KNBS census data visualization.

January 17, 2023

```
[1]: print("hello")
```

```
hello
```

```
[2]: import matplotlib.pyplot as pl
     import seaborn as sns
     %matplotlib inline
```

```
[5]: year=[1897,1948,1962,1969,1979,1989,1999,2009,2019]
     population=[2.5,5.4,8.6,10.9,15.3,21.4,28.7,37.7,47.6]
     pl.plot(year,population,"o-b",alpha=1,lw=3)
     pl.legend(["population"])
     pl.title("Kanyas Ppoulation since 1889")
     pl.xlabel("year")
     pl.ylabel("population")
     pl.figure(figsize=[16,12])
     sns.set_style("darkgrid");
```

Kanyas Ppoulation since 1889

```
<Figure size 1152x864 with 0 Axes>
```
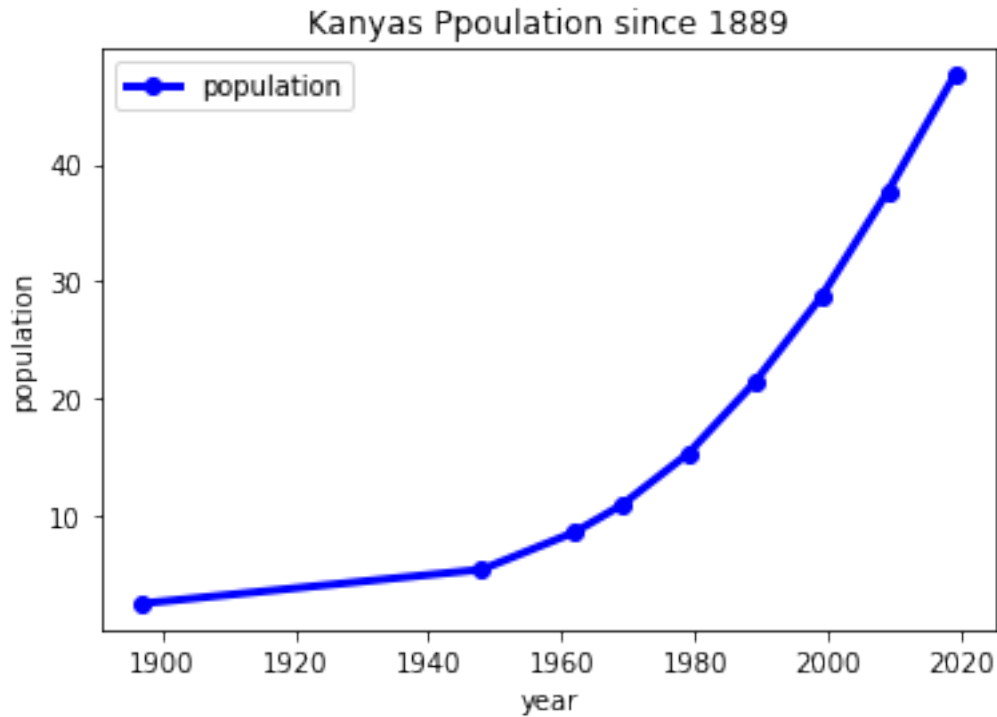
[23]:
```python
female=[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444,
 216219, 128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247,
 384845, 308369, 532669, 1230454, 448868, 314213, 153546, 501206, 582889,
 227151, 444430, 330428, 259102, 1084835, 578805, 560704, 451008, 441379,
 970406, 306323, 858389, 467401, 521496, 594609, 592367, 580214, 661038,
 314656, 2204376]
print(female)
```

```
[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444, 216219,
128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247, 384845, 308369,
532669, 1230454, 448868, 314213, 153546, 501206, 582889, 227151, 444430, 330428,
259102, 1084835, 578805, 560704, 451008, 441379, 970406, 306323, 858389, 467401,
521496, 594609, 592367, 580214, 661038, 314656, 2204376]
```

