Bài 1:

Code:

#include<stdio.h>

#include<string.h>

#include<pthread.h>

#include<stdlib.h>

#include<unistd.h>

#define MAX\_THREAD 2

pthread\_t tid[MAX\_THREAD]={0};

/\*Counter la bien toan cuc duoc 2 thread su dung\*/

int counter;

pthread\_mutex\_t mutex = PTHREAD\_MUTEX\_INITIALIZER;   //khai bao mutex

long int total\_point;

long int count\_circle = 0;

void \*threadFunc(void \*param)

{

    pthread\_mutex\_lock(&mutex);

    int \*pcount = (int \*)param;

    int i;

    for (i = 0; i < total\_point; i++)

    {

        double x = (double)rand() / (double)RAND\_MAX;

        double y = (double)rand() / (double)RAND\_MAX;

        double r = x \* x + y \* y;

        if (r <= 1)

            \*pcount = \*pcount + 1;

    }

    pthread\_mutex\_unlock(&mutex);

    pthread\_exit(NULL);

}

int main(int argc, char const \*argv[])

{

    srand(time(NULL));

    total\_point = atoll(argv[1]) / MAX\_THREAD;

    int i = 0;

    int ret = 0;

    int cnt[2]={0};

    for (i = 0; i < MAX\_THREAD; i++)

    {

        ret = pthread\_create(&(tid[i]), NULL, threadFunc,&cnt[i]);

        if (ret != 0)

        {

            printf("Thread [%d] created error\n", i);

        }

    }

    for (i = 0; i < MAX\_THREAD; i++)

    {

        pthread\_join(tid[i], NULL);

        count\_circle += cnt[i];

    }

    double pi = 4.0 \* (double)count\_circle / (double)total\_point / (double)MAX\_THREAD;

    printf("PI = %f\n", pi);

    return 0;

}

Kết Quả:

Text

Description automatically generated

Bài 2:

Code:

#include <pthread.h>

#include <stdio.h>

#include <stdlib.h>

#include <sys/types.h>

#include <unistd.h>

pthread\_mutex\_t a\_mutex; // dong bo

static int sove = 0;

void \*thr1()

{

    FILE \*out = fopen("sove.txt", "r");

    fscanf(out, "%d", &sove);

    fclose(out);

}

void \*thr2()

{

    pthread\_mutex\_lock(&a\_mutex);

    if (sove == 0)

    {

        printf("Da het ve,khong the mua tiep\n");

    }

    int tmp;

    FILE \*out = fopen("daily1.txt", "r");

    while (fscanf(out, "%d", &tmp)!=EOF)

    {

        if (tmp < sove)

        {

            printf("Dat mua thanh cong dai li 1 voi so ve %d\n", tmp);

            sove -= tmp;

        }

        else

        {

            printf("Khong dat mua thanh cong dai li 1 voi so ve %d\n", tmp);

        }

    }

    fclose(out);

    sleep(5);

    pthread\_mutex\_unlock(&a\_mutex);

    pthread\_exit(NULL);

}

void \*thr3()

{

    pthread\_mutex\_lock(&a\_mutex);

    int tmp;

    FILE \*out = fopen("daily2.txt", "r");

    if (sove == 0)

    {

        printf("Da het ve,khong the mua tiep\n");

    }

    while (fscanf(out, "%d", &tmp)!=EOF)

    {

        if (tmp < sove)

        {

            printf("Dat mua thanh cong dai li 2 voi so ve %d\n", tmp);

            sove -= tmp;

        }

        else

        {

            printf("Khong dat mua thanh cong dai li 2 voi so ve %d\n", tmp);

        }

    }

    fclose(out);

    sleep(5);

    pthread\_mutex\_unlock(&a\_mutex);

    pthread\_exit(NULL);

}

int main()

{

    int res = pthread\_mutex\_init(&a\_mutex, NULL);

    // a\_mutex = PTHREAD\_MUTEX\_INITIALIZER;

    int i;

    pthread\_t tid[3];

    int status, \*pstatus = &status;

    pthread\_create(&tid[0], NULL, thr1, NULL);

    if (pthread\_join(tid[0], (void \*\*)pstatus) == 0)

    {

        pthread\_create(&tid[1], NULL, thr2, NULL);

        pthread\_join(tid[1], (void \*\*)pstatus);

        sleep(5);

        pthread\_create(&tid[2], NULL, thr3, NULL);

        pthread\_join(tid[2], (void \*\*)pstatus);

    }

    return 0;

}

Kết Quả:

Text

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