In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```

In [3]:
```
pd.set_option("display.max_rows", None)
```

In [4]:
```
traffic = pd.read_csv("traffic.csv", sep = ";")
```

In [5]:
```
traffic
```

Out[5]:

	Hour (Coded)	Immobilized bus	Broken Truck	Vehicle excess	Accident victim	Running over	Fire vehicles	Occurrence involving freight	Inc invo dang fi
0	1	0	0	0	0	0	0	0	
1	2	0	0	0	0	0	0	0	
2	3	0	0	0	0	0	0	0	
3	4	0	0	0	0	0	0	0	
4	5	0	0	0	0	0	0	0	
5	6	0	0	0	0	0	0	0	
6	7	0	0	0	0	0	0	0	
7	8	0	0	0	0	0	0	0	
8	9	0	0	0	0	0	0	0	

In [6]:
```
1 traffic.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 135 entries, 0 to 134
Data columns (total 18 columns):
 #   Column                                  Non-Null Count  Dtype
---  ------                                  --------------  -----
 0   Hour (Coded)                            135 non-null    int64
 1   Immobilized bus                         135 non-null    int64
 2   Broken Truck                            135 non-null    int64
 3   Vehicle excess                          135 non-null    int64
 4   Accident victim                         135 non-null    int64
 5   Running over                            135 non-null    int64
 6   Fire vehicles                           135 non-null    int64
 7   Occurrence involving freight            135 non-null    int64
 8   Incident involving dangerous freight    135 non-null    int64
 9   Lack of electricity                     135 non-null    int64
 10  Fire                                    135 non-null    int64
 11  Point of flooding                       135 non-null    int64
 12  Manifestations                          135 non-null    int64
 13  Defect in the network of trolleybuses   135 non-null    int64
 14  Tree on the road                        135 non-null    int64
 15  Semaphore off                           135 non-null    int64
 16  Intermittent Semaphore                  135 non-null    int64
 17  Slowness in traffic (%)                 135 non-null    object
dtypes: int64(17), object(1)
memory usage: 19.1+ KB
```

In [7]:
```
1 traffic["Slowness in traffic (%)"] = traffic["Slowness in traffic (%)"].s
```

In [8]:
```
1 traffic.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 135 entries, 0 to 134
Data columns (total 18 columns):
 #   Column                                  Non-Null Count  Dtype  
---  ------                                  --------------  -----  
 0   Hour (Coded)                            135 non-null    int64  
 1   Immobilized bus                         135 non-null    int64  
 2   Broken Truck                            135 non-null    int64  
 3   Vehicle excess                          135 non-null    int64  
 4   Accident victim                         135 non-null    int64  
 5   Running over                            135 non-null    int64  
 6   Fire vehicles                           135 non-null    int64  
 7   Occurrence involving freight            135 non-null    int64  
 8   Incident involving dangerous freight    135 non-null    int64  
 9   Lack of electricity                     135 non-null    int64  
 10  Fire                                    135 non-null    int64  
 11  Point of flooding                       135 non-null    int64  
 12  Manifestations                          135 non-null    int64  
 13  Defect in the network of trolleybuses   135 non-null    int64  
 14  Tree on the road                        135 non-null    int64  
 15  Semaphore off                           135 non-null    int64  
 16  Intermittent Semaphore                  135 non-null    int64  
 17  Slowness in traffic (%)                 135 non-null    float64
dtypes: float64(1), int64(17)
memory usage: 19.1 KB
```

In [10]:
```
1 traffic["Slowness in traffic (%)"].value_counts(bins = 10)
```

Out[10]:
```
(7.4, 9.4]      36
(9.4, 11.4]     27
(5.4, 7.4]      21
(3.379, 5.4]    16
(11.4, 13.4]    11
(13.4, 15.4]     6
(15.4, 17.4]     6
(17.4, 19.4]     5
(21.4, 23.4]     4
(19.4, 21.4]     3
Name: Slowness in traffic (%), dtype: int64
```

In [11]:
```
1 traffic["Slowness in traffic (%)"].value_counts(bins = 10, normalize = Tr
```

Out[11]:
```
(7.4, 9.4]      26.666667
(9.4, 11.4]     20.000000
(5.4, 7.4]      15.555556
(3.379, 5.4]    11.851852
(11.4, 13.4]     8.148148
(13.4, 15.4]     4.444444
(15.4, 17.4]     4.444444
(17.4, 19.4]     3.703704
(21.4, 23.4]     2.962963
(19.4, 21.4]     2.222222
Name: Slowness in traffic (%), dtype: float64
```

In [12]:
```
1 traffic.head()
```

Out[12]:

	Hour (Coded)	Immobilized bus	Broken Truck	Vehicle excess	Accident victim	Running over	Fire vehicles	Occurrence involving freight	Incident involving dangerous freight
0	1	0	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0	0
3	4	0	0	0	0	0	0	0	0
4	5	0	0	0	0	0	0	0	0

In [15]:
```
1 incidents = traffic.drop(["Hour (Coded)", "Slowness in traffic (%)"], axi
```

In [16]:
```
1 incidents
```

3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	1	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	2	2	0	1	0	0	0	0
14	0	2	0	0	0	0	0	0

In [17]:
```
1 incidents.sum()
```

Out[17]:
```
Immobilized bus                          46
Broken Truck                            118
Vehicle excess                            4
Accident victim                          57
Running over                             16
Fire vehicles                             1
Occurrence involving freight              1
Incident involving dangerous freight      1
Lack of electricity                      16
Fire                                      1
Point of flooding                        16
Manifestations                            7
Defect in the network of trolleybuses    31
Tree on the road                          6
Semaphore off                            17
Intermittent Semaphore                    2
dtype: int64
```

In [18]:
```
1 inci = incidents.sum().sort_values(ascending = False)
```

In [19]:
```
1 inci
```

Out[19]:
```
Broken Truck                              118
Accident victim                            57
Immobilized bus                            46
Defect in the network of trolleybuses      31
Semaphore off                              17
Running over                               16
Lack of electricity                        16
Point of flooding                          16
Manifestations                              7
Tree on the road                            6
Vehicle excess                              4
Intermittent Semaphore                      2
Fire vehicles                               1
Occurrence involving freight                1
Incident involving dangerous freight        1
Fire                                        1
dtype: int64
```

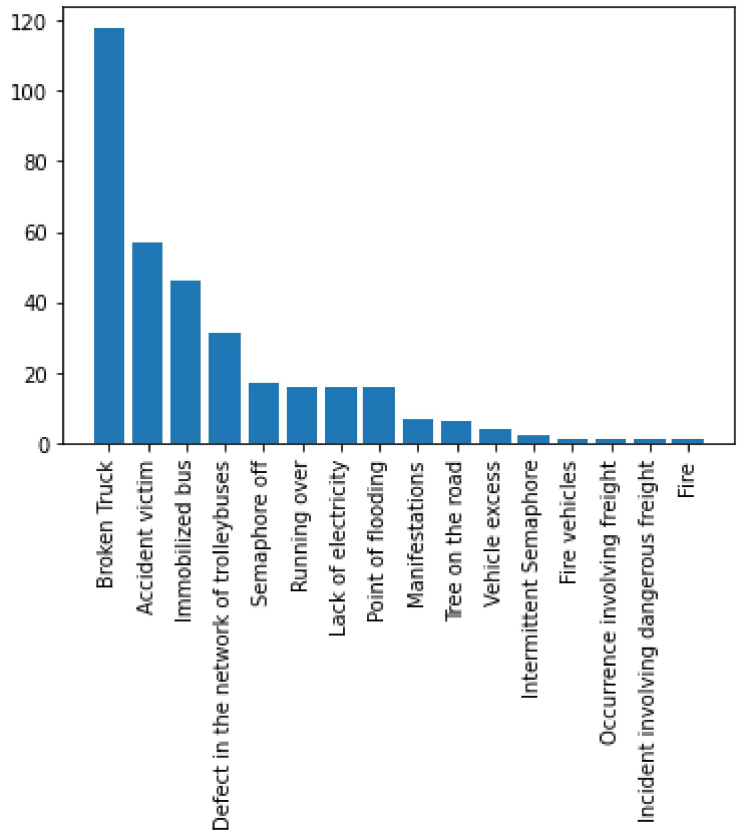
In [21]:
```
1 x = inci.index
```

In [22]:
```
1 y = inci.values
```

In [23]:
```
plt.bar(x,y)

plt.xticks(rotation  = 90)

plt.show()
```



In [25]:
```
traffic.corr()["Slowness in traffic (%)"].sort_values(ascending = False)
```

Out[25]:
```
Slowness in traffic (%)                1.000000
Hour (Coded)                           0.729962
Lack of electricity                    0.436569
Point of flooding                      0.420016
Semaphore off                          0.347242
Fire vehicles                          0.134103
Broken Truck                           0.131998
Accident victim                        0.121730
Immobilized bus                        0.101143
Manifestations                         0.066377
Occurrence involving freight           0.026791
Incident involving dangerous freight   0.000957
Running over                          -0.001133
Vehicle excess                        -0.045297
Fire                                  -0.046737
Tree on the road                      -0.098489
Intermittent Semaphore                -0.119942
Defect in the network of trolleybuses -0.147035
Name: Slowness in traffic (%), dtype: float64
```

In [ ]:
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In [ ]:
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```