Knowledge Discovery & Data Mining Lab-03

Name: Kunal Sanjay Patil

PRN: 20190802025

In [1]:

import pandas as pd

In [2]:

```
with open('iris.data') as f:
    data = f.read()
    data = data.split('\n')
print(data)
```

['5.1,3.5,1.4,0.2,Iris-setosa', '4.9,3.0,1.4,0.2,Iris-setosa', '4.7,3.2,1.3, 0.2, Iris-setosa', '4.6,3.1,1.5,0.2, Iris-setosa', '5.0,3.6,1.4,0.2, Iris-setos a', '5.4,3.9,1.7,0.4,Iris-setosa', '4.6,3.4,1.4,0.3,Iris-setosa', '5.0,3.4, 1.5,0.2, Iris-setosa', '4.4,2.9,1.4,0.2, Iris-setosa', '4.9,3.1,1.5,0.1, Iris-s etosa', '5.4,3.7,1.5,0.2,Iris-setosa', '4.8,3.4,1.6,0.2,Iris-setosa', '4.8, 3.0,1.4,0.1,Iris-setosa', '4.3,3.0,1.1,0.1,Iris-setosa', '5.8,4.0,1.2,0.2,Ir is-setosa', '5.7,4.4,1.5,0.4,Iris-setosa', '5.4,3.9,1.3,0.4,Iris-setosa', '5.1,3.5,1.4,0.3,Iris-setosa', '5.7,3.8,1.7,0.3,Iris-setosa', '5.1,3.8,1.5, 0.3, Iris-setosa', '5.4, 3.4, 1.7, 0.2, Iris-setosa', '5.1, 3.7, 1.5, 0.4, Iris-setos a', '4.6,3.6,1.0,0.2,Iris-setosa', '5.1,3.3,1.7,0.5,Iris-setosa', '4.8,3.4, 1.9,0.2, Iris-setosa', '5.0,3.0,1.6,0.2, Iris-setosa', '5.0,3.4,1.6,0.4, Iris-s etosa', '5.2,3.5,1.5,0.2,Iris-setosa', '5.2,3.4,1.4,0.2,Iris-setosa', '4.7, 3.2,1.6,0.2,Iris-setosa', '4.8,3.1,1.6,0.2,Iris-setosa', '5.4,3.4,1.5,0.4,Ir is-setosa', '5.2,4.1,1.5,0.1,Iris-setosa', '5.5,4.2,1.4,0.2,Iris-setosa', '4.9,3.1,1.5,0.1,Iris-setosa', '5.0,3.2,1.2,0.2,Iris-setosa', '5.5,3.5,1.3, 0.2, Iris-setosa', '4.9,3.1,1.5,0.1, Iris-setosa', '4.4,3.0,1.3,0.2, Iris-setos a', '5.1,3.4,1.5,0.2,Iris-setosa', '5.0,3.5,1.3,0.3,Iris-setosa', '4.5,2.3, 1.3,0.3, Iris-setosa', '4.4,3.2,1.3,0.2, Iris-setosa', '5.0,3.5,1.6,0.6, Iris-s etosa', '5.1,3.8,1.9,0.4,Iris-setosa', '4.8,3.0,1.4,0.3,Iris-setosa', '5.1, 3.8,1.6,0.2,Iris-setosa', '4.6,3.2,1.4,0.2,Iris-setosa', '5.3,3.7,1.5,0.2,Ir is-setosa', '5.0,3.3,1.4,0.2,Iris-setosa', '7.0,3.2,4.7,1.4,Iris-versicolo r', '6.4,3.2,4.5,1.5,Iris-versicolor', '6.9,3.1,4.9,1.5,Iris-versicolor', '5.5,2.3,4.0,1.3, Iris-versicolor', '6.5,2.8,4.6,1.5, Iris-versicolor', '5.7, 2.8,4.5,1.3,Iris-versicolor', '6.3,3.3,4.7,1.6,Iris-versicolor', '4.9,2.4,3. 