[38]:
```python
total=[1208333,866820,1453787,315943,143920,340671,841353,781263,867457,459785,268002,1545714,
print(female)
female=[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444,
 216219, 128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247,
 384845, 308369, 532669, 1230454, 448868, 314213, 153546, 501206, 582889,
 227151, 444430, 330428, 259102, 1084835, 578805, 560704, 451008, 441379,
 970406, 306323, 858389, 467401, 521496, 594609, 592367, 580214, 661038,
 314656, 2204376]
```
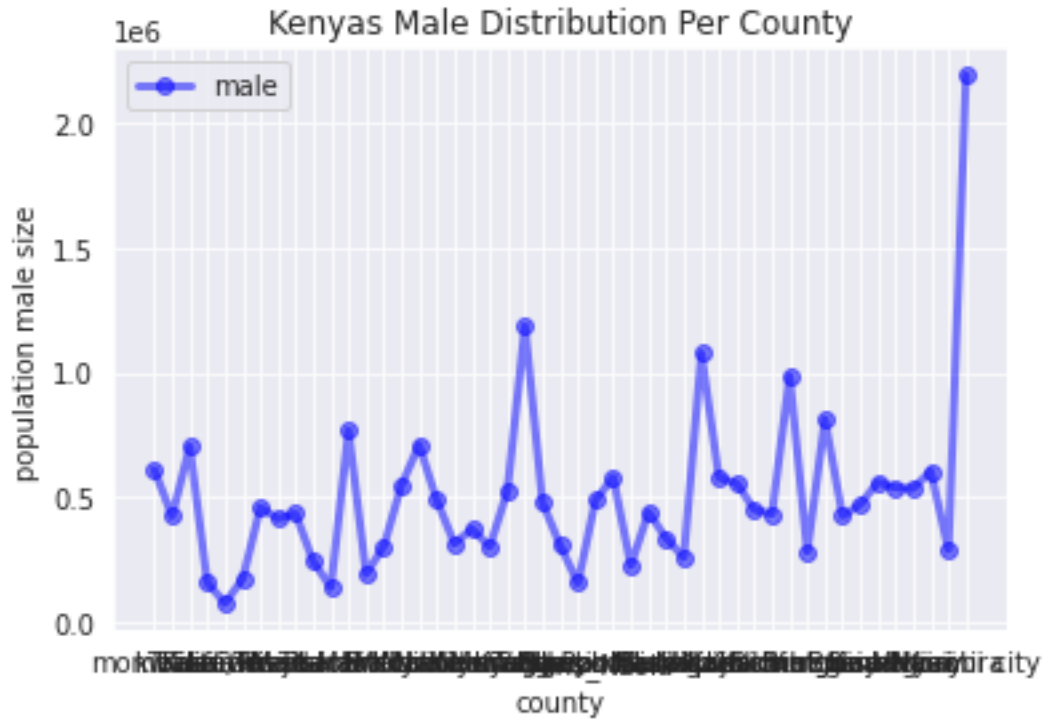
```python
intersex=[30, 18, 25, 2, 4, 7, 34, 49, 37, 18, 9, 41, 7, 24, 33, 34, 20, 20,
↪31, 31, 31, 135, 21, 15, 7, 28, 28, 12, 22, 13, 18, 95, 26, 38, 28, 23, 40,
↪12, 35, 28, 18, 23, 23, 35, 38, 13, 245]
male=[610257, 425121, 704089, 158550, 76103, 173337, 458975, 415374, 434976,
↪243548, 139510, 767698, 193764, 304208, 549003, 710707, 489691, 315022,
↪374228, 302011, 523940, 1187146, 478087, 307013, 156774, 489107, 580269,
↪227317, 441259, 336322, 259440, 1077272, 579042, 557098, 450741, 434287,
↪987133, 283678, 812146, 426252, 471669, 560942, 539560, 536187, 605784,
↪290907, 2192452]
county=['mombasa', 'kwale', 'Kilifi', 'Tanariver', 'Lamu', 'Taita/Taveta',
↪'Garissa', 'Wajir', 'Mandera', 'Marsarbit', 'Isiolo', 'Meru', 'Tharaka
↪Nithi', 'Embu', 'Kitui', 'Machakos', 'Makueni', 'Nyandarua', 'Nyeri',
↪'Kirinyaga', 'Muranga', 'Kiambu', 'Turkana', 'West Pokot', 'Samburu',
↪'Trans_Nzoia', 'Uasin Gishu', 'Elgeyo Marakwet', 'Nandi', 'Baringo',
↪'Laikipia', 'Nakuru', 'Narok', 'Kajiado', 'Kericho', 'Bomet', 'Kakamega',
↪'Vihiga', 'Bungoma', 'Busia', 'Siaya', 'Kisumu', 'Homa bay', 'Migori',
↪'Kisii', 'Nyamira', 'Nairobi city']
pl.plot(county,male,"o-b",alpha=.5,lw=3)
pl.legend(["male"])
pl.title("Kenyas Male Distribution Per County")
pl.xlabel("county")
pl.ylabel("population male size")
pl.figure(figsize=[1000,980])
sns.set_style("darkgrid");
```

[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444, 216219,
128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247, 384845, 308369,
532669, 1230454, 448868, 314213, 153546, 501206, 582889, 227151, 444430, 330428,
259102, 1084835, 578805, 560704, 451008, 441379, 970406, 306323, 858389, 467401,
521496, 594609, 592367, 580214, 661038, 314656, 2204376]

Kenyas Male Distribution Per County

<Figure size 72000x70560 with 0 Axes>

```
[37]: total=[1208333,866820,1453787,315943,143920,340671,841353,781263,867457,459785,268002,1545714,
      print(female)
      female=[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444,
       →216219, 128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247,
       →384845, 308369, 532669, 1230454, 448868, 314213, 153546, 501206, 582889,
       →227151, 444430, 330428, 259102, 1084835, 578805, 560704, 451008, 441379,
       →970406, 306323, 858389, 467401, 521496, 594609, 592367, 580214, 661038,
       →314656, 2204376]
      intersex=[30, 18, 25, 2, 4, 7, 34, 49, 37, 18, 9, 41, 7, 24, 33, 34, 20, 20,
       →31, 31, 31, 135, 21, 15, 7, 28, 28, 12, 22, 13, 18, 95, 26, 38, 28, 23, 40,
       →12, 35, 28, 18, 23, 23, 35, 38, 13, 245]
      male=[610257, 425121, 704089, 158550, 76103, 173337, 458975, 415374, 434976,
       →243548, 139510, 767698, 193764, 304208, 549003, 710707, 489691, 315022,
       →374228, 302011, 523940, 1187146, 478087, 307013, 156774, 489107, 580269,
       →227317, 441259, 336322, 259440, 1077272, 579042, 557098, 450741, 434287,
       →987133, 283678, 812146, 426252, 471669, 560942, 539560, 536187, 605784,
       →290907, 2192452]
```

