PHASE - III

DEVELOPMENT PART – I

Assessment of Marginal Workers In Tamil Nadu

Date	04-10-2023
Team ID	4570
Project Name	Assessment of Marginal Workers in Tamil Nadu

Problem statement:

Analyze the demographic characteristics of marginal workers based on age, industrial category, and sex. Create visualizations such as bar charts, pie charts, or heat maps to represent the distribution across different categories

```python
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import r2_score,
mean_absolute_error,mean_squared_error
from sklearn.linear_model import LinearRegression
from sklearn.linear_model import Lasso
from sklearn.ensemble import RandomForestRegressor
from sklearn.svm import SVR
```

New section

```
dataset= pd.read_csv("Dataset.csv")

dataset.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 594 entries, 0 to 593
Data columns (total 69 columns):
 #   Column
Non-Null Count  Dtype


 0   Table Code
594 non-null    object
 1   State Code
594 non-null    object
 2   District Code
594 non-null    object
 3   Area Name
594 non-null    object
 4   Total/ Rural/ Urban
594 non-null    object
 5   Age group
594 non-null    object
 6   Worked for 3 months or more but less than 6 months -  Persons
594 non-null    int64
 7   Worked for 3 months or more but less than 6 months - Males
594 non-null    int64
 8   Worked for 3 months or more but less than 6 months - Females
594 non-null    int64
 9   Worked for less than 3 months - Persons
594 non-null    int64
 10  Worked for less than 3 months - Males
594 non-null    int64
```

```
11 Worked for less than 3 months - Females
594 non-null    int64
 12 Industrial Category - A - Cultivators - Persons
594 non-null    int64
 13  Industrial Category - A - Cultivators - Males
594 non-null    int64
 14 Industrial Category - A - Cultivators - Females
594 non-null    int64
 15 Industrial Category - A - Agricultural labourers - Persons
594 non-null    int64
 16  Industrial Category - A - Agricultural labourers - Males
594 non-null    int64
 17 Industrial Category - A - Agricultural labourers - Females
594 non-null    int64
 18 Industrial Category - A - Plantation, Livestock, Forestry,
Fishing, Hunting and allied activities - Persons  594 non-null
int64
 19 Industrial Category - A - Plantation, Livestock, Forestry,
Fishing, Hunting and allied activities - Males    594 non-null
int64
 20 Industrial Category - A - Plantation, Livestock, Forestry,
Fishing, Hunting and allied activities - Females  594 non-null
int64
 21  Industrial Category - B - Persons
594 non-null    int64
 22  Industrial Category - B - Males
594 non-null    int64
 23  Industrial Category - B - Females
594 non-null    int64
 24 Industrial Category - C - HHI - Persons
594 non-null    int64
 25  Industrial Category - C - HHI - Males
594 non-null    int64
 26 Industrial Category - C - HHI - Females
594 non-null    int64
 27  Industrial Category - C - Non HHI - Persons
594 non-null    int64
 28  Industrial Category - C - Non HHI - Males
594 non-null    int64
 29  Industrial Category - C - Non HHI - Females
594 non-null    int64
 30  Industrial Category - D & E - Persons
594 non-null    int64
 31  Industrial Category - D & E - Males
594 non-null    int64
 32  Industrial Category - D & E - Females
594 non-null    int64
 33  Industrial Category - F - Persons
594 non-null    int64
```

```
 34  Industrial Category - F - Males
594 non-null     int64
 35  Industrial Category - F - Females
594 non-null     int64
 36 Industrial Category - G - HHI - Persons
594 non-null     int64
 37  Industrial Category - G - HHI - Males
594 non-null     int64
 38 Industrial Category - G - HHI - Females
594 non-null     int64
 39  Industrial Category - G - Non HHI - Persons
594 non-null     int64
 40  Industrial Category - G - Non HHI - Males
594 non-null     int64
 41  Industrial Category - G - Non HHI - Females
594 non-null     int64
 42  Industrial Category - H - Persons
594 non-null     int64
 43  Industrial Category - H - Males
594 non-null     int64
 44  Industrial Category - H - Females
594 non-null     int64
 45  Industrial Category - I - Persons
594 non-null     int64
 46  Industrial Category - I - Males
594 non-null     int64
 47  Industrial Category - I - Females
594 non-null     int64
 48 Industrial Category - J - HHI - Persons
594 non-null     int64
 49  Industrial Category - J - HHI - Males
594 non-null     int64
 50 Industrial Category - J - HHI - Females
594 non-null     int64
 51  Industrial Category - J - Non HHI - Persons
594 non-null     int64
 52  Industrial Category - J - Non HHI - Males
594 non-null     int64
 53  Industrial Category - J - Non HHI - Females
594 non-null     int64
 54  Industrial Category - K to M - Persons
594 non-null     int64
 55  Industrial Category - K to M - Males
594 non-null     int64
 56  Industrial Category - K to M - Females
594 non-null     int64
 57  Industrial Category - N to O - Persons
