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/* C */

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

#define N 100000000

int main () {
    float f = 0;
    for (int i = 1; i <= N; i++) {
        f = f + 1.0 / i;
    }
    printf("sum from 1 to %d is %f\n", N, f);
    // sum from 1 to 100000000 is 15.403683

    f = 0;
    for (int i = N; i > 1; i--) {
        f = f + 1.0 / i;
    }
    printf("sum from %d to 1 is %f\n", N, f);
    // sum from 100000000 to 1 is 17.807919
}
```