

# CS118 Programming Assignment

## Exam 1 - Dog Years

Dogs have a wonderful life, but it is rather short compared to humans. While there are many different models for “dog years”, the one we will use is this:

<u>Age of Dog</u>	<u>Approximate Human age</u>
Under 1 year	1.17 years per month
1 <= age < 2 years	14 years + 1.2 years per month past 1 year
2 <= age < 3 years	22 years + 0.6 years per month past 2 years
3 or more years	36 years + 0.4 years per month past 3 years

Your assignment is to write a Python program that will collect three sets of data from the user. Each set will consist of two pieces of information:

- Dog's name
- Dog's age in decimal years

For example, if Bowser is 4 years and 5 months old, the user would enter the dog's age as 4.42 years. You may assume the user will enter the appropriate data types. Once you have the data set, compute the approximate age in human years. Before computing the human age, round down all dog months to the nearest integer using the math library's `floor()` function.

Do the same for two other data sets and create a table that looks like the one in this sample run - be sure to show all values as demonstrated. You are required to demonstrate left-justification, width specifiers, precision modifiers, and escape sequences:

```
Dogs name: Axel
Age in years (e.g. 4.42): 0.2

Dogs name: Phydeaux
Age in years (e.g. 4.42): 2.3

Dogs name: Spot
Age in years (e.g. 4.42): 5.6

      Name          Dog Age Dog Yrs Dog Months      Human Age
-----
Axel                0.2      0        2            2.3
Phydeaux            2.3      2        3            23.8
Spot                5.6      5        7            48.4
```

If you do not attempt the extra credit portion, submit your .PY file using the Blackboard submission link under EXAMS.

### **Extra Credit: 30%**

Make a duplicate of the program you just finished and modify the duplicate so that it will collect all data sets until the user enters “DONE” for the dog's name. When the user enters “DONE” for the dog's name, the program should terminate gracefully - do not collect any more data, show the results for all complete data sets, then end. Since you should not collect the numerical data for the “DONE” dog, that would not be a complete data set and should not appear in the final table. **Submit your original and extra credit .PY files together in a single ZIP file.**

```
Dogs name: Axel
Age in years (e.g. 4.42): 0.4

Dogs name: Bowser
Age in years (e.g. 4.42): 2.7

Dogs name: Chum Chum
Age in years (e.g. 4.42): 5.1

Dogs name: Phydeaux
Age in years (e.g. 4.42): 19.2

Dogs name: DONE

      Name          Dog Age Dog Yrs Dog Months      Human Age
-----
Axel                0.4      0        4            4.7
Bowser              2.7      2        8            26.8
Chum Chum           5.1      5        1            46.0
Phydeaux            19.2     19       2            113.6
```