```
Python 3.8.4 (tags/v3.8.4:dfa645a, Jul 13 2020, 16:30:28) [MSC v.1926 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.

>>> import pandas as pd
>>> df=pd.read_csv('C:/Users/ppp/Desktop/data.csv')
>>> df.dtypes
Age               int64
BMI             float64
Glucose           int64
Insulin         float64
HOMA            float64
Leptin          float64
Adiponectin     float64
Resistin        float64
MCP.1           float64
Classification    int64
dtype: object
>>> df.describe()
              Age         BMI     Glucose     Insulin  ...  Adiponectin    Resistin       MCP.1
Classification
count  116.000000  116.000000  116.000000  116.000000  ...   116.000000  116.000000
116.000000      116.000000
mean    57.301724   27.582111   97.793103   10.012086  ...    10.180874   14.725966
534.647000        1.551724
std     16.112766    5.020136   22.525162   10.067768  ...     6.843341   12.390646   345.912663
0.499475
min     24.000000   18.370000   60.000000    2.432000  ...     1.656020    3.210000    45.843000
1.000000
25%     45.000000   22.973205   85.750000    4.359250  ...     5.474283    6.881763
269.978250        1.000000
50%     56.000000   27.662416   92.000000    5.924500  ...     8.352692   10.827740
471.322500        2.000000
75%     71.000000   31.241442  102.000000   11.189250  ...    11.815970   17.755207
700.085000        2.000000
max     89.000000   38.578759  201.000000   58.460000  ...    38.040000   82.100000
1698.440000        2.000000

[8 rows x 10 columns]

>>> df.groupby(by=['Age']).size()
Age
24    1
25    1
28    1
```

29	2
32	1
34	3
35	2
36	2
38	2
40	2
41	1
42	2
43	3
44	4
45	7
46	3
47	1
48	4
49	5
50	1
51	4
52	1
53	1
54	3
55	1
57	1
58	1
59	2
60	2
61	1
62	2
64	2
65	3
66	5
67	1
68	3
69	5
71	3
72	3
73	2
74	1
75	4
76	4
77	2
78	1
81	1
82	2

```
83    1
85    2
86    3
89    1
dtype: int64
>>> df.isna().sum()
Age               0
BMI               0
Glucose           0
Insulin           0
HOMA              0
Leptin            0
Adiponectin       0
Resistin          0
MCP.1             0
Classification    0
dtype: int64
>>> df.isnull()
       Age    BMI  ...  MCP.1  Classification
0    False  False  ...  False           False
1    False  False  ...  False           False
2    False  False  ...  False           False
3    False  False  ...  False           False
4    False  False  ...  False           False
..     ...    ...  ...    ...             ...
111  False  False  ...  False           False
112  False  False  ...  False           False
113  False  False  ...  False           False
114  False  False  ...  False           False
115  False  False  ...  False           False

[116 rows x 10 columns]
>>> type("Age")
<class 'str'>
>>> type("BMI")
<class 'str'>

>>> df.Age.astype(float)
0      48.0
1      83.0
2      82.0
3      68.0
4      86.0
       ...
```

```
111    45.0
112    62.0
113    65.0
114    72.0
115    86.0
Name: Age, Length: 116, dtype: float64
>>> df.Age=df.Age.astype(float)
>>> df.describe()
             Age        BMI     Glucose     Insulin       HOMA      Leptin  Adiponectin    Resistin
MCP.1  Classification
count  116.000000  116.000000  116.000000  116.000000  116.000000  116.000000
116.000000  116.000000   116.000000      116.000000
mean    57.301724   27.582111   97.793103   10.012086    2.694988   26.615080    10.180874
14.725966   534.647000        1.551724
std     16.112766    5.020136   22.525162   10.067768    3.642043   19.183294     6.843341
12.390646   345.912663        0.499475
min     24.000000   18.370000   60.000000    2.432000    0.467409    4.311000     1.656020
3.210000    45.843000        1.000000
25%     45.000000   22.973205   85.750000    4.359250    0.917966   12.313675     5.474283
6.881763   269.978250        1.000000
50%     56.000000   27.662416   92.000000    5.924500    1.380939   20.271000     8.352692
10.827740   471.322500        2.000000
75%     71.000000   31.241442  102.000000   11.189250    2.857787   37.378300    11.815970
17.755207   700.085000        2.000000
max     89.000000   38.578759  201.000000   58.460000   25.050342   90.280000    38.040000
82.100000  1698.440000        2.000000

>>> df.dtypes
Age               float64
BMI               float64
Glucose             int64
Insulin           float64
HOMA              float64
Leptin            float64
Adiponectin       float64
Resistin          float64
MCP.1             float64
Classification      int64
dtype: object

>>> df.sort_values('Age')
    Age       BMI  Glucose  Insulin  ...  Adiponectin  Resistin     MCP.1  Classification
13   24  18.670000       88    6.107  ...    36.060000   6.85000   632.220               1
12   25  22.860000       82    4.090  ...    23.670000   5.14000   313.730               1
```

```
32    28  35.855815      87    8.576  ...    4.794200  21.44366   358.624             1
22    29  32.270788      84    5.810  ...    6.209635  24.60330   904.981             1
11    29  23.010000      82    5.663  ...   26.720000   4.58000   174.800             1
..   ...        ...     ...      ...  ...          ...       ...       ...           ...