3,1.0, Iris-versicolor', '6.6,2.9,4.6,1.3, Iris-versicolor', '5.2,2.7,3.9,1.4, Iris-versicolor', '5.0,2.0,3.5,1.0,Iris-versicolor', '5.9,3.0,4.2,1.5,Iris-v ersicolor', '6.0,2.2,4.0,1.0,Iris-versicolor', '6.1,2.9,4.7,1.4,Iris-versico lor', '5.6,2.9,3.6,1.3, Iris-versicolor', '6.7,3.1,4.4,1.4, Iris-versicolor', '5.6,3.0,4.5,1.5,Iris-versicolor', '5.8,2.7,4.1,1.0,Iris-versicolor', '6.2, 2.2,4.5,1.5,Iris-versicolor', '5.6,2.5,3.9,1.1,Iris-versicolor', '5.9,3.2,4. 8,1.8,Iris-versicolor', '6.1,2.8,4.0,1.3,Iris-versicolor', '6.3,2.5,4.9,1.5, Iris-versicolor', '6.1,2.8,4.7,1.2, Iris-versicolor', '6.4,2.9,4.3,1.3, Iris-v ersicolor', '6.6,3.0,4.4,1.4,Iris-versicolor', '6.8,2.8,4.8,1.4,Iris-versico lor', '6.7,3.0,5.0,1.7, Iris-versicolor', '6.0,2.9,4.5,1.5, Iris-versicolor', '5.7,2.6,3.5,1.0,Iris-versicolor', '5.5,2.4,3.8,1.1,Iris-versicolor', '5.5, 2.4,3.7,1.0,Iris-versicolor', '5.8,2.7,3.9,1.2,Iris-versicolor', '6.0,2.7,5. 1,1.6,Iris-versicolor', '5.4,3.0,4.5,1.5,Iris-versicolor', '6.0,3.4,4.5,1.6, Iris-versicolor', '6.7,3.1,4.7,1.5,Iris-versicolor', '6.3,2.3,4.4,1.3,Iris-v ersicolor', '5.6,3.0,4.1,1.3,Iris-versicolor', '5.5,2.5,4.0,1.3,Iris-versico lor', '5.5,2.6,4.4,1.2, Iris-versicolor', '6.1,3.0,4.6,1.4, Iris-versicolor', '5.8,2.6,4.0,1.2,Iris-versicolor', '5.0,2.3,3.3,1.0,Iris-versicolor', '5.6, 2.7,4.2,1.3,Iris-versicolor', '5.7,3.0,4.2,1.2,Iris-versicolor', '5.7,2.9,4. 2,1.3, Iris-versicolor', '6.2,2.9,4.3,1.3, Iris-versicolor', '5.1,2.5,3.0,1.1, Iris-versicolor', '5.7,2.8,4.1,1.3,Iris-versicolor', '6.3,3.3,6.0,2.5,Iris-v irginica', '5.8,2.7,5.1,1.9,Iris-virginica', '7.1,3.0,5.9,2.1,Iris-virginic a', '6.3,2.9,5.6,1.8,Iris-virginica', '6.5,3.0,5.8,2.2,Iris-virginica', '7. 6,3.0,6.6,2.1,Iris-virginica', '4.9,2.5,4.5,1.7,Iris-virginica', '7.3,2.9,6. 3,1.8, Iris-virginica', '6.7,2.5,5.8,1.8, Iris-virginica', '7.2,3.6,6.1,2.5, Ir is-virginica', '6.5,3.2,5.1,2.0,Iris-virginica', '6.4,2.7,5.3,1.9,Iris-virgi nica', '6.8,3.0,5.5,2.1,Iris-virginica', '5.7,2.5,5.0,2.0,Iris-virginica', '5.8,2.8,5.1,2.4,Iris-virginica', '6.4,3.2,5.3,2.3,Iris-virginica', '6.5,3. 0,5.5,1.8, Iris-virginica', '7.7,3.8,6.7,2.2, Iris-virginica', '7.7,2.6,6.9,2. 3, Iris-virginica', '6.0,2.2,5.0,1.5, Iris-virginica', '6.9,3.2,5.7,2.3, Iris-v irginica', '5.6,2.8,4.9,2.0,Iris-virginica', '7.7,2.8,6.7,2.0,Iris-virginic

