In [1]:

```
import numpy as np
import pandas as pd
```

In [2]:

```
user = " "
path = user+"/log/calling.csv"

original = pd.read_csv(path,header=None, names=['method', 'arg', 'line', 'file', 'time_stamp'])
```

In [3]:

```
original
```

Out[3]:

	method	arg	line	file	time_stamp
0	done	NaN	6	./sourcecodesPerSec\code18-20-36-861917.py	2021-12-07 05:39:27.726797
1	done	NaN	6	./sourcecodesPerSec\code18-20-41-850365.py	2021-12-07 05:39:27.730783
2	done	NaN	6	./sourcecodesPerSec\code18-20-46-859451.py	2021-12-07 05:39:27.733783
3	done	NaN	6	./sourcecodesPerSec\code18-20-51-867386.py	2021-12-07 05:39:27.736774
4	done	NaN	6	./sourcecodesPerSec\code18-20-56-875636.py	2021-12-07 05:39:27.738774
...	...	...	...	...	...
26678	forward	110.0	24	./sourcecodesPerSec\code19-07-52-208329.py	2021-12-07 05:40:17.889380
26679	left	-120.0	25	./sourcecodesPerSec\code19-07-52-208329.py	2021-12-07 05:40:17.890381
26680	forward	110.0	24	./sourcecodesPerSec\code19-07-52-208329.py	2021-12-07 05:40:17.892381
26681	left	-120.0	25	./sourcecodesPerSec\code19-07-52-208329.py	2021-12-07 05:40:17.894380
26682	done	NaN	26	./sourcecodesPerSec\code19-07-52-208329.py	2021-12-07 05:40:17.896381

26683 rows × 5 columns

In [4]:

```
original[original['method']=="done"]
```

Out[4]:

	method	arg	line	file	time_stamp
0	done	NaN	6	./sourcecodesPerSec\code18-20-36-861917.py	2021-12-07 05:39:27.726797
1	done	NaN	6	./sourcecodesPerSec\code18-20-41-850365.py	2021-12-07 05:39:27.730783
2	done	NaN	6	./sourcecodesPerSec\code18-20-46-859451.py	2021-12-07 05:39:27.733783
3	done	NaN	6	./sourcecodesPerSec\code18-20-51-867386.py	2021-12-07 05:39:27.736774
4	done	NaN	6	./sourcecodesPerSec\code18-20-56-875636.py	2021-12-07 05:39:27.738774
...	...	...	...	...	...
26410	done	NaN	29	./sourcecodesPerSec\code19-07-32-175795.py	2021-12-07 05:40:17.398990
26478	done	NaN	26	./sourcecodesPerSec\code19-07-37-177712.py	2021-12-07 05:40:17.529175
26546	done	NaN	26	./sourcecodesPerSec\code19-07-42-181859.py	2021-12-07 05:40:17.645223
26614	done	NaN	26	./sourcecodesPerSec\code19-07-47-197861.py	2021-12-07 05:40:17.775414
26682	done	NaN	26	./sourcecodesPerSec\code19-07-52-208329.py	2021-12-07 05:40:17.896381

567 rows × 5 columns

In [5]:

```
df = original[['method', 'arg', 'line']]
df
```

Out[5]:

	method	arg	line
0	done	NaN	6
1	done	NaN	6
2	done	NaN	6
3	done	NaN	6
4	done	NaN	6
...	...	...	...
26678	forward	110.0	24
26679	left	-120.0	25
26680	forward	110.0	24
26681	left	-120.0	25
26682	done	NaN	26

26683 rows × 3 columns

In [6]:

```
block = [0]*len(df)
n = 1
for i in range(len(df)):
    block[i] = n
    if df['method'][i] == 'done':
        n += 1
```

In [7]:

```
df['block'] = block
```

```
<ipython-input-7-314602959f93>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)
  df['block'] = block
```

In [8]:

```
df
```

Out[8]:

	method	arg	line	block
0	done	NaN	6	1
1	done	NaN	6	2
2	done	NaN	6	3
3	done	NaN	6	4
4	done	NaN	6	5
...	...	...	...	...
26678	forward	110.0	24	567
26679	left	-120.0	25	567
26680	forward	110.0	24	567
26681	left	-120.0	25	567
26682	done	NaN	26	567

26683 rows × 4 columns

In [9]:

```
# forwardの総数
# leftの総数
# forward(何十)の数
# ・
# ・
# left(なんぼ)の数
# ・
# ・
# forward()->left()の数
# left()->forward()の数
```

In [10]:

```
data = pd.DataFrame(columns=['f_all', 'f_60', 'f_70',
                             'f_80', 'f_90', 'f_100',
                             'f_110', 'f_120', 'f_other',
                             'l_all', 'l_300', 'l_240',
                             'l_other', 'f_to_l', 'l_to_f'
                            ])
```

In [11]:

```
n_block = df['block'][len(df)-1]
```

In [12]:

```
for i in range(n_block):
    df_block = df[df['block']==i+1].reset_index(drop=True)
#     print(i)
    s = pd.Series([0, 0, 0,
                   0, 0, 0,
                   0, 0, 0,
                   0, 0, 0,
                   0, 0, 0],
                  index=data.columns
                 )

    for j in range(len(df_block)):
        if df_block['method'][j] == "forward":
            s['f_all'] += 1
            if df_block['arg'][j] == 60:
                s['f_60'] += 1
            elif df_block['arg'][j] == 70:
                s['f_70'] += 1
            elif df_block['arg'][j] == 80:
                s['f_80'] += 1
            elif df_block['arg'][j] == 90:
                s['f_90'] += 1
            elif df_block['arg'][j] == 100:
                s['f_100'] += 1
            elif df_block['arg'][j] == 110:
                s['f_110'] += 1
            elif df_block['arg'][j] == 120:
                s['f_120'] += 1
            else:
                s['f_other'] += 1
            if j != len(df_block)-1:
                if df_block['method'][j+1] == "left":
                    s['f_to_l'] += 1

        elif df_block['method'][j] == "left":
            s['l_all'] += 1
            if (df_block['arg'][j] == 300) or (df_block['arg'][j] == -60):
                s['l_300'] += 1
            elif (df_block['arg'][j] == 240) or (df_block['arg'][j] == -120):
                s['l_240'] += 1
            else:
                s['l_other'] += 1
            if j != len(df_block)-1:
                if df_block['method'][j+1] == "forward":
                    s['l_to_f'] += 1

    data = data.append(s, ignore_index=True)
```

In [13]:

```
data
```

Out[13]:

	f_all	f_60	f_70	f_80	f_90	f_100	f_110	f_120	f_other	l_all	l_300	l_240	l_other	f_t
0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	
562	33	0	4	5	0	7	8	0	9	25	1	24	0	
563	33	3	4	5	6	7	8	0	0	34	1	33	0	
564	33	3	4	5	6	7	8	0	0	34	1	33	0	
565	33	3	4	5	6	7	8	0	0	34	1	33	0	
566	33	3	4	5	6	7	8	0	0	34	1	33	0	

567 rows × 15 columns

In [14]:

```
data.to_csv("data_about_method/"+user+".csv")
```