594 non-null     int64
 58  Industrial Category - N to O - Males
```

```
594 non-null     int64
 59   Industrial Category - N to O - Females
594 non-null     int64
 60   Industrial Category - P to Q - Persons
594 non-null     int64
 61   Industrial Category - P to Q - Males
594 non-null     int64
 62   Industrial Category - P to Q - Females
594 non-null     int64
 63   Industrial Category - R to U - HHI - Persons
594 non-null     int64
 64   Industrial Category - R to U - HHI - Males
594 non-null     int64
 65   Industrial Category - R to U - HHI - Females
594 non-null     int64
 66   Industrial Category - R to U - Non HHI - Persons
594 non-null     int64
 67   Industrial Category - R to U - Non HHI - Males
594 non-null     int64
 68   Industrial Category - R to U - Non HHI - Females
594 non-null     int64
dtypes: int64(63), object(6)
memory usage: 320.3+ KB

dataset.describe()

       Worked for 3 months or more but less than 6 months -
Persons \
count                                            5.940000e+02

mean                                             1.617277e+04

std                                              7.607172e+04

min                                              0.000000e+00

25%                                              2.872500e+02

50%                                              2.225500e+03

75%                                              9.628500e+03

max                                              1.200828e+06


       Worked for 3 months or more but less than 6 months - Males  \
count                                              594.000000
mean                                              7932.700337
std                                              36864.822704
min                                                  0.000000
25%                                                147.250000
```

```
50%                                           1147.000000
75%                                           4770.500000
max                                         589003.000000

        Worked for 3 months or more but less than 6 months - Females  \
count                                          594.000000
mean                                          8240.067340
std                                          39259.545337
min                                              0.000000
25%                                            144.000000
50%                                           1076.000000
75%                                           4887.500000
max                                         611825.000000

        Worked for less than 3 months - Persons  \
count                                          594.000000
mean                                          2981.629630
std                                          13909.621137
min                                              0.000000
25%                                             27.000000
50%                                            430.000000
75%                                           1775.250000
max                                         221386.000000

        Worked for less than 3 months - Males  \
count                                          594.000000
mean                                          1338.289562
std                                           6127.047670
min                                              0.000000
25%                                             14.250000
50%                                            198.500000
75%                                            774.250000
max                                          99368.000000

        Worked for less than 3 months - Females  \
count                                          594.000000
mean                                          1643.340067
std                                           7808.832522
min                                              0.000000
25%                                             13.000000
50%                                            213.000000
75%                                            946.500000
max                                         122018.000000

        Industrial Category - A - Cultivators - Persons  \
count                                          594.000000
mean                                           865.117845
std                                           4274.458077
min                                              0.000000
25%                                              9.000000
```

```
50%                                    69.500000
75%                                   466.000000
max                                 64235.000000


        Industrial Category - A - Cultivators - Males   \
count                                   594.000000
mean                                    466.424242
std                                    2298.072295
min                                       0.000000
