaN
4                                          NaN                NaN
5                                     No wait.                NaN
6                                     No wait.                NaN
7                                     No wait.                NaN
8                                     No wait.                NaN
9                                     No wait.                NaN
10                                    No wait.                NaN
11  Depends on availability of tutors for small gr…                NaN
12                                    No wait.                NaN
13                           Up to 20 minutes.                NaN
14  Varies according to available beds for men and…                NaN
```

```
15                          No wait.                        NaN
16                               NaN                        NaN
17                           Varies.                        NaN
18                           Varies.                        NaN
19                               NaN                        NaN
20                               NaN                        NaN
21            No wait to 2 weeks.  http://www.example.com
22             No wait to 2 weeks  http://www.example.com

                             taxonomy_ids
0                                     NaN
1                                     NaN
2                                     NaN
3                                     NaN
4                                     NaN
5                                     NaN
6                                     NaN
7                                     NaN
8                                     NaN
9                                     NaN
10                                    NaN
11                                    NaN
12                                    NaN
13                                    NaN
14                                    NaN
15                                    NaN
16                                    NaN
17                                    NaN
18                                    NaN
19                                    NaN
20                                    NaN
21  105, 108, 108-05, 108-05-01, 111, 111-05
22                                    NaN

[23 rows x 22 columns]
```

[6]: `type(df)`

[6]: pandas.core.frame.DataFrame

[7]: `df.columns`

[7]: Index(['id', 'location_id', 'program_id', 'accepted_payments',
       'alternate_name', 'application_process', 'audience', 'description',
       'eligibility', 'email', 'fees', 'funding_sources',
       'interpretation_services', 'keywords', 'languages', 'name',
       'required_documents', 'service_areas', 'status', 'wait_time', 'website',

```
          'taxonomy_ids'],
          dtype='object')
```

[8]: `df.location_id`

```
[8]: 0      1
     1      2
     2      3
     3      4
     4      5
     5      6
     6      7
     7      8
     8      9
     9     10
     10    11
     11    12
     12    13
     13    14
     14    15
     15    16
     16    17
     17    18
     18    19
     19    20
     20    21
     21    22
     22    22
     Name: location_id, dtype: int64
```

[9]: `type(df.location_id)`

[9]: `pandas.core.series.Series`

[10]: `list[df.location_id]`

```
[10]: list[0      1
      1      2
      2      3
      3      4
      4      5
      5      6
      6      7
      7      8
      8      9
      9     10
      10    11
```

```
11      12
12      13
13      14
14      15
15      16
16      17
17      18
18      19
19      20
20      21
21      22
22      22
Name: location_id, dtype: int64]
```

[11]: `df[['location_id']]`

[11]:
```
     location_id
0              1
1              2
2              3
3              4
4              5
5              6
6              7
7              8
8              9
9             10
10            11
11            12
12            13
13            14
14            15
15            16
16            17
17            18
18            19
19            20
20            21
21            22
22            22
```

[12]: `df.head(4)`

[12]:
```
   id  location_id  program_id  accepted_payments  alternate_name  \
0   1            1           1                NaN             NaN             NaN
1   2            2           2                NaN             NaN             NaN
2   3            3           3                NaN             NaN             NaN
```

```
3  4          4        NaN              NaN              NaN

                       application_process  \
0                      Walk in or apply by phone.
1              Apply by phone for an appointment.
2    Phone for information (403-4300 Ext. 4322).
3                                 Apply by phone.


                                          audience  \
0    Older adults age 55 or over, ethnic minorities…
1        Residents of San Mateo County age 55 or over
2    Older adults age 55 or over who can benefit fr…
3    Parents, children, families with problems of c…


                                       description  \
0    A walk-in center for older adults that provide…
1    Provides training and job placement to eligibl…
2    Offers supportive counseling services to San M…
3    Provides supervised visitation services and a …


