

```
In [3]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```
In [4]: df0 = pd.read_table(r"C:\Users\Munish\Downloads\goerelli.csv", delimiter = ",")
df1 = pd.read_table(r"C:\Users\Munish\Downloads\goerelli(1).csv", delimiter = ",")
df2 = pd.read_table(r"C:\Users\Munish\Downloads\goerelli(2).csv", delimiter = ",")
df3 = pd.read_table(r"C:\Users\Munish\Downloads\goerelli(3).csv", delimiter = ",")
df4 = pd.read_table(r"C:\Users\Munish\Downloads\goerelli(4).csv", delimiter = ",")
```

```
In [5]: dfinal = [df0,df1,df2,df3,df4]
result = pd.concat(dfinal)
result.shape
```

```
Out[5]: (201, 10)
```

```
In [6]: def get_index(ans):
i = 0;
while(ans[i] != " "):
i+=1;
return i

def convertStr(ans):
space = get_index(ans)
time = int(ans[:space])
if(ans[space+1] == "m"):
time *= 60
elif (ans[space+1] == "h"):
time = time*60*60
return time
```

```
In [7]: arr = []
for i in range(0,result.shape[0]):
arr.append( convertStr(result['timestamp'].iloc[i]))
```

```
In [8]: result["time_in_seconds"] = arr
```

```
In [9]: def convertBlcks(ans):
time = int(ans[:2])
return time

arr_new = []
for i in range(0,result.shape[0]):
arr_new.append( convertStr(result['block_confirmations'].iloc[i]))
```

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In [10]: result["blockss"] = arr_new
```

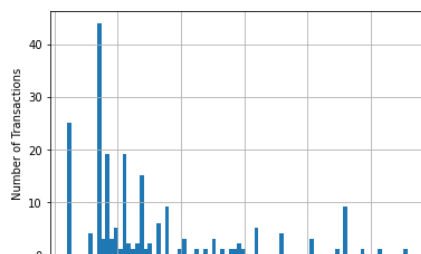
```
In [11]: arr_avg = []
for i in range(0,result.shape[0]):
time = result["time_in_seconds"].iloc[i]
blocks = result["blockss"].iloc[i]
arr_avg.append(7*time/blocks)
result["time_per_7blocks"] = arr_avg
```

```
In [14]: result["time_per_7blocks"].describe()
```

```
Out[14]: count    201.000000
mean      120.815506
std        60.759334
min        60.000000
25%       84.000000
50%       98.000000
75%      133.000000
max       329.000000
Name: time_per_7blocks, dtype: float64
```

```
In [19]: graph7 = result["time_per_7blocks"].hist(bins=80)
graph7.set_xlabel("Confirmation time Interval for 7 blocks (in sec)")
graph7.set_ylabel("Number of Transactions")
```

```
Out[19]: Text(0, 0.5, 'Number of Transactions')
```



### Calculation for 12 block confirmation times

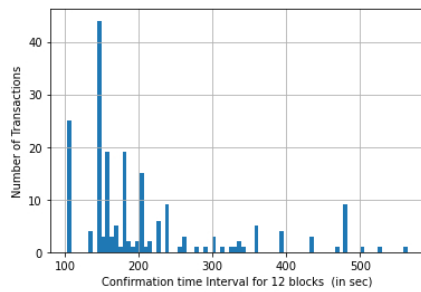
```
In [15]: arr_avg12 = []
for i in range(0,result.shape[0]):
    time = result["time_in_seconds"].iloc[i]
    blocks = result["blockss"].iloc[i]
    arr_avg12.append(12*time/blocks)
result["time_per_12blocks"] = arr_avg12
```

```
In [16]: result["time_per_12blocks"].describe()
```

```
Out[16]: count    201.000000
mean      207.112296
std       104.158858
min       102.857143
25%      144.000000
50%      168.000000
75%      228.000000
max       564.000000
Name: time_per_12blocks, dtype: float64
```

```
In [18]: graph12 = result["time_per_12blocks"].hist(bins=80)
graph12.set_xlabel("Confirmation time Interval for 12 blocks (in sec)")
graph12.set_ylabel("Number of Transactions")
```

```
Out[18]: Text(0, 0.5, 'Number of Transactions')
```



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In [ ]:
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