87    85  27.688778     196   51.814  ...    7.901685  55.21530  1078.359             2
4     86  21.111111      92    3.549  ...    4.819240  10.57635   773.920             1
78    86  26.666667     201   41.611  ...    5.357135  24.37010  1698.440             2
115   86  27.180000     138   19.910  ...   14.110000   4.35000    90.090             2
6     89  22.700000      77    4.690  ...    5.589865  12.93610  1256.083             1

[116 rows x 10 columns]
>>> df.sort_values('Age',ascending=False)
     Age        BMI  Glucose  Insulin  ...  Adiponectin  Resistin     MCP.1  Classification
6     89  22.700000       77    4.690  ...     5.589865  12.93610  1256.083               1
115   86  27.180000      138   19.910  ...    14.110000   4.35000    90.090               2
78    86  26.666667      201   41.611  ...     5.357135  24.37010  1698.440               2
4     86  21.111111       92    3.549  ...     4.819240  10.57635   773.920               1
49    85  26.600000       96    4.462  ...     7.931700   9.61350   232.006               1
..   ...        ...      ...      ...  ...          ...       ...       ...             ...
22    29  32.270788       84    5.810  ...     6.209635  24.60330   904.981               1
11    29  23.010000       82    5.663  ...    26.720000   4.58000   174.800               1
32    28  35.855815       87    8.576  ...     4.794200  21.44366   358.624               1
12    25  22.860000       82    4.090  ...    23.670000   5.14000   313.730               1
13    24  18.670000       88    6.107  ...    36.060000   6.85000   632.220               1

[116 rows x 10 columns]
>>> df.rename(columns={'Age':'Year Old'})
     Year Old        BMI  Glucose  Insulin  ...  Adiponectin  Resistin    MCP.1  Classification
0          48  23.500000       70    2.707  ...     9.702400   7.99585  417.114               1
1          83  20.690495       92    3.115  ...     5.429285   4.06405  468.786               1
2          82  23.124670       91    4.498  ...    22.432040   9.27715  554.697               1
3          68  21.367521       77    3.226  ...     7.169560  12.76600  928.220               1
4          86  21.111111       92    3.549  ...     4.819240  10.57635  773.920               1
..        ...        ...      ...      ...  ...          ...       ...      ...             ...
111        45  26.850000       92    3.330  ...    12.100000  10.96000  268.230               2
112        62  26.840000      100    4.530  ...    21.420000   7.32000  330.160               2
113        65  32.050000       97    5.730  ...    22.540000  10.33000  314.050               2
114        72  25.590000       82    2.820  ...    33.750000   3.27000  392.460               2
115        86  27.180000      138   19.910  ...    14.110000   4.35000   90.090               2

[116 rows x 10 columns]
>>> df.sort_index()
     Age        BMI  Glucose  Insulin  ...  Adiponectin  Resistin    MCP.1  Classification
0     48  23.500000       70    2.707  ...     9.702400   7.99585  417.114               1
```

```
1     83  20.690495      92    3.115  ...     5.429285   4.06405  468.786              1
2     82  23.124670      91    4.498  ...    22.432040   9.27715  554.697              1
3     68  21.367521      77    3.226  ...     7.169560  12.76600  928.220              1
4     86  21.111111      92    3.549  ...     4.819240  10.57635  773.920              1
..   ...        ...     ...      ...  ...          ...       ...      ...            ...