25%                                       5.000000
50%                                      35.500000
75%                                     244.250000
max                                   34632.000000
        Industrial Category - A - Cultivators - Females   \
count                                   594.000000
mean                                    398.693603
std                                    1978.682322
min                                       0.000000
25%                                       4.000000
50%                                      32.000000
75%                                     204.750000
max                                   29603.000000


        Industrial Category - A - Agricultural labourers - Persons   ...
\
count                                   594.000000                    ...

mean                                  12225.616162                    ...

std                                   60458.382586                    ...

min                                       0.000000                    ...

25%                                      79.250000                    ...

50%                                    1094.000000                    ...

75%                                    6279.750000                    ...

max                                  907752.000000                    ...


        Industrial Category - N to O - Females   \
count                           594.000000
mean                             48.013468
std                             222.553500
min                               0.000000
25%                               0.000000
50%                               2.000000
```

```
75%                                    18.000000
max                                  3565.000000

          Industrial Category - P to Q - Persons   \
count                              594.000000
mean                               149.225589
std                                696.553730
min                                  0.000000
25%                                  0.000000
50%                                 14.500000
75%                                 99.750000
max                              11080.000000

          Industrial Category - P to Q - Males
count                              594.000000
mean                                54.127946
std                                253.067862
min                                  0.000000
25%                                  0.000000
50%                                  6.000000
75%                                 35.750000
max                               4019.000000

          Industrial Category - P to Q - Females   \
count                              594.000000
mean                                95.097643
std                                444.011425
min                                  0.000000
25%                                  0.000000
50%                                  6.500000
75%                                 64.000000
max                               7061.000000

          Industrial Category - R to U - HHI - Persons   \
count                                    594.000000
mean                                     226.707071
std                                     1039.953069
min                                        0.000000
25%                                        0.000000
50%                                       27.000000
75%                                      126.750000
max                                    16833.000000

          Industrial Category - R to U - HHI - Males   \
count                                    594.000000
mean                                      57.454545
std                                      265.230865
min                                        0.000000
25%                                        0.000000
50%                                        7.500000
```

```
75%                                                32.000000
max                                              4266.000000

        Industrial Category - R to U - HHI - Females  \
count                                             594.000000
mean                                              169.252525
std                                               776.206806
min                                                 0.000000
25%                                                 0.000000
50%                                                20.000000
75%                                                97.500000
max                                             12567.000000

        Industrial Category - R to U - Non HHI - Persons  \
count                                             594.000000
mean                                             1644.282828
std                                              7325.241597
min                                                 0.000000
25%                                                64.500000
