

```
/*
 * while3.c
 * Adapted from earlier solution by Prof. George Cheney
 * 16.216: ECE Application Programming
 * ECE Dept., UMass Lowell
 *
 * PURPOSE: Read list of grades from keyboard and compute average.
 * Program will run until user enters invalid grade (something
 * outside the range  $0 \leq \text{grade} \leq 100$ ), which is taken as
 * signal that
 *
 * DEMONSTRATES: Loop terminated on sentinel value
 */

#include <stdio.h>

int main()
{
    int gradeCount;    // Counts # of grades processed so far

    double grade;      // An individual grade to be processed
    double gradeSum;    // Running total
    double avgGrade;    // Average grade

    char enterGrade;

    // Initialize loop
    gradeSum = 0;
    gradeCount = 0;

    // Prompt for and read first grade
    /*printf("Enter grade: ");
    scanf("%lf", &grade);*/

    // Continue reading/accumulating grades until invalid value entered
    do {
        printf("Enter grade: ");    // Prompt for and read next grade
        scanf("%lf", &grade);

        // If invalid grade entered, leave loop
        if ((grade > 100) || (grade < 0))
            break;

        gradeSum = gradeSum + grade;    // Accumulate grade
        gradeCount = gradeCount + 1;    // Increment grade count
    } while ((grade >= 0.0) && (grade <= 100.0));

    if (gradeCount == 0)    // No grades entered
        printf("No valid grades entered\n");

    // Compute and display the average
    else {
        avgGrade = gradeSum / gradeCount;
        printf("Average grade = %1.1lf\n", avgGrade);
    }

    return 0;
}
```