4

```
county=['mombasa', 'kwale', 'Kilifi', 'Tanariver', 'Lamu', 'Taita/Taveta',
→'Garissa', 'Wajir', 'Mandera', 'Marsarbit', 'Isiolo', 'Meru', 'Tharaka
→Nithi', 'Embu', 'Kitui', 'Machakos', 'Makueni', 'Nyandarua', 'Nyeri',
→'Kirinyaga', 'Muranga', 'Kiambu', 'Turkana', 'West Pokot', 'Samburu',
→'Trans_Nzoia', 'Uasin Gishu', 'Elgeyo Marakwet', 'Nandi', 'Baringo',
→'Laikipia', 'Nakuru', 'Narok', 'Kajiado', 'Kericho', 'Bomet', 'Kakamega',
→'Vihiga', 'Bungoma', 'Busia', 'Siaya', 'Kisumu', 'Homa bay', 'Migori',
→'Kisii', 'Nyamira', 'Nairobi city']
pl.plot(county,female,"o-r",alpha=.5,lw=3)
pl.legend(["female"])
pl.title("Kenya Female Distribution Per County")
pl.xlabel("county")
pl.ylabel("population female size")
pl.figure(figsize=[1000,980])
```
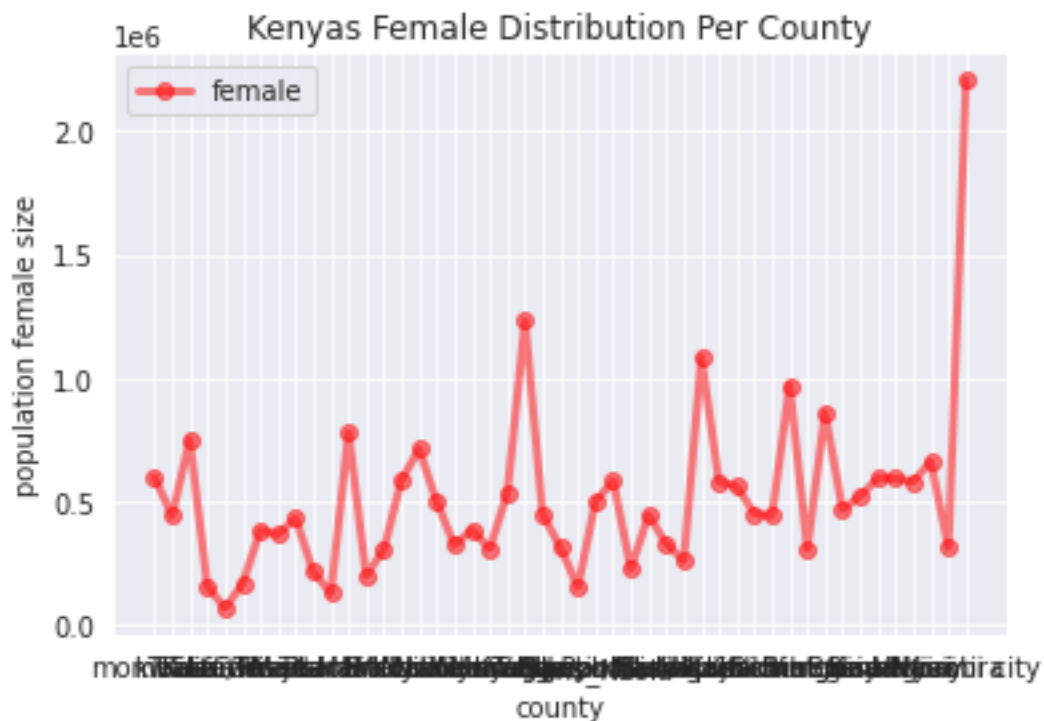
[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444, 216219,
128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247, 384845, 308369,
532669, 1230454, 448868, 314213, 153546, 501206, 582889, 227151, 444430, 330428,
259102, 1084835, 578805, 560704, 451008, 441379, 970406, 306323, 858389, 467401,
521496, 594609, 592367, 580214, 661038, 314656, 2204376]

