

Math 3300 Programming Assignment 3

Instructions: Work on the following 2 programs by yourself and submit your source code to me via Blackboard (you should send only 2 total cpp files).

1. Write a program that allows the user to input their weight (in lbs) and age (in years). The program should then create a file named "table.txt" which will contain a **table** (meaning setw should be used) containing the user's weight and age on the other planets in our solar system and our moon. You can figure out the appropriate conversions using the example below. Display all values correct to 3 decimal places. To figure out the appropriate width for each column, assume the users age will be between 1 and 125, and weight will be between 1 and 1400 (These values are close to the documented oldest and heaviest person ever).

Example: The user enters: 100 (for weight in lbs) and 10 (for years)

Mercury	38.00 lbs	41.55 years
Venus	91.00 lbs	16.25 years
Moon	16.60 lbs	10 years
Mars	37.60 lbs	5.32 years
Jupiter	252.80 lbs	0.84 years
Saturn	106.50 lbs	0.34 years
Uranus	88.60 lbs	0.12 years
Neptune	114.00 lbs	0.06 years

Please name this program "planets.cpp".

2. Create a program that allows the user to open a file named "scores.txt" containing their scores in this class. This file contains the following information:
 - The first line contains the homework scores separated by spaces
 - The second line contains the quiz scores separated by spaces
 - The third line contains the programming assignment scores separated by spaces
 - The fourth line contains the final exam score only

Assume there will be 6 homework assignments, 8 quizzes, and 10 programming assignments and that each score could take on decimal values (7.5

on a quiz is a possible score). Assume further that each item is graded out of a maximum score of 10 except the final which is out of 90.

Recall that your grade in this course is determined out of 100 possible points broken down into: 20 points for homework, 10 points for quizzes, 55 points for the programming assignments, and 15 points for the final exam. Your program will create a file named “grade.txt” which will contain the following information:

- The first line contains the total percentage correct on homework (i.e. if you get perfect on every assignment this should be 100%, whereas if you get half on every assignment it would be 50%) and how many points you will get for homework portion of the course (if you got 100% you would get a perfect score in the homework category, 20 points, whereas if you got 50% you would get a score of 10 points in the homework category).
- The second line contains the same info for the quizzes.
- The third line contains the same info for the programming assignments.
- The fourth line contains the same info for the final exam.
- The fifth line contains a phrase like: “Your final course score is: ” and then a number between 0 and 100 which represents the total number of points earned based on the breakdown above.

Please name this program “grade.cpp”.