

Write a program to figure out π with pthread. The formula is here as follows

$$\pi = \int_0^1 \frac{4}{1+x^2} dx \approx \sum_{0 \leq i \leq N} \frac{4}{1 + \left(\frac{i+0.5}{N}\right)^2} \times \frac{1}{N}$$

You should choose the appropriate N and the number the threads and evaluate how do these two factors affect the performance. Try it in the multi-CPU or multi-cores system if possible and compare the time consumed in the single CPU with one core system. Remember to add the option of -lpthread in gcc.

Programming guide:

Beginning Linux Programming 4e (Chapter 12: POSIX Threads)