111   45  26.850000      92    3.330  ...    12.100000  10.96000  268.230              2
112   62  26.840000     100    4.530  ...    21.420000   7.32000  330.160              2
113   65  32.050000      97    5.730  ...    22.540000  10.33000  314.050              2
114   72  25.590000      82    2.820  ...    33.750000   3.27000  392.460              2
115   86  27.180000     138   19.910  ...    14.110000   4.35000   90.090              2

[116 rows x 10 columns]
>>> df.reset_index()
     index  Age        BMI  Glucose  ...  Adiponectin  Resistin   MCP.1  Classification
0        0   48  23.500000       70  ...     9.702400   7.99585  417.114               1
1        1   83  20.690495       92  ...     5.429285   4.06405  468.786               1
2        2   82  23.124670       91  ...    22.432040   9.27715  554.697               1
3        3   68  21.367521       77  ...     7.169560  12.76600  928.220               1
4        4   86  21.111111       92  ...     4.819240  10.57635  773.920               1
..     ...  ...        ...      ...  ...          ...       ...      ...             ...
111    111   45  26.850000       92  ...    12.100000  10.96000  268.230               2
112    112   62  26.840000      100  ...    21.420000   7.32000  330.160               2
113    113   65  32.050000       97  ...    22.540000  10.33000  314.050               2
114    114   72  25.590000       82  ...    33.750000   3.27000  392.460               2
115    115   86  27.180000      138  ...    14.110000   4.35000   90.090               2

[116 rows x 11 columns]
>>> df.drop(columns=['Age'])
           BMI  Glucose  Insulin      HOMA  ...  Adiponectin  Resistin   MCP.1  Classification
0    23.500000       70    2.707  0.467409  ...     9.702400   7.99585  417.114               1
1    20.690495       92    3.115  0.706897  ...     5.429285   4.06405  468.786               1
2    23.124670       91    4.498  1.009651  ...    22.432040   9.27715  554.697               1
3    21.367521       77    3.226  0.612725  ...     7.169560  12.76600  928.220               1
4    21.111111       92    3.549  0.805386  ...     4.819240  10.57635  773.920               1
..         ...      ...      ...       ...  ...          ...       ...      ...             ...
111  26.850000       92    3.330  0.755688  ...    12.100000  10.96000  268.230               2
112  26.840000      100    4.530  1.117400  ...    21.420000   7.32000  330.160               2
113  32.050000       97    5.730  1.370998  ...    22.540000  10.33000  314.050               2
114  25.590000       82    2.820  0.570392  ...    33.750000   3.27000  392.460               2
115  27.180000      138   19.910  6.777364  ...    14.110000   4.35000   90.090               2

[116 rows x 9 columns]
>>> pd.melt(df)
           variable  value
```

```
0             Age   48.0
1             Age   83.0
2             Age   82.0
3             Age   68.0
4             Age   86.0
...           ...    ...
1155  Classification    2.0
1156  Classification    2.0
1157  Classification    2.0
1158  Classification    2.0
1159  Classification    2.0

[1160 rows x 2 columns]
>>> df.drop_duplicates()
    Age       BMI  Glucose  Insulin  ...  Adiponectin  Resistin   MCP.1  Classification
0    48  23.500000       70    2.707  ...     9.702400   7.99585  417.114               1
1    83  20.690495       92    3.115  ...     5.429285   4.06405  468.786               1
2    82  23.124670       91    4.498  ...    22.432040   9.27715  554.697               1
3    68  21.367521       77    3.226  ...     7.169560  12.76600  928.220               1
4    86  21.111111       92    3.549  ...     4.819240  10.57635  773.920               1
..  ...        ...      ...      ...  ...          ...       ...      ...             ...
