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vip% cat sort_lib.c
/* sort_lib.c: test C library sort routine */
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
#define M 100000 /* size of array to sort */
void inita(double a[]);
int cmp(double *, double *);
void check_sorted(double a[]);

void main(void)
{
    double a[M];
    int starttime, stoptime; /* elapsed time */
    int startclock, stopclock; /* CPU time */
    srand48((long)time(NULL));
    inita(a);
    starttime = time(NULL); startclock = clock();
    qsort(a, M, sizeof(double), cmp);
    stoptime = time(NULL); stopclock = clock();
    check_sorted(a);
    printf("Elapsed time for sort: %ld seconds\n",
           stoptime - starttime);
    printf("CPU time: %.3f seconds\n",
           (double)(stopclock - startclock)/1000000.0);
    exit(0);
}
/* inita: initialize array a to random #s */
void inita(double a[])
{
    int i;
    for (i = 0; i < M; i++)
        a[i] = drand48();
}
/* cmp: comparison, using pointers, used in qsort */
int cmp(double *x, double *y)
{
    if (*x < *y) return -1;
    else if (*x > *y) return 1;
    else return 0;
}
/* check_sorted: check if sorted */
void check_sorted(double a[])
{
    int sorted = 1;
    int i;
    for (i = 0; i < M-1; i++)
        if (a[i] > a[i+1]) sorted = 0;
    if(sorted) printf("Array sorted, %d items\n", M);
    else printf("*** Array NOT sorted\n");
}
vip% cc -o sort_lib sort_lib.c
"sort_lib.c", line 18: warning: argument #4 is incompatible with prototype:
    prototype: pointer to function(pointer to const void, pointer to const void)
    returning int : "/usr/include/stdlib.h", line 96
    argument : pointer to function(pointer to double, pointer to double) returning int
vip% sort_lib
Array sorted, 100000 items
Elapsed time for sort: 2 seconds
CPU time: 1.570 seconds
vip% sort_lib
Array sorted, 1000000 items
Elapsed time for sort: 22 seconds
CPU time: 18.880 seconds

```