50%                                               263.500000
75%                                               994.000000
max                                            122088.000000

        Industrial Category - R to U - Non HHI - Males  \
count                                             594.000000
mean                                              751.528620
std                                              3352.811737
min                                                 0.000000
25%                                                34.000000
50%                                               123.000000
75%                                               447.750000
max                                             55801.000000

        Industrial Category - R to U - Non HHI - Females
count                                             594.000000
mean                                              892.754209
std                                              3988.125301
min                                                 0.000000
25%                                                30.500000
50%                                               135.000000
75%                                               500.000000
max                                             66287.000000

[8 rows x 63 columns]


sns.boxplot(dataset, x='Worked for less than 3 months - Males',
palette='Blues')

<Axes: xlabel='Worked for less than 3 months - Males'>
```

Worked for less than 3 months - Males
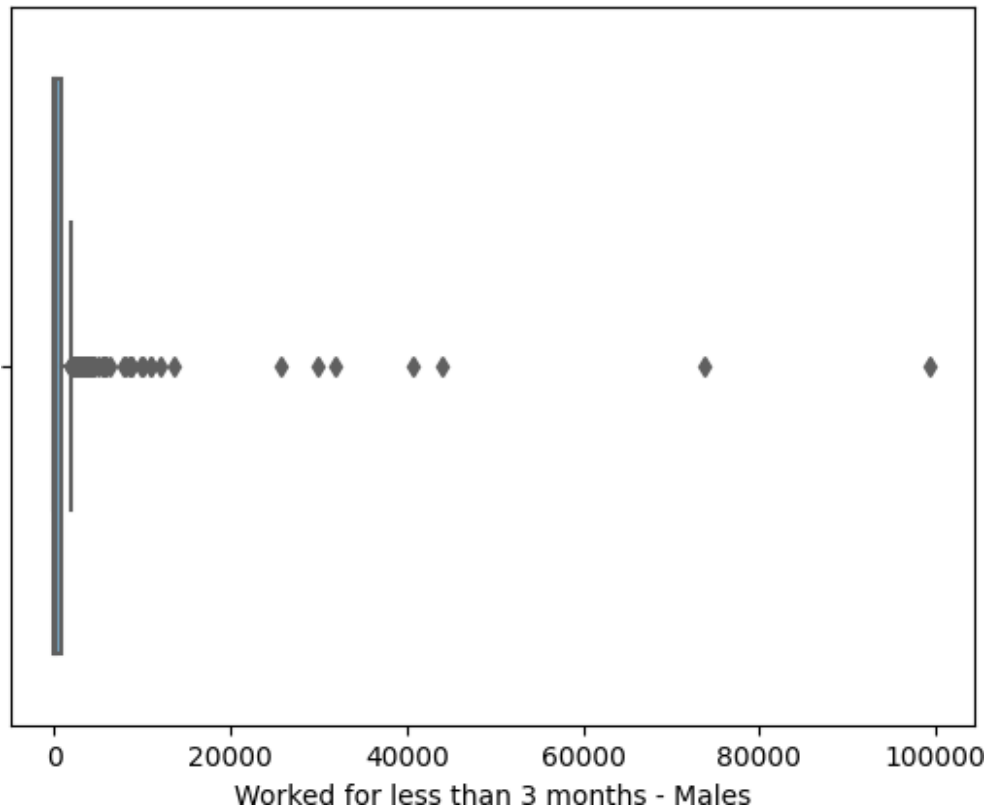
```
sns.boxplot(dataset, x='Worked for 3 months or more but less than 6
months - Females', palette='Blues')

<Axes: xlabel='Worked for 3 months or more but less than 6 months -
Females'>
```

Worked for 3 months or more but less than 6 months - Females
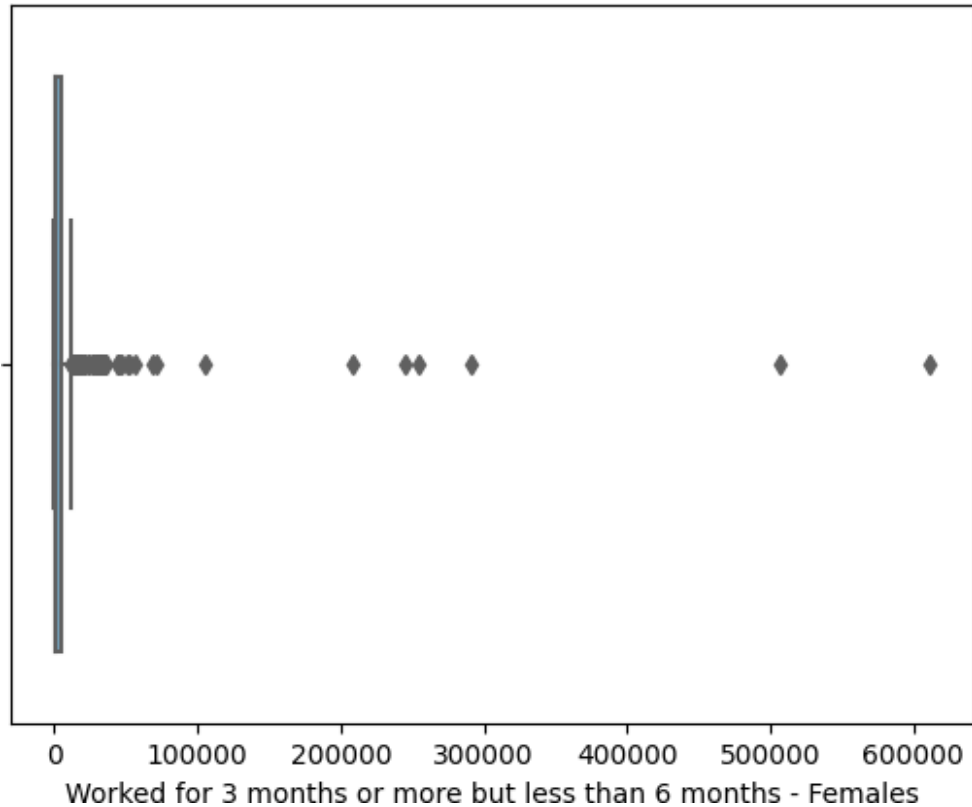
```
dataset.hist(figsize=(155,100))

array([[<Axes: title={'center': 'Worked for 3 months or more but less
than 6 months - Persons'}>,
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        <Axes: title={'center': 'Worked for 3 months or more but less
than 6 months - Females'}>,
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Persons'}>,
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Males'}>,
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Females'}>,
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- Persons'}>,
        <Axes: title={'center': 'Industrial Category - A - Cultivators
- Males'}>],
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- Females'}>,
        <Axes: title={'center': 'Industrial Category - A -
Agricultural labourers - Persons'}>,
        <Axes: title={'center': 'Industrial Category - A -
Agricultural labourers - Males'}>,
```

```
        <Axes: title={'center': 'Industrial Category - A -
Agricultural labourers - Females'}>,
        <Axes: title={'center': 'Industrial Category - A - Plantation,
Livestock, Forestry, Fishing, Hunting and allied activities -
Persons'}>,
        <Axes: title={'center': 'Industrial Category - A - Plantation,
Livestock, Forestry, Fishing, Hunting and allied activities -
Males'}>,
        <Axes: title={'center': 'Industrial Category - A - Plantation,
Livestock, Forestry, Fishing, Hunting and allied activities -
Females'}>,
        <Axes: title={'center': 'Industrial Category - B -
Persons'}>],
      [<Axes: title={'center': 'Industrial Category - B - Males'}>,
        <Axes: title={'center': 'Industrial Category - B - Females'}>,
        <Axes: title={'center': 'Industrial Category - C - HHI -
Persons'}>,
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Males'}>,
        <Axes: title={'center': 'Industrial Category - C - HHI -
Females'}>,
        <Axes: title={'center': 'Industrial Category - C - Non HHI -
Persons'}>,
        <Axes: title={'center': 'Industrial Category - C - Non HHI -
Males'}>,
        <Axes: title={'center': 'Industrial Category - C - Non HHI -
Females'}>],
      [<Axes: title={'center': 'Industrial Category - D & E -
Persons'}>,
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Males'}>,
        <Axes: title={'center': 'Industrial Category - D & E -
Females'}>,
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Persons'}>,
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Males'}>],
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Females'}>,
        <Axes: title={'center': 'Industrial Category - G - Non HHI -
Persons'}>,
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Males'}>,
        <Axes: title={'center': 'Industrial Category - G - Non HHI -
Females'}>,
        <Axes: title={'center': 'Industrial Category - H - Persons'}>,
```

```
       <Axes: title={'center': 'Industrial Category - H - Males'}>,
       <Axes: title={'center': 'Industrial Category - H - Females'}>,
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Persons'}>],
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       <Axes: title={'center': 'Industrial Category - J - HHI -