111   45  26.850000       92    3.330  ...    12.100000  10.96000  268.230               2
112   62  26.840000      100    4.530  ...    21.420000   7.32000  330.160               2
113   65  32.050000       97    5.730  ...    22.540000  10.33000  314.050               2
114   72  25.590000       82    2.820  ...    33.750000   3.27000  392.460               2
115   86  27.180000      138   19.910  ...    14.110000   4.35000   90.090               2

[116 rows x 10 columns]
>>> df.head(5)
   Age       BMI  Glucose  Insulin  ...  Adiponectin  Resistin   MCP.1  Classification
0   48  23.500000       70    2.707  ...     9.702400   7.99585  417.114               1
1   83  20.690495       92    3.115  ...     5.429285   4.06405  468.786               1
2   82  23.124670       91    4.498  ...    22.432040   9.27715  554.697               1
3   68  21.367521       77    3.226  ...     7.169560  12.76600  928.220               1
4   86  21.111111       92    3.549  ...     4.819240  10.57635  773.920               1

[5 rows x 10 columns]
>>> df.tail(5)
    Age    BMI  Glucose  Insulin  ...  Adiponectin  Resistin   MCP.1  Classification
111   45  26.85       92     3.33  ...        12.10     10.96  268.23               2
112   62  26.84      100     4.53  ...        21.42      7.32  330.16               2
113   65  32.05       97     5.73  ...        22.54     10.33  314.05               2
114   72  25.59       82     2.82  ...        33.75      3.27  392.46               2
115   86  27.18      138    19.91  ...        14.11      4.35   90.09               2
```

```
[5 rows x 10 columns]

Age               6647.000000
BMI               3199.524856
Glucose          11344.000000
Insulin           1161.402000
HOMA               312.618557
Leptin            3087.349300
Adiponectin       1180.981380
Resistin          1708.212040
MCP.1            62019.052000
Classification     180.000000
dtype: float64

>>> df.count()
Age               116
BMI               116
Glucose           116
Insulin           116
HOMA              116
Leptin            116
Adiponectin       116
Resistin          116
MCP.1             116
Classification    116
dtype: int64
>>> df.median()
Age                56.000000
BMI                27.662416
Glucose            92.000000
Insulin             5.924500
HOMA                1.380939
Leptin             20.271000
Adiponectin         8.352692
Resistin           10.827740
MCP.1             471.322500
Classification      2.000000
dtype: float64
>>> df.quantile()
Age                56.000000
BMI                27.662416
Glucose            92.000000
Insulin             5.924500
```

```
HOMA              1.380939
Leptin           20.271000
Adiponectin        8.352692
Resistin          10.827740
MCP.1            471.322500
Classification     2.000000
Name: 0.5, dtype: float64

>>> df.min()
Age              24.000000
BMI              18.370000
Glucose           60.000000
Insulin           2.432000
HOMA              0.467409
Leptin            4.311000
Adiponectin        1.656020
Resistin          3.210000
MCP.1            45.843000
Classification     1.000000
dtype: float64
>>> df.max()
Age                89.000000
BMI                38.578759
Glucose            201.000000
Insulin            58.460000
HOMA               25.050342
Leptin             90.280000
Adiponectin         38.040000
Resistin            82.100000
MCP.1            1698.440000
Classification      2.000000
dtype: float64
>>> df.mean()
Age               57.301724
BMI               27.582111
Glucose            97.793103
Insulin           10.012086
HOMA               2.694988
Leptin            26.615080
Adiponectin        10.180874
Resistin          14.725966
MCP.1            534.647000
Classification     1.551724
dtype: float64
```

```
>>> df.std()
Age               16.112766
BMI                5.020136
Glucose           22.525162
Insulin           10.067768
HOMA               3.642043
Leptin            19.183294
Adiponectin        6.843341
Resistin          12.390646
MCP.1            345.912663
Classification     0.499475
dtype: float64

>>> pd.get_dummies(df['Age'])
    24  25  28  29  32  34  35  36  38  40  41  42  43  44  45  46  47  48  49  50  ...  64  65  66  67
68  69  71  72  73  74  75  76  77  78  81  82  83  85  86  89
0    0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0 ...  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0
1    0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  1  0  0  0
2    0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  1  0  0  0  0
3    0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  0  0  0  1  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0
4    0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  1  0
..   .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. ... .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. ..
.. .. .. ..
111  0  0  0  0  0  0  0  0  0  0  0  0  0  0  1  0  0  0  0  0 ...  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0
112  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0
113  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  1  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0
114  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  0  0  0  0  0  0  1
0  0  0  0  0  0  0  0  0  0  0  0
115  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0 ...  0  0  0  0  0  0  0  0
0  0  0  0  0  0  0  0  0  0  1  0

[116 rows x 51 columns]
>>> pd.get_dummies(df['Glucose'])
    60  70  74  75  76  77  78  79  ...  131  134  138  139  152  196  199  201
0     0   1   0   0   0   0   0   0 ...    0    0    0    0    0    0    0    0
1     0   0   0   0   0   0   0   0 ...    0    0    0    0    0    0    0    0
```

```
2     0   0   0   0   0   0   0   0 ...   0   0   0   0   0   0   0   0
3     0   0   0   0   0   1   0   0 ...   0   0   0   0   0   0   0   0
4     0   0   0   0   0   0   0   0 ...   0   0   0   0   0   0   0   0
..  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...