[37]: <Figure size 72000x70560 with 0 Axes>

<Figure size 72000x70560 with 0 Axes>

```
[32]: total=[1208333,866820,1453787,315943,143920,340671,841353,781263,867457,459785,268002,1545714,
      print(female)
      female=[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444,
      →216219, 128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247,
      →384845, 308369, 532669, 1230454, 448868, 314213, 153546, 501206, 582889,
      →227151, 444430, 330428, 259102, 1084835, 578805, 560704, 451008, 441379,
      →970406, 306323, 858389, 467401, 521496, 594609, 592367, 580214, 661038,
      →314656, 2204376]
      intersex=[30, 18, 25, 2, 4, 7, 34, 49, 37, 18, 9, 41, 7, 24, 33, 34, 20, 20,
      →31, 31, 31, 135, 21, 15, 7, 28, 28, 12, 22, 13, 18, 95, 26, 38, 28, 23, 40,
      →12, 35, 28, 18, 23, 23, 35, 38, 13, 245]
      male=[610257, 425121, 704089, 158550, 76103, 173337, 458975, 415374, 434976,
      →243548, 139510, 767698, 193764, 304208, 549003, 710707, 489691, 315022,
      →374228, 302011, 523940, 1187146, 478087, 307013, 156774, 489107, 580269,
      →227317, 441259, 336322, 259440, 1077272, 579042, 557098, 450741, 434287,
      →987133, 283678, 812146, 426252, 471669, 560942, 539560, 536187, 605784,
      →290907, 2192452]
      county=['mombasa', 'kwale', 'Kilifi', 'Tanariver', 'Lamu', 'Taita/Taveta',
      →'Garissa', 'Wajir', 'Mandera', 'Marsarbit', 'Isiolo', 'Meru', 'Tharaka
      →Nithi', 'Embu', 'Kitui', 'Machakos', 'Makueni', 'Nyandarua', 'Nyeri',
      →'Kirinyaga', 'Muranga', 'Kiambu', 'Turkana', 'West Pokot', 'Samburu',
      →'Trans_Nzoia', 'Uasin Gishu', 'Elgeyo Marakwet', 'Nandi', 'Baringo',
      →'Laikipia', 'Nakuru', 'Narok', 'Kajiado', 'Kericho', 'Bomet', 'Kakamega',
      →'Vihiga', 'Bungoma', 'Busia', 'Siaya', 'Kisumu', 'Homa bay', 'Migori',
      →'Kisii', 'Nyamira', 'Nairobi city']
      pl.plot(county,male,"o-b",alpha=.5,lw=3)
      pl.plot(county,female,"x-r",alpha=1,lw=3)

      pl.legend(["male","female"])
      pl.title("Kanyas Gender Distribution")
      pl.xlabel("county")
      pl.ylabel("population size")
      pl.figure(figsize=[100,98])
      sns.set_style("darkgrid");
```
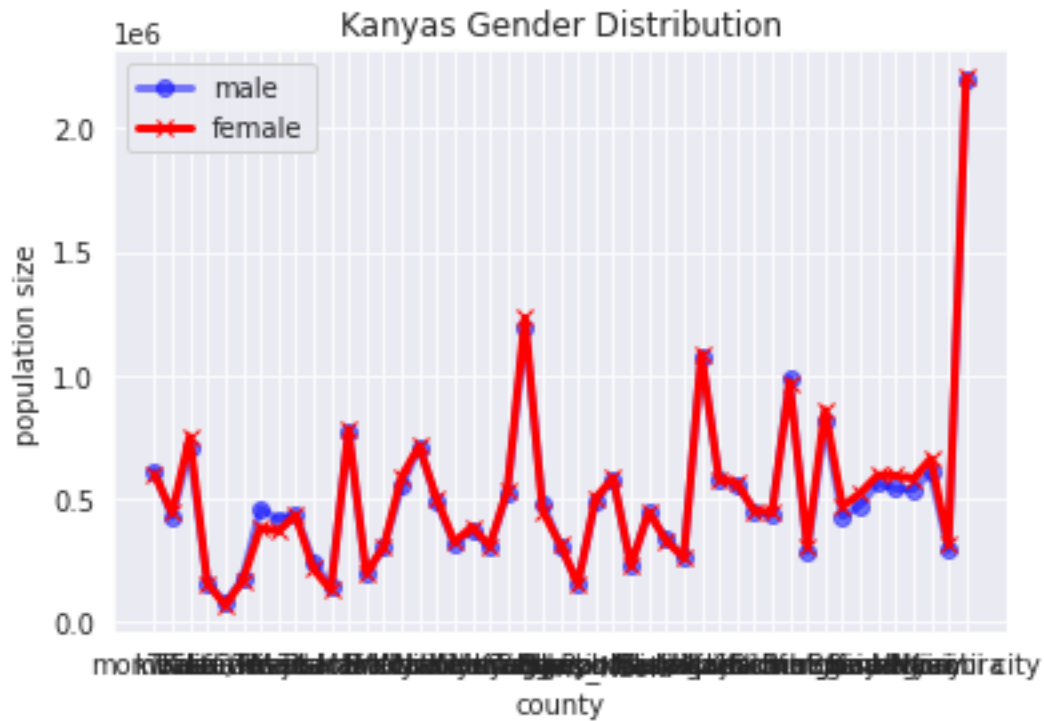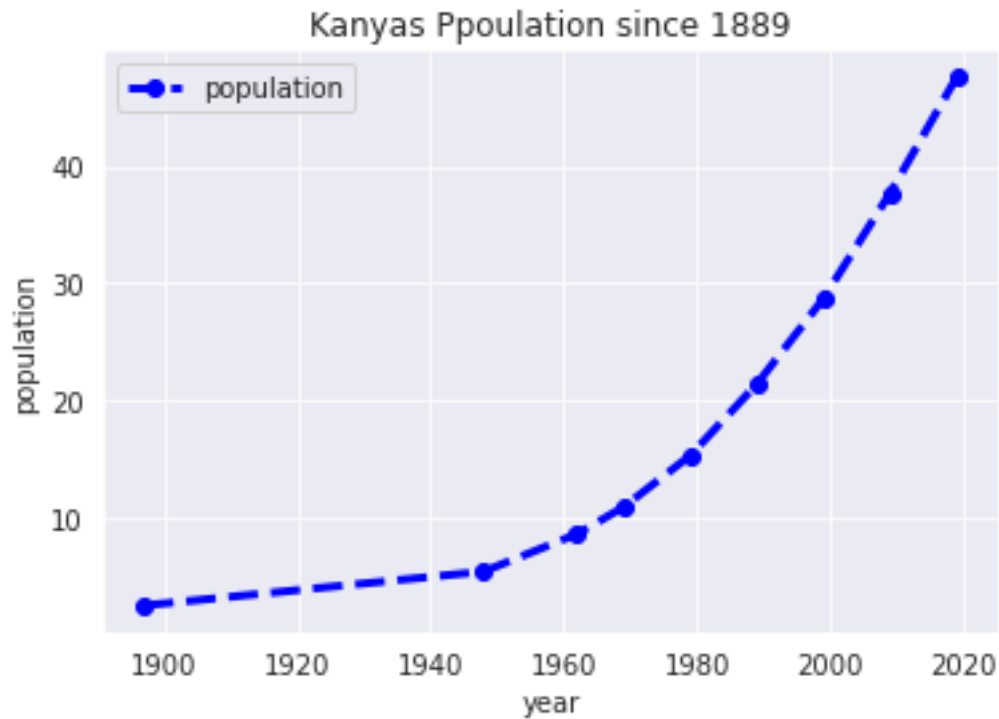
```
[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444, 216219,
128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247, 384845, 308369,
532669, 1230454, 448868, 314213, 153546, 501206, 582889, 227151, 444430, 330428,
259102, 1084835, 578805, 560704, 451008, 441379, 970406, 306323, 858389, 467401,
521496, 594609, 592367, 580214, 661038, 314656, 2204376]
```

Kanyas Gender Distribution

```
<Figure size 7200x7056 with 0 Axes>
```

```
[8]: year=[1897,1948,1962,1969,1979,1989,1999,2009,2019]
population=[2.5,5.4,8.6,10.9,15.3,21.4,28.7,37.7,47.6]
pl.plot(year,population,"o--b",alpha=1,lw=3)
pl.legend(["population"])
pl.title("Kanyas Ppoulation since 1889")
pl.xlabel("year")
pl.ylabel("population")
pl.figure(figsize=[16,12])
sns.set_style("darkgrid");
```

Kanyas Ppoulation since 1889

<Figure size 1152x864 with 0 Axes>

```
[16]: pl.title("Scatter Plot Kenya Data")
      sns.scatterplot(year,population),
      pl.figure(figsize=[12,12]);
```

/opt/conda/lib/python3.9/site-packages/seaborn/_decorators.py:36: FutureWarning:
Pass the following variables as keyword args: x, y. From version 0.12, the only
valid positional argument will be `data`, and passing other arguments without an
explicit keyword will result in an error or misinterpretation.
  warnings.warn(

