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/*****
* FILE: omp_reduction.c
* DESCRIPTION:
*   OpenMP Example - Combined Parallel Loop Reduction - C/C++ Version
*   This example demonstrates a sum reduction within a combined parallel loop
*   construct. Notice that default data element scoping is assumed - there
*   are no clauses specifying shared or private variables. OpenMP will
*   automatically make loop index variables private within team threads, and
*   global variables shared.
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* LAST REVISED: 04/06/05
*****/
#include <omp.h>
#include <stdio.h>
#include <stdlib.h>

int main (int argc, char *argv[])
{
    int    i, n;
    float a[100], b[100], sum;

    /* Some initializations */
    n = 100;
    for (i=0; i < n; i++)
        a[i] = b[i] = i * 1.0;
    sum = 0.0;

    #pragma omp parallel for reduction(+:sum)
        for (i=0; i < n; i++)
            sum = sum + (a[i] * b[i]);

    printf("    Sum = %f\n",sum);

}

```