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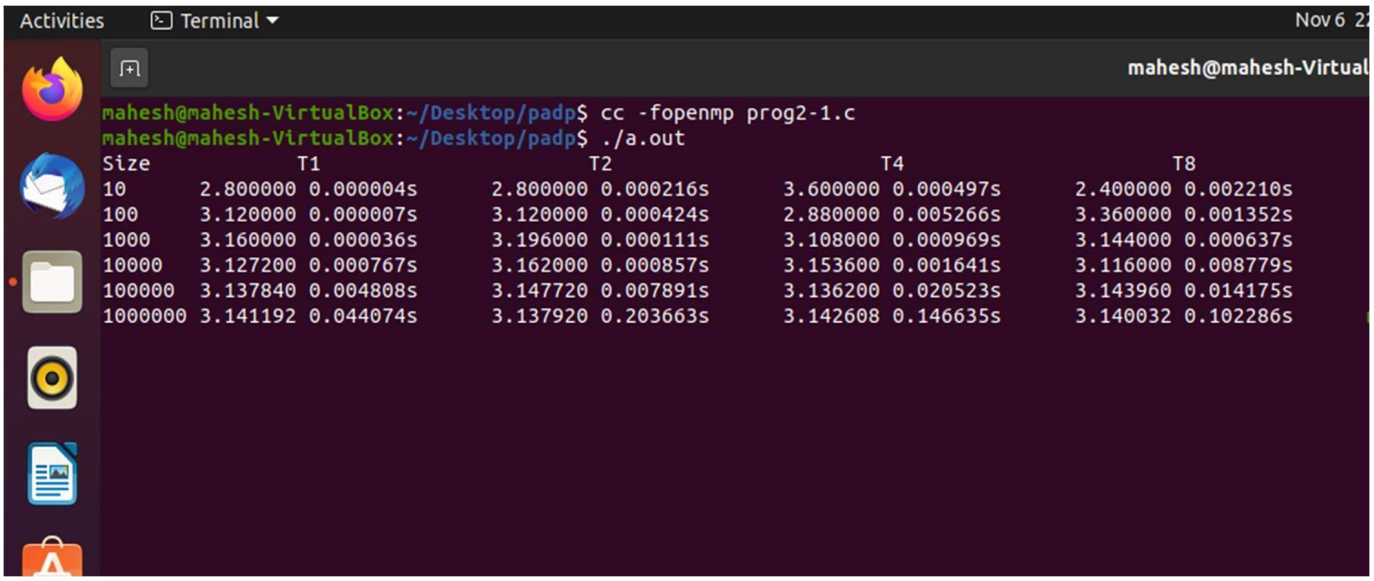
PADP lab Program 2

Code:

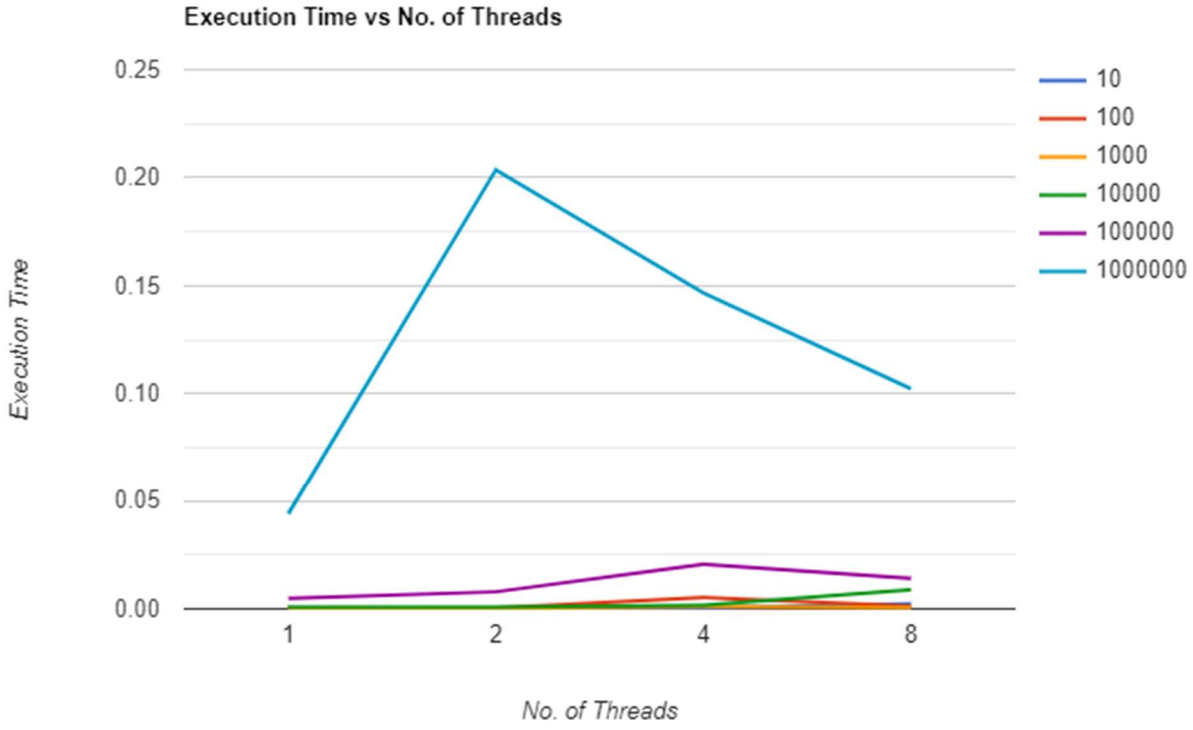
```
#include<stdio.h>
#include<stdlib.h>
#include<omp.h>
#define SEED 50123

int main()
{
        long n = 0, i, count = 0;
        double x,y,z;



//      printf("Enter the number of iterations used to estimate pi: ");
//      scanf("%ld", &n);
        srand(SEED);
        printf("Size\t\tT1\t\tT2\t\tT4\t\tT8");
        for(n=10; n<=1000000; n*=10){
                printf("\n%ld\t",n);
        for(int t=1; t<=8; t*=2){
                        count = 0;
                        double start = omp_get_wtime();
        omp_set_num_threads(t);

                        #pragma omp parallel for private(x, y, z) reduction( +: count)
                        for ( i=0; i<n; i++)
                        {
```

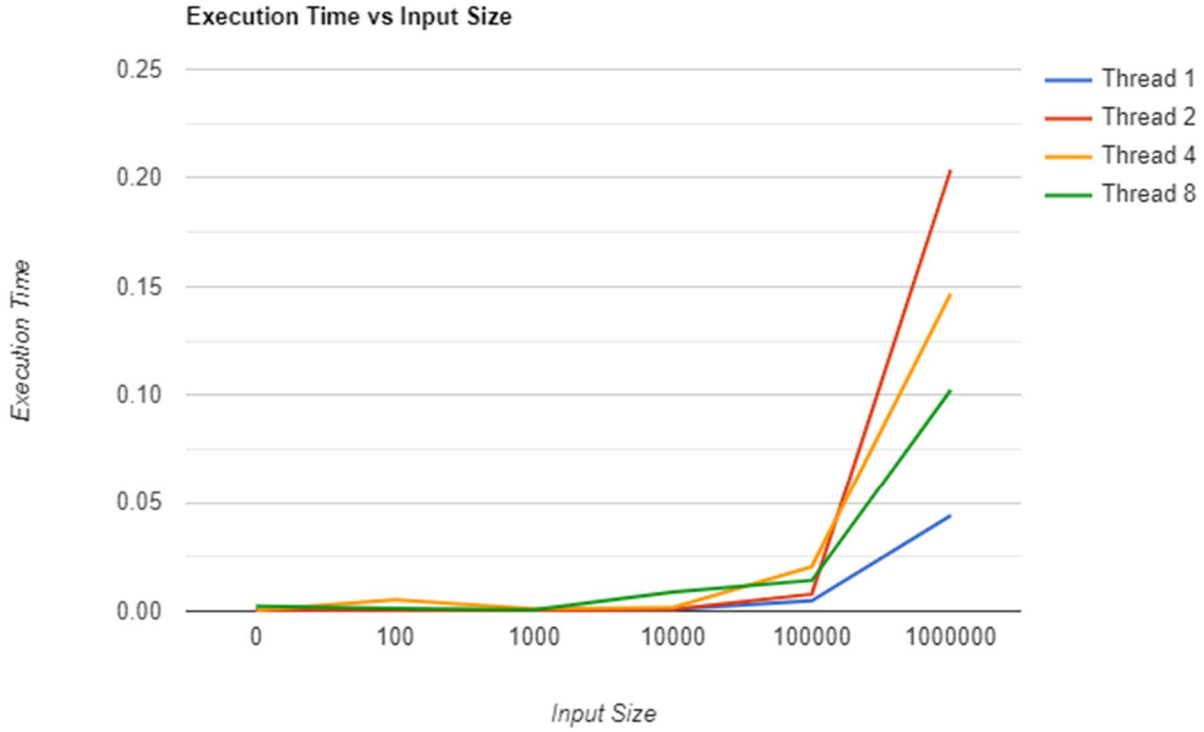
```
                    x = (double)rand()/RAND_MAX;
                    y = (double)rand()/RAND_MAX;

                    z = x*x+y*y;
                    if (z<=1) count++;
                }


                double pi=(double)count/n * 4;
                double stop = omp_get_wtime();
                printf("%lf %lfs\t",pi,stop-start);
            }
        }
        return 0;
}
```

Output:



Graphs:


Execution Time vs No. of Threads
0.25
0.20
0.15
0.10
0.05
0.00
Execution Time
1
2
4
8
No. of Threads
10
100
1000
10000
100000
1000000


Execution Time vs Input Size
0.25
0.20
0.15
0.10
0.05
0.00
Execution Time
0
100
1000
10000
100000
1000000
Input Size
Thread 1
Thread 2
Thread 4
Thread 8