a', '6.3,2.7,4.9,1.8,Iris-virginica', '6.7,3.3,5.7,2.1,Iris-virginica', '7.
2,3.2,6.0,1.8,Iris-virginica', '6.2,2.8,4.8,1.8,Iris-virginica', '6.1,3.0,4.
9,1.8,Iris-virginica', '6.4,2.8,5.6,2.1,Iris-virginica', '7.2,3.0,5.8,1.6,Ir
is-virginica', '7.4,2.8,6.1,1.9,Iris-virginica', '7.9,3.8,6.4,2.0,Iris-virginica', '6.4,2.8,5.6,2.2,Iris-virginica', '6.3,2.8,5.1,1.5,Iris-virginica',
'6.1,2.6,5.6,1.4,Iris-virginica', '7.7,3.0,6.1,2.3,Iris-virginica', '6.3,3.
4,5.6,2.4,Iris-virginica', '6.4,3.1,5.5,1.8,Iris-virginica', '6.0,3.0,4.8,1.
8,Iris-virginica', '6.9,3.1,5.4,2.1,Iris-virginica', '6.7,3.1,5.6,2.4,Iris-virginica', '6.8,3.2,5.9,2.3,Iris-virginica', '5.8,2.7,5.1,1.9,Iris-virginica', '6.8,3.2,5.9,2.3,Iris-virginica', '6.7,3.3,5.7,2.5,Iris-virginica', '6.
7,3.0,5.2,2.3,Iris-virginica', '6.3,2.5,5.0,1.9,Iris-virginica', '6.5,3.0,5.
2,2.0,Iris-virginica', '6.2,3.4,5.4,2.3,Iris-virginica', '5.9,3.0,5.1,1.8,Ir
is-virginica', '', '']

In [3]:

```
new_data = []
for line in data:
    new_data.append(line.split(','))
```

