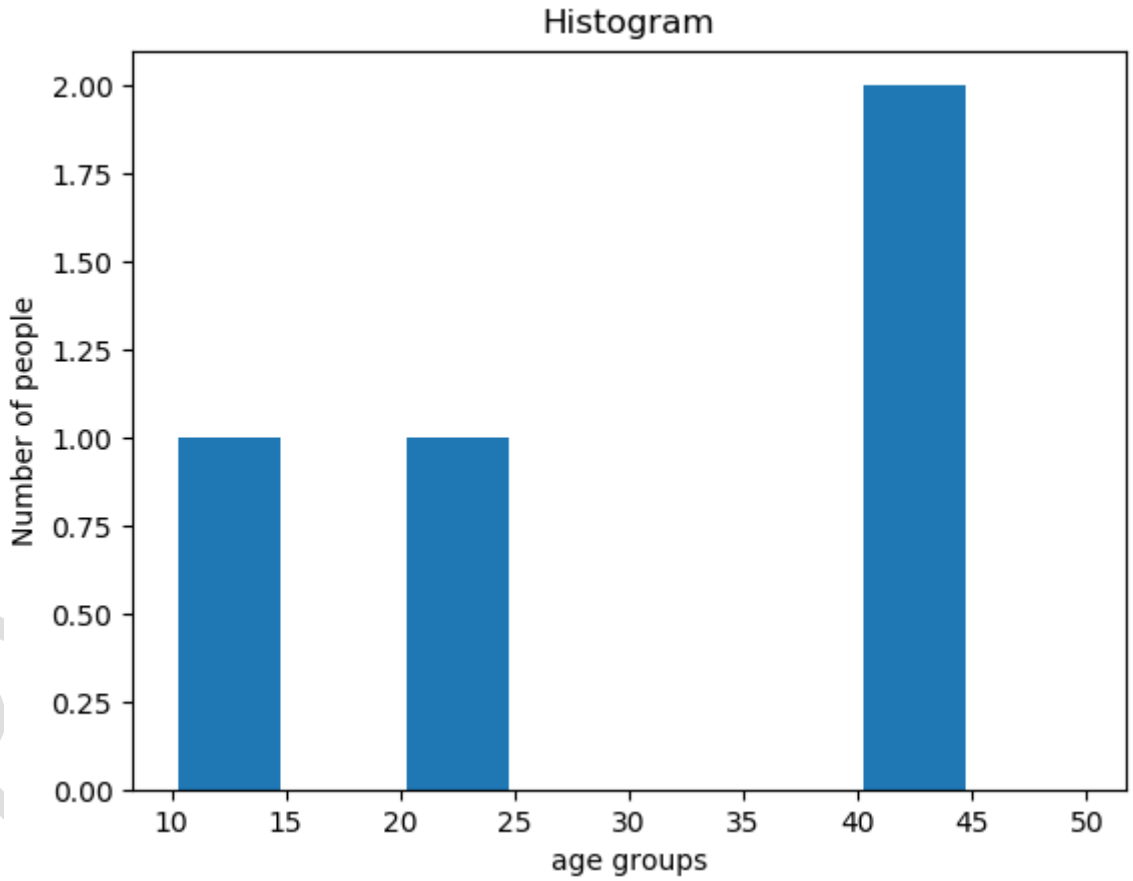
DATA VISUALIZATION

PROGRAMS

#Histogram with bars for age group[10,15,20,25,30,35,40,45,50] and avarage_age_of_population = [10,20,40,40]

