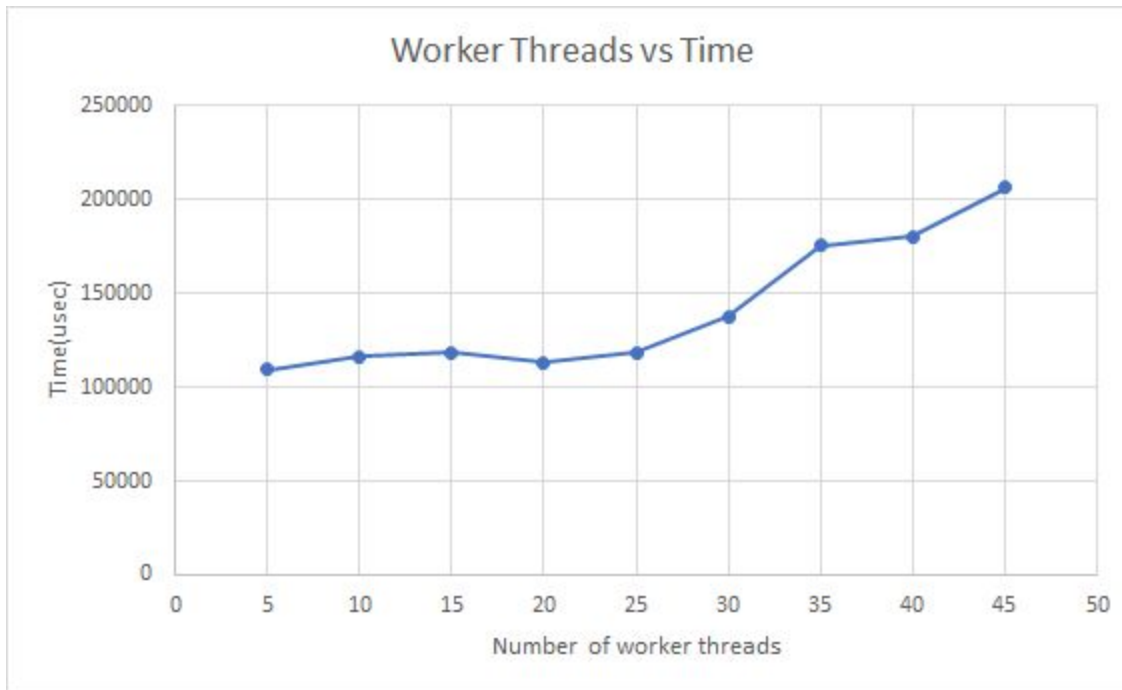


## NUMBER OF THREADS

So according to the data below it seems as though increasing the number of worker threads does not improve the efficiency of the code. In fact it looks like the more you increase the amount of worker threads, the longer it takes for the to run through the program. I think this is due to the fact that there is only one pc buffer used for all of the threads, in my code it is called work\_buff. Since the code only used one pc buffer, the threads cannot run in "parallel" they have to run one after another. So this ended up created a bottleneck that prevent the program from improving in efficiency by increasing the amount of worker threads.

-n 10 -b 5 -w??

| Number of worker threads | Time (usec) |
|--------------------------|-------------|
| 5                        | 109542      |
| 10                       | 116209      |
| 15                       | 118236      |
| 20                       | 113199      |
| 25                       | 118310      |
| 30                       | 137830      |
| 35                       | 175476      |
| 40                       | 180052      |
| 45                       | 206334      |



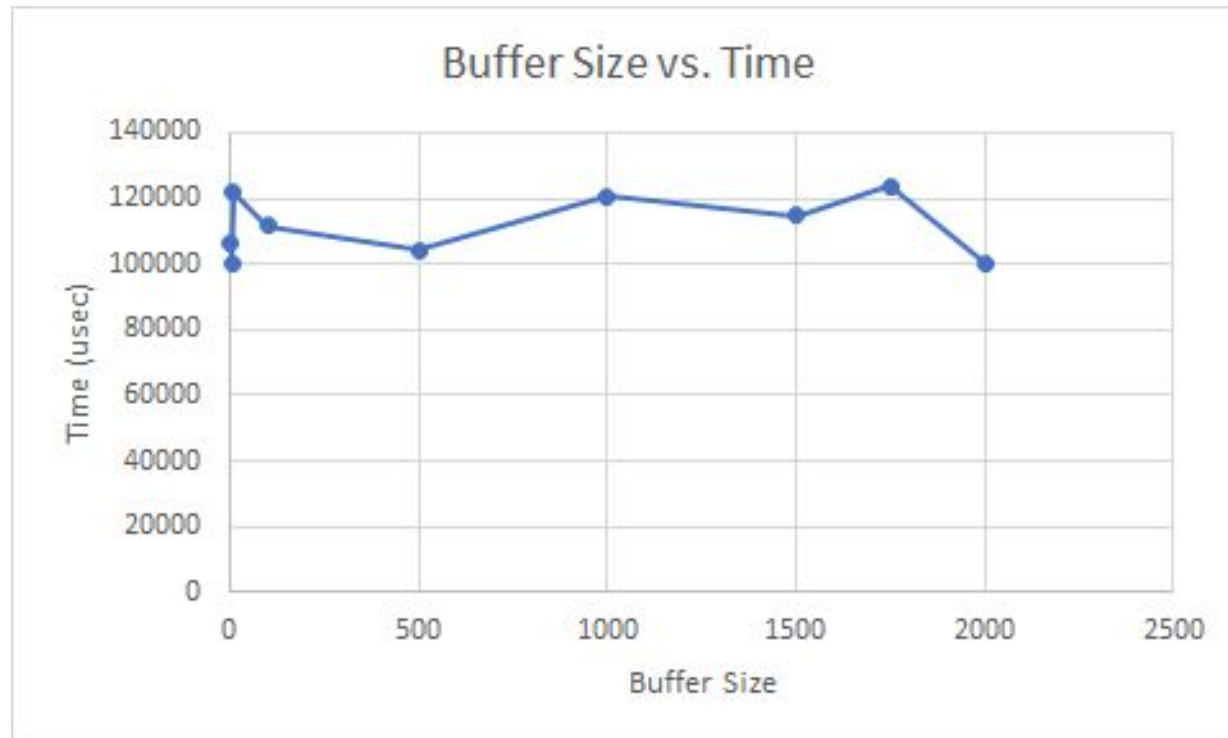
## BUFFER SIZE

According to the data below it seems as though adjusting the buffer size does not greatly change the runtime of the program. There are little dips and and spikes but I think those occur simply due to some other unknown factors.

-n 10 -b ?? - w 20

| Buffer size | Time(usec) |
|-------------|------------|
| 1           | 106463     |
| 5           | 100263     |
| 10          | 121998     |

|      |        |
|------|--------|
| 100  | 111823 |
| 500  | 104356 |
| 1000 | 120716 |
| 1500 | 114975 |
| 1750 | 123816 |
| 2000 | 100434 |



Note:

Example of code running on my pc

```
Printing histogram for Joe
(0, 9): 0 -> (10, 19): 2 -> (20, 29): 3 -> (30, 39): 0 -> (40, 49): 0 -> (50, 59): 1 -> (60, 69): 0 -> (70, 79): 1 -> (80, 89): 1 -> (90, 99): 2
-----
Printing histogram for Jane
(0, 9): 1 -> (10, 19): 3 -> (20, 29): 3 -> (30, 39): 0 -> (40, 49): 0 -> (50, 59): 0 -> (60, 69): 0 -> (70, 79): 2 -> (80, 89): 1 -> (90, 99): 0
-----
Printing histogram for Jill
(0, 9): 0 -> (10, 19): 0 -> (20, 29): 1 -> (30, 39): 1 -> (40, 49): 1 -> (50, 59): 1 -> (60, 69): 3 -> (70, 79): 1 -> (80, 89): 0 -> (90, 99): 2
-----
Total number of request is: 10
The buffer size is : 5
Total number of worker threads: 5
Total other timer taken is: 81445
closing request channel 'control'...
done closing request channel 'control'
ninarao09@Nina-Rao:/mnt/c/CSCE313/MP3$
```