Scatter Plot Kenya Data

<Figure size 864x864 with 0 Axes>
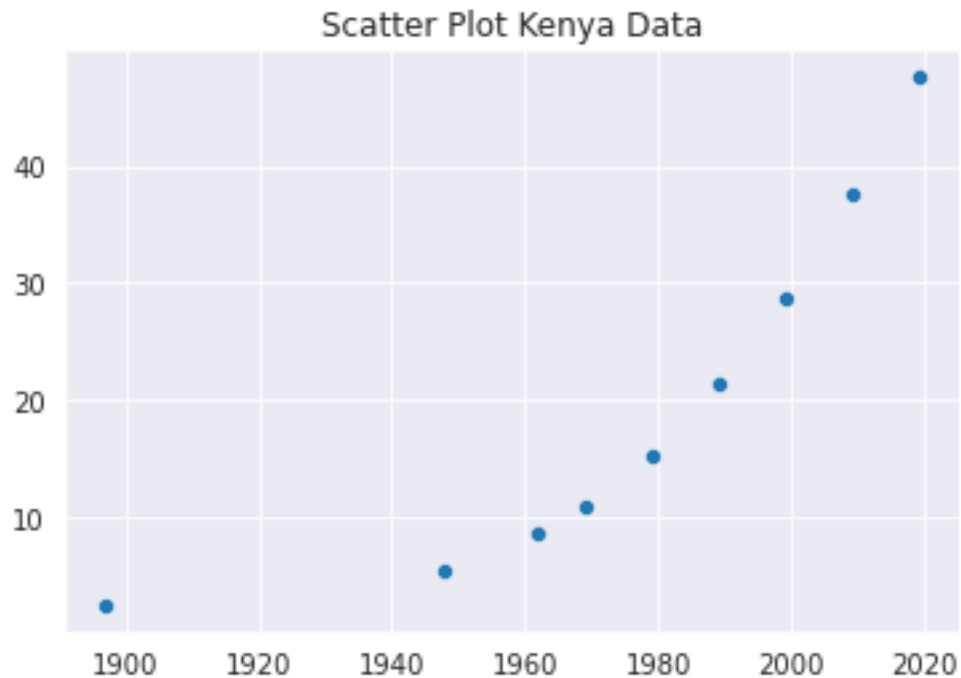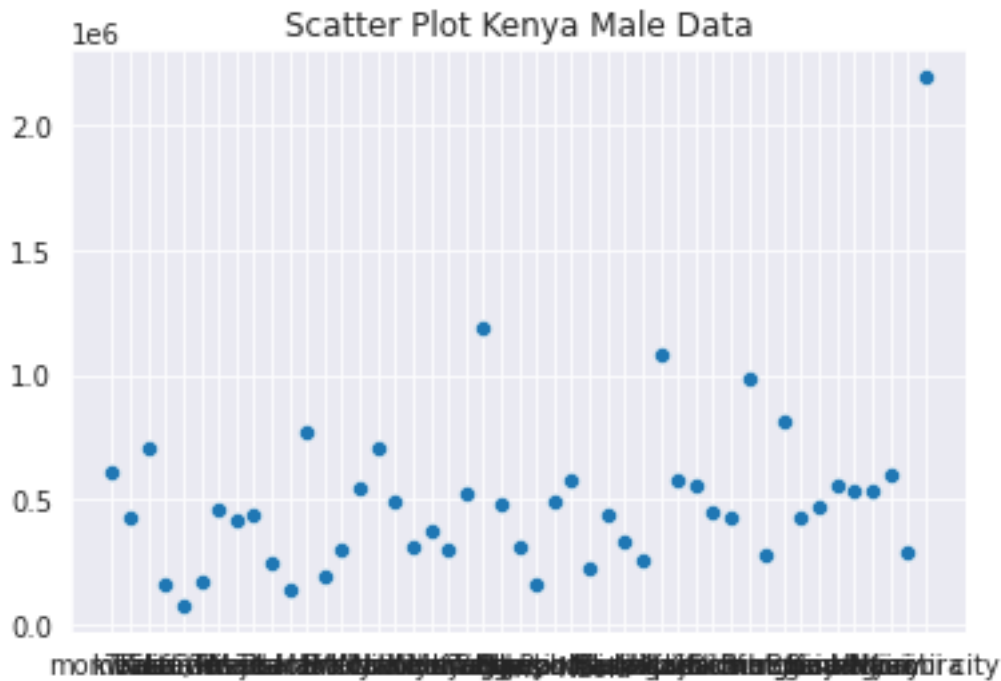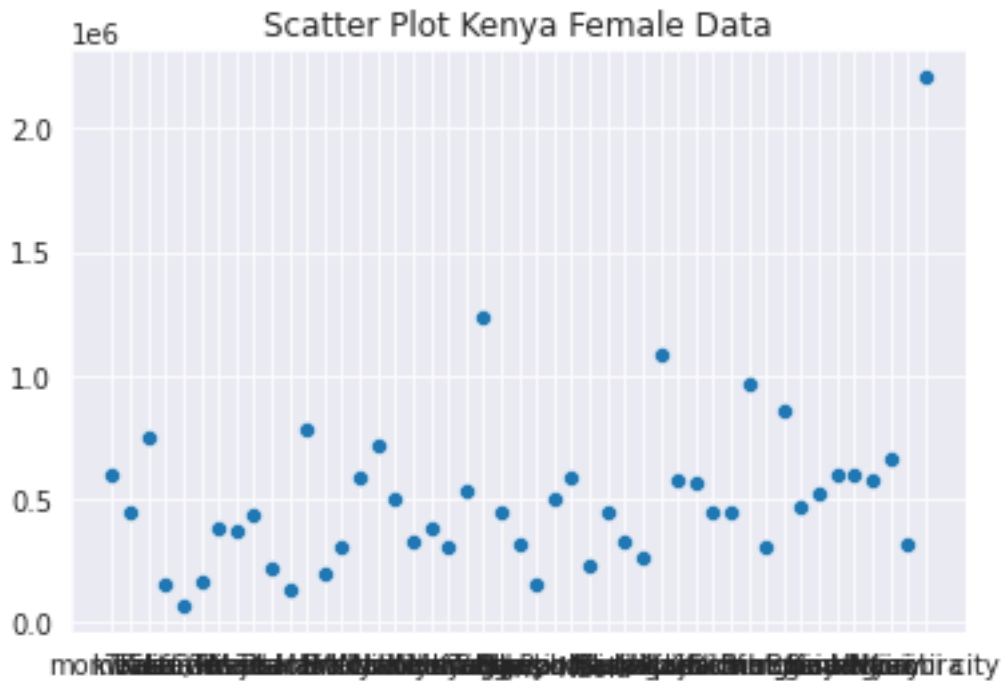
```
[41]: pl.title("Scatter Plot Kenya Male Data")
      sns.scatterplot(county,male),
      pl.xlabel="county",
      pl.ylabel="population size male",
      pl.figure(figsize=[100,100]);
```

/opt/conda/lib/python3.9/site-packages/seaborn/_decorators.py:36: FutureWarning:
Pass the following variables as keyword args: x, y. From version 0.12, the only
valid positional argument will be `data`, and passing other arguments without an
explicit keyword will result in an error or misinterpretation.
  warnings.warn(