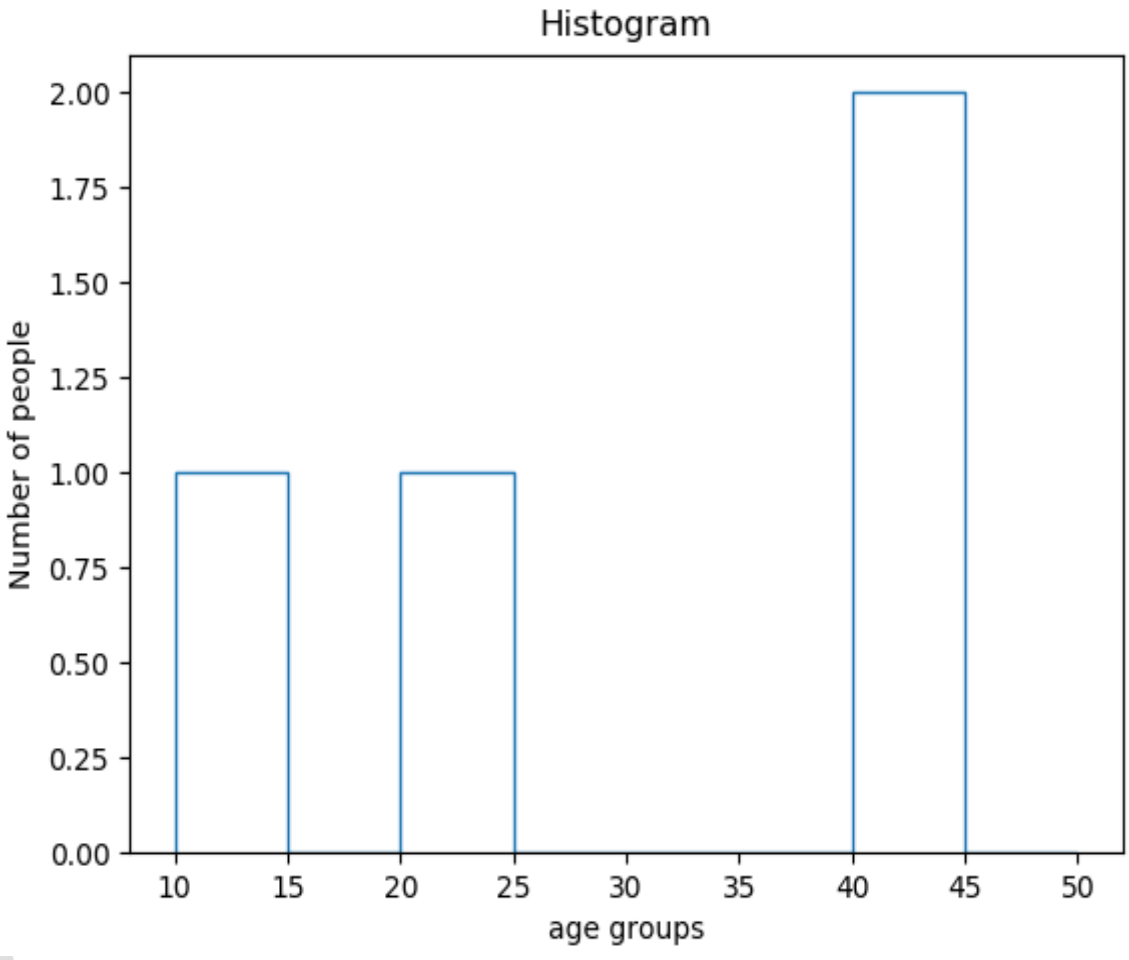
```
import matplotlib.pyplot as xyz
avarage_age_of_population = [10,20,40,40]
bins = [10,15,20,25,30,35,40,45,50]
xyz.hist(avarage_age_of_population, bins, histtype='bar',rwidth=0.9)
xyz.xlabel('age groups')
xyz.ylabel('Number of people')
xyz.title('Histogram')
xyz.show()
```



Note : above histogram is drawn with bars as per bins already decided for age group [10,15,20,25,30,35,40,45,50] and height of bars as 1 point for 10 and 20 because these values are for one time only and 2 point for 40 because it is for two times.

#Histogram with steps for age group[10,15,20,25,30,35,40,45,50] and avarage_age_of_population = [10,20,40,40]

```
import matplotlib.pyplot as xyz
avarage_age_of_population = [10,20,40,40]
bins = [10,15,20,25,30,35,40,45,50]
xyz.hist(avarage_age_of_population, bins, histtype='step',rwidth=0.9)
xyz.xlabel('age groups')
xyz.ylabel('Number of people')
xyz.title('Histogram')
xyz.show()
```