Persons'}>,
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Males'}>,
       <Axes: title={'center': 'Industrial Category - J - HHI -
Females'}>,
       <Axes: title={'center': 'Industrial Category - J - Non HHI -
Persons'}>,
       <Axes: title={'center': 'Industrial Category - J - Non HHI -
Males'}>,
       <Axes: title={'center': 'Industrial Category - J - Non HHI -
Females'}>],
      [<Axes: title={'center': 'Industrial Category - K to M -
Persons'}>,
       <Axes: title={'center': 'Industrial Category - K to M -
Males'}>,
       <Axes: title={'center': 'Industrial Category - K to M -
Females'}>,
       <Axes: title={'center': 'Industrial Category - N to O -
Persons'}>,
       <Axes: title={'center': 'Industrial Category - N to O -
Males'}>,
       <Axes: title={'center': 'Industrial Category - N to O -
Females'}>,
       <Axes: title={'center': 'Industrial Category - P to Q -
Persons'}>,
       <Axes: title={'center': 'Industrial Category - P to Q -
Males'}>],
      [<Axes: title={'center': 'Industrial Category - P to Q -
Females'}>,
       <Axes: title={'center': 'Industrial Category - R to U - HHI -
Persons'}>,
       <Axes: title={'center': 'Industrial Category - R to U - HHI -
Males'}>,
       <Axes: title={'center': 'Industrial Category - R to U - HHI -
Females'}>,
       <Axes: title={'center': 'Industrial Category - R to U - Non
HHI - Persons'}>,
       <Axes: title={'center': 'Industrial Category - R to U - Non
HHI - Males'}>,
       <Axes: title={'center': 'Industrial Category - R to U - Non
HHI - Females'}>,
       <Axes: >]], dtype=object)
```
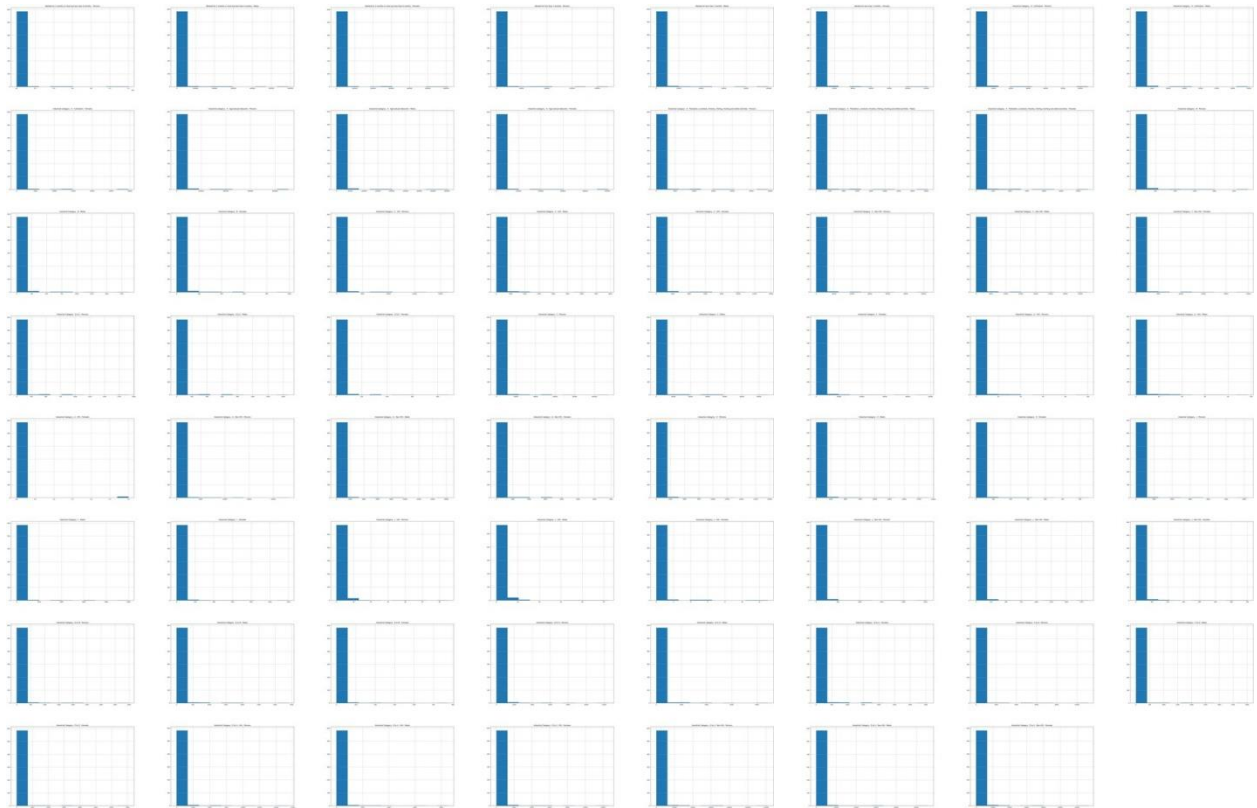
```
dataset.corr()
```

```
<ipython-input-12-c187c74d1e71>:1: FutureWarning: The default value of
numeric_only in DataFrame.corr is deprecated. In a future version, it
will default to False. Select only valid columns or specify the value
of numeric_only to silence this warning.
  dataset.corr()
```

```
                                                 Worked for 3
months or more but less than 6 months -  Persons \
Worked for 3 months or more but less than 6 mon...
1.000000
Worked for 3 months or more but less than 6 mon...
0.999263
Worked for 3 months or more but less than 6 mon...
0.999351
Worked for less than 3 months - Persons
0.998865
Worked for less than 3 months - Males
0.994883
...
...
Industrial Category - R to U - HHI - Males
0.987514
Industrial Category - R to U - HHI - Females
0.983226
```

```
Industrial Category - R to U - Non HHI - Persons
0.883359
Industrial Category - R to U - Non HHI - Males
0.890343
Industrial Category - R to U - Non HHI - Females
0.874011

                                                  Worked for 3
months or more but less than 6 months - Males \
Worked for 3 months or more but less than 6 mon...
0.999263
Worked for 3 months or more but less than 6 mon...
1.000000
Worked for 3 months or more but less than 6 mon...
0.997232
Worked for less than 3 months - Persons
0.999020
Worked for less than 3 months - Males
0.997622
...
...
Industrial Category - R to U - HHI - Males
0.991627
Industrial Category - R to U - HHI - Females
0.987635
Industrial Category - R to U - Non HHI - Persons
0.898087
Industrial Category - R to U - Non HHI - Males
0.904637
Industrial Category - R to U - Non HHI - Females
0.889046

                                                  Worked for 3
months or more but less than 6 months - Females \
Worked for 3 months or more but less than 6 mon...
0.999351
Worked for 3 months or more but less than 6 mon...
0.997232
Worked for 3 months or more but less than 6 mon...
1.000000
Worked for less than 3 months - Persons
0.997381
Worked for less than 3 months - Males
0.990976
...
...
Industrial Category - R to U - HHI - Males
0.982327
Industrial Category - R to U - HHI - Females
```

```
0.977768
Industrial Category - R to U - Non HHI - Persons
0.868345
Industrial Category - R to U - Non HHI - Males
0.875727
Industrial Category - R to U - Non HHI - Females
0.858721

                                                    Worked for less
than 3 months - Persons  \
Worked for 3 months or more but less than 6 mon...
0.998865
Worked for 3 months or more but less than 6 mon...
0.999020
Worked for 3 months or more but less than 6 mon...
0.997381
Worked for less than 3 months - Persons
1.000000
Worked for less than 3 months - Males
0.997598
...
...
Industrial Category - R to U - HHI - Males
0.988538
Industrial Category - R to U - HHI - Females
0.985253
Industrial Category - R to U - Non HHI - Persons
0.887969
Industrial Category - R to U - Non HHI - Males
0.893847
Industrial Category - R to U - Non HHI - Females
0.879533

                                                    Worked for less
than 3 months - Males  \
Worked for 3 months or more but less than 6 mon...
0.994883
Worked for 3 months or more but less than 6 mon...