111    0   0   0   0   0   0   0   0 ...   0   0   0   0   0   0   0   0
112    0   0   0   0   0   0   0   0 ...   0   0   0   0   0   0   0   0
113    0   0   0   0   0   0   0   0 ...   0   0   0   0   0   0   0   0
114    0   0   0   0   0   0   0   0 ...   0   0   0   0   0   0   0   0
115    0   0   0   0   0   0   0   0 ...   0   0   1   0   0   0   0   0

[116 rows x 50 columns]

>>> df.iloc[2:50]
   Age       BMI  Glucose  Insulin      HOMA   Leptin  Adiponectin  Resistin    MCP.1
Classification
2    82  23.124670       91    4.498  1.009651  17.9393    22.432040   9.27715   554.697
1
3    68  21.367521       77    3.226  0.612725   9.8827     7.169560  12.76600   928.220
1
4    86  21.111111       92    3.549  0.805386   6.6994     4.819240  10.57635   773.920               1
5    49  22.854458       92    3.226  0.732087   6.8317    13.679750  10.31760   530.410
1
6    89  22.700000       77    4.690  0.890787   6.9640     5.589865  12.93610  1256.083
1
7    76  23.800000      118    6.470  1.883201   4.3110    13.251320   5.10420   280.694
1
8    73  22.000000       97    3.350  0.801543   4.4700    10.358725   6.28445   136.855
1
9    75  23.000000       83    4.952  1.013839  17.1270    11.578990   7.09130   318.302
1
10   34  21.470000       78    3.469  0.667436  14.5700    13.110000   6.92000   354.600
1
11   29  23.010000       82    5.663  1.145436  35.5900    26.720000   4.58000   174.800
1
12   25  22.860000       82    4.090  0.827271  20.4500    23.670000   5.14000   313.730
1
13   24  18.670000       88    6.107  1.330000   8.8800    36.060000   6.85000   632.220
1
14   38  23.340000       75    5.782  1.069670  15.2600    17.950000   9.35000   165.020
1
15   44  20.760000       86    7.553  1.600000  14.0900    20.320000   7.64000    63.610
1
16   47  22.030000       84    2.869  0.590000  26.6500    38.040000   3.32000   191.720
1
```

17	61	32.038959	85	18.077	3.790144	30.7729	7.780255	13.68392	444.395	1
18	64	34.529723	95	4.427	1.037394	21.2117	5.462620	6.70188	252.449	1
19	32	36.512637	87	14.026	3.009980	49.3727	5.100000	17.10223	588.460	1
20	36	28.576676	86	4.345	0.921719	15.1248	8.600000	9.15390	534.224	1
21	34	31.975015	87	4.530	0.972138	28.7502	7.642760	5.62592	572.783	1
22	29	32.270788	84	5.810	1.203832	45.6196	6.209635	24.60330	904.981	1
23	35	30.276817	84	4.376	0.906707	39.2134	9.048185	16.43706	733.797	1
24	54	30.483158	90	5.537	1.229214	12.3310	9.731380	10.19299	1227.910	1
25	45	37.035608	83	6.760	1.383997	39.9802	4.617125	8.70448	586.173	1
26	50	38.578759	106	6.703	1.752611	46.6401	4.667645	11.78388	887.160	1
27	66	31.446541	90	9.245	2.052390	45.9624	10.355260	23.38190	1102.110	1
28	35	35.250761	90	6.817	1.513374	50.6094	6.966895	22.03703	667.928	1
29	36	34.174890	80	6.590	1.300427	10.2809	5.065915	15.72187	581.313	1
30	66	36.212279	101	15.533	3.869788	74.7069	7.539550	22.32024	864.968	1
31	53	36.790166	101	10.175	2.534932	27.1841	20.030000	10.26309	695.754	1
32	28	35.855815	87	8.576	1.840410	68.5102	4.794200	21.44366	358.624	1
33	43	34.422174	89	23.194	5.091856	31.2128	8.300955	6.71026	960.246	1
34	51	27.688778	77	3.855	0.732193	20.0920	3.192090	10.37518	473.859	1
35	67	29.606767	79	5.819	1.133929	21.9033	2.194280	4.20750	585.307	1
36	66	31.238590	82	4.181	0.845677	16.2247	4.267105	3.29175	634.602	1
37	69	35.092702	101	5.646	1.406607	83.4821	6.796985	82.10000	263.499	1
38	60	26.349292	103	5.138	1.305395	24.2998	2.194280	20.25350	378.996	1

```
39   77  35.587929      76    3.881  0.727558  21.7863     8.125550  17.26150   618.272
1
40   76  29.218408      83    5.376  1.100646  28.5620     7.369960   8.04375   698.789
1
41   76  27.200000      94   14.070  3.262364  35.8910     9.346630   8.41560   377.227
1