In [4]:

```
print(new_data)
```

```
[['5.1', '3.5', '1.4', '0.2', 'Iris-setosa'], ['4.9', '3.0', '1.4', '0.2',
'Iris-setosa'], ['4.7', '3.2', '1.3', '0.2', 'Iris-setosa'], ['4.6', '3.1', '1.5', '0.2', 'Iris-setosa'], ['5.0', '3.6', '1.4', '0.2', 'Iris-setosa'],
['5.4', '3.9', '1.7', '0.4', 'Iris-setosa'], ['4.6', '3.4', '1.4', '0.3', ris-setosa'], ['5.0', '3.4', '1.5', '0.2', 'Iris-setosa'], ['4.4', '2.9',
'1.4', '0.2', 'Iris-setosa'], ['4.9', '3.1', '1.5', '0.1', 'Iris-setosa'], ['5.4', '3.7', '1.5', '0.2', 'Iris-setosa'], ['4.8', '3.4', '1.6', '0.2', 'Iris-setosa'], ['4.8', '3.0', '1.4', '0.1', 'Iris-setosa'], ['4.3', '3.0',
'1.1', '0.1', 'Iris-setosa'], ['5.8', '4.0', '1.2', '0.2', 'Iris-setosa'], ['5.7', '4.4', '1.5', '0.4', 'Iris-setosa'], ['5.4', '3.9', '1.3', '0.4', 'Iris-setosa'], ['5.1', '3.5', '1.4', '0.3', 'Iris-setosa'], ['5.7', '3.8',
'1.7', '0.3', 'Iris-setosa'], ['5.1', '3.8', '1.5', '0.3', 'Iris-setosa'], ['5.4', '3.4', '1.7', '0.2', 'Iris-setosa'], ['5.1', '3.7', '1.5', '0.4', 'I ris-setosa'], ['4.6', '3.6', '1.0', '0.2', 'Iris-setosa'], ['5.1', '3.3',
'1.7', '0.5', 'Iris-setosa'], ['4.8', '3.4', '1.9', '0.2', 'Iris-setosa'],
['5.0', '3.0', '1.6', '0.2', 'Iris-setosa'], ['5.0', '3.4', '1.6', '0.4', 'Iris-setosa'], ['5.2', '3.5', '1.5', '0.2', 'Iris-setosa'], ['5.2', '3.4',
'1.4', '0.2', 'Iris-setosa'], ['4.7', '3.2', '1.6', '0.2', 'Iris-setosa'],
['4.8', '3.1', '1.6', '0.2', 'Iris-setosa'], ['5.4', '3.4', '1.5', '0.4', 'Iris-setosa'], ['5.2', '4.1', '1.5', '0.1', 'Iris-setosa'], ['5.5', '4.2',
'1.4', '0.2', 'Iris-setosa'], ['4.9', '3.1', '1.5', '0.1', 'Iris-setosa'], ['5.0', '3.2', '1.2', '0.2', 'Iris-setosa'], ['5.5', '3.5', '1.3', '0.2', 'Iris-setosa'], ['4.9', '3.1', '1.5', '0.1', 'Iris-setosa'], ['4.4', '3.0',
'1.3', '0.2', 'Iris-setosa'], ['5.1', '3.4', '1.5', '0.2', 'Iris-setosa'], ['5.0', '3.5', '1.3', '0.3', 'Iris-setosa'], ['4.5', '2.3', '1.3', '0.3', 'Iris-setosa'], ['4.4', '3.2', '1.3', '0.2', 'Iris-setosa'], ['5.0', '3.5',
'1.6', '0.6', 'Iris-setosa'], ['5.1', '3.8', '1.9', '0.4', 'Iris-setosa'], ['4.8', '3.0', '1.4', '0.3', 'Iris-setosa'], ['5.1', '3.8', '1.6', '0.2', 'Iris-setosa'], ['4.6', '3.2', '1.4', '0.2', 'Iris-setosa'], ['5.3', '3.7',
