In [1]:

```
import pandas as pd
```

In [ ]:

```

```

In [2]:

```
df = pd.read_csv("users/user01f2/sample_ex.csv")
```

In [3]:

```
df.describe()
```

Out[3]:

	Left_x	Left_y	Right_x	Right_y	left_pupil_diameter	right_p
count	200495.000000	200495.000000	202340.000000	202340.000000	200495.000000	2
mean	0.452040	0.568493	0.480304	0.558731	2.500707	
std	0.202610	0.305200	0.194269	0.306498	0.162986	
min	-0.194762	-0.198839	-0.197145	-0.205678	0.795181	
25%	0.240769	0.349056	0.284994	0.340492	2.399994	
50%	0.553779	0.522377	0.575833	0.507172	2.499313	
75%	0.603700	0.725637	0.627894	0.722207	2.597702	
max	1.192185	2.131697	1.198954	2.189150	3.968643	

In [4]:

```
df.query('0<Left_x<=1 & 0<Left_y<=1 & 0<Right_x<=1 & 0<Right_y<=1')

# df.query('0<Left_x<=1 & 0<Left_y<=1 & 0<Right_x<=1 & 0<Right_y<=1')
```

Out[4]:

	Left_x	Left_y	Right_x	Right_y	left_pupil_diameter	right_pupil_diameter	mous
5	0.694782	0.829364	0.683713	0.860779	2.386383	2.336685	1
6	0.676107	0.852336	0.678150	0.859380	2.526337	2.498947	1
7	0.669395	0.867482	0.673417	0.864439	2.493469	2.462997	1
8	0.674026	0.868280	0.675698	0.867960	2.474655	2.452347	1
9	0.665345	0.874817	0.674087	0.864104	2.464600	2.448471	1
...	...	...	...	...	...	...	
257895	0.729544	0.455575	0.798775	0.460593	2.724411	2.367157	1
258022	0.722815	0.537679	0.742224	0.470309	2.227951	2.083221	1
258023	0.722815	0.537679	0.742224	0.470309	2.227951	2.083221	1
258026	0.744126	0.507346	0.749441	0.506400	2.192017	2.057831	1
258027	0.744126	0.507346	0.749441	0.506400	2.192017	2.057831	1

169622 rows × 9 columns

In [5]:

```
heat_x = [df.query('0<Left_x<=0.5 & 0<Left_y<=1 & 0<Right_x<=0.5 & 0<Right_y<=1').shape,
          df.query('0.5<Left_x<=1 & 0<Left_y<=1 & 0.5<Right_x<=1 & 0<Right_y<=1').shape]
```

In [6]:

```
heat_x
```

Out[6]:

```
[(67004, 9), (97703, 9)]
```

In [7]:

```
df2 = pd.read_csv("users/user01f2/sample_ex_click.csv")
```

In [8]:

```
df2[df2['PorR']==True]
```

Out[8]:

	x	y	count	PorR	time_stamp
0	672	1326	1	True	10:59:34.068619
2	1439	138	2	True	10:59:37.014096
4	1459	237	3	True	11:04:31.554119
6	1610	256	4	True	11:04:45.953730
8	1450	295	5	True	11:05:15.931944
...	...	...	...	...	...
338	1433	131	170	True	12:10:10.796104
340	1621	131	171	True	12:10:11.702286
342	1402	139	172	True	12:10:12.992323
344	630	1312	173	True	12:10:16.030081
346	664	1336	174	True	12:10:19.354337

174 rows × 5 columns

In [9]:

```
df3= pd.read_csv("users/user01f2/sample_ex_key.csv")
```

In [10]:

```
df3[df3['PorR']==True]
```

Out[10]:

	key	PorR	time_stamp
0	'f'	True	11:01:39.487506
2	'r'	True	11:01:39.607185
4	'o'	True	11:01:39.771745
6	Key.backspace	True	11:01:40.422046
8	Key.backspace	True	11:01:40.607549
...	...	...	...
3243	Key.left	True	12:09:38.653661
3245	Key.left	True	12:09:38.904989
3247	Key.backspace	True	12:09:39.470474
3249	Key.shift	True	12:09:40.018017
3250	Key.f10	True	12:09:40.226521

1703 rows × 3 columns

In [11]:

```
df3["key"].value_counts()
```

Out[11]:

```
Key.backspace    555
Key.shift        299
Key.right        298
Key.left         267
Key.enter        168
Key.down         158
Key.space        136
Key.f10          100
'r'               96
'f'               82
Key.tab           72
'('               72
Key.up            64
'o'               62
'n'               62
'e'               60
'a'               52
'0'               50
Key.ctrl_l        40
'i'               36
'l'               34
'w'               32
't'               32
'x'               30
'1'               30
':'               28
'g'               28
'8'               28
"'"               24
'5'               24
'y'               24
'd'               22
'-'               21
'4'               18
's'               16
'6'               14
'7'               14
'='               13
'j'               12
'c'               11
'¥x03'             9
'v'                8
'¥x16'             8
'2'                8
'3'                8
'm'                4
'.'                4
'*'                4
'k'                4
'h'                4
'¥x1a'             2
')'                2
Key.shift_r        2
```

```
'/'                 2
Name: key, dtype: int64
```