0.997622
Worked for 3 months or more but less than 6 mon...
0.990976
Worked for less than 3 months - Persons
0.997598
Worked for less than 3 months - Males
1.000000
...
...
Industrial Category - R to U - HHI - Males
0.993430
```

```
Industrial Category - R to U - HHI - Females
0.991781
Industrial Category - R to U - Non HHI - Persons
0.913979
Industrial Category - R to U - Non HHI - Males
0.918710
Industrial Category - R to U - Non HHI - Females
0.906405

                                                    Worked for less
than 3 months - Females  \
Worked for 3 months or more but less than 6 mon...
0.998631
Worked for 3 months or more but less than 6 mon...
0.996757
Worked for 3 months or more but less than 6 mon...
0.999052
Worked for less than 3 months - Persons
0.998522
Worked for less than 3 months - Males
0.992359
...
...
Industrial Category - R to U - HHI - Males
0.981375
Industrial Category - R to U - HHI - Females
0.976818
Industrial Category - R to U - Non HHI - Persons
0.864574
Industrial Category - R to U - Non HHI - Males
0.871332
Industrial Category - R to U - Non HHI - Females
0.855491

                                                    Industrial
Category - A - Cultivators - Persons  \
Worked for 3 months or more but less than 6 mon...
0.987308
Worked for 3 months or more but less than 6 mon...
0.982657
Worked for 3 months or more but less than 6 mon...
0.990352
Worked for less than 3 months - Persons
0.984360
Worked for less than 3 months - Males
0.973140
...
...
Industrial Category - R to U - HHI - Males
```

0.963460
Industrial Category - R to U - HHI - Females
0.952677
Industrial Category - R to U - Non HHI - Persons
0.820028
Industrial Category - R to U - Non HHI - Males
0.832068
Industrial Category - R to U - Non HHI - Females
0.806678

                                                    Industrial
Category - A - Cultivators - Males \
Worked for 3 months or more but less than 6 mon...
0.985738
Worked for 3 months or more but less than 6 mon...
0.981185
Worked for 3 months or more but less than 6 mon...
0.988691
Worked for less than 3 months - Persons
0.983491
Worked for less than 3 months - Males
0.972236
...
...
Industrial Category - R to U - HHI - Males
0.961010
Industrial Category - R to U - HHI - Females
0.949565
Industrial Category - R to U - Non HHI - Persons
0.815232
Industrial Category - R to U - Non HHI - Males
0.827014
Industrial Category - R to U - Non HHI - Females
0.802119

                                                    Industrial
Category - A - Cultivators - Females \
Worked for 3 months or more but less than 6 mon...
0.987987
Worked for 3 months or more but less than 6 mon...
0.983225
Worked for 3 months or more but less than 6 mon...
0.991132
Worked for less than 3 months - Persons
0.984228
Worked for less than 3 months - Males
0.973061
...
...

```
Industrial Category - R to U - HHI - Males
0.965188
Industrial Category - R to U - HHI - Females
0.955187
Industrial Category - R to U - Non HHI - Persons
0.824646
Industrial Category - R to U - Non HHI - Males
0.836972
Industrial Category - R to U - Non HHI - Females
0.811038
                                                  Industrial
Category - A - Agricultural labourers - Persons \
Worked for 3 months or more but less than 6 mon...
0.991821
Worked for 3 months or more but less than 6 mon...
0.987097
Worked for 3 months or more but less than 6 mon...
0.994927
Worked for less than 3 months - Persons
0.988923
Worked for less than 3 months - Males
0.977145
...
...
Industrial Category - R to U - HHI - Males
0.965973
Industrial Category - R to U - HHI - Females
0.955424
Industrial Category - R to U - Non HHI - Persons
0.819429
Industrial Category - R to U - Non HHI - Males
0.829783
Industrial Category - R to U - Non HHI - Females
0.807500
```

```
                                                  Industrial
```

```
Category - N to O - Females  \
Worked for 3 months or more but less than 6 mon...
0.886220
Worked for 3 months or more but less than 6 mon...
0.897920
Worked for 3 months or more but less than 6 mon...
0.874045
Worked for less than 3 months - Persons
0.894134
Worked for less than 3 months - Males
0.915607
...
...
Industrial Category - R to U - HHI - Males
0.910143
Industrial Category - R to U - HHI - Females
0.940298
Industrial Category - R to U - Non HHI - Persons
0.962054
Industrial Category - R to U - Non HHI - Males
0.945421
Industrial Category - R to U - Non HHI - Females
0.972250

                                                 Industrial
Category - P to Q - Persons  \
Worked for 3 months or more but less than 6 mon...
0.923176
Worked for 3 months or more but less than 6 mon...
0.934548
Worked for 3 months or more but less than 6 mon...
0.911260
Worked for less than 3 months - Persons
0.925513
Worked for less than 3 months - Males
0.944921
...
...
Industrial Category - R to U - HHI - Males
0.956272
Industrial Category - R to U - HHI - Females
0.965278
Industrial Category - R to U - Non HHI - Persons
0.973702
Industrial Category - R to U - Non HHI - Males
0.976197
Industrial Category - R to U - Non HHI - Females
0.967772
```

```
                                                        Industrial
Category - P to Q - Males  \
Worked for 3 months or more but less than 6 mon...
0.930708
Worked for 3 months or more but less than 6 mon...
0.941462
Worked for 3 months or more but less than 6 mon...
0.919362
Worked for less than 3 months - Persons
0.932542
Worked for less than 3 months - Males
0.950694
                                                        ...
