```
In [1]:
        import pandas as pd
         import numpy as np
         import matplotlib.pyplot as plt
In [2]: data=pd.read_csv(r"C:\Users\user\Desktop\Vicky\4_drug200.csv")
In [3]: data.shape
Out[3]: (200, 6)
In [4]: data.head
Out[4]: <bound method NDFrame.head of</pre>
                                              Age Sex
                                                            BP Cholesterol Na_to_K
                                                                                        Dru
         0
               23
                    F
                          HIGH
                                       HIGH
                                              25.355
                                                       drugY
         1
               47
                    Μ
                           LOW
                                       HIGH
                                              13.093
                                                       drugC
         2
               47
                           LOW
                                              10.114
                                                      drugC
                    Μ
                                       HIGH
         3
               28
                    F
                        NORMAL
                                       HIGH
                                               7.798
                                                      drugX
               61
                    F
         4
                           LOW
                                       HIGH
                                              18.043
                                                      drugY
                                                  . . .
         . .
              . . .
                    . .
                           . . .
                                        . . .
         195
               56
                    F
                           LOW
                                       HIGH
                                              11.567
                                                       drugC
         196
               16
                           LOW
                                       HIGH
                                              12.006
                                                      drugC
                    Μ
         197
               52
                    М
                       NORMAL
                                       HIGH
                                               9.894
                                                      drugX
         198
               23
                    Μ
                        NORMAL
                                     NORMAL
                                              14.020
                                                       drugX
         199
               40
                    F
                                              11.349
                           LOW
                                     NORMAL
                                                      drugX
         [200 rows x 6 columns]>
In [5]: data.tail()
```

## Out[5]:

	Age	Sex	ВР	Cholesterol	Na_to_K	Drug
195	56	F	LOW	HIGH	11.567	drugC
196	16	М	LOW	HIGH	12.006	drugC
197	52	М	NORMAL	HIGH	9.894	drugX
198	23	М	NORMAL	NORMAL	14.020	drugX
199	40	F	LOW	NORMAL	11.349	drugX

In [6]: data.describe()

Out[6]:

	Age	Na_to_K
count	200.000000	200.000000
mean	44.315000	16.084485
std	16.544315	7.223956
min	15.000000	6.269000
25%	31.000000	10.445500
50%	45.000000	13.936500
75%	58.000000	19.380000
max	74.000000	38.247000

In [7]: data.isna()

Out[7]:

	Age	Sex	ВР	Cholesterol	Na_to_K	Drug
0	False	False	False	False	False	False
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False
195	False	False	False	False	False	False
196	False	False	False	False	False	False
197	False	False	False	False	False	False
198	False	False	False	False	False	False
199	False	False	False	False	False	False

200 rows × 6 columns

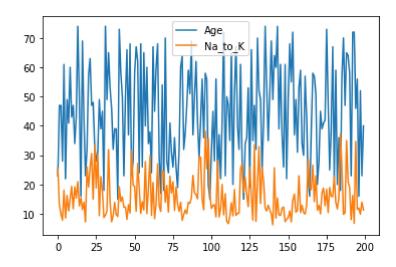
In [8]: data.size

Out[8]: 1200

```
In [9]: |data.isna
Out[9]: <bound method DataFrame.isna of</pre>
                                                                 BP Cholesterol Na_to_K
                                                   Age Sex
                                                                                              D
         rug
                23
                     F
         0
                           HIGH
                                        HIGH
                                                25.355
                                                         drugY
                                                         drugC
         1
                47
                            LOW
                                                13.093
                     Μ
                                        HIGH
         2
                47
                     Μ
                            LOW
                                        HIGH
                                                10.114
                                                         drugC
         3
                     F
                         NORMAL
                28
                                        HIGH
                                                 7.798
                                                         drugX
         4
                61
                     F
                            LOW
                                        HIGH
                                                18.043
                                                         drugY
                            . . .
                                          . . .
                                                    . . .
                            LOW
                                                         drugC
         195
                56
                     F
                                        HIGH
                                                11.567
                            LOW
                                                         drugC
         196
                16
                     Μ
                                        HIGH
                                                12.006
         197
                52
                         NORMAL
                                        HIGH
                                                 9.894
                                                         drugX
                     Μ
         198
                23
                     Μ
                         NORMAL
                                      NORMAL
                                                14.020
                                                         drugX
         199
                40
                     F
                            LOW
                                      NORMAL
                                                11.349
                                                         drugX
         [200 rows x 6 columns]>
```

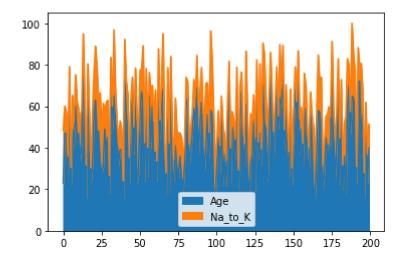
```
In [10]: | data.plot.line()
```

## Out[10]: <AxesSubplot:>



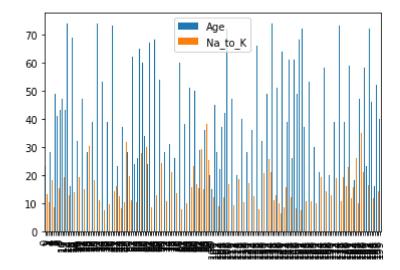
In [11]: data.plot.area()

Out[11]: <AxesSubplot:>



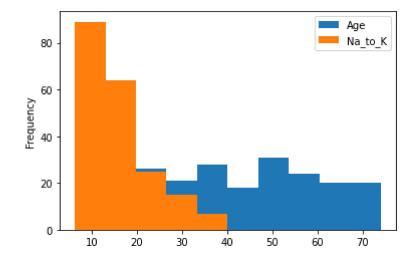
```
In [12]: data.plot.bar()
```

Out[12]: <AxesSubplot:>



```
In [13]: data.plot.hist()
```

Out[13]: <AxesSubplot:ylabel='Frequency'>



```
In [15]: data.plot.scatter(x="Age",y='Na_to_K')
Out[15]: <AxesSubplot:xlabel='Age', ylabel='Na_to_K'>
              35
              30
           & 50
장 52
              15
              10
               5
                      20
                             30
                                     40
                                                            70
                                                    60
 In [ ]: data.fillna(value=5)
 In [ ]:
          pd.isna(data)
In [17]: data.plot.pie(y="Age",startangle=90)
                                         57
                                         58
                                         59
                                         60
                                         61
                                         62
                                         63
                                         64
                                         65
                                         67
                                         68
                                         69
                                         70
                                         71
                                         72
                                         73
                                         74
                                         75
                                         76
                                         77
                                         78
 In [ ]:
```