42   75  27.300000      85    5.197  1.089638  10.3900     9.000805   7.57670   335.393
1
43   69  32.500000      93    5.430  1.245642  15.1450    11.787960  11.78796   270.142
1
44   71  30.300000     102    8.340  2.098344  56.5020     8.130000   4.29890   200.976
1
45   66  27.700000      90    6.042  1.341324  24.8460     7.652055   6.70520   225.880
1
46   75  25.700000      94    8.079  1.873251  65.9260     3.741220   4.49685   206.802
1
47   78  25.300000      60    3.508  0.519184   6.6330    10.567295   4.66380   209.749
1
48   69  29.400000      89   10.704  2.349885  45.2720     8.286300   4.53000   215.769
1
49   85  26.600000      96    4.462  1.056602   7.8500     7.931700   9.61350   232.006
1
>>>
>>> print(pd.get_dummies(df['Glucose']))
     60  70  74  75  76  77  78  79  80  82  83  84  85  86  \
0     0   1   0   0   0   0   0   0   0   0   0   0   0   0
1     0   0   0   0   0   0   0   0   0   0   0   0   0   0
2     0   0   0   0   0   0   0   0   0   0   0   0   0   0
3     0   0   0   0   0   1   0   0   0   0   0   0   0   0
4     0   0   0   0   0   0   0   0   0   0   0   0   0   0
..   ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..
111   0   0   0   0   0   0   0   0   0   0   0   0   0   0
112   0   0   0   0   0   0   0   0   0   0   0   0   0   0
113   0   0   0   0   0   0   0   0   0   0   0   0   0   0
114   0   0   0   0   0   0   0   0   0   1   0   0   0   0
115   0   0   0   0   0   0   0   0   0   0   0   0   0   0

     87  88  89  90  91  92  93  94  95  96  97  98  99  100  \
0     0   0   0   0   0   0   0   0   0   0   0   0   0    0
1     0   0   0   0   0   1   0   0   0   0   0   0   0    0
2     0   0   0   0   1   0   0   0   0   0   0   0   0    0
3     0   0   0   0   0   0   0   0   0   0   0   0   0    0
4     0   0   0   0   0   1   0   0   0   0   0   0   0    0
..   ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ...
```

```
111    0    0    0    0    0    1    0    0    0    0    0    0    0    0
112    0    0    0    0    0    0    0    0    0    0    0    0    0    1
113    0    0    0    0    0    0    0    0    0    0    1    0    0    0
114    0    0    0    0    0    0    0    0    0    0    0    0    0    0
115    0    0    0    0    0    0    0    0    0    0    0    0    0    0

     101  102  103  104  105  106  108  110  112  114  116  118  119  128  \
0      0    0    0    0    0    0    0    0    0    0    0    0    0    0
1      0    0    0    0    0    0    0    0    0    0    0    0    0    0
2      0    0    0    0    0    0    0    0    0    0    0    0    0    0
3      0    0    0    0    0    0    0    0    0    0    0    0    0    0
4      0    0    0    0    0    0    0    0    0    0    0    0    0    0
..   ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...
111    0    0    0    0    0    0    0    0    0    0    0    0    0    0
112    0    0    0    0    0    0    0    0    0    0    0    0    0    0
113    0    0    0    0    0    0    0    0    0    0    0    0    0    0
114    0    0    0    0    0    0    0    0    0    0    0    0    0    0
115    0    0    0    0    0    0    0    0    0    0    0    0    0    0

     131  134  138  139  152  196  199  201
0      0    0    0    0    0    0    0    0
1      0    0    0    0    0    0    0    0
2      0    0    0    0    0    0    0    0
3      0    0    0    0    0    0    0    0
4      0    0    0    0    0    0    0    0
..   ...  ...  ...  ...  ...  ...  ...  ...
111    0    0    0    0    0    0    0    0
112    0    0    0    0    0    0    0    0
113    0    0    0    0    0    0    0    0
114    0    0    0    0    0    0    0    0
115    0    0    1    0    0    0    0    0

[116 rows x 50 columns]
>>>
```