'1.5', '0.2', 'Iris-setosa'], ['5.0', '3.3', '1.4', '0.2', 'Iris-setosa'],
['7.0', '3.2', '4.7', '1.4', 'Iris-versicolor'], ['6.4', '3.2', '4.5', '1.
5', 'Iris-versicolor'], ['6.9', '3.1', '4.9', '1.5', 'Iris-versicolor'
['5.5', '2.3', '4.0', '1.3', 'Iris-versicolor'], ['6.5', '2.8', '4.6', '1.
5', 'Iris-versicolor'], ['5.7', '2.8', '4.5', '1.3', 'Iris-versicolor'],
['6.3', '3.3', '4.7', '1.6', 'Iris-versicolor'], ['4.9', '2.4', '3.3', '1.0', 'Iris-versicolor'], ['6.6', '2.9', '4.6', '1.3', 'Iris-versicolor'],
['5.2', '2.7', '3.9', '1.4', 'Iris-versicolor'], ['5.0', '2.0', '3.5', '1.
0', 'Iris-versicolor'], ['5.9', '3.0', '4.2', '1.5', 'Iris-versicolor'],
['6.0', '2.2', '4.0', '1.0', 'Iris-versicolor'], ['6.1', '2.9', '4.7', '1.4', 'Iris-versicolor'], ['5.6', '2.9', '3.6', '1.3', 'Iris-versicolor'],
['6.7', '3.1', '4.4', '1.4', 'Iris-versicolor'], ['5.6', '3.0', '4.5', '1.
5', 'Iris-versicolor'], ['5.8', '2.7', '4.1', '1.0', 'Iris-versicolor'],
['6.2', '2.2', '4.5', '1.5', 'Iris-versicolor'], ['5.6', '2.5', '3.9', '1.
1', 'Iris-versicolor'], ['5.9', '3.2', '4.8', '1.8', 'Iris-versicolor'],
['6.1', '2.8', '4.0', '1.3', 'Iris-versicolor'], ['6.3', '2.5', '4.9', '1.
5', 'Iris-versicolor'], ['6.1', '2.8', '4.7', '1.2', 'Iris-versicolor'],
['6.4', '2.9', '4.3', '1.3', 'Iris-versicolor'], ['6.6', '3.0', '4.4', '1.
4', 'Iris-versicolor'], ['6.8', '2.8', '4.8', '1.4', 'Iris-versicolor'],
['6.7', '3.0', '5.0', '1.7', 'Iris-versicolor'], ['6.0', '2.9', '4.5', '1.5', 'Iris-versicolor'], ['5.7', '2.6', '3.5', '1.0', 'Iris-versicolor'],
['5.5', '2.4', '3.8', '1.1', 'Iris-versicolor'], ['5.5', '2.4', '3.7',
0', 'Iris-versicolor'], ['5.8', '2.7', '3.9', '1.2', 'Iris-versicolor'],
['6.0', '2.7', '5.1', '1.6', 'Iris-versicolor'], ['5.4', '3.0', '4.5', '1.
5', 'Iris-versicolor'], ['6.0', '3.4', '4.5', '1.6', 'Iris-versicolor'
['6.7', '3.1', '4.7', '1.5', 'Iris-versicolor'], ['6.3', '2.3', '4.4', '1.
3', 'Iris-versicolor'], ['5.6', '3.0', '4.1', '1.3', 'Iris-versicolor'],
['5.5', '2.5', '4.0', '1.3', 'Iris-versicolor'], ['5.5', '2.6', '4.4', '1.
```

2', 'Iris-versicolor'], ['6.1', '3.0', '4.6', '1.4', 'Iris-versicolor'], ['5.8', '2.6', '4.0', '1.2', 'Iris-versicolor'], ['5.0', '2.3', '3.3', '1. 0', 'Iris-versicolor'], ['5.6', '2.7', '4.2', '1.3', 'Iris-versicolor'], ['5.7', '3.0', '4.2', '1.2', 'Iris-versicolor'], ['5.7', '2.9', '4.2', '1. 3', 'Iris-versicolor'], ['6.2', '2.9', '4.3', '1.3', 'Iris-versicolor'], ['5.1', '2.5', '3.0', '1.1', 'Iris-versicolor'], ['5.7', '2.8', '4.1', '1.3', 'Iris-versicolor'], ['6.3', '3.3', '6.0', '2.5', 'Iris-virginica'], ['5. 8', '2.7', '5.1', '1.9', 'Iris-virginica'], ['7.1', '3.0', '5.9', '2.1', is-virginica'], ['6.3', '2.9', '5.6', '1.8', 'Iris-virginica'], ['6.5', '3. 0', '5.8', '2.2', 'Iris-virginica'], ['7.6', '3.0', '6.6', '2.1' , 'Iris-virg inica'], ['4.9', '2.5', '4.5', '1.7', 'Iris-virginica'], ['7.3', '2.9', '6.3', '1.8', 'Iris-virginica'], ['6.7', '2.5', '5.8', '1.8', 'Iris-virginic a'], ['7.2', '3.6', '6.1', '2.5', 'Iris-virginica'], ['6.5', '3.2', '5.1', '2.0', 'Iris-virginica'], ['6.4', '2.7', '5.3', '1.9', 'Iris-virginica'], ['6.8', '3.0', '5.5', '2.1', 'Iris-virginica'], ['5.7', '2.5', '5.0', '2.0', 'Iris-virginica'], ['5.8', '2.8', '5.1', '2.4', 'Iris-virginica'], ['6.4', '3.2', '5.3', '2.3', 'Iris-virginica'], ['6.5', '3.0', '5.5', '1.8', 'Iris-v irginica'], ['7.7', '3.8', '6.7', '2.2', 'Iris-virginica'], ['7.7', '2.6', '6.9', '2.3', 'Iris-virginica'], ['6.0', '2.2', '5.0', '1.5', 'Iris-virginic a'], ['6.9', '3.2', '5.7', '2.3', 'Iris-virginica'], ['5.6', '2.8', '4.9', '2.0', 'Iris-virginica'], ['7.7', '2.8', '6.7', '2.0', 'Iris-virginica'], ['6.3', '2.7', '4.9', '1.8', 'Iris-virginica'], ['6.7', '3.3', '5.7', '2.1', 'Iris-virginica'], ['7.2', '3.2', '6.0', '1.8', 'Iris-virginica'], ['6.2', '2.8', '4.8', '1.8', 'Iris-virginica'], ['6.1', '3.0', '4.9', '1.8', 'Iris-v irginica'], ['6.4', '2.8', '5.6', '2.1', 'Iris-virginica'], ['7.2', '3.0', '5.8', '1.6', 'Iris-virginica'], ['7.4', '2.8', '6.1', '1.9', 'Iris-virginica'], ['7.9', '3.8', '6.4', '2.0', 'Iris-virginica'], ['6.4', '2.8', '5.6', '2.8', '3.8', '2.2', 'Iris-virginica'], ['6.3', '2.8', '5.1', '1.5', 'Iris-virginica'], ['6.1', '2.6', '5.6', '1.4', 'Iris-virginica'], ['7.7', '3.0', '6.1', '2.3', 'Iris-virginica'], ['6.3', '3.4', '5.6', '2.4', 'Iris-virginica'], ['6.4', '3.1', '5.5', '1.8', 'Iris-virginica'], ['6.0', '3.0', '4.8', '1.8', 'Iris-v irginica'], ['6.9', '3.1', '5.4', '2.1', 'Iris-virginica'], ['6.7', '3.1', '5.6', '2.4', 'Iris-virginica'], ['6.9', '3.1', '5.1', '2.3', 'Iris-virginic a'], ['5.8', '2.7', '5.1', '1.9', 'Iris-virginica'], ['6.8', '3.2', '5.9', '2.3', 'Iris-virginica'], ['6.7', '3.3', '5.7', '2.5', 'Iris-virginica'], ['6.7', '3.0', '5.2', '2.3', 'Iris-virginica'], ['6.3', '2.5', '5.0', '1.9', 'Iris-virginica'], ['6.5', '3.0', '5.2', '2.0', 'Iris-virginica'], ['6.2', '3.4', '5.4', '2.3', 'Iris-virginica'], ['5.9', '3.0', '5.1', '1.8', 'Iris-virginica'] irginica'], [''], ['']]

