

A primary school teacher needs help in grading a True/False test. The students' IDs and test answers are stored in a text file. The first entry in the file contains answers to the test in the form:

TFFTFFTTTTFFTFFTFTT

Every other entry in the file is the student ID, followed by a blank, followed by the student's responses. For example, the entry:

F16XXXX TFTFTFTT TFTFTFTFTT

Indicates that the student ID is F16XXXX and the answer to question 1 is true, the answer to question 2 is False, and so on. This student did not answer question 9, hence left blank in the file. The exam has 20 questions, and the class has more than 150 students. Each correct answer is awarded two points, each wrong answer gets one point deducted, and no answer gets zero points. Write a program that processes the test data. The output should be the student's ID, followed by the answers, followed by the test score, followed by the test grade. An example output is

F168200 TFTFTFTT TFTFTFTFTT (marks obtained) (grade obtained)

Assume the following grade scale:

90%–100%, A;
80%–89.99%, B;
70%–79.99%, C;
60%–69.99%, D;
0%–59.99%, F.

For the sake of making your lives more difficult, the instructor of this course wants you to make a program that tells how well female and male students of this university perform in a certain course. You receive a file that contains female and male student GPAs for certain courses. Due to confidentiality, the letter code f is used for female students and m for male students. Every file entry consists of a letter code followed by a GPA. Each line has one entry. The number of entries in the file is unknown. Write a program that computes and outputs the average GPA for both female and male students. Format your results to two decimal places. Your program should use the following functions:

Function openFiles: This function opens the input and output files, and sets the output of the floating-point numbers to two decimal places in a fixed decimal format with a decimal point and trailing zeros.

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Function initialize: This function initializes variables such as countFemale, countMale, sumFemaleGPA, and sumMaleGPA.

Function sumGrades: This function finds the sum of the female and male students' GPAs.

Function averageGrade: This function finds the average GPA for female and male students.

Function printResults: This function outputs the relevant results.

NOTE:

There can be no global variables. Use the appropriate parameters to pass information in and out of functions.

Question no. 3

10 Marks

An Armstrong number is an n-digit number that is equal to the sum of the nth powers of its digits.

Note: There are no two-digit Armstrong numbers.

An Armstrong number of three digits is an integer such that the sum of the cubes of its digits is equal to the number itself. For example, 371 is an Armstrong number since $3^3 + 7^3 + 1^3 = 371$.

Write a program that takes input of a number from a user and displays the Armstrong numbers between 1 and that number. The user can enter a number between 100-9999.

Question no. 4

10 Marks

An Anagram is a word formed by rearranging the letters of another, such as CINEMA, formed from ICEMAN.

Write a program that takes an input of two strings from the user, and displays on screen that are the two words anagrams of each other or not.

Note: Use of string functions is not allowed and will result in ZERO marks.

Story
Cin.
St
Cine

for
{
for
H/s

goto