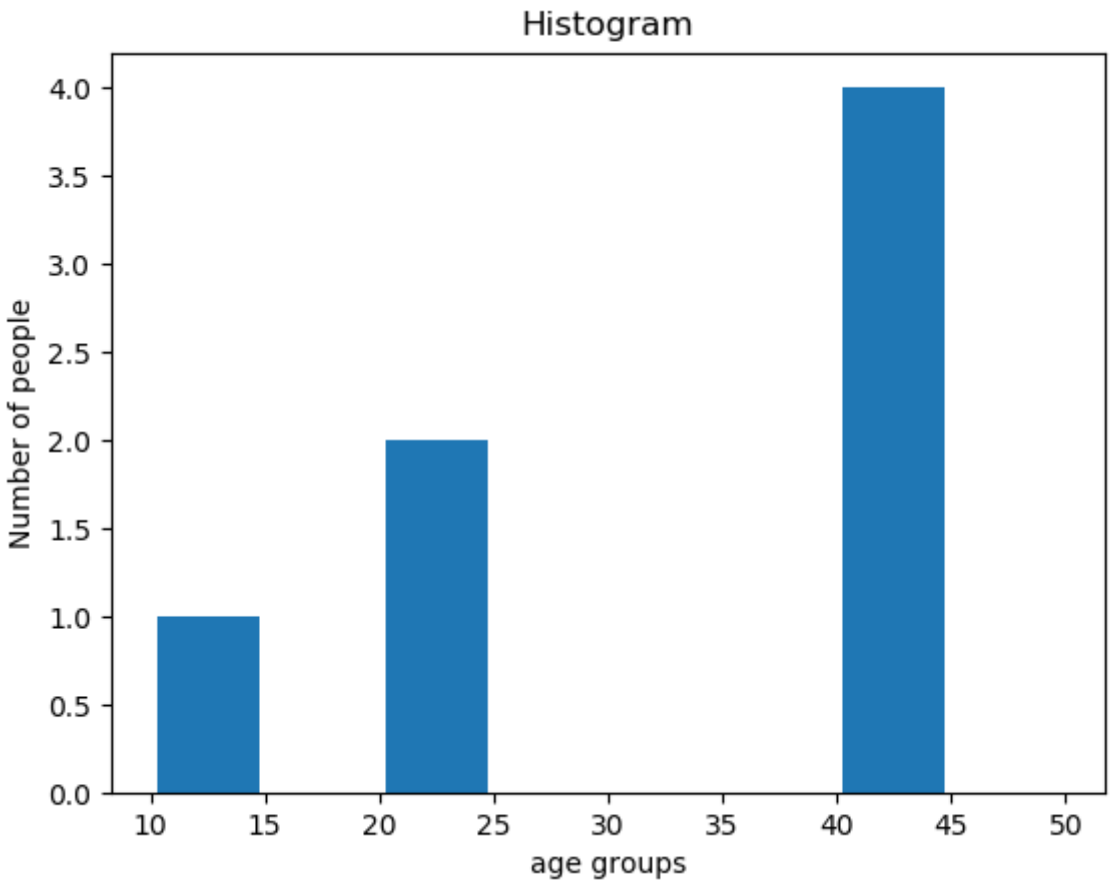


Note : above histogram is drawn with steps as per bins already decided for age group [10,15,20,25,30,35,40,45,50] and height of bars as 1 point for 10 and 20 because these values are for one time only and 2 point for 40 because it is for two times.

Type of histtypes are histtype : {'bar', 'barstacked', 'step', 'stepfilled'}

#Histogram with bars for age group[10,15,20,25,30,35,40,45,50] and avarage_age_of_population = [10,20,20,40,40,40,40]

```
import matplotlib.pyplot as xyz
avarage_age_of_population = [10,20,20,40,40,40,40]
bins = [10,15,20,25,30,35,40,45,50]
xyz.hist(avarage_age_of_population, bins, histtype='bar',rwidth=0.9)
xyz.xlabel('age groups')
xyz.ylabel('Number of people')
xyz.title('Histogram')
xyz.show()
```



Note : above histogram is drawn with bars as per bins already decided for age group [10,15,20,25,30,35,40,45,50] and height of bars as 1 point for 10 as 10 is one time only , 2 points for 20 because these values are for two time and 4 points for 40 because it is for four times.

