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/*****
* FILE: omp_workshare2.c
* OpenMP Example - Sections Work-sharing - C Version
* In this example, the OpenMP SECTION directive is used to assign
* different array operations to each thread that executes a SECTION.
*****/
#include <omp.h>
#include <stdio.h>
#include <stdlib.h>
#define N      50

int main (int argc, char *argv[])
{
    int i, nthreads, tid;
    float a[N], b[N], c[N], d[N];

    /* Some initializations */
    for (i=0; i<N; i++) {
        a[i] = i * 1.5;
        b[i] = i + 22.35;
        c[i] = d[i] = 0.0;
    }

    #pragma omp parallel shared(a,b,c,d,nthreads) private(i,tid)
    {
        tid = omp_get_thread_num();
        if (tid == 0)
        {
            nthreads = omp_get_num_threads();
            printf("Number of threads = %d\n", nthreads);
        }
        printf("Thread %d starting...\n",tid);

        #pragma omp sections nowait
        {
            #pragma omp section
            {
                printf("Thread %d doing section 1\n",tid);
                for (i=0; i<N; i++)
                {
                    c[i] = a[i] + b[i];
                    printf("Thread %d: c[%d]= %f\n",tid,i,c[i]);
                }
            }

            #pragma omp section
            {
                printf("Thread %d doing section 2\n",tid);
                for (i=0; i<N; i++)
                {
                    d[i] = a[i] * b[i];
                    printf("Thread %d: d[%d]= %f\n",tid,i,d[i]);
                }
            }
        } /* end of sections */

        printf("Thread %d done.\n",tid);

    } /* end of parallel section */
}

```