

CS344 Lab 10 – Age Analysis Functions

Assigned: 10/23/09

Points: 20

Purpose

The purpose of the lab is to learn how to create and use user defined functions in FORTRAN and MATLAB.

Process

This lab will read in a series of ages from a file. You will read in this file and compute and display the following statistics:

```
Size of population: 104
Oldest persons age: 54
Youngest persons age: 12
Average age: 43.82
Number of teenagers: 23
```

The values shown here are not correct for the data file you will be using.

FORTRAN Implementation

- Assume that there will no more than 200 ages in the data file
- Reads the data into a one dimensional array (use END= option in FORTRAN)
- Create user defined functions that determine the:
 - Oldest person's age
 - Youngest person's age
 - Average age
 - Number of teenagers
- Each function should be passed the array and the number of valid elements in the array

Execute the program against the two data files provided (age1.txt and age2.txt).

MATLAB Implementation

Produce the same output except:

- Use the following MATLAB vector functions when possible:
 - length
 - max
 - min
 - mean

- Create a function to determine the number of teenagers

Execute the program against the two data files provided (age1.txt and age2.txt).

Turn in a copy of your FORTRAN and MATLAB code and the sample output from the two files.