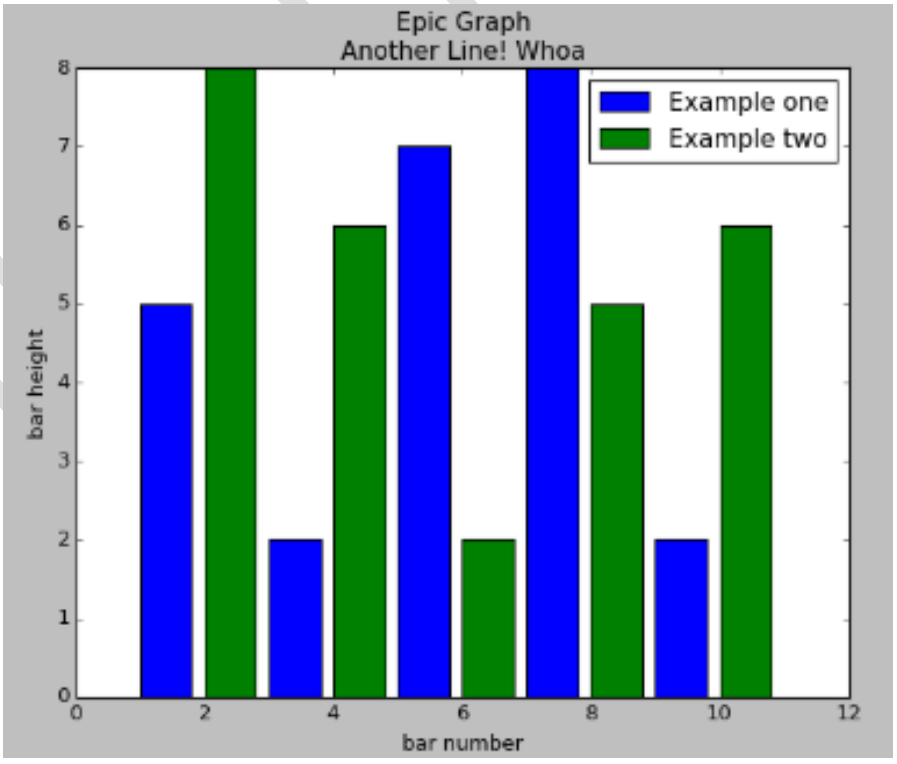
#Draw the double bar graph for data given below using matplotlib
[1,3,6,7,9],[5,2,7,8,2] &
[2,4,6,8,10],[8,6,2,5,6]

```
import matplotlib.pyplot as plt
        plt.bar([1,3,6,7,9],[5,2,7,8,2], label="Example one")

plt.bar([2,4,6,8,10],[8,6,2,5,6], label="Example two", color='g')
plt.legend()
plt.xlabel('bar number')
plt.ylabel('bar height')

plt.title('Epic Graph\nAnother Line! Whoa')

plt.show()
```

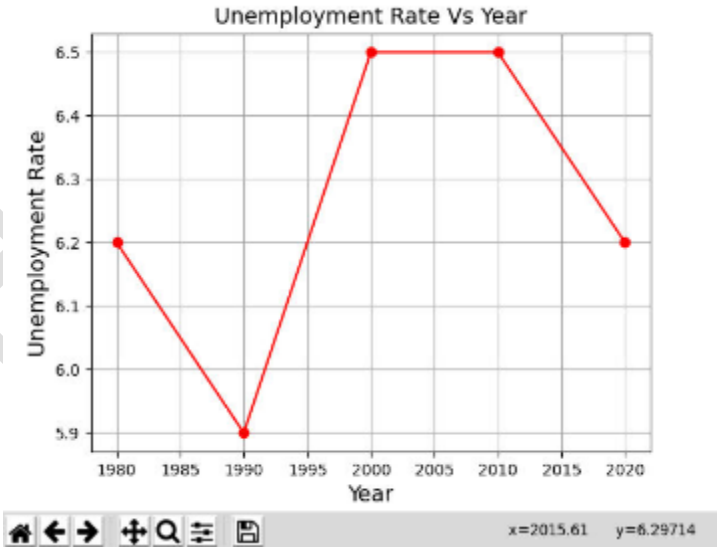


#Draw line plot for unemployment data

```
import matplotlib.pyplot as plt

Year = [1980,1990,2000,2010,2020]
Unemployment_Rate = [6.2,5.9,6.5,6.5,6.2]

plt.plot(Year, Unemployment_Rate, color='red', marker='o')
plt.title('Unemployment Rate Vs Year', fontsize=14)
plt.xlabel('Year', fontsize=14)
plt.ylabel('Unemployment Rate', fontsize=14)
plt.grid(True)
plt.show()
```



#double line in line plot

```
import matplotlib.pyplot as plt
year = [2014, 2015, 2016, 2017, 2018, 2019]
englishpassper = [39, 117, 98, 54, 28, 15]
mathspassper = [0, 0, 13, 56, 39, 14]
plt.plot(year,englishpassper, color="#6c3376",
linewidth=3,label="English pass %")
plt.plot(year, mathspassper, color="#f3e151",
linewidth=3,label="Math pass %")

plt.xlabel('Year')
plt.ylabel('Pass performance')
plt.legend()
plt.show()
```