COP 3223 Program #5: Weekly feed budget

Due on Webcourses: Sunday, October 30, 2016, 11:00 PM

Program: Weekly feed budget (feed.c)

The Orange County Sheriff's Office Mounted Unit has asked that you write a program to help them manage their feed costs per week. The Mounted Unit includes twelve horses who each have individualized feed plans that are reviewed by a vet once a month. The Sheriff's Office would like you to write a program that reads in the vet's monthly plan and prints out a summary of how much grain each horse requires each week and how much grain must be ordered each week.

You may assume that, once a month, the vet will provide a data file called `input.txt` containing twelve lines of data. Each line contains three values. The first value is the name of the horse, the second value is the number of scoops of grain that horse should receive for breakfast each day, and the third value is the number of scoops of grain that horse should receive for dinner each day. One scoop equals 3.5 pounds of grain. One bag contains 50 pounds of grain.

You program should declare three arrays: `name`, `breakfast`, and `dinner` and read in and store the data file values into these three arrays. You program must then calculate and print to the screen: the amount of grain (in pounds) that each horse requires per week, the total amount of grain (in pounds) required to feed everyone in one week, and the total number of bags of grain that needs to be ordered each week.

Sample input file: `oct2016.txt`

```
Ditto      1.0    1.0
Leo        1.0    1.0
Major      1.5    1.5
Scooter    1.0    1.0
Diesel     1.5    1.5
Sierra     1.5    1.5
Salem      0.75   0.75
Senator    1.0    1.0
Oscar      0.75   0.75
Pete       1.0    1.0
Angelina   0.75   0.75
Blossom    1.0    1.0
```

Sample output for data file: `oct2016.txt`

```
Amount of grain per horse each week:
   Ditto   49.00 pounds
     Leo   49.00 pounds
   Major   73.50 pounds
 Scooter   49.00 pounds
  Diesel   73.50 pounds
  Sierra   73.50 pounds
   Salem   36.75 pounds
 Senator   49.00 pounds
   Oscar   36.75 pounds
    Pete   49.00 pounds
Angelina   36.75 pounds
 Blossom   49.00 pounds
Total grain required each week: 624.75 pounds
Total grain to purchase each week: 13 bags
```

Some things to be aware of:
1. Make sure that the number of bags ordered is sufficient to meet the weekly need for grain. For example, in the data above, 624.75 pounds equals approximately 12.5 bags. As a result, 13 bags must be ordered in order to cover the need.
2. In the list of the horses' weekly grain needs, please ensure that all weight values are lined up. The horses' names may be either right or left justified.
3. Any amounts in pounds must be rounded to two decimal places. The number of bags may be printed in either as an integer or double value but must be a whole number.

Deliverables

Please submit a file titled feed.c containing your solution to this problem to Webcourses by Sunday, October 30, 2016 at 11:00 PM. Please submit your file to both the "Homework 5" assignment and the "Homework 5 Peer Review" assignment.

Some notes:
1. Please ensure that your file includes header comments which include a good description of your entire program.
2. Each function should be preceded by comments that give the pre-conditions, post-conditions, and actions of that function.
3. All of your code should be commented. A good measure of the effectiveness of your comments is whether I can understand the structure of each main program and function by the comments alone (e.g. can I tell what your program and functions do if I deleted all of the code and only had your comments).
4. All variables declared within a function must be declared at the start of your function. All variables in the main program must be declared at the start of your main program.
5. Please ensure that your program reads from a data file called `input.txt`.

Program: **feed.c**