                                       eligibility email  …  \
0    Age 55 or over for most programs, age 60 or ov…   NaN  …
1    Age 55 or over, county resident and willing an…   NaN  …
2        Resident of San Mateo County age 55 or over    NaN  …
3                                             None   NaN  …

    interpretation_services                                          keywords  \
0                        NaN  ADULT PROTECTION AND CARE SERVICES, Meal Sites…
1                        NaN  EMPLOYMENT/TRAINING SERVICES, Job Development,…
2                        NaN  Geriatric Counseling, Older Adults, Gay, Lesbi…
3                        NaN  INDIVIDUAL AND FAMILY DEVELOPMENT SERVICES, Gr…

   languages                             name required_documents  \
0        NaN   Fair Oaks Adult Activity Center                NaN
1        NaN  Second Career Employment Program                NaN
2        NaN            Senior Peer Counseling                NaN
3        NaN            Family Visitation Center                NaN


        service_areas  status wait_time website taxonomy_ids
0               Colma  active  No wait.     NaN          NaN
1    San Mateo County  active   Varies.     NaN          NaN
2    San Mateo County  active   Varies.     NaN          NaN
3    San Mateo County  active  No wait.     NaN          NaN

[4 rows x 22 columns]
```

[13]: `df.tail(4)`

```
[13]:     id  location_id  program_id        accepted_payments  \
     19  20           20         NaN                      NaN
     20  21           21         NaN                      NaN
     21  22           22         NaN  Cash, Check, Credit Card
     22  23           22         NaN                      NaN


                 alternate_name              application_process  \
     19                     NaN                        Walk in.
     20                     NaN    By phone during business hours.
     21  Fotos para pasaportes  Walk in or apply by phone or mail
     22                     NaN  Walk in or apply by phone or mail


                                          audience  \
     19                                        NaN
     20                                        NaN
     21  Profit and nonprofit businesses, the public, m…
     22  Second service and nonprofit businesses, the p…


                                       description eligibility  \
     19            no unrequired fields for this service          NaN
     20                            just a test service          NaN
     21  [NOTE THIS IS NOT A REAL SERVICE--THIS IS FOR …         None
     22  [NOTE THIS IS NOT A REAL ORGANIZATION--THIS IS…         None


                    email  … \
     19               NaN  …
     20               NaN  …
     21  passports@example.org  …
     22               NaN  …


                              interpretation_services  \
     19                                           NaN
     20                                           NaN
     21  We offer 3-way interpretation services over th…
     22                                           NaN


                              keywords languages  \
     19                            NaN       NaN
     20                            NaN       NaN
     21               Salud, Medicina   Spanish
     22  Ruby on Rails/Postgres/Redis, testing, wic       NaN


                             name                    required_documents  \
     19       Service with blank fields                              NaN
     20  Service for Admin Test Location                              NaN
     21               Passport Photos  Government-issued picture identification
     22            Example Service Name                              NaN
```

```
               service_areas     status            wait_time  \
19                          NaN   defunct                NaN
20            San Mateo County   inactive               NaN
21  Alameda County, San Mateo County   active   No wait to 2 weeks.
22  San Mateo County, Alameda County   active   No wait to 2 weeks

                website                          taxonomy_ids
19                  NaN                                   NaN
20                  NaN                                   NaN
21  http://www.example.com  105, 108, 108-05, 108-05-01, 111, 111-05
22  http://www.example.com                                NaN

[4 rows x 22 columns]
```

[14]: `df.columns`

[14]:
```
Index(['id', 'location_id', 'program_id', 'accepted_payments',
       'alternate_name', 'application_process', 'audience', 'description',
       'eligibility', 'email', 'fees', 'funding_sources',
       'interpretation_services', 'keywords', 'languages', 'name',
       'required_documents', 'service_areas', 'status', 'wait_time', 'website',
       'taxonomy_ids'],
      dtype='object')
```

[15]: `pk=df[['id','program_id']]`

[16]: `pk.head(6)`

[16]:
```
   id  program_id
0   1          NaN
1   2          NaN
2   3          NaN
3   4          NaN
4   5          NaN
5   6          NaN
```

[17]:
```python
import pandas as pd

data = {'Name': ['John', 'Jane', 'Jim', 'Joan'],

        'Age': [25, 30, 35, 40],

        'Occupation': ['Engineer', 'Doctor', 'Teacher', 'Lawyer']}

df = pd.DataFrame(data)
```

```python
print(df.loc[0])
```

```
Name          John
Age             25
Occupation  Engineer
Name: 0, dtype: object
```

[24]:
```python
df.sort_values(by='Age')
```

[24]:
```
   Name  Age Occupation
0  John   25   Engineer
1  Jane   30     Doctor
2   Jim   35    Teacher
3  Joan   40     Lawyer
```

[21]:
```python
df.describe()
```

[21]:
```
             Age
count   4.000000
mean   32.500000
std     6.454972
min    25.000000
25%    28.750000
50%    32.500000
75%    36.250000
max    40.000000
```

[ ]: