In [41]:
```python
# Sequential Access of Data

workingClass = {}
education = {}
maritalStatus = {}
occupation = {}
relationship = {}
race = {}
sex = {}
country = {}
income = {}

fp = open('adult.data','r')

def counting(categoryDict, index):
    fp.seek(0)
    for line in fp:
        entry = line.split(',')
        category = entry[index]
        if category in categoryDict:
            categoryDict[category] = categoryDict[category] + 1
        else:
            categoryDict[category] = 1
    return categoryDict


def printing(categoryDict):
    print("\n")
    for counts in categoryDict:
        print(categoryDict[counts], "\t", counts)
    return


workingClassCount = counting(workingClass, 1)
printing(workingClassCount)

educationCount = counting(education, 3)
printing(educationCount)

maritalStatusCount = counting(maritalStatus, 5)
printing(maritalStatusCount)

occupationCount = counting(occupation, 6)
printing(occupationCount)

relationshipCount = counting(relationship, 7)
printing(relationshipCount)

raceCount = counting(race, 8)
printing(raceCount)

sexCount = counting(sex, 9)
printing(sexCount)

countryCount = counting(country, 13)
printing(countryCount)

incomeCount = counting(income, 14)
```

```
printing(incomeCount)

fp.close()
```

```
1298       State-gov
2541       Self-emp-not-inc
22696      Private
960        Federal-gov
2093       Local-gov
1836       ?
1116       Self-emp-inc
14         Without-pay
7          Never-worked


5355       Bachelors
10501      HS-grad
1175       11th
1723       Masters
514        9th
7291       Some-college
1067       Assoc-acdm
1382       Assoc-voc
646        7th-8th
413        Doctorate
576        Prof-school
333        5th-6th
933        10th
168        1st-4th
51         Preschool
433        12th


10683      Never-married
14976      Married-civ-spouse
4443       Divorced
418        Married-spouse-absent
1025       Separated
23         Married-AF-spouse
993        Widowed


3770       Adm-clerical
4066       Exec-managerial
1370       Handlers-cleaners
4140       Prof-specialty
3295       Other-service
3650       Sales
4099       Craft-repair
1597       Transport-moving
994        Farming-fishing
2002       Machine-op-inspct
928        Tech-support
1843       ?
649        Protective-serv
9          Armed-Forces
149        Priv-house-serv


8305       Not-in-family
13193      Husband
1568       Wife
5068       Own-child
```

```
3446        Unmarried
981         Other-relative


27816       White
3124        Black
1039        Asian-Pac-Islander
311         Amer-Indian-Eskimo
271         Other


21790       Male
10771       Female


29170       United-States
95          Cuba
81          Jamaica
100         India
583         ?
643         Mexico
80          South
114         Puerto-Rico
13          Honduras
90          England
121         Canada
137         Germany
43          Iran
198         Philippines
73          Italy
60          Poland
59          Columbia
19          Cambodia
18          Thailand
28          Ecuador
18          Laos
51          Taiwan
44          Haiti
37          Portugal
70          Dominican-Republic
106         El-Salvador
29          France
64          Guatemala
75          China
62          Japan
16          Yugoslavia
31          Peru
14          Outlying-US(Guam-USVI-etc)
12          Scotland
19          Trinadad&Tobago
29          Greece
34          Nicaragua
67          Vietnam
20          Hong
24          Ireland
13          Hungary
1           Holand-Netherlands


24720       <=50K
```

```
7841        >50K
```

In [42]:
```python
# Column Access of Data

import pandas as pd

df = pd.read_csv('adult.data', header=None)

for index in [1,3,5,6,7,8,9,13,14]:
    print("\n", df[index].value_counts())
```

```
1
Private               22696
Self-emp-not-inc       2541
Local-gov              2093
?                      1836
State-gov              1298
Self-emp-inc           1116
Federal-gov             960
Without-pay              14
Never-worked              7
Name: count, dtype: int64

3
HS-grad           10501
Some-college       7291
Bachelors          5355
Masters            1723
Assoc-voc          1382
11th               1175
Assoc-acdm         1067
10th                933
7th-8th             646
Prof-school         576
9th                 514
12th                433
Doctorate           413
5th-6th             333
1st-4th             168
Preschool            51
Name: count, dtype: int64

5
Married-civ-spouse       14976
Never-married            10683
Divorced                  4443
Separated                 1025
Widowed                    993
Married-spouse-absent      418
Married-AF-spouse           23
Name: count, dtype: int64

6
Prof-specialty       4140
Craft-repair         4099
Exec-managerial      4066
Adm-clerical         3770
Sales                3650
Other-service        3295
Machine-op-inspct    2002
?                    1843
Transport-moving     1597
Handlers-cleaners    1370
Farming-fishing       994
Tech-support          928
Protective-serv       649
Priv-house-serv       149
Armed-Forces            9
Name: count, dtype: int64

7
```

```
 Husband              13193
 Not-in-family         8305
 Own-child             5068
 Unmarried             3446
 Wife                  1568
 Other-relative         981
Name: count, dtype: int64

 8
 White                   27816
 Black                    3124
 Asian-Pac-Islander       1039
 Amer-Indian-Eskimo        311
 Other                     271
Name: count, dtype: int64

 9
 Male     21790
 Female   10771
Name: count, dtype: int64

 13
 United-States                29170
 Mexico                         643
 ?                              583
 Philippines                    198
 Germany                        137
 Canada                         121
 Puerto-Rico                    114
 El-Salvador                    106
 India                          100
 Cuba                            95
 England                         90
 Jamaica                         81
 South                           80
 China                           75
 Italy                           73
 Dominican-Republic              70
 Vietnam                         67
 Guatemala                       64
 Japan                           62
 Poland                          60
 Columbia                        59
 Taiwan                          51
 Haiti                           44
 Iran                            43
 Portugal                        37
 Nicaragua                       34
 Peru                            31
 France                          29
 Greece                          29
 Ecuador                         28
 Ireland                         24
 Hong                            20
 Cambodia                        19
 Trinadad&Tobago                 19
 Laos                            18
 Thailand                        18
 Yugoslavia                      16
 Outlying-US(Guam-USVI-etc)      14
```

```
     Honduras                      13
     Hungary                       13
     Scotland                      12
     Holand-Netherlands             1
Name: count, dtype: int64


     14
 <=50K    24720
 >50K      7841
Name: count, dtype: int64
```