                                                        ...
Industrial Category - R to U - HHI - Males
0.963555
Industrial Category - R to U - HHI - Females
0.969691
Industrial Category - R to U - Non HHI - Persons
0.970974
Industrial Category - R to U - Non HHI - Males
0.975075
Industrial Category - R to U - Non HHI - Females
0.963706

                                                        Industrial
Category - P to Q - Females  \
Worked for 3 months or more but less than 6 mon...
0.917791
Worked for 3 months or more but less than 6 mon...
0.929501
Worked for 3 months or more but less than 6 mon...
0.905563
Worked for less than 3 months - Persons
0.920411
Worked for less than 3 months - Males
0.940512
                                                        ...
                                                        ...
Industrial Category - R to U - HHI - Males
0.950989
Industrial Category - R to U - HHI - Females
0.961621
Industrial Category - R to U - Non HHI - Persons
0.974104
Industrial Category - R to U - Non HHI - Males
0.975681
Industrial Category - R to U - Non HHI - Females
0.968945
```

```
                                                       Industrial
Category - R to U - HHI - Persons  \
Worked for 3 months or more but less than 6 mon...
0.985723
Worked for 3 months or more but less than 6 mon...
0.990063
Worked for 3 months or more but less than 6 mon...
0.980327
Worked for less than 3 months - Persons
0.987497
Worked for less than 3 months - Males
0.993617
...
...
Industrial Category - R to U - HHI - Males
0.995826
Industrial Category - R to U - HHI - Females
0.999514
Industrial Category - R to U - Non HHI - Persons
0.938478
Industrial Category - R to U - Non HHI - Males
0.942038
Industrial Category - R to U - Non HHI - Females
0.931792


                                                       Industrial
Category - R to U - HHI - Males  \
Worked for 3 months or more but less than 6 mon...
0.987514
Worked for 3 months or more but less than 6 mon...
0.991627
Worked for 3 months or more but less than 6 mon...
0.982327
Worked for less than 3 months - Persons
0.988538
Worked for less than 3 months - Males
0.993430
...
...
Industrial Category - R to U - HHI - Males
1.000000
Industrial Category - R to U - HHI - Females
0.992495
Industrial Category - R to U - Non HHI - Persons
0.926353
Industrial Category - R to U - Non HHI - Males
0.934201
Industrial Category - R to U - Non HHI - Females
```

```
0.916109

                                                           Industrial
Category - R to U - HHI - Females  \
Worked for 3 months or more but less than 6 mon...
0.983226
Worked for 3 months or more but less than 6 mon...
0.987635
Worked for 3 months or more but less than 6 mon...
0.977768
Worked for less than 3 months - Persons
0.985253
Worked for less than 3 months - Males
0.991781
...
...
Industrial Category - R to U - HHI - Males
0.992495
Industrial Category - R to U - HHI - Females
1.000000
Industrial Category - R to U - Non HHI - Persons
0.940827
Industrial Category - R to U - Non HHI - Males
0.942914
Industrial Category - R to U - Non HHI - Females
0.935369

                                                           Industrial
Category - R to U - Non HHI - Persons  \
Worked for 3 months or more but less than 6 mon...
0.883359
Worked for 3 months or more but less than 6 mon...
0.898087
Worked for 3 months or more but less than 6 mon...
0.868345
Worked for less than 3 months - Persons
0.887969
Worked for less than 3 months - Males
0.913979
...
...
Industrial Category - R to U - HHI - Males
0.926353
Industrial Category - R to U - HHI - Females
0.940827
Industrial Category - R to U - Non HHI - Persons
1.000000
Industrial Category - R to U - Non HHI - Males
0.997456
```

```
Industrial Category - R to U - Non HHI - Females
0.998203

                                                    Industrial
Category - R to U - Non HHI - Males  \
Worked for 3 months or more but less than 6 mon...
0.890343
Worked for 3 months or more but less than 6 mon...
0.904637
Worked for 3 months or more but less than 6 mon...
0.875727
Worked for less than 3 months - Persons
0.893847
Worked for less than 3 months - Males
0.918710
...
...
Industrial Category - R to U - HHI - Males
0.934201
Industrial Category - R to U - HHI - Females
0.942914
Industrial Category - R to U - Non HHI - Persons
0.997456
Industrial Category - R to U - Non HHI - Males
1.000000
Industrial Category - R to U - Non HHI - Females
0.991392

                                                    Industrial
Category - R to U - Non HHI - Females
Worked for 3 months or more but less than 6 mon...
0.874011
Worked for 3 months or more but less than 6 mon...
0.889046
Worked for 3 months or more but less than 6 mon...
0.858721
Worked for less than 3 months - Persons
0.879533
Worked for less than 3 months - Males
0.906405
...
...
Industrial Category - R to U - HHI - Males
0.916109
Industrial Category - R to U - HHI - Females
0.935369
Industrial Category - R to U - Non HHI - Persons
0.998203
Industrial Category - R to U - Non HHI - Males
0.991392
```

```
Industrial Category - R to U - Non HHI - Females
1.000000

[63 rows x 63 columns]

plt.figure(figsize=(20,20))
sns.heatmap(dataset.corr(), annot=True)

Output hidden; open in https://colab.research.google.com to view.