In [5]:

df = pd.DataFrame(new_data, columns=['sepal length in cm', 'sepal width in cm', 'petal leng

In [6]:

df

Out[6]:

	sepal length in cm	sepal width in cm	petal length in cm	petal width in cm	class
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa
147	6.5	3.0	5.2	2.0	Iris-virginica
148	6.2	3.4	5.4	2.3	Iris-virginica
149	5.9	3.0	5.1	1.8	Iris-virginica
150		None	None	None	None
151		None	None	None	None

152 rows × 5 columns

In [7]:

```
df.to_csv('iris.csv', index=False)
```

In [8]:

```
df.to_excel('iris_excel.xlsx', index=False)
```

In [9]:

```
with open('nursery.data') as i:
    data1 = i.read()
    data1 = data1.split('\n')
print(data1)
```

['usual,proper,complete,1,convenient,convenient,nonprob,recommended,recomm end', 'usual, proper, complete, 1, convenient, convenient, nonprob, priority, prio rity', 'usual, proper, complete, 1, convenient, convenient, nonprob, not_recom, no t_recom', 'usual,proper,complete,1,convenient,convenient,slightly_prob,rec ommended, recommend', 'usual, proper, complete, 1, convenient, convenient, slight ly_prob,priority,priority', 'usual,proper,complete,1,convenient,convenien t,slightly_prob,not_recom,not_recom', 'usual,proper,complete,1,convenient, convenient, problematic, recommended, priority', 'usual, proper, complete, 1, con venient, convenient, problematic, priority, priority', 'usual, proper, complete, 1,convenient,convenient,problematic,not_recom,not_recom', 'usual,proper,co mplete,1,convenient,inconv,nonprob,recommended,very_recom', 'usual,proper, complete,1,convenient,inconv,nonprob,priority,priority', 'usual,proper,com plete,1,convenient,inconv,nonprob,not_recom,not_recom', 'usual,proper,comp lete,1,convenient,inconv,slightly_prob,recommended,very_recom', 'usual,pro per,complete,1,convenient,inconv,slightly_prob,priority,priority', 'usual, proper,complete,1,convenient,inconv,slightly_prob,not_recom,not_recom', 'u sual,proper,complete,1,convenient,inconv,problematic,recommended,priorit y', 'usual, proper, complete, 1, convenient, inconv, problematic, priority, priori ty', 'usual, proper, complete, 1, convenient, inconv, problematic, not_recom, not_

In [10]:

```
new_d = []
for l in data1:
    new_d.append(l.split(','))
```

In [11]:

```
print(new_d)
```

[['usual', 'proper', 'complete', '1', 'convenient', 'convenient', 'nonpro b', 'recommended', 'recommend'], ['usual', 'proper', 'complete', '1', 'con venient', 'convenient', 'nonprob', 'priority', 'priority'], ['usual', 'proper', 'complete', '1', 'convenient', 'nonprob', 'not_recom', 'not_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'convenient', 'slightly_prob', 'recommended', 'recommend'], ['usual', 'proper', 'complete', '1', 'convenient', 'priority'], ['usual', 'proper', 'complete', '1', 'convenient', 'convenient', 'slightly_prob', 'not_recom', 'not_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'problematic', 'recommended', 'priority'], ['usual', 'proper', 'complete', '1', 'convenient', 'problematic', 'not_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'nonprob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'nonprob', 'priority'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'nonprob', 'priority'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'inconv', 'slightly_prob', 'recommended', 'very_recom'], ['usual', 'proper', 'complete', '1', 'convenient', 'usual', 'proper', 'complete', '1', 'convenient', 'usual', 'proper', 'complete', '1', 'convenient', 'us

```
In [12]:
```

```
df1 = pd.DataFrame(new_d, columns=['parents', 'has_nurs', 'form', 'children', 'housing', 'f
```

In [13]:

df1

Out[13]:

	parents	has_nurs	form	children	housing	finance	social	healt		
0	usual	proper	complete	1	convenient	convenient	nonprob	recommende		
1	usual	proper	complete	1	convenient	convenient	nonprob	priorit		
2	usual	proper	complete	1	convenient	convenient	nonprob	not_recor		
3	usual	proper	complete	1	convenient	convenient	slightly_prob	recommende		
4	usual	proper	complete	1	convenient	convenient	slightly_prob	priorit		
12957	great_pret	very_crit	foster	more	critical	inconv	problematic	recommende		
12958	great_pret	very_crit	foster	more	critical	inconv	problematic	priorit		
12959	great_pret	very_crit	foster	more	critical	inconv	problematic	not_recor		
12960		None	None	None	None	None	None	Non		
12961		None	None	None	None	None	None	Non		
12962 rows × 9 columns										

In [14]:

df1.to_csv('nursery_csv,csv', index=False)

In [15]:

df1.to_excel('nursery_excel.xlsx', index=False)

In []: