```c
/*

  To Compile: gcc -O -Wall lab12.c -lpthread
  To Run: ./a.out 1000 4
*/

#include <stdio.h>
#include <stdlib.h>
#include <pthread.h>
#include <unistd.h>

typedef struct my_struct{
        pthread_t *tid;
        int size;
        int N;
        double *a ;
        double sum;
        long count;
} my_struct;

void *compute(void *arg){
        int myStart, myEnd, myN, i;

        my_struct *struct_ptr = (my_struct*) arg;
        long tid = struct_ptr->count;
        struct_ptr->count += 1;

        // determine start and end of computation for the current thread
        myN = struct_ptr->N/struct_ptr->size;

        myStart = tid*myN;
        myEnd = myStart + myN;

        if (tid == (struct_ptr->size-1)) myEnd = struct_ptr->N;
        // compute partial sum
        double mysum = 0.0;
        for (i=myStart; i<myEnd; i++){
                mysum += struct_ptr->a[i];
        }
        // grab the lock, update global sum, and release lock
        struct_ptr->sum += mysum;
        return (NULL);
}

int main(int argc, char **argv) {
    long i;
        my_struct *info;

        // allocate structure
    info = (my_struct *)malloc(sizeof(my_struct));

        if (argc != 3) {
       printf("Usage: %s <# of elements> <# of threads>\n",argv[0]);
       exit(-1);
    }
    info->N = atoi(argv[1]); // no. of elements

    info->size = atoi(argv[2]); // no. of threads

    // allocate vector and initialize
    info->tid = (pthread_t *)malloc(sizeof(pthread_t)*(info->size));

    info->a = (double *)malloc(sizeof(double)*info->N);
    for (i=0; i<info->N; i++){
      info->a[i] = (double)(i + 1);
    }

        // create threads
    for ( i = 0; i <info->size; i++){
      pthread_create(&info->tid[i], NULL, compute, (void *)info);
    }
         // wait for them to complete
    for ( i = 0; i < info->size; i++)
      pthread_join(info->tid[i], NULL);

    printf("The total is %g, it should be equal to %g\n",
           info->sum, ((double)info->N*((info->N)+1))/2);

    return 0;
}


/* References: https://www.codegrepper.com/code-examples/c/How+to+pass+a+struct+value+t
o+a+pthread+in+c%3F */
```