y=dataset['Total/ Rural/ Urban'].value_counts()
y

Total    198
Rural    198
Urban  198
Name: Total/ Rural/ Urban, dtype: int64

plt.bar(dataset['Total/ Rural/ Urban'], len(dataset['Total/ Rural/
Urban']))

<BarContainer object of 594 artists>
```
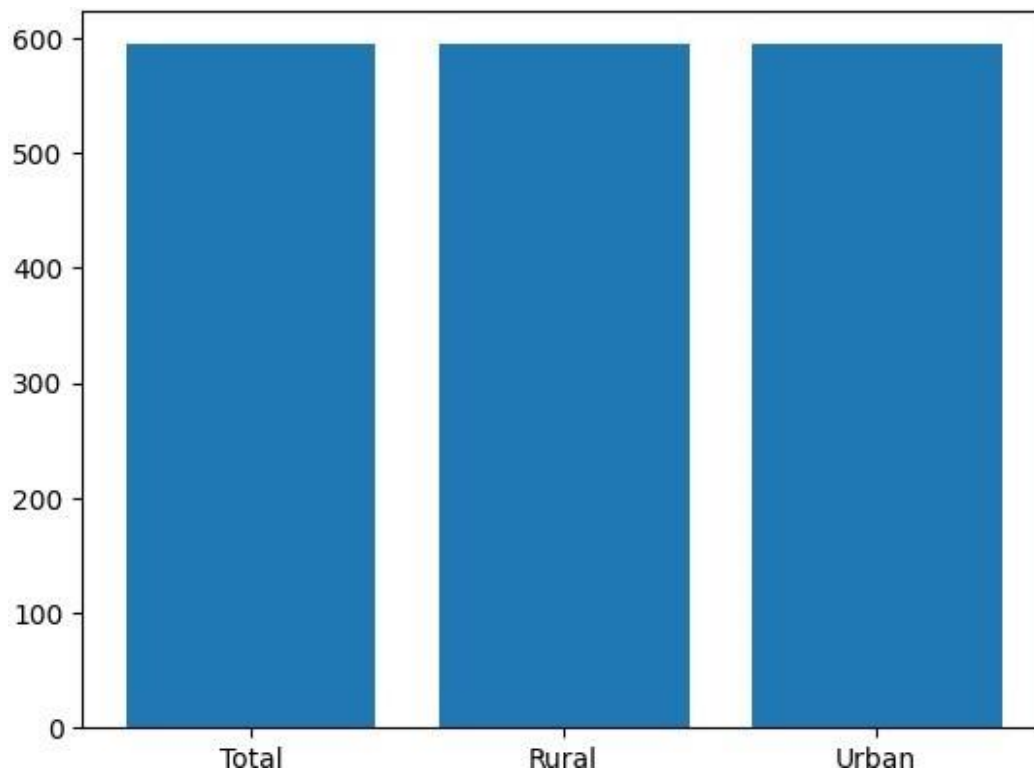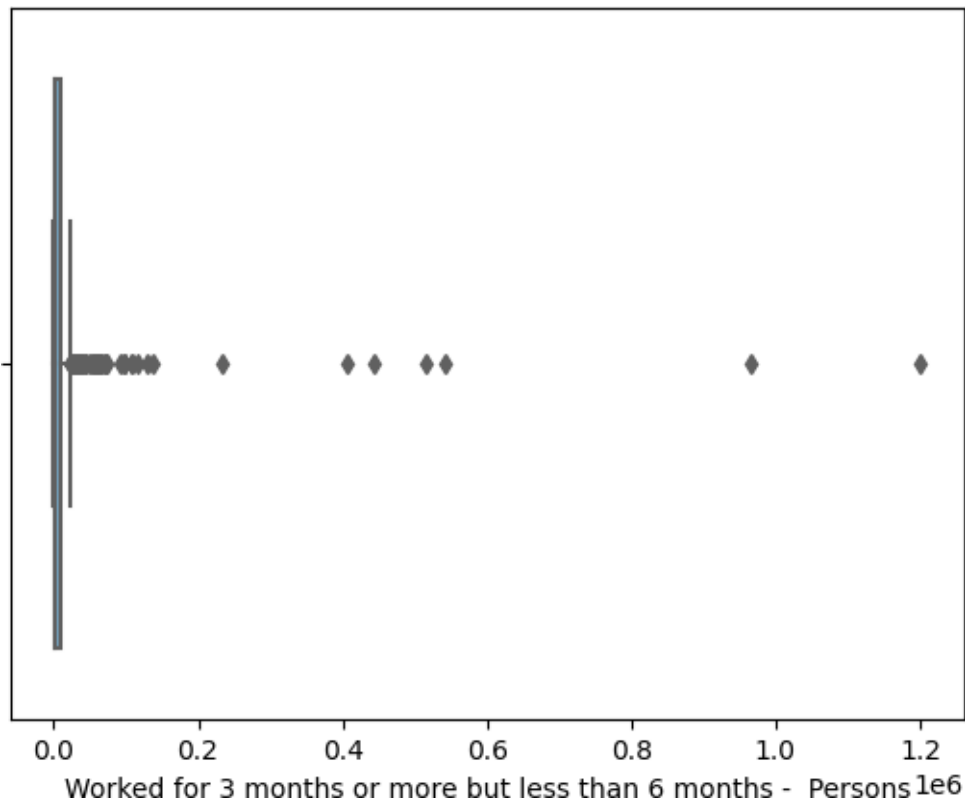


```
sns.boxplot(dataset, x='Worked for 3 months or more but less than 6
months -  Persons', palette='Blues')
```

```
<Axes: xlabel='Worked for 3 months or more but less than 6 months -
Persons'>
```


DATA VISUALIZATION USING COGNOS