

Oct 04, 18 18:58

divergentSingle.c

Page 1/1

```

/* Findind the where n will stop changing with single precision
 *
 * Author: Dustin
 * ME2045
 * September 21
 *
 * Use the following to compile
 * gcc divergentSingle.c -std=c99 -O3 -lm -o divergentSingle.exe
 */
#include <stdio.h>
#include <stdlib.h>
#include <limits.h>
#include <math.h>
#include <sys/resource.h>
#include "timer.h" //MAKE SURE FILE IS IN SAME DIRECTORY

int main(){
    // Timer Variables
    double start, finish, flop, elapsedTime;

    // Single Precision
    float i,k,q,increment;
    q = 0.0f;
    k = 1.0f;
    i = 1.0f;

    GET_TIME(start); //start the timer

    while (k-q != 0.0f){
        q = k;
        increment = 1.0f/i;
        k = k + increment;
        printf("i=%f,k=%0.25f\n",i,k);
        // when series stops increasing then it's the final iteration
        if (k-q == 0.0f){
            printf("At n = %f, the seires stops at k = %0.25f\n", i-1, q);
            break;
        }
        i++;
    }
    GET_TIME(finish);
    elapsedTime = finish - start;
    printf("elapsed wall time = %.6f seconds\n",elapsedTime);
    return EXIT_SUCCESS;
}

```