Scatter Plot Kenya Male Data

<Figure size 7200x7200 with 0 Axes>

```
[42]: pl.title("Scatter Plot Kenya Female Data")
sns.scatterplot(county,female),
pl.xlabel="county",
pl.ylabel="population size female",
pl.figure(figsize=[100,100]);
```

/opt/conda/lib/python3.9/site-packages/seaborn/_decorators.py:36: FutureWarning:
Pass the following variables as keyword args: x, y. From version 0.12, the only
valid positional argument will be `data`, and passing other arguments without an
explicit keyword will result in an error or misinterpretation.
  warnings.warn(

Scatter Plot Kenya Female Data

```
<Figure size 7200x7200 with 0 Axes>
```

```
[78]: pl.title("Scatter Plot Kenya Gender Data Per County")
      sns.scatterplot(county,female,color="red"),
      sns.scatterplot(county,male,color="yellow"),
      pl.xlabel="county",
      pl.ylabel="population sizein terms of gender per county",
      pl.figure(figsize=[100,100]);
```

/opt/conda/lib/python3.9/site-packages/seaborn/_decorators.py:36: FutureWarning:
Pass the following variables as keyword args: x, y. From version 0.12, the only
valid positional argument will be `data`, and passing other arguments without an
explicit keyword will result in an error or misinterpretation.
 warnings.warn(
/opt/conda/lib/python3.9/site-packages/seaborn/_decorators.py:36: FutureWarning:
Pass the following variables as keyword args: x, y. From version 0.12, the only
valid positional argument will be `data`, and passing other arguments without an
explicit keyword will result in an error or misinterpretation.
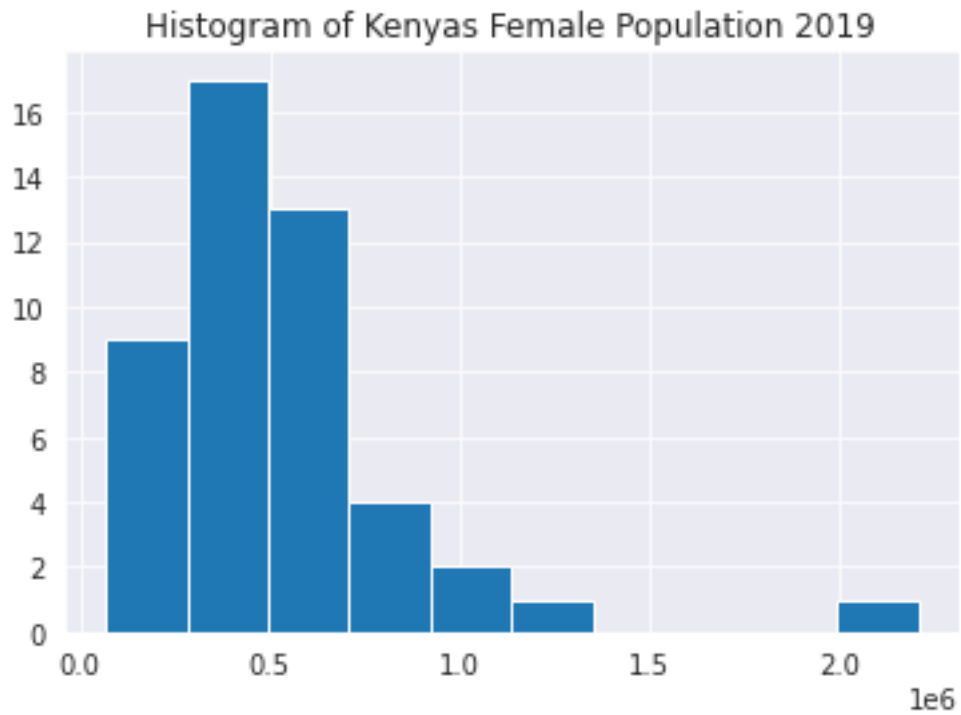 warnings.warn(

Scatter Plot Kenya Gender Data Per County

<Figure size 7200x7200 with 0 Axes>
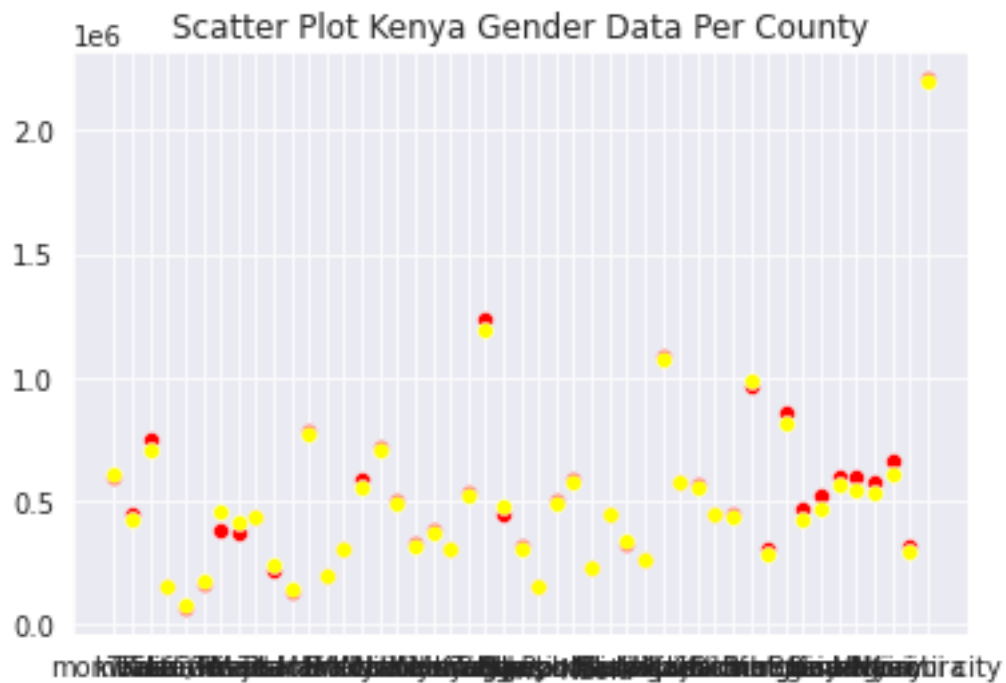
```
[52]: pl.title("Histogram of Kenyas Census Data Since 1889")
      pl.hist(population,bins=9);
```


Histogram of Kenyas Census Data Since 1889
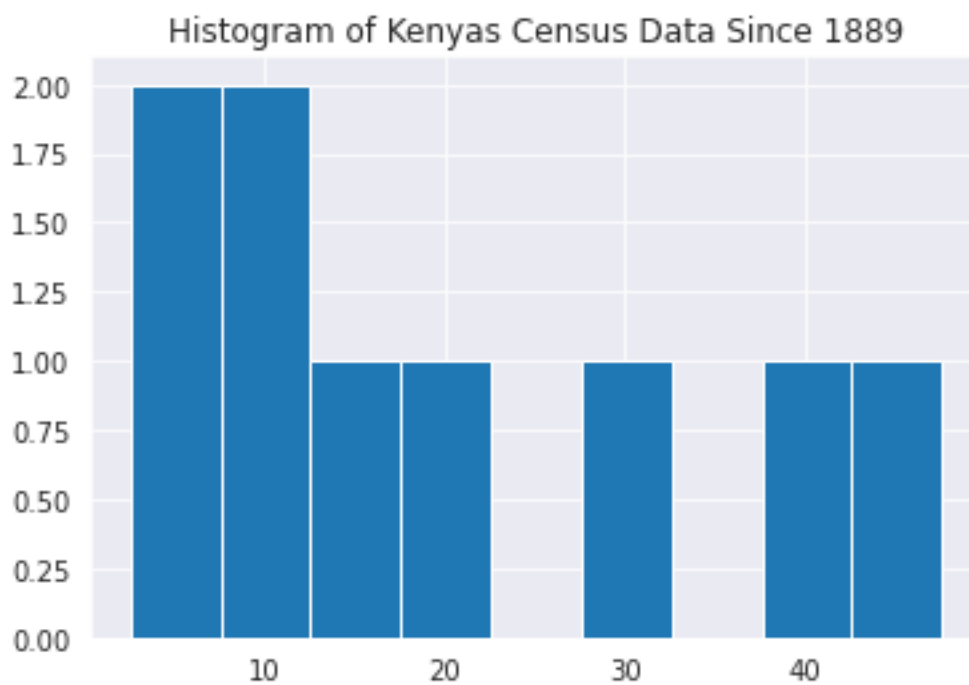
```
[56]: import numpy as np
```
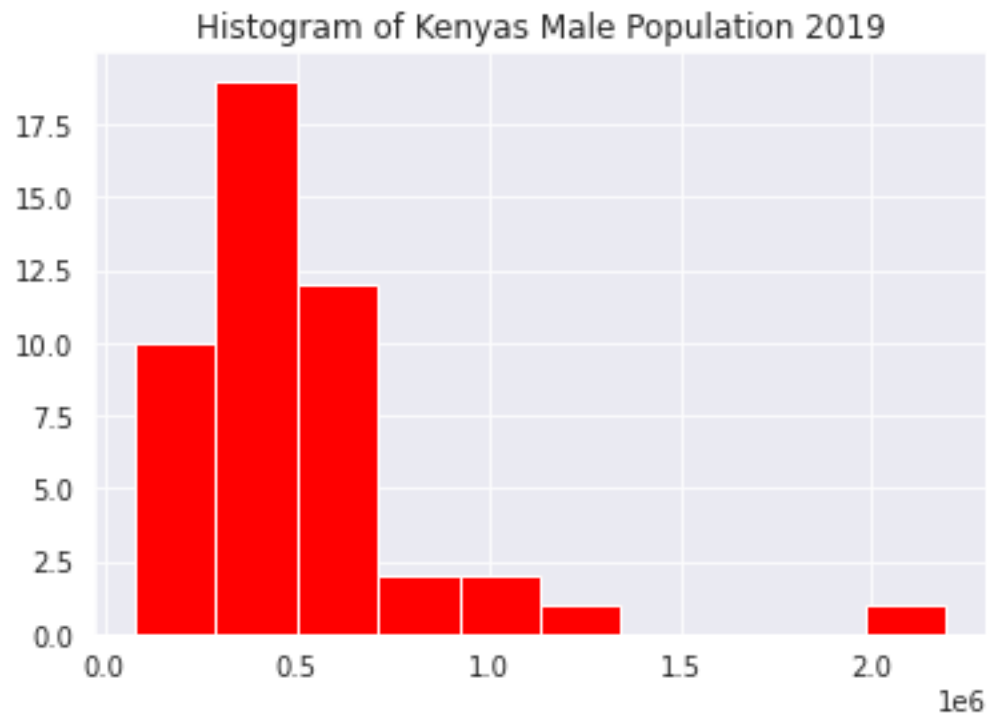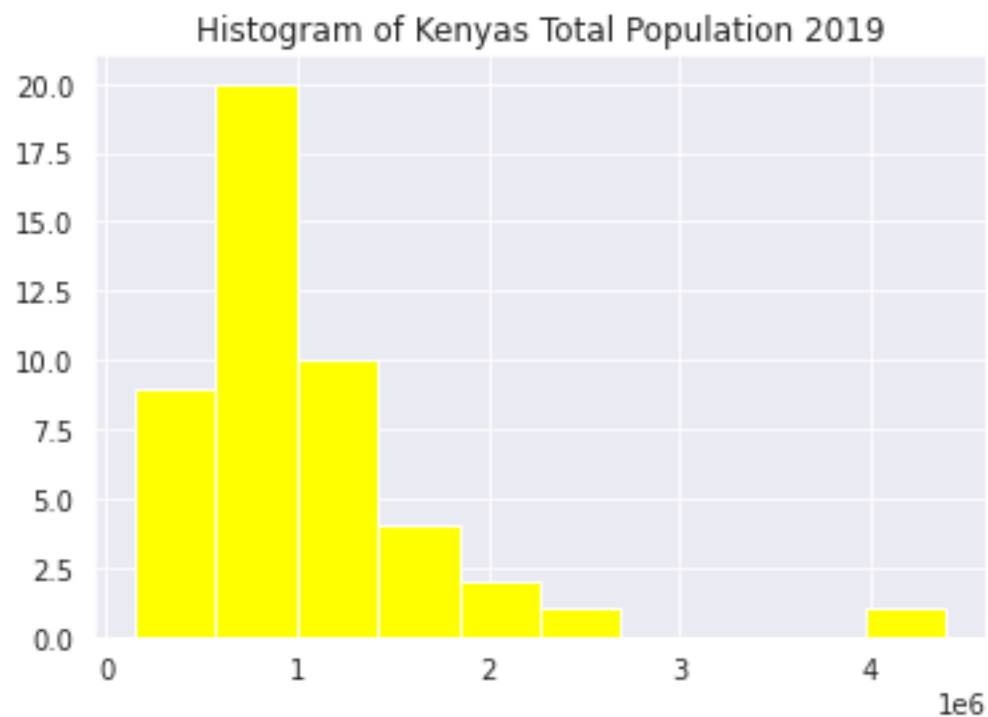
```
[68]: pl.title("Histogram of Kenyas Female Population 2019")
      pl.hist(female, bins=10);
```


Histogram of Kenyas Female Population 2019

```
[74]: pl.title("Histogram of Kenyas Male Population 2019")
      pl.hist(male,color="red");
```

Histogram of Kenyas Male Population 2019
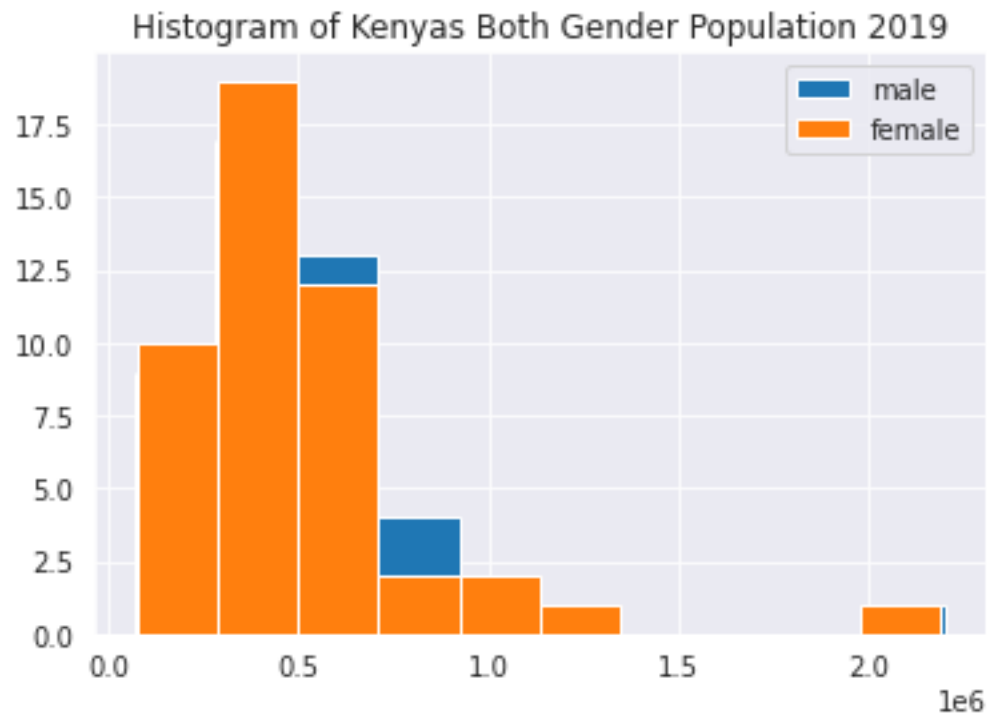
```
[75]: pl.title("Histogram of Kenyas Total Population 2019")
      pl.hist(total,color="yellow");
```


Histogram of Kenyas Total Population 2019

```python
total=[1208333,866820,1453787,315943,143920,340671,841353,781263,867457,459785,268002,1545714,
print(female)
female=[598046, 441681, 749673, 157391, 67813, 167327, 382344, 365840, 432444,
 216219, 128483, 777975, 199406, 304367, 587151, 711191, 497942, 323247,
 384845, 308369, 532669, 1230454, 448868, 314213, 153546, 501206, 582889,
 227151, 444430, 330428, 259102, 1084835, 578805, 560704, 451008, 441379,
 970406, 306323, 858389, 467401, 521496, 594609, 592367, 580214, 661038,
 314656, 2204376]
intersex=[30, 18, 25, 2, 4, 7, 34, 49, 37, 18, 9, 41, 7, 24, 33, 34, 20, 20,
 31, 31, 31, 135, 21, 15, 7, 28, 28, 12, 22, 13, 18, 95, 26, 38, 28, 23, 40,
 12, 35, 28, 18, 23, 23, 35, 38, 13, 245]
male=[610257, 425121, 704089, 158550, 76103, 173337, 458975, 415374, 434976,
 243548, 139510, 767698, 193764, 304208, 549003, 710707, 489691, 315022,
 374228, 302011, 523940, 1187146, 478087, 307013, 156774, 489107, 580269,
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 987133, 283678, 812146, 426252, 471669, 560942, 539560, 536187, 605784,
 290907, 2192452]
county=['mombasa', 'kwale', 'Kilifi', 'Tanariver', 'Lamu', 'Taita/Taveta',
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 Nithi', 'Embu', 'Kitui', 'Machakos', 'Makueni', 'Nyandarua', 'Nyeri',
 'Kirinyaga', 'Muranga', 'Kiambu', 'Turkana', 'West Pokot', 'Samburu',
 'Trans_Nzoia', 'Uasin Gishu', 'Elgeyo Marakwet', 'Nandi', 'Baringo',
 'Laikipia', 'Nakuru', 'Narok', 'Kajiado', 'Kericho', 'Bomet', 'Kakamega',
 'Vihiga', 'Bungoma', 'Busia', 'Siaya', 'Kisumu', 'Homa bay', 'Migori',
 'Kisii', 'Nyamira', 'Nairobi city']
```

```python
pl.title("Histogram of Kenyas Both Gender Population 2019")
pl.hist(female)
pl.hist(male)
pl.legend(["male","female"]);
```

Histogram of Kenyas Both Gender Population 2019

[ ]: