

CSCI 310, Data Structures, Summer 2009

Assignment 2 (15 points)

1. (5 points) **Sum Even Odd:** Write a program that reads a set of nonnegative integers and prints (i) the number of *evens* entered and their sum, and (ii) the number of *odds* entered and their sum.
2. (5 points) **Multiple:** Write a program that reads two integers then determines and prints whether the first is a multiple of the second.
3. (5 points) **Gravitation:** According to Newton's universal law of gravitation, the force F between two bodies with masses M_1 and M_2 is computed as

$$F = k \left(\frac{M_1 M_2}{d^2} \right)$$

where d is the distance between the two bodies and k is a positive real number called the *gravitational constant*. The gravitational constant k is approximately equal to 6.67×10^{-8} dyn·cm²/g². Write a program the (i) accepts the mass for the the two bodies in grams and the distance between the two bodies in centimeters and (ii) computes the force F . For your information, the force between the Earth and the Moon is 1.984×10^{25} dyn, the mass of the earth is 5.983×10^{27} g, the mass of the moon is 7.347×10^{25} g, and the distance